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MONETARY POLICY AND SECTORAL CREDIT FLOWS  
Assessment of Alternative Policy Strategies

Paper By

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I. Introduction

The differential impact of changing credit conditions on the availability of credit in particular sectors of the economy is a problem that has troubled the Federal Reserve for a number of years. The general features of this problem are widely recognized. During periods of strong credit demands and inflationary pressures (such as 1966, and 1969-70, and 1972-73), Federal Reserve monetary policy ordinarily assumes a posture of substantial restraint. However, the impact of this restraint is felt most unevenly by various groups of borrowers in the country. Some borrowers (most notably the largest corporate concerns) are able to obtain most (or at least a large share) of the funds they require to continue their activities--particularly investment in plant expansion. In contrast, other borrowers (especially State and local governments and families attempting to purchase homes) are severely rationed in their efforts to obtain credit. The effects on spending and output that result from this disproportionate shift in the distribution of loanable funds are no less apparent. Business spending on plant and

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I am grateful to several members of the Board's staff for assistance in the preparation of this paper. Mr. Jared Enzler did the computer simulations to test alternative stabilization policies. Mr. Michael Prell assisted in tracing savings flows and housing activity during the last decade. Mr. John Austin and Mrs. Ruth Robinson (my regular staff assistants) also worked on the paper at various stages.

However, while I am grateful to the staff for their support, the views expressed here are my own, and should not be attributed to the staff, nor should they be attributed to my colleagues on the Board.

MONETARY POLICY AND SECTORAL CREDIT FLOWS

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equipment and on inventories continues at a pace essentially unchanged from that prevailing prior to the adoption of a restrictive credit policy; and the expansion continues long after spending by State and local governments--and particularly by home buyers--has been severely retarded.

This is a familiar story, and the explanation of the outcome is widely known: the institutional rigidities of housing finance (derived from the inflexibility of the mortgage as a debt instrument and the limited ability of savings and loan associations to compete for funds)--combined with the reluctance of home buyers to pay market-determined rates of interest--serve to erect formidable obstacles to the continued flow of funds into residential construction during periods of tight credit conditions. Similar rigidities (notably limitations on borrowing costs) inhibit the ability of State and local governments to compete in the capital market. Numerous proposals have been advanced to cope with the situation by lessening barriers and stabilizing the flow of funds into specific sectors. Some of these have been adopted, and a few have resulted in improvements.

Nevertheless, the problem remains an urgent one, and much of the debate over the issue continues to focus on the role of the Federal Reserve. This is not surprising because the reduced availability of funds in the adversely affected sectors becomes most evident as market forces respond to monetary restraint. Of course, one can contend that the objective of monetary policy is to impose general restraints on borrowing, and place the blame for the differential impact which it

actually has on rigidities in housing finance and State and local borrowing limitations. And there is an element of truth in this position. Nonetheless, if the impact of monetary policy consistently hits specific sectors of the economy and just as consistently leaves other sectors relatively unaffected, then it is also true that, whatever its intent, some of the effects of monetary policy are specific rather than general.

Recognition of this fact has led many observers (who assign a high priority to housing) to suggest ways to modify the sectoral impact of monetary restraint. The Federal Reserve Board itself has been among those advancing specific recommendations to Congress for this purpose. In early 1972, the Board suggested that Congress give consideration to the adoption of a variable investment tax credit. The Board's initial concern was the achievement of greater stability in credit flows to housing,<sup>1/</sup> but the expected benefits would reach well beyond this sector. The Board also suggested a number of steps to strengthen thrift institutions' ability to compete for funds in the face of high market interest rates.

In the Board's view, the introduction of a flexible investment tax credit would assure that the corporate business sector (which is far more resistant than housing to reduced credit availability) would bear a larger share of the burden of national economic stabilization needs. Since timeliness of use and flexibility in application would be critical, the Board recommended that the President be empowered to vary the tax within a specific

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<sup>1/</sup> See "Ways to Moderate Fluctuations in the Construction of Housing," Report of the Board of Governors of the Federal Reserve System, March 3, 1972. Reprinted in the Federal Reserve Bulletin, March, 1972, pp. 215-225.

range. Initially, the Board thought that this range might be from zero to 10 per cent or 15 per cent. Later it was concluded that the prospect of losing the tax credit completely might lead to strong opposition to its enactment. Consequently, the range was modified to set a floor (such as 3-4 per cent) below which the tax would not be reduced. To impose restraint on the use of this new fiscal authority, the Board suggested that--before a rate change could be put into effect--Congress should retain the right to consider the proposed change for 60 days during which either the House or Senate could disapprove it. Thus, the administration of the investment tax credit would parallel the procedure traditionally employed with respect to governmental reorganization plans.

In operation, during periods when business spending on fixed investment was adding to inflationary pressures, the tax credit would be reduced. It would be liberalized when the economy needed stimulation. A number of beneficial effects would accrue from the flexible use of this instrument. The corporate demand for external financing would become more stable. This should produce greater stability in market interest rates and in the flow of funds to savings intermediaries. Since the latter are the principal sources of mortgage funds, the availability of housing finance would be more assured. In addition, the stabilization of business demands for credit would contribute to stability in credit flows to other sectors--such as State and local governments.

Other suggestions have been made to use fiscal policy tools to accomplish the same purpose. For example, the imposition of an income tax surcharge during periods of excess demand has been recommended. In fact, in mid-1968, such a surcharge was adopted, and it remained in effect--at least in part--for about three years. Moreover, between the Fall of 1966 and the Summer of 1971, the existing 7 per cent investment tax credit was suspended and restored several times.

Assessment of Stabilization Policies: Given this concern with the stability of sectoral credit flows--and in the light of these attempts at flexible administration of fiscal policy--I concluded that it would be useful to examine these experiences to see what contribution (if any) they made toward the enhancement of economic stability in the United States. To make such an assessment, it was necessary for me to know what would be the general economic impact--both direct and indirect--of changing the policy mix to assign more weight to fiscal policy and less to monetary policy in an attempt to check inflation. To answer this question, it was first necessary to have an indication of the contours of financial flows and composition of gross national product (GNP) in the absence of special fiscal policy measures. In other words, one had to obtain some idea of the way in which the national economy might be expected to perform over time without taking account of the response of various sectors to the use of alternative policy instruments. To obtain such a picture, a large-scale, econometric model (which the Federal Reserve Board's staff has had in operation for several years)

was employed.<sup>2/</sup> The model was used in the application of a computer-based analytic technique--known technically as "simulation"--to test the effects of pursuing different policy strategies. This approach recognizes that the behavior of the economy is influenced significantly by autonomous changes in consumer spending, business investment, and government monetary and fiscal policies. Moreover, these variables interact with each other and also affect the level of interest rates, employment, and prices. Thus, even before one begins to weigh the impact of alternative stabilization policies, it is necessary to unravel the feedback effects of changes in those variables which drive the economy under ordinary circumstances. The working out of these mutual adjustment patterns is the task of simulation techniques, and the modern computer makes it possible to chart the process in some detail.

Let me say in passing, however, that my main interest is not in the characteristics of the econometric model or of simulation techniques as such.<sup>3/</sup> Instead, I am interested in obtaining by the use of these tools

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<sup>2/</sup> This econometric model is used by the Board's staff as a research tool in helping to describe the possible effects of alternative policies and policy mixes on the economy. As such, the model represents one of a number of inputs employed in the staff economic projections regularly supplied to Federal Reserve System policy makers. It must be emphasized, however, that the projections used in policy making are basically judgmental--rather than econometric--in character.

<sup>3/</sup> For those interested in an introduction to the econometric model maintained by the Board's staff, see Frank de Leeuw and Edward Gramlich, "The Federal Reserve-MIT Econometric Model," Staff Economic Study, January, 1968.



whatever insights I can into the workings of the nation's economy. I believe strongly that those of us who share responsibility for the determination of national economic policy must try constantly to improve our understanding of the ways in which the economy performs--and of the potentialities as well as of the limitations of the policy instruments available to us.

The rest of this paper is devoted to the following: in Section II, the differential impact of monetary restraint in recent years is summarized. In Section III, the analytical framework for the examination of alternative policy strategies is set forth. Then, in Sections IV, V, and VI, an assessment is made of alternative policies during the periods 1966-68; 1969-71, and 1972-73, respectively. Finally, Section VII presents the summary and conclusions.

II. Sectoral Impact of Monetary Restraint: The Recent Record

The uneven impact of monetary restraint in recent years can be traced in the gross national product (GNP) accounts. During each episode of sharply rising interest rates (1966, 1969-70 and 1973), residential construction expenditure declined significantly as a percentage of GNP. (See Table 1.) State and local government spending was also adversely affected by credit stringency--although this does not show up clearly in the GNP accounts because the strong uptrend in wages and salaries paid to State and local workers has masked the fluctuations in construction activity in this sector. Private plant and equipment spending (the other major component of fixed capital formation) has actually risen initially as a percentage of GNP during periods of credit stringency. This pattern of reaction has lent support to the view that the impact of monetary policy on business spending is rather weak in the very short-run.

Of course, because expenditures on fixed investment projects are spread over a considerable period of time, the GNP flow figures in some sense understate the sharpness of changes that occur in the pattern of economic activity. In the case of residential construction, the level of private housing starts serves as a useful indicator. For example, from the fourth quarter of 1965 to the first quarter of 1967, residential construction spending dropped 21 per cent (from a \$27.4 billion annual rate to \$21.6 billion), while private housing starts

Table 1

## SECTORAL IMPACT OF CREDIT RESTRAINT, SELECTED PERIODS, 1965-1973

Year & Quarter	Housing Starts (Thousands of Units, SAAR)		\$ Billions, SAAR			Percentage of GNP				
	Total Starts	Single Family	Residential Construction Expenditure	1-4 Family	Multi-Family	Residential Construction Expenditure	1-4 Family	Multi-Family	Plant and Equipment Expenditure	State & Local Government Expenditure
1965 - IV	1,523	1,013	27.4	20.1	7.3	3.9	2.8	1.0	10.7	10.3
1966 - I	1,381	903	27.4	20.2	7.2	3.8	2.8	1.0	10.8	10.3
II	1,270	828	26.0	19.3	6.6	3.5	2.6	0.9	10.8	10.5
III	1,084	728	24.7	17.9	6.8	3.3	2.4	0.9	11.0	10.6
IV	931	647	22.1	15.7	6.4	2.9	2.0	0.8	10.9	10.7
1967 - I	1,082	750	21.6	15.4	6.2	2.8	2.0	0.8	10.7	11.2
II	1,214	822	23.3	17.8	5.5	3.0	2.3	0.7	10.6	11.2
1969 - I	1,678	893	33.1	24.1	9.0	3.7	2.7	1.0	10.5	11.8
II	1,545	842	33.5	23.2	10.4	3.6	2.5	1.1	10.5	12.0
III	1,411	787	33.0	21.8	11.2	3.5	2.3	1.2	10.6	11.9
IV	1,312	740	30.9	19.3	11.6	3.2	2.0	1.2	10.7	12.1
1970 - I	1,236	687	31.1	20.6	10.5	3.2	2.1	1.1	10.4	12.3
II	1,313	758	29.5	18.5	11.0	3.0	1.9	1.1	10.4	12.5
III	1,483	839	30.4	20.0	10.4	3.1	2.0	1.0	10.4	12.7
1973 - I	2,404	1,356	59.0	41.1	17.9	4.7	3.3	1.4	10.5	13.2
II	2,221	1,199	59.6	41.9	17.6	4.7	3.3	1.3	10.5	13.2
III	2,015	1,116	59.3	41.4	17.9	4.5	3.2	1.4	10.6	13.3

Source: Federal Reserve Board Flow of Funds Accounts; U.S. Department of Commerce, Bureau of the Census.

fell 39 per cent between the fourth quarter of 1965 and the fourth quarter of 1966 (from a 1.52 million unit rate to a 0.93 million rate). The same pattern prevailed in 1969-70 and during the first three quarters of 1973. (Also shown in Table 1).

Regardless of which series on residential construction activity is examined, it is clear that this sector has experienced pronounced cyclical fluctuations in association with changes in the cost and availability of credit. It is equally clear, however, that the experience of the housing sector has not been exactly the same in each of the recent periods of credit stringency. The 1966 drop in building activity was much more pronounced than that in 1969-70. Although one cannot forecast with any degree of certainty where the bottom of the current decline will be reached, the drop in 1973 has thus far been more moderate than either of the earlier two housing recessions. In the current episode, we have started from an extremely high base, and even a pessimistic forecast of the low point would leave us around the 1969 peak.

Flow of Funds: The responses of the housing sector to each episode of credit restraint have been greatly influenced by the particular patterns of funds flows in the mortgage market. These patterns, in turn, have been greatly affected by Federal regulatory actions, by State usury ceilings, and by institutional changes in financial markets. A brief summary of the events in each period will highlight these patterns.

The basic feature of each episode has been disintermediation. Funds have flowed away from the depository institutions that traditionally have provided the overwhelming majority of mortgage credit. In part, this disintermediation was the expected result of the inability or unwillingness of institutions with long-term asset portfolios carrying relatively inflexible returns to bid aggressively for savings against the high yields available on market instruments. And at times, the rate paying ability of these institutions has been constrained by deposit rate ceilings set by the Federal supervisory authorities. Furthermore, the precise configuration of inter-institutional deposit rate ceiling differentials and the timing of changes have had significant effects on saving flows.

Selected data on consumer time and savings deposit flows have been reported in Table 2. The figures show very clearly the deterioration of savings flows to the depository institutions that has accompanied sharply rising rates. They also show that all institutions have not been affected equally in given episodes and that the distribution of deposit flows across institutions has varied considerably from episode-to-episode. In 1966, initially only commercial banks were subject to rate ceilings, but these were high enough that the banks were able to exploit their relatively better earnings position, and they captured a much greater proportion of savings flows. The sharp decline

Table 2

## INTEREST RATES AND SAVINGS FLOWS AT DEPOSITARY INSTITUTIONS, SELECTED PERIODS, 1965-1973

	Interest Rates		Savings Flows <sup>1/</sup>			Percentage Distribution of Flows		
	6 mon. Treas. Bill Rate	S&L's	MSB's (\$ billions, SAAR)	CB's	S&L's	MSB's	CB's	
1966 - I	4.78	5.7	2.4	9.4	31	14	54	
II	4.73	1.9	.9	18.4	9	4	87	
III	5.33	1.1	3.3	15.8	5	16	78	
IV	5.38	5.5	3.7	11.8	26	18	56	
1967 - I	4.52	10.5	5.0	19.0	30	15	55	
1969 - I	6.25	6.9	3.5	12.7	30	15	55	
II	6.34	3.7	2.3	8.7	25	16	59	
III	7.24	2.6	2.0	-10.9	-41	-32	173	
IV	7.60	2.4	2.6	0.9	41	44	15	
1970 - I	7.20	-.2	1.0	4.3	-4	20	84	
II	6.83	9.2	3.7	28.2	22	9	69	
1973 - I	5.99	32.8	7.6	37.7	42	10	48	
II	6.79	22.3	6.4	31.9	37	11	52	
III	8.41	4.7	-.2	18.0	21	-1	80	

<sup>1/</sup> Changes in consumer-type time and savings deposits  
Source: Federal Reserve Board Flow of Funds Accounts.

in thrift institution deposit inflows led to the establishment of ceilings for all the depository institutions--with differentials set that would provide the thrift institutions with some protection against commercial bank competition.

In 1969, the existing deposit rate ceilings buffered the thrift institutions from the pressures of disintermediation that took an especially sharp toll on commercial bank consumer time and savings deposit flows. As the year progressed, flows to all depository institutions combined declined sharply, and a further weakening was in prospect. Consequently, rate ceilings were raised across the board in January, 1970. In 1973, there were sharp declines in savings flows to all depository institutions--particularly in the third quarter. During that quarter, the share of savings flows going to commercial banks rose markedly. Although deposit rate ceilings for all institutions were raised in July and a new ceiling-free 4-year account category was created, investors seem to have been drawn to the high returns available on market instruments. Analyses to date suggest that the relatively poor performance of thrift institution flows was probably due in large part to the higher interest sensitivity of depositors at those institutions who had previously been attracted to them by the rate differential that existed under regulatory ceilings.

Acquisition of Mortgages: Declining savings flows at depository institutions are quite quickly translated into lower rates of net

mortgage acquisition, as may be seen in Table 3. The relative shares of mortgage flows accounted for by each of the depository institutions have been very closely related to the share of savings flows they were capturing. For example, in 1966 and in 1973, the percentage of net mortgage acquisitions accounted for by commercial banks was fairly stable, while that of the thrift institutions declined. In 1969-70 (when commercial banks suffered the weakest relative deposit flows), their share of the mortgage market declined. In 1969-70, the ability of savings and loan associations (S&L's)--the backbone of the residential mortgage market--to sustain mortgage lending was greatly aided by their opportunity to borrow in volume from the Federal Home Loan Banks. This source of funds was not available to the same extent in 1966, thus accounting in part for the relatively weak performance of the housing sector in that earlier period. In 1973, the FHLB System again provided massive amounts of credit to its member S&L's. It may be noted that--despite the similarities in relative deposit performance between 1966 and 1973--the S&L share of mortgage flows has not dropped as sharply.

However, the activity of the FHLB System is not the only important institutional change in mortgage markets. The role of Federal and related mortgage credit agencies has also grown. This is especially true of the Federal National Mortgage Association, the Government National Mortgage Association, and more recently, the Federal Home Loan Mortgage Corporation. Their participation, through the development of secondary market support to the mortgage market, has provided an



Table 3

NET ACQUISITION OF RESIDENTIAL MORTGAGES BY SELECTED FINANCIAL INSTITUTIONS, SELECTED PERIODS, 1965-1973  
(Amounts in billions of dollars, SAAR)

	Amount							Percentage of Total						
	S&L's	MSB's	Com. Banks	Life Ins.	Spons. Credit Agcy	All Other	Total	S&L's	MSB's	Com. Banks	Life Ins.	Spons. Credit Agcy	All Other	
1965 - IV	7.6	3.8	3.3	2.6	1.2	0.9	19.4	39	20	17	13	6	5	
1966 - I	7.7	2.4	3.0	2.6	2.8	2.0	20.5	38	12	15	13	14	9	
II	4.1	1.5	3.4	2.5	2.1	1.6	15.2	27	10	22	16	14	11	
III	0.6	2.4	2.0	2.1	1.6	1.6	10.3	6	23	19	20	16	16	
IV	0.9	2.3	1.6	1.3	1.0	2.3	9.4	10	24	17	14	11	24	
1967 - I	3.5	2.5	1.3	1.6	.6	1.9	11.4	31	22	11	14	5	17	
II	5.9	2.6	2.0	.9	.5	1.3	13.2	45	20	15	7	4	10	
1969 - I	10.9	2.2	4.8	0.6	2.1	2.3	22.9	48	10	21	3	9	10	
II	10.6	2.1	4.0	0.5	2.6	1.0	20.8	51	10	19	2	13	5	
III	7.3	1.5	2.2	0.7	4.3	2.7	18.7	39	8	12	4	23	14	
IV	6.7	2.0	3.1	-0.6	6.6	1.3	19.1	35	10	16	-2	35	7	
1970 - I	5.2	0.5	1.3	0.9	6.3	2.4	16.6	31	3	8	5	38	14	
II	6.2	1.5	0.7	0.7	5.4	0.7	15.2	41	10	5	5	35	5	
III	10.9	1.5	0.7	0.5	5.8	1.9	21.3	51	7	3	2	27	9	
1973 - I	29.6	4.1	11.2	0.4	6.0	0.3	51.6	57	8	22	1	12	1	
II	31.8	4.9	13.2	-0.5	8.4	3.0	60.8	52	8	22	-1	14	5	
III	19.4	3.5	11.4	1.1	10.2	9.2	54.8	35	6	21	2	19	17	

Source: Federal Reserve Board, Flow of Funds Accounts

offset to the reduced role of life insurance companies (which in 1969-70 were more attracted by the high yields on nonresidential mortgages and corporate bonds) and, furthermore, a strong buffer when mortgage flows from other institutions were at their weakest. The 1969-70 and 1973 data show that the infusions of mortgage credit by the Federally-sponsored credit agencies have tended to be largest in the quarters when total net mortgage flows were smallest.

III. Computer Simulation of Alternative Strategies: The Analytical Framework

A number of simulations were undertaken with the MIT-PENN-SSRC<sup>4/</sup> econometric model (referred to hereafter as the MPS model) with the aim of assessing the effect on sectoral credit flows of several alternative monetary and fiscal policies in three recent periods when the restrictive policies actually adopted had a severely adverse impact on several sectors of the economy--particularly housing and State and local governments. The time periods in question were: 1966 I-1968 IV; 1969 I-1971 IV, and 1972 III-1975 II. (Because of the Federal Reserve's tradition of not forecasting future policy actions, the results of the simulations for the third period are not reported beyond 1973.) In addition to examining the effects of different monetary policies (defined for the present purpose as different rates of growth in the money supply), the effects of two tax policy instruments were weighed: the 7 per cent investment tax credit and a 10 per cent income tax surcharge.

The method employed to study the effects of alternative monetary and fiscal policies was to simulate the MPS model twice--the first time using actual policy, and the second time using a hypothetical policy. Before these simulations were done, each behavioral equation of the model had been simulated separately and the error for each equation for each quarter was recorded. These errors were then added back to each equation in the solutions mentioned above. By following this method, the

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<sup>4/</sup> This model was developed by economists at the Massachusetts Institute of Technology and the University of Pennsylvania with support for the Social Science Research Council.

control solution incorporating actual policy is freed of equation errors and--  
apart from such things as rounding errors--matches the historical data. The  
reason for using this procedure arises from the fact that the MPS model  
is non-linear. Consequently, the responses to policy actions depend  
to some extent on the values of the simulated variables. Since the model's  
equations make errors, gauging the response without feeding the equation  
errors back in measures the response at the wrong point.

Impact of Tax Policy: In the MPS model, the investment tax  
credit works through its effect on the cost of capital. If corporations  
are permitted to deduct a portion of their new equipment costs from  
their income taxes, the effect is the same as if the price of machinery  
were lowered. Machinery is substituted for labor in the sense that new  
capacity is installed which has greater capital-output ratios than before.  
This in turn means larger gross investment. The extent of this effect  
depends on the elasticity of substitution between capital and labor.  
The speed of the effect depends on the length of lags between changes  
in the cost of capital and businessmen's recognition of it, design lags  
in creating equipment for the new economic factor proportions, and the  
lag involved in its production. Both the elasticity and the lags are  
difficult to measure, and doubts must necessarily remain about the degree  
of accuracy achieved in their measurement.

There is another effect of changes in the investment tax  
credit which we are unable to measure. This is the anticipatory effect.  
If the tax credit is operating and businessmen think it will be suspended

in the near future, there is an incentive to order new equipment before the suspension goes into effect. Similarly, if businessmen think the credit is about to be reinstated, there is an incentive to hold off on equipment orders. We have implicitly assumed in all that follows that changes in the investment tax credit rate are unforeseen.

The income tax works through the more familiar channel of reducing disposable income. There is also in this case a problem with speculation about tax changes. If, for example, an income tax surcharge were imposed but was widely expected to be terminated in the near future (as happened in 1968), the surcharge should be less effective than if it were regarded as permanent. This is because it would be viewed not as a permanent change in expected disposable incomes, but as a temporary reduction in the flow of disposable income. In these simulations, we have assumed all income tax rate changes are regarded as permanent. (This means that we have probably overstated the effects of temporary income tax changes.)

Finally, these simulations assume that all fiscal policies apart from the tax under consideration are unchanged.

Other Analytical Assumptions: A number of other assumptions have important bearing on the analysis. For example, it is assumed unless otherwise stated that maximum rates of interest payable on time and savings deposits are not changed by the policy mix. (These rates are set by the Federal Reserve Board's Regulation Q and by corresponding regulations promulgated by other bank supervisory agencies).

It is further assumed that foreign exchange rates, foreign prices, and the value of exports are not altered by the different policies. Federal taxes and expenditure other than those specifically mentioned in the alternative are regarded as unaffected. This is certainly not completely realistic. In the recession of 1970, a number of tax and spending measures were enacted (liberalized depreciation, liberalized personal exemptions, increases in social security payments, etc.) which probably would not have occurred had tax and monetary policy been less restrictive. It is further assumed that lending by the Federal Home Loan Banks and mortgage purchases by FMMA and GNMA are not influenced by the effects on housing of the alternative monetary and fiscal policies. The Federal Reserve discount rate is also assumed to be unchanged in these simulations--although with the money stock taken as the target monetary policy variable, the discount rate has little effect on anything except in determining the amount of nonborrowed reserves necessary to achieve a given money stock.

In the 1969-71 simulations, it is assumed that the New Economic Policy (NEP) announced in August, 1971, still occurred. One might argue that more restrictive monetary policies would have strengthened the balance of payments and dampened domestic inflation sufficiently to make the NEP unnecessary or to have postponed it. However, this point is not debated here.

None of these simulations takes account of the effect on the reaction pattern of the economic system to changes in policy resulting from the price controls that have been in effect to a varying degree since the Summer of 1971. In this model, the rate of change of prices depends in part on the level of economic activity. One might argue that under a System of price and wage controls, prices should be less sensitive to changes in economic activity brought about by policy shifts. While this may be true, we cannot measure it, and in the simulations reported here we assume that prices react to changes in monetary and fiscal policy in their pre-1971 manner. The MPS model has no supply constraints except in the labor market. In the current situation, shortages are occurring partially because of capacity limitation and partially because the present system of price controls does not encourage the expansion of production of those commodities which are in short supply. In this situation, the stimulation of aggregate demand through fiscal or monetary policy may have less than the usual effect on real economic activity. This model does not reflect these developments.

Anticipated Criticism: Before proceeding further, I wish to take note of several criticisms that may be raised with respect to the approach adopted here. This paper treats each of the periods covered as a different episode. It may be argued--and not exclusively by economists of the monetarist persuasion--that policy is an ongoing process

and not a series of separate strategies to be pursued one at a time. It is true that policies followed in one situation create the initial conditions for the next situation. However, I believe that it is worthwhile to employ some of the modern tools of economic analysis to enhance our understanding of the implications of alternative policy courses for specific episodes. Because of the noticeably adverse effects of restrictive measures on certain sectors, it appears particularly helpful to examine the experience accumulated during periods of monetary restraint. Simulation techniques lend themselves readily to this purpose.

In each of the simulations reported below, we find that tighter fiscal policies offset by more money in the system lead to greater savings flows and higher residential construction expenditures. This result would occur at any time and not just in periods of monetary restraint. Much of our thinking about the relation between housing and fiscal and monetary policy addresses the question of how we might protect housing from bearing an "inequitable" share of the burden when monetary policy shifts. One might argue that--if we are truly concerned about the state of housing of the population--we might better urge that tax policy be permanently more restrictive and the stock of money increased to offset the effect on aggregate demand. This would most likely increase the stock of housing--and perhaps more effectively than programs like the various Federal programs now in force. While this argument has a great deal of merit, it cannot be accepted without reference to the situation that actually prevails.



Because of the crucial importance of credit availability to home financing and because of the existing arrangements for financing housing (which rest so heavily on savings and loan associations), the Federal Reserve must remain sensitive to the impact of restrictive monetary policy on the housing sector.

Within the analytical framework outlined here, the following assessment of alternative stabilization policies was undertaken. The results of the simulations are shown in Appendix Tables I, II, and III, for the three time periods, respectively. The figures in these tables show the difference between a control simulation (referred to as a "Base Simulation") and another specific simulation using the policy variable identified. In the first (control) simulation, all variables exogenous to the model took on their actual values. In each successive simulation, a change was effected in a given policy variable, and the responses of a number of interest rates, sectoral credit flows, and spending patterns were recorded. These derived results in turn were compared with those obtained in the control simulation. To facilitate analysis and exposition, the derived results for alternative policies were expressed in the form of index numbers where the control simulation served as the base.

The most important results of the simulation exercises are summarized in Table 4.

Simulation of Alternative Stabilization Policies, Selected Periods, 1966-1973<sup>1/</sup>  
(Highlights of Results)

<u>Category</u>	<u>Year and Quarter</u>	<u>1966 I</u>	<u>1967 I</u>	<u>1969 I</u>	<u>1970 I</u>	<u>1972 III</u>	<u>1973 III</u>
<b>1. <u>Money Stock (\$ billions)</u></b>							
	Base Simulation	\$174.6	\$178.2	\$205.3	\$212.8	\$250.8	\$263.9
	<u>Index Numbers</u> <sup>2/</sup>						
	7% investment tax credit	100.4	101.3	100.0	99.4	100.4	100.8
	Improved policy mix	100.0	101.7	100.0	101.6	99.8	99.2
	5% money supply growth rate	99.7	102.6	99.7	101.1	99.4	99.2
<b>2. <u>Interest Rates (3 mo. Treas. bill)</u> <u>(Per Cent)</u></b>							
	Base Simulation	4.6	4.5	6.1	7.1	4.2	8.3
	<u>Index Numbers</u>						
	7% investment tax credit	93.2	85.8	100.0	110.0	92.9	91.6
	Improved policy mix	98.3	75.3	100.0	80.6	104.8	98.8
	5% money supply growth rate	106.2	81.2	104.8	89.7	111.9	96.4
<b>3. <u>Mortgage Interest Rate (Per Cent)</u></b>							
	Base Simulation	6.1	6.6	7.6	8.6	7.7	8.7
	<u>Index Numbers</u>						
	7% investment tax credit	99.7	96.7	100.0	102.7	100.0	97.7
	Improved policy mix	100.0	95.1	100.0	96.3	100.0	101.2
	5% money supply growth rate	100.3	95.5	100.3	97.1	100.0	103.4

<u>Category</u>						
<u>Year and Quarter</u>	<u>1966 I</u>	<u>1967 I</u>	<u>1969 I</u>	<u>1970 I</u>	<u>1972 III</u>	<u>1973 III</u>
4. <u>Savings and Loan Deposits</u> (\$ billions)						
Base Simulation	\$111.8	\$116.6	\$133.7	\$135.9	\$200.1	\$223.0
<u>Index Numbers</u>						
7% investment tax credit	100.1	101.2	100.0	98.0	100.1	101.2
Improved policy mix	100.0	101.6	100.0	102.6	99.9	99.0
5% money supply growth rate	99.9	102.1	99.8	102.3	99.8	98.0
5. <u>Mortgages Held by Savings and Loan Associations</u> (\$ billions)						
Base Simulation	\$112.5	\$115.1	\$133.8	\$141.8	\$197.9	\$232.2
<u>Index Numbers</u>						
7% investment tax credit	100.1	100.8	100.0	98.8	100.1	100.8
Improved policy mix	100.0	100.9	100.0	101.4	100.0	99.2
5% money supply growth rate	99.9	101.3	99.9	101.3	99.0	98.6
6. <u>Residential Construction Expenditures</u> (\$ billions)						
Base Simulation	\$ 27.4	\$ 21.6	\$ 33.1	\$ 31.1	\$ 54.5	\$ 59.3
<u>Index Numbers</u>						
7% investment tax credit	100.0	103.7	100.0	94.7	100.0	106.1
Improved policy mix	100.0	104.3	100.0	104.3	100.0	93.9
5% money supply growth rate	99.9	105.7	99.9	104.1	99.8	88.7

<u>Category</u>	<u>Year and Quarter</u>	<u>1966 I</u>	<u>1967 I</u>	<u>1969 I</u>	<u>1970 I</u>	<u>1972 III</u>	<u>1973 I</u>
<b>7. <u>Business Fixed Investment</u> (\$ billions)</b>							
Base Simulation		\$ 78.8	\$ 82.9	\$ 95.5	\$ 99.9	\$118.3	\$138.7
<u>Index Numbers</u>							
7% investment tax credit		100.0	97.7	100.0	101.5	100.0	97.5
Improved policy mix		99.9	96.4	100.0	100.6	100.0	95.2
5% money supply growth rate		100.0	100.8	100.0	100.3	100.0	103.1
<b>8. <u>GNP (1958 dollars)</u> (\$ billions)</b>							
Base Simulation		\$649.1	\$666.6	\$722.4	\$721.2	\$796.7	\$841.6
<u>Index Numbers</u>							
7% investment tax credit		100.0	99.8	100.0	100.0	100.0	100.0
Improved policy mix		99.8	99.1	100.0	100.5	100.0	99.7
5% money supply growth rate		100.0	100.7	100.0	100.4	99.9	98.8
<b>9. <u>Price Level (GNP Deflator)</u></b>							
Base Simulation		\$112.4	\$116.2	\$125.6	\$132.9	\$146.4	\$154.9
<u>Index Numbers</u>							
7% investment tax credit		100.0	99.2	100.0	100.1	100.0	100.0
Improved policy mix		100.0	99.6	100.0	100.0	100.0	99.8
5% money supply growth rate		100.0	100.1	100.0	100.0	100.0	99.9

<u>Category</u>						
<u>Year and Quarter</u>	<u>1966 I</u>	<u>1967 I</u>	<u>1969 I</u>	<u>1970 I</u>	<u>1972 III</u>	<u>1973 III</u>
10. <u>Unemployment Rate (Per Cent)</u>						
Base Simulation	3.9	3.8	3.4	4.2	5.6	4.8
<u>Index Numbers</u>						
7% investment tax credit	99.9	101.6	100.0	100.4	100.0	100.0
Improved policy mix	102.3	111.9	100.0	95.6	100.0	110.4
5% money supply growth rate	100.2	92.8	100.3	96.4	100.0	110.4

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1/ For more detailed data see appendix tables I, II, and III.

2/ The index numbers in this table are contemporaneous index numbers with the values of the base simulation serving as the base of the index numbers. Thus, in every quarter the index number for the base simulation would be 100.0.

IV. Alternative Policies: 1966-1968

By early 1966, the economy was suffering increasingly from inflation, and the Federal Reserve shifted to a policy of monetary restraint. During the course of the year, fiscal policy also became less expansive. In response to these moves, economic expansion slowed noticeably late in 1966, and a modest decline occurred in real output in early 1967. One effect of the restrictive policies was a serious decline in savings flows and residential construction.

As the impact of restraint on different sectors became more evident, calls were heard increasingly for a suspension of the 7 per cent investment tax credit as a means of lessening pressures on the money and capital market. These calls were eventually heard, and the investment tax credit was suspended from late September, 1966, to March, 1967. An assessment of the efficacy of this policy was the subject of the first simulation. In this experiment, the tax credit was suspended on January 1, 1966, and reinstated on January 1, 1967. At the same time, the depressing effect of this action on money GNP was approximately offset by a less restrictive monetary policy.

Of course, when we change a tax policy and offset it with a changed monetary policy, it is not feasible to offset completely the change in GNP. The reason for this is that the initial effect of a change in monetary policy is small relative to later effects. If we completely offset the effect of, say, a tax reduction by a reduction in the money stock in the first quarter, we find that we must soon offset this decrease in money by a much larger increase in money--which soon must be offset in turn--and the process would continue indefinitely.

Again, the results of suspending the investment tax credit for calendar 1966 are shown in Appendix Table I. However, the interpretation of these effects encounters a difficulty: as already indicated, the investment tax credit, in fact, was suspended for about six months beginning in late September, 1966. We ignore this in the control solution, however. The reason for this is that the 1966 suspension was widely anticipated and huge machinery orders occurred in September, 1966. Since the suspension was relatively brief, we felt that the orders lost between October and March were about equal to what was gained by the anticipation of the suspension. Thus, what appears in the table is the difference between a case where the unanticipated suspension of the credit occurred in January, 1966, and an unexpected restoration occurred in January, 1967--as opposed to a case where no suspension occurred at all.

The data generated in the simulation indicate that the money supply, interest rates, credit flows, and the mix of GNP are altered noticeably. According to the model, an increase of about \$2.3 billion (or 1.3 per cent) in the money stock would have been required to offset the dampening effects of the tax suspension at the point of greatest impact (which occurred during the last quarter of 1966 and the first quarter of 1967. Short-term interest rates would have fallen significantly. For example, the 3-month Treasury bill rate would have dropped to roughly 4.3 per cent in the fourth quarter of 1966, compared with the 5.2 per cent which actually prevailed. Mortgage interest rates also would have been lower--but by a smaller margin than that recorded for short-term rates.

All principal types of savings intermediaries would have gained funds. However, savings and loan associations (S&L's) would have had a slightly more favorable experience than commercial banks or mutual savings banks. Reflecting this outcome, S&L's would have expanded their holdings of real estate mortgages somewhat more quickly than the other two types of institutions. But, as inflows mounted at the latter, they would have increased their mortgage holdings by a sizable amount.

The new policy mix would have given a significant stimulus to residential construction. At the most favorable point (in the second quarter of 1967), residential construction expenditures would have been nearly 5 per cent above the level prevailing in the absence of a suspension of the investment tax credit. State and local government expenditures also would have been slightly higher, but consumer spending would have remained essentially unchanged. Business fixed investment and inventories (not shown in the Appendix tables) would have been depressed by the new mixture of stabilization policies. For instance, at the point of maximum impact (in the third quarter of 1967), capital outlays would have been about 3 per cent below the level registered with the tax credit in force.



In a second simulation experiment, calculations were made to assess the effects of imposing a 10 per cent income tax surcharge for calendar 1966--instead of suspending the investment tax credit. As can be seen in Appendix Table I, consumer expenditures--rather than business fixed investment--bear the brunt of the reduction in spending in this case.

In a third experiment, still another alternative combination of monetary and fiscal policies was tested. In this case, the investment tax credit was suspended for calendar 1966, and a 10 per cent income tax surcharge was imposed. Again, monetary policy was used to smooth the economy's adjustment to these fiscal actions. These joint tax measures go a substantial distance toward evening out savings flows in this period. Nevertheless, they offset only about one-quarter of the decline in residential construction that actually occurred. Moreover, mortgage rates still rose sharply in the simulation.

The economy emerged from the 1966-1968 period with an unemployment rate of about 3.5 per cent and continuing strong inflationary pressures. In the light of this experience, a search was made for what we thought was a better policy mix for the period. In this exercise, the investment tax credit was suspended, and the income tax surcharge was imposed in calendar 1966. At the same time, the dampening effects on GNP were only partially offset by a more expansive monetary policy. In this case, a severe decline in residential construction does occur--although it is not

as bad as the one which actually developed. Savings flows are increased, interest rates are reduced, and the unemployment rate ends up just under 4.5 per cent. Most importantly, the inflation rate ends up about 4.5 per cent, about 1.5 percentage points below the actual level which was recorded. The simulation results suggest that this combination of stabilization policies certainly would have put us in better shape going into 1969-70.

Steady Money Growth: We also did some simulation experiments involving steady growth rates of the money supply. For the 1966-68 period, the behavior of the economy was simulated using a constant 4 per cent growth rate throughout. The experiment was repeated with a steady 5 per cent rate of increase. The data in Appendix Table I show the effect of a constant 5 per cent money stock expansion beginning in the first quarter of 1966. Apparently, this was not an appropriate policy for that period. It introduces more money into the system than actually occurred in 1966. Interest rates would have dropped sharply. The 3-month Treasury bill rate would have been in the neighborhood of 3.5 per cent at the low point (in the last quarter of 1966)--compared with an actual average of 5.2 per cent. Mortgage rates also would have been appreciably lower. Savings intermediaries would have experienced a sizable rise in the inflow of funds, and they would have expanded their mortgage holdings accordingly. As they relent these funds to finance housing, residential construction would have received a strong boost. Other sectors would have expanded simultaneously, and the unemployment rate would have been pushed to an

exceptionally low level. The net result would have been a sharp acceleration in the rate of inflation.

We also tried using a 4 per cent money growth rate in this period. The results in this case are much better. This is fairly close to the actual policy through 1967, and--in fact--it results in slightly lower unemployment rates for 1966-67 than actually prevailed. However, in 1968 real growth speeded up, and monetary policy largely accommodated it with high money growth rates and moderate interest rate increases. The hypothetical 4 per cent growth rate drives interest rates very high toward the end of 1967. It should be pointed out that if anything like these increases in short-term rates had occurred, surely Regulation Q (which is assumed constant here) would have been raised--thus moderating both the rise in interest rates and the decrease in savings flow. All in all, a 4 per cent rate of growth in the money supply--combined with Regulation Q increases--would have worked out fairly well. So, in the light of these results, the increase in money growth actually registered in 1968 (as a number of Federal Reserve spokesmen have acknowledged) was probably a mistake.

V. Alternative Policies: 1969-1971

Essentially the same simulation experiment was repeated for the 1969-71 period. (See Appendix Table II). In this case, however, the actual fiscal policy framework differed significantly from that prevailing during the 1966-68 years. For instance, the investment tax credit actually was suspended in April, 1969, and reinstated in August, 1971. Similarly, as of January 1, 1969, a 10 per cent income tax surcharge was in effect. The surcharge was reduced to 5 per cent in the first half of 1970--then eliminated entirely. Thus, the results of this set of simulations are the reverse of those for 1966-68. The question posed was this: what would have been the effect of a decision not to suspend the investment tax credit and of ending the 10 per cent surtax as of January, 1969.

In the first simulation of the 1969-71 experience, it was assumed that the investment tax credit was left in place and the expansionary effect was offset with a more restrictive monetary policy. As one might expect, the impact of these policy decisions is greater than that shown in the 1966-68 experiment--because the foregone suspension this time is assumed to last for about two years--rather than one. The investment tax credit provides a strong stimulus to business demand for capital goods, and business fixed investment expands appreciably. Spending for this purpose adjusts with a noticeable time lag. However, once the process is underway, the outlays for business fixed investment climb to a level about 3 per cent above that which would have been achieved had the investment tax credit been suspended.

The reduction in the money stock necessary to offset the effect of this increase in investment on the level of income causes interest rates to rise sharply. For example, at the point of maximum impact of this pressure on the money and capital markets, short-term interest rates would have been one-fifth higher than those which actually emerged. Mortgage interest rates also would have risen appreciably.

Reflecting these developments, savings flows to S&L's and other financial intermediaries would have been considerably depressed. The situation would have deteriorated progressively. By the fourth quarter of 1971, S&L deposits would have been about 4 per cent (roughly \$8 billion) below the level that probably would have been recorded if the investment tax credit had been suspended. A similar pattern was observable in the case of mutual savings banks and in the case of commercial banks' time and savings deposits. The volume of mortgages held by S&L's and other thrift institutions also would have expanded more slowly. By the last quarter of 1971, the shortfall (compared to the situation in which the tax credit was lifted) would have amounted to nearly \$7 billion for S&L; about \$3-1/2 billion for mutual savings banks, and \$2-1/2 billion for commercial banks.

This reduced availability of credit for home financing would have imposed a severe drag on residential construction. By the fourth quarter of 1970, the margin between actual and anticipated spending was as much as \$2.7 billion. Business fixed investment would have been about \$3 billion higher--thus considerably exceeding the short-fall in residential construction expenditures.

If the 10 per cent income tax surcharge had been ended completely on January 1, 1969, the differential effects on credit flows to the housing sector would have been substantially adverse, and residential construction would have suffered accordingly. Short-term interest rates would have varied widely over the period, but a net increase would have resulted. Mortgage rates would have risen steadily. The pull of higher market interest rates (in the face of Regulation Q rate ceilings) would have depressed inflows to thrift institutions. For instance, in the last two quarters of 1969, S&L's would have received about \$2-1/2 billion less in deposits, and the shortfall would have continued during the following two years. By the end of 1971, deposits would have been \$3.7 billion less than actually experienced. The adverse effects on residential construction would have risen steadily from a shortfall of \$0.3 billion in the first quarter of 1969 to a peak of \$1.8 billion in the fourth quarter of that year. The negative effects would have continued through the third quarter of 1970--after which there would have been a modest improvement. In contrast, outlays for business fixed investment would have been dampened only slightly. Consumer spending would have shown little or no adverse effects.

In the next experiment, the two fiscal policy measures were combined--that is, as in the first experiment, the investment tax credit was not suspended, but the income tax surcharge was also ended. The results of these steps were offset with a more restrictive monetary policy. This combination of policies makes the situation much worse. Both short-term yields and mortgage interest rates increase sharply. Savings flows decrease,

net mortgage acquisitions are substantially lower, and residential construction expenditures fall dramatically. On the other hand, both consumer spending and business fixed investment rise to higher levels.

The next step was to search for a combination of policies to bring the economy through the 1969-71 period more successfully than we did. This time, we did not change tax policy from that which actually occurred. Instead, enough money was injected into the banking system to make the unemployment rate end up in the neighborhood of 4-1/2 per cent. This alternative approach to policy substantially increases credit flows and residential construction. However, this improved sectoral performance is purchased at the price of a significant quickening in inflation. For example, the GNP deflator ends up at 1 per cent above the level it otherwise would have reached. On the basis of these simulations, it appears that we cannot devise a policy nearly as satisfactory as the one we devised for the 1966-68 period. By 1969, the rate of inflation was higher than in 1966, and the steps necessary to reduce it would have been much more painful. Even the very firm policies followed in 1969 did not get the inflation rate below 5 per cent in 1971 until the NEP began in August of that year. This result provides good evidence as to why in reality stabilization policy should not be viewed as a series of isolated episode.

Money Supply Growth: The final simulation for the 1969-71 period involved experimentation with a constant money supply growth rate. By the beginning of 1969, the inflation rate was high enough that a 4 per cent money growth rate was no longer feasible. So a steady 5 per cent money growth rate was tried beginning January, 1969. This policy too works out fairly well. It causes slightly lower unemployment rates than actually

occurred and very slightly higher inflation rates. Residential construction and savings flows are in better shape in early 1970 than they were under actual policy.

VI. Alternative Policies: 1972-1973

As indicated above, the simulations for the final time period extended from the third quarter of 1972 through the second quarter of 1975. But, as also mentioned, the results are reported here only through the end of 1973. (See Appendix Table III) This was done to avoid any suggestion that future monetary policy actions are being forecast.

As 1972 unfolded, it became increasingly evident that the economy was expanding too rapidly and that a rekindling of inflationary pressures was in prospect. Given this outlook, a more restrictive monetary policy was adopted in the spring and intensified in the fall of that year. A slower provision of bank reserves through open market operations was the principal instrument employed by the Federal Reserve for this purpose, and the discount rate was raised after the turn of the new year.

In the assessment of alternative policies for the 1972-73 period, the first step was to run a simulation in which the 7 per cent investment tax credit was suspended in mid-1972 for a period of four quarters, with the adverse impact on GNP being offset by monetary policy. As expected, this move would have resulted in somewhat lower interest rates--including those on mortgages. By the end of 1972, S&L's would have gained about \$1 billion more in deposits than they actually recorded. At the end of 1973, their deposits would have been \$3.2 billion higher. A significant share of these gains would have been channeled into mortgages--i.e., \$400 million at the end of 1972 and \$2.4 billion at the close of 1973.



In this more favorable environment, residential construction would have been stimulated appreciably. At the end of 1972 (partly because of the long lead times involved in construction activity), the net increase would have been rather slight (only about \$200 million). However, for 1973, the additional spending would have been significant--amounting to \$4.3 billion as the year ended. On the other hand, consumer expenditures would have been affected very little. Business fixed investment would have dropped substantially--being \$3.8 billion lower by the end of 1973. (Again it is necessary to remember that these simulations did not attempt to account for the effects of the severe materials shortages which actually existed and undoubtedly would have adversely affected the level of construction and business investment achieved.)

The next experiment began with the imposition of a 10 per cent income tax surcharge over the period mid-1972 through mid-1973. In this case, interest rates would have generally eased off somewhat below the levels actually reached during 1972 and 1973. Savings flows and mortgage acquisitions would have expanded noticeably, and residential construction would have received a strong boost. Consumer expenditures would have changed very little, and business spending for equipment and structures would have been somewhat higher. This experiment was followed by a simulation in which both taxes were altered, and--to the extent feasible--the dampening effects were offset by monetary policy. However, the resulting rate of growth in the money stock required to achieve this

result was particularly high. In this example, interest rates were reduced considerably, and savings inflows at thrift institutions were strengthened measurably. Mortgage acquisitions and construction activity were correspondingly much stronger. Again, however, the consumer sector was little affected.

For this episode also an attempt was made to find a better policy mix. In this case, the investment tax credit was suspended for a year, and a somewhat more restrictive monetary policy was imposed in July, 1972. Under this policy, the inflation rate is reduced by about one-half percentage point. The unemployment rate does not go below 5 per cent. Savings flows and residential construction apparently would have undergone somewhat sharper declines than what has actually occurred. Again, it should be recalled that none of these simulations takes any account of the present oil crisis--although it presumably would have occurred under any monetary or fiscal policy.

There are a number of considerations with respect to the 1972-73 experience which are difficult to interpret. Price controls, varying from period to period, have been in effect since mid-1971. We do not know whether these controls reduced inflation in some basic sense, or whether they merely suppressed it. It may be that a part of the apparent effect of these controls was to eliminate discounts and reduce product quality. If so, the underlying rate of inflation is greater than official numbers suggest. It is also possible that part of the apparent effect was accomplished by reducing profit margins. If so, this is an occurrence which cannot be endlessly repeated.. In this case, part

of the apparent effect on the rate of inflation was really only a once-and-for-all decrease in the level of prices, and the rate of inflation going into the 1972-73 period was higher than the numbers indicate. These considerations--in addition to bad harvest and fuel shortages--may help explain why inflation in 1973 seemed to accelerate so rapidly.

Money Supply Growth: Finally, a simulation was run for the 1972-73 period using a 5 per cent constant growth rate for the money supply. However, by 1972, the inflationary problem had become sufficiently severe that some observers could question whether the 5 per cent money growth policy was any longer feasible. In the simulation reported here, this policy is sufficient to reduce GNP by \$20 billion and to add .6 per cent to the unemployment rate by the end of 1973. It also reduces residential construction by \$7 billion. This is about as restrictive a policy as I personally can believe could have been carried out over the period.

Thus, we see that, as we move chronologically through the periods analyzed here, the inflation rate is successively higher. For example, although not shown in the quarterly data, the GNP implicit price deflator increased at an average rate of 3.8 per cent in the 1966-68 period; by 5.0 per cent during the years 1969-71, and by approximately 6.8 per cent during 1973. Because of this trend, any constant money growth rate appears to become a progressively restrictive policy in each time period. Thus, on the basis of the simulation experiments reported here, a 5 per cent rate was too expansionary in 1966; about right in 1969, and apparently too restrictive in 1972-73, given the underlying price pressures.

These results raise a difficult question: Given the high rate of inflation that had already become imbedded in the economy even before the oil crisis gave prices a further boost, should the Federal Reserve accommodate some of this inflation with money growth rates in excess of those consistent with approximate price stability? Some observers who answer affirmatively stress that--with a rate of increase in prices as high or nearly as high as the rate of growth of money--it is vital to assure that the real money balances created are sufficient to allow for normal economic growth. For them, the best policy is to set a money growth rate not too far below that necessary to accommodate the higher rate of inflation and then to reduce successively the money growth rates later--once the inflation rate begins to fall.

This suggestion, however, is immediately subject to the counter-argument that--since the rate of inflation depends (with a lag) on the rate of growth of money--the above policy could set off a price-money-price spiral where increased inflation was met with increased money growth--followed by still further increased inflation.

Clearly, the Federal Reserve must be careful not to fall into this trap. Yet, both of these lines of argument beg the question as to just what money growth rate is consistent with what rate of inflation. That is a question to which we have not so far devised a very reliable answer.

## VII. Summary and Conclusions

The main conclusions reached in this analysis have been stated in each section. However, it may be useful to summarize them here:

- The record shows what nearly everyone would expect: residential construction during the last decade has experienced the most pronounced fluctuations in association with changes in the cost and availability of credit experienced by any major sector of the economy. But what is not so widely recognized is the fact that the severity of the problem of home financing has lessened somewhat in recent years. Cutbacks in homebuilding activity have become more moderate during each successive period of monetary restraint imposed since 1966.
- Thrift institutions (on which housing finance depends so heavily) were subjected to severe disintermediation during each episode of restrictive monetary policy--in 1966, in 1969, and in mid-1973. The reason for this is widely understood; depositors traditionally attracted to such institutions because of a desire for safety and liquidity have become increasingly sensitive to higher market interest rates while thrift institutions have not been able to meet the rate competition of the market place.
- Reduced inflows of funds at savings and loan associations meant pronounced cutbacks in mortgage acquisitions in 1966. This tendency became less pronounced in 1969-70 and in 1973. A principal explanation for this changed experience has been the expanding role of Federally-sponsored home financing agencies.
- A comprehensive assessment of stabilization policies during the last decade (based on more than a dozen and a half computer-based simulation experiments involving alternative combinations of monetary and fiscal policies) strongly suggests that the economy's performance could have been improved--if such heavy reliance had not been placed on monetary restraint in the fight against inflation. Moreover, residential construction would have carried less (and the corporate sector more) of the burden of restraint--if stabilization policies had taken a different course.

- For example, in every period examined, a suspension of the investment tax credit would have dampened business spending on plant and equipment. This would have eased upward pressures on market interest rates, and thrift institutions would have received a larger volume of savings. These increased inflows would have enabled them to acquire an enlarged volume of mortgages, and residential construction activity would thus have been sustained at a higher level.
  
- An imposition of a 10 per cent income tax surcharge during each of the three periods of monetary restraint also would have produced favorable effects on residential construction. However, in this case, the consumer sector (especially spending for durable goods) would have borne relatively more of the burden and business fixed investment relatively less.
  
- Numerous combinations of monetary and fiscal policy were tried to determine whether the economy's performance could be improved. For the 1966-68 period, the best performance occurred under a combination of policies consisting of a suspension of the investment tax credit and the imposition of an income tax surcharge--with the dampening effect on GNP being offset by a less restrictive monetary policy. In addition to improving the availability of credit for housing, both the unemployment rate and the rate of inflation would have been kept in the neighborhood of 4-1/2 per cent. Unfortunately, by 1969-70, the pace of inflation had progressed to the point that a policy simulation could not be constructed that was as satisfactory as the one devised for the 1966-68 period. By 1969, the rate of inflation was higher than in 1966, and steps necessary to reduce it significantly would have been much more painful--probably more painful than the public would have accepted. In fact, even the firm policies followed in 1969 did not get the inflation rate below 5 per cent in 1971 until the New Economic Policy was introduced in August of that year.
  
- For the 1973 period, we would have been even less successful than in 1969 in searching for a better mix of stabilization policy results in our econometric model simulations. A suspension of the investment tax credit and the imposition of a particularly restrictive monetary policy for a full year would have reduced the inflation rate by about  $\frac{1}{2}$  percentage point. The unemployment rate would have remained about 5 per cent. Savings flows and residential construction apparently would have undergone somewhat sharper declines than those that actually occurred.

- The interpretation of these experimental results is complicated by a number of factors--including the distortions introduced by price controls which have been in effect in one form or another since mid-1971 and more recently by the oil crisis. Nevertheless, a central conclusion stands out: the progressive intensification of inflation since the mid-1960's has made it more and more difficult to bring the economy on to a course of sustained growth with reasonable price stability and acceptable levels of unemployment.
- Finally, the model simulations indicate that a monetary policy aimed at maintaining a constant growth rate of the money supply would have had seriously adverse effects on the economy--once inflationary pressures (whatever their causes) had been allowed to accumulate for such a long time. On the basis of the analysis undertaken here, it appears that a 4 per cent money growth rate would have been appropriate for the 1966-68 period while 5 per cent would have been too expansive. However, 5 per cent appears to have been about right in 1969--but apparently too restrictive in 1972-73, given the rate of inflation that actually prevailed.
- In the light of these analytic results, some observers might argue that the Federal Reserve ought to accommodate some of the added inflation by expanding the money supply at a rate in excess of that required for long-run price stability. Others might take the opposite point of view. Yet, both lines of argument beg the question as to just what money growth rate is consistent with what rate of inflation. That is a question that remains to be answered.

## APPENDIX TABLE I

A I - 1

Category Year and Quarter	Simulation of Alternative Stabilization Policies, 1966 I-1968 IV											
	1966				1967				1968			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
<b>1. Money Stock (\$ billions)</b>												
Base Simulation	\$174.6	\$175.1	\$175.3	\$175.4	\$178.2	\$181.9	\$185.2	\$187.4	\$190.0	\$194.7	\$198.0	\$202.2
<u>Index Numbers</u> <sup>1/</sup>												
7% investment tax credit	100.4	100.6	100.9	101.3	101.3	101.2	99.8	99.8	99.8	99.8	99.8	99.9
10% income tax surcharge	101.1	101.1	101.1	101.1	99.6	99.6	99.6	99.6	100.3	100.6	100.6	100.5
Joint tax measures	102.0	102.3	102.1	102.4	100.9	100.9	99.4	99.4	101.1	100.4	100.4	100.4
Improved policy mix	100.0	100.6	101.1	101.7	101.7	101.1	100.8	100.5	100.3	100.0	100.0	100.0
Money supply targets												
4% growth rate	99.4	100.2	101.0	102.0	101.4	100.4	99.5	99.3	98.9	97.5	96.9	95.8
5% growth rate	99.7	100.6	101.7	102.9	102.6	101.7	101.1	101.1	101.0	99.8	99.3	98.4
<b>2. Interest Rate (3 mos. Trea. bill) (per cent)</b>												
Base Simulation	4.6	4.6	5.0	5.2	4.5	3.7	4.3	4.7	5.0	5.5	5.2	5.6
<u>Index Numbers</u>												
7% investment tax credit	93.2	91.5	87.7	83.2	85.8	87.2	116.6	106.7	105.9	105.7	104.3	102.3
10% income tax surcharge	79.8	86.0	86.6	87.2	117.9	108.3	108.1	107.2	94.8	93.7	96.4	98.2
Joint tax measures	68.1	73.4	79.6	73.4	103.0	94.2	124.9	112.8	97.8	95.6	97.0	97.1
Improved policy mix	98.3	86.4	79.3	73.0	75.3	83.3	83.9	85.5	86.1	85.7	82.2	80.3
Money supply targets												
4% growth rate	110.7	92.8	83.1	74.0	90.7	109.3	121.5	120.3	127.4	156.2	156.8	176.4
5% growth rate	106.2	86.8	76.2	66.9	81.2	97.5	108.9	108.0	115.2	142.7	141.4	163.2

<sup>1/</sup> The index numbers in this table are contemporaneous index numbers with the values of the base simulation serving as the base of the index numbers. Thus, in every quarter the index number for the base simulation would be 100.0.



Category	1966				1967				1968			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>3. Mortgage Interest Rate (Per cent)</b>												
Base Simulation	6.1	6.4	6.6	6.7	6.6	6.5	6.6	6.7	6.8	7.1	7.3	7.4
<u>Index Numbers</u>												
7% investment tax credit	99.7	99.2	98.5	97.5	96.7	96.3	97.3	98.3	98.9	99.4	99.8	100.0
10% income tax surcharge	99.1	99.2	97.5	96.9	97.7	98.6	99.0	99.3	99.2	98.6	98.2	98.4
Joint tax measures	98.5	97.1	96.2	95.1	95.0	95.3	96.6	97.9	98.2	98.0	97.7	97.4
Improved policy mix	100.0	99.3	98.1	96.5	95.1	94.7	94.7	94.5	94.3	93.9	93.2	92.3
Money supply targets												
4% growth rate	100.5	100.4	99.4	97.8	97.1	97.7	99.1	100.5	102.1	105.2	108.6	112.8
5% growth rate	100.3	99.8	98.4	96.5	95.5	95.9	97.1	98.1	99.4	102.1	105.1	108.8
<b>4. Savings &amp; Loan Deposits (\$billions)</b>												
Base Simulation	\$111.8	\$112.3	\$112.6	\$114.0	\$116.6	\$119.8	\$122.7	\$124.7	\$126.2	\$128.0	\$129.7	\$132.0
<u>Index Numbers</u>												
7% investment tax credit	100.1	100.3	100.6	101.0	101.2	101.3	100.8	100.5	100.3	100.2	100.1	100.1
10% income tax surcharge	100.4	100.8	101.1	101.3	100.8	100.5	100.2	100.0	100.1	100.5	100.7	100.9
Joint tax measures	100.6	101.4	101.9	102.4	103.1	101.9	101.2	100.7	100.6	100.8	100.9	101.1
Improved policy mix	100.0	100.2	100.7	101.3	101.6	101.6	101.5	101.5	101.6	101.6	101.7	101.8
Money supply targets												
4% growth rate	99.8	99.9	100.4	101.1	101.3	101.0	100.4	99.8	99.2	98.0	96.5	94.0
5% growth rate	99.9	100.1	100.8	101.7	102.1	102.1	101.7	101.4	101.0	100.0	99.0	97.3

Category	1966				1967				1968			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>5. <u>Mutual Savings Banks Deposits</u></b> (\$ billions)												
Base Simulation	\$53.3	\$53.6	\$54.4	\$55.3	\$56.6	\$58.0	\$59.4	\$60.4	\$61.4	\$62.3	\$63.5	\$64.6
<u>Index Numbers</u>												
7% investment tax credit	100.1	100.3	100.5	100.7	100.8	100.9	100.5	100.2	100.0	99.9	99.7	99.6
10% income tax surcharge	100.3	100.6	100.8	100.9	100.5	100.2	100.0	99.9	99.9	100.1	100.2	100.2
Joint tax measures	100.5	101.0	101.4	101.7	101.4	101.2	100.6	100.2	100.0	100.0	99.9	99.9
Improved Policy Mix	100.0	100.1	100.5	100.9	101.1	101.0	100.9	100.8	100.7	100.6	100.5	100.3
Money supply targets												
4% growth rate	99.8	99.9	100.3	100.8	100.9	100.7	100.2	99.8	99.4	98.4	96.9	94.3
5% growth rate	99.9	100.1	100.6	101.3	101.5	101.5	101.2	101.0	100.7	99.8	98.9	97.1
<b>6. <u>Commercial Banks Time and Savings</u></b> <u>Deposits (exc. CD's) (\$ billions)</u>												
Base Simulation	\$134.1	\$137.3	\$140.5	\$142.5	\$148.9	\$154.8	\$159.7	\$162.4	\$167.8	\$170.1	\$175.6	\$180.0
<u>Index Numbers</u>												
7% investment tax credit	100.3	100.5	100.4	101.6	101.8	101.8	100.7	100.2	99.3	98.5	97.9	97.6
10% income tax surcharge	100.6	100.7	100.7	100.8	99.9	99.5	99.1	98.7	98.9	99.0	99.1	99.1
Joint tax measures	101.1	101.5	101.5	101.9	101.1	100.8	99.2	98.3	98.1	97.9	97.7	97.7
Improved Policy Mix	99.8	100.1	100.6	101.3	101.5	101.2	100.8	100.2	99.4	98.7	98.6	98.7
Money supply targets												
4% growth rate	99.5	99.9	100.5	101.6	101.7	101.3	100.4	99.5	98.1	95.3	92.6	89.0
5% growth rate	99.7	100.4	101.3	102.7	102.9	102.5	101.7	101.0	99.9	97.7	95.9	92.8

<u>Category</u>	1966				1967				1968			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>7. <u>Mortgages Held by Savings and Loan Associations</u> (\$ billions)</b>												
Base Simulation	\$112.5	113.6	113.8	114.1	115.1	116.7	119.1	121.6	123.9	126.1	128.1	130.9
<u>Index Numbers</u>												
7% investment tax credit	100.1	100.2	100.3	100.6	100.8	100.9	100.8	100.6	100.4	100.2	100.1	100.1
10% income tax surcharge	100.2	100.4	100.7	100.9	100.8	100.6	100.4	100.1	100.1	100.1	100.3	100.5
Joint tax measures	100.3	100.7	101.2	101.6	101.8	101.8	101.4	101.0	100.7	100.5	100.5	100.6
Improved policy mix	100.0	100.1	100.3	100.6	100.9	101.1	101.1	101.2	101.1	101.1	101.1	101.1
Money supply target												
4% growth rate	99.9	99.9	100.1	100.5	100.8	100.9	100.7	100.3	99.9	99.1	98.1	96.4
5% growth rate	99.9	100.0	100.3	100.8	101.3	101.6	101.7	101.6	101.3	100.8	100.1	99.0
<b>8. <u>Mortgages Held by Mutual Savings Banks</u> (\$ billions)</b>												
Base Simulation	\$ 45.5	46.0	46.8	47.5	48.3	49.0	49.9	50.6	51.2	51.8	52.5	53.4
<u>Index Numbers</u>												
7% investment tax credit	100.1	100.2	100.2	100.6	100.8	101.0	100.9	100.8	100.8	100.7	100.6	100.4
10% income tax surcharge	100.2	100.4	100.6	100.8	100.7	100.7	100.7	100.6	100.7	100.7	100.7	100.7
Joint tax measures	100.3	100.7	101.0	101.5	101.6	101.8	101.7	101.6	101.6	101.6	101.4	101.2
Improved policy mix	100.0	100.1	100.3	100.7	100.9	101.1	101.3	101.5	101.7	101.9	102.0	102.0
Money supply targets												
4% growth rate	99.9	99.9	100.2	100.5	100.7	100.7	100.5	100.4	100.1	99.4	98.1	96.4
5% growth rate	99.9	100.1	100.3	100.9	101.2	101.4	101.5	101.5	101.5	101.0	100.4	98.9

<u>Category</u>	<u>1966</u>				<u>1967</u>				<u>1968</u>			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>9. <u>Mortgages Held by Commercial Banks (\$ billions)</u></b>												
Base Simulation	\$50.4	\$51.8	\$52.8	\$53.6	\$54.2	\$55.2	\$56.6	\$58.2	\$59.8	\$6.14	\$62.9	\$64.9
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	100.3	101.0	101.8	102.5	102.8	102.6	101.7	100.5	99.2	97.9
10% income tax surcharge	100.0	100.0	100.3	100.9	101.3	101.5	101.3	100.7	99.9	99.4	99.0	99.0
Joint tax measures	100.0	100.1	100.4	101.1	101.8	102.4	102.4	101.5	100.3	99.4	98.3	98.0
Improved policy mix	100.0	100.0	100.2	100.9	101.6	102.2	102.5	102.4	102.1	102.0	102.0	102.0
Money supply targets												
4% growth rate	99.8	99.6	99.6	100.1	100.8	101.5	101.8	101.1	99.4	96.7	93.0	88.6
5% growth rate	100.0	100.0	100.3	101.0	101.9	102.6	103.1	102.9	101.9	100.0	97.2	93.4
<b>10. <u>Residential Construction Expenditures (\$ billions)</u></b>												
Base Simulation	\$27.4	\$26.0	\$24.7	\$22.1	\$21.6	\$23.3	\$26.6	\$28.8	\$28.8	\$30.5	\$29.7	\$30.4
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.3	101.0	102.3	103.7	104.7	104.6	103.4	101.2	99.1	97.6	97.1
10% income tax surcharge	100.3	101.3	102.8	104.4	104.9	103.8	101.8	100.0	99.0	99.3	100.5	102.0
Joint tax measures	100.4	101.9	104.1	106.3	107.5	107.3	105.7	103.0	99.9	98.1	97.7	98.7
Improved policy mix	100.0	100.0	100.7	102.4	104.3	105.4	105.1	104.3	102.8	101.2	99.9	99.0
Money supply targets												
4% growth rate	99.8	99.5	99.7	101.2	103.5	104.8	104.5	102.7	99.6	94.9	87.3	80.5
5% growth rate	99.9	99.8	100.5	102.7	105.7	107.9	108.4	107.6	105.6	102.3	96.6	89.5

<u>Category</u>	1966				1967				1968			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>11. State and Local Government Expenditures (\$ billions)</b>												
Base Simulation	\$ 75.2	77.8	80.1	83.1	86.6	88.2	89.9	92.9	96.8	99.6	101.7	105.1
<u>Index Numbers</u>												
7% investment tax credit	100.1	100.2	100.2	100.3	100.2	100.1	99.7	99.9	99.9	100.0	100.0	100.1
10% income tax surcharge	100.3	100.1	100.0	99.9	99.3	99.6	99.7	99.8	100.2	100.3	100.3	100.4
Joint tax measures	100.5	100.3	100.1	100.1	99.5	99.6	99.3	99.6	100.0	100.2	100.2	100.3
Improved policy mix	99.5	100.0	99.9	99.9	99.5	99.1	98.8	98.6	98.3	98.1	97.9	97.8
Money supply targets												
4% growth rate	99.8	100.1	100.3	100.6	100.3	100.1	99.9	100.0	100.0	99.4	99.3	98.3
5% growth rate	99.9	100.3	100.5	100.9	100.6	100.6	100.6	101.0	101.2	101.1	101.5	101.0
<b>12. Consumer Expenditures (\$ billions)</b>												
Base Simulation	\$457.8	461.9	471.2	474.5	480.7	489.6	495.5	502.5	519.3	529.0	544.0	552.0
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.9	99.8	99.7
10% income tax surcharge	99.6	99.5	99.4	99.3	99.7	99.7	99.8	99.8	99.9	100.0	100.1	100.3
Joint tax measures	99.6	99.5	99.4	99.3	99.6	99.7	99.7	99.6	99.6	99.6	99.7	99.8
Improved policy mix	99.5	99.3	99.1	98.9	98.6	98.2	97.9	97.5	95.4	94.6	96.9	96.6
Money supply targets												
4% growth rate	100.0	99.9	100.0	100.1	100.3	100.4	100.6	100.7	100.7	100.4	99.9	99.2
5% growth rate	100.0	100.0	100.4	101.1	101.8	102.5	103.4	104.2	104.5	104.3	103.7	102.6

Category	1966				1967				1968			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>13. <u>Business Fixed Investment</u></b> <b>(\$ billions)</b>												
Base Simulation	\$78.8	\$80.3	\$83.0	\$84.2	\$82.9	\$82.9	\$83.3	\$84.2	\$88.4	\$86.9	\$88.8	\$91.3
<u>Index Numbers</u>												
7% investment tax credit	100.0	99.8	99.2	98.5	97.7	97.2	97.1	97.5	98.0	98.4	98.5	98.7
10% income tax surcharge	100.0	99.9	99.9	100.1	100.5	101.0	101.4	101.7	101.6	101.7	101.5	101.9
Joint tax measures	100.0	99.6	99.0	98.6	98.1	98.0	98.2	101.0	99.0	99.2	99.4	99.6
Improved policy mix	99.9	99.4	98.6	97.5	96.4	95.3	94.1	92.9	91.7	90.1	89.0	88.0
<b>Money supply targets</b>												
4% growth rate	100.0	99.7	99.9	100.0	100.2	100.6	101.6	102.4	102.6	102.6	101.7	99.8
5% growth rate	100.0	100.0	100.0	100.2	100.8	101.9	103.4	105.0	106.2	107.6	108.3	108.1
<b>14. <u>GNP (current) (\$ billions)</u></b>												
Base Simulation	\$729.5	\$743.3	\$755.9	\$770.7	\$774.4	\$784.5	\$800.9	\$815.9	\$834.0	\$875.2	\$875.2	\$890.2
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	99.9	99.9	99.7	99.7	99.7	99.8	99.9	99.8	99.8	99.7
10% income tax surcharge	99.8	99.7	99.7	99.7	99.9	100.1	100.2	100.2	100.1	100.2	100.3	100.5
Joint tax measures	99.9	99.7	99.6	99.5	99.6	99.7	99.8	99.8	99.8	99.8	99.8	99.9
Improved policy mix	99.7	99.4	99.2	98.9	98.6	98.3	98.0	97.7	97.2	96.7	99.6	96.4
<b>Money supply targets</b>												
4% growth rate	100.0	99.9	100.0	100.2	100.3	100.6	100.8	100.8	100.7	100.3	99.5	98.4
5% growth rate	100.0	100.0	100.1	100.4	100.7	101.2	101.6	102.1	102.4	102.4	102.3	101.8

<u>Category</u>	<u>1966</u>				<u>1967</u>				<u>1968</u>			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>15. <u>GNP</u> (1958 dollars) (\$ billions)</b>												
Base Simulation	649.1	655.0	660.2	668.1	666.6	671.6	678.9	683.6	692.6	705.3	712.3	716.5
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	99.9	99.9	99.8	99.9	99.9	100.0	100.0	100.0	99.9	99.8
10% income tax surcharge	99.9	99.7	99.8	99.7	100.1	100.3	100.3	100.3	100.3	100.3	100.4	100.5
Joint tax measures	99.9	99.8	99.7	99.7	99.8	100.1	100.1	100.2	100.1	100.1	100.1	100.1
Improved policy mix	99.8	99.5	99.3	99.2	99.1	98.9	98.8	98.7	98.5	98.3	98.5	98.7
<u>Money supply targets</u>												
4% growth rate	100.0	100.0	100.0	100.2	100.2	100.5	100.6	100.6	100.4	99.9	99.1	98.0
5% growth rate	100.0	100.0	100.1	100.4	100.7	101.0	101.3	101.6	101.5	101.3	100.8	100.0
<b>16. <u>Price Level</u> (GNP Deflator)</b>												
Base Simulation	112.4	113.5	114.5	115.4	116.2	116.9	118.0	119.4	120.4	121.6	122.9	124.3
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	100.0	99.9	99.9	99.8	99.8	99.8	99.8	99.8	99.8	99.8
10% income tax surcharge	100.0	100.0	99.9	99.9	99.9	99.8	99.8	99.9	99.9	99.9	99.9	100.0
Joint tax measures	100.0	100.0	99.9	99.8	99.7	99.7	99.7	99.6	99.6	99.7	99.7	99.7
Improved policy mix	100.0	99.9	99.8	99.7	99.6	99.4	99.2	99.0	98.7	98.4	98.0	97.7
<u>Money supply target</u>												
4% growth rate	100.0	100.0	100.0	100.0	100.0	100.0	100.1	100.2	100.3	100.4	100.4	100.4
5% growth rate	100.0	100.0	100.0	100.0	100.1	100.2	100.3	100.5	100.8	101.1	101.5	101.8

<u>Category</u>	<u>1966</u>				<u>1967</u>				<u>1968</u>			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>17. <u>Unemployment Rate</u> (Per Cent)</b>												
<b>Base Simulation</b>	3.9	3.8	3.8	3.7	3.8	3.8	3.8	3.9	3.7	3.6	3.5	3.4
<b><u>Index Numbers</u></b>												
7% investment tax credit	99.9	100.0	100.6	101.2	101.6	101.5	100.9	100.1	99.7	100.1	101.1	102.2
10% income tax surcharge	101.5	103.9	103.9	103.1	100.8	98.1	96.9	97.4	97.7	97.2	95.9	93.5
Joint tax measures	101.2	103.0	104.1	104.3	103.0	100.8	99.4	99.3	99.4	99.5	99.2	97.9
Improved policy mix	102.3	105.9	108.9	110.7	111.9	113.7	115.7	117.2	121.4	126.1	126.2	124.6
<b>Money supply target</b>												
4% growth rate	100.4	100.7	100.3	98.6	96.5	94.4	92.7	92.6	93.6	98.5	107.3	120.6
5% growth rate	100.2	100.1	98.9	96.1	92.8	88.9	85.0	82.4	79.8	80.3	84.4	92.1



## APPENDIX TABLE II

## Simulation of Alternative Stabilization Policies, 1969 I-1971 IV

Category	1969				1970				1971			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
1. <u>Money Stock (\$ billions)</u>												
Base Simulation	\$205.3	\$207.4	\$208.0	\$209.7	\$212.8	\$215.6	\$219.4	\$221.6	\$277.1	\$233.3	\$235.3	\$236.1
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	99.0	99.4	99.4	98.9	99.0	99.4	99.6	99.6	99.2	99.0
10% income tax surcharge	98.7	99.4	100.4	99.4	100.4	99.4	100.1	100.4	99.2	100.5	100.5	98.8
Joint tax measures	98.7	99.4	99.7	98.4	99.7	99.1	99.1	100.0	98.5	99.8	99.4	101.1
Improved Policy Mix	100.0	100.0	100.7	101.2	101.6	102.1	102.1	102.5	102.4	102.4	102.3	102.3
5% money supply growth rate	99.7	99.9	100.9	101.3	101.1	101.0	100.5	100.8	99.6	98.1	98.5	99.4
2. <u>Interest Rate (3 mos. Tres. bill)</u> (per cent)												
Base Simulation	6.1	6.2	7.0	7.4	7.1	6.7	6.3	5.4	3.8	4.2	5.0	4.2
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.1	120.6	105.9	110.0	116.1	113.2	106.1	104.9	105.0	114.7	92.8
10% income tax surcharge	128.5	105.6	90.4	115.4	89.6	111.8	94.2	93.4	120.3	86.2	93.2	130.9
Joint tax measures	128.5	105.7	104.0	135.5	97.4	114.3	111.8	95.6	136.8	94.9	111.9	75.6
Improved Policy Mix	100.0	100.0	87.4	84.2	80.6	81.9	88.3	84.1	89.9	93.6	97.4	103.6
5% money supply growth rate	104.8	99.1	83.5	82.4	89.7	94.3	105.5	98.2	126.8	159.9	135.1	93.2

Category	1969				1970				1971			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>3. <u>Mortgage Interest Rate (Per Cent)</u></b>												
Base Simulation	7.6	7.9	8.2	8.4	8.6	8.6	8.6	8.4	7.8	7.7	7.8	7.8
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	101.2	102.1	102.7	103.8	104.4	104.5	104.5	104.4	104.8	104.6
10% income tax surcharge	101.5	102.5	101.8	102.3	101.9	101.9	101.6	101.0	101.8	101.6	101.1	102.3
Joint tax measures	101.5	102.5	102.6	104.5	105.0	105.0	105.3	104.9	106.0	106.0	106.0	105.4
Improved Policy Mix	100.0	100.0	99.3	98.1	96.3	95.9	95.6	95.5	95.5	95.7	95.7	95.7
5% money supply growth rate	100.3	100.3	99.3	97.9	97.1	96.9	97.4	97.7	98.2	100.1	100.9	100.4
<b>4. <u>Savings &amp; Loan Deposits (\$ billions)</u></b>												
Base Simulation	\$133.7	\$134.7	\$135.3	\$135.9	\$135.9	\$138.2	\$141.9	\$146.8	\$155.4	\$162.5	\$168.5	\$174.9
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	99.2	98.7	98.0	96.5	96.2	96.0	96.0	95.9	95.6	95.6
10% income tax surcharge	99.0	98.5	98.8	98.1	98.2	98.1	98.5	98.6	98.2	98.4	98.5	97.9
Joint tax measures	99.0	98.5	98.3	96.6	95.4	96.0	95.9	95.9	95.2	95.1	94.7	94.9
Improved policy mix	100.0	100.0	100.5	101.4	102.6	103.0	103.1	103.4	103.7	104.5	105.2	105.3
5% money supply growth rate	99.8	99.8	100.5	101.5	102.3	102.3	101.8	101.8	101.6	100.5	99.8	99.7

Category	1969				1970				1971			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>5. <u>Mutual Savings Banks Deposits</u></b> <b>(<u>\$ billions</u>)</b>												
Base Simulation	\$65.5	\$66.0	\$66.5	\$67.2	\$67.4	\$68.4	\$69.7	\$71.6	\$74.5	\$77.3	\$79.1	\$80.5
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	99.2	98.7	98.1	96.8	97.0	96.7	96.7	96.8	96.2	96.2
10% income tax surcharge	99.4	98.7	98.9	98.2	98.3	98.4	98.9	99.3	99.1	99.3	99.3	98.7
Joint tax measures	99.4	98.7	98.4	96.7	95.6	96.6	97.1	97.0	96.4	96.5	95.9	96.1
Improved Policy Mix	100.0	100.0	100.5	101.4	102.5	102.6	102.4	102.3	102.2	102.3	102.7	103.2
5% money supply growth rate	99.9	99.8	100.5	101.5	102.2	102.0	101.5	101.2	100.8	100.2	99.6	99.4
<b>6. <u>Commercial Banks Time and Savings</u></b> <b><u>Deposits (exc. CD's) (\$ billions)</u></b>												
Base Simulation	\$184.5	\$184.9	\$182.9	\$182.2	\$185.5	\$190.3	\$197.7	\$199.6	\$219.9	\$225.8	\$229.8	\$238.4
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	98.8	98.7	98.3	98.1	97.3	97.2	97.3	97.2	96.8	97.3
10% income tax surcharge	98.6	99.0	99.9	99.3	100.4	99.7	99.8	100.1	99.3	99.9	100.2	99.1
Joint tax measures	98.8	99.0	99.1	97.5	98.7	97.3	96.5	96.9	96.0	96.3	96.0	96.2
Improved Policy Mix	100.0	100.0	100.7	101.5	102.4	103.3	103.7	104.1	103.8	103.4	102.7	102.1
5% money supply growth rate	99.8	99.9	100.8	101.7	102.0	102.3	101.9	101.9	100.9	98.5	97.0	96.7

Category	1969				1970				1971			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>7. <u>Mortgages Held by Savings and Loan Associations</u> (\$ billions)</b>												
Base Simulation	\$133.8	\$136.6	\$138.7	\$140.4	\$141.8	\$143.5	\$146.4	\$150.6	\$155.3	\$161.6	\$168.3	\$174.6
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	99.7	99.3	98.8	97.8	97.2	96.7	96.4	96.3	96.1	96.1
10% income tax surcharge	99.6	99.3	99.0	98.6	98.5	98.3	98.5	98.6	98.5	98.6	98.6	98.4
Joint tax measures	99.5	99.2	98.8	97.9	96.9	96.6	96.4	96.3	96.0	95.9	95.7	95.6
Improved Policy Mix	100.0	100.0	100.2	100.7	101.4	102.0	102.4	102.8	103.1	103.6	104.2	104.6
5% money supply growth rate	99.9	99.9	100.1	100.7	101.3	101.6	101.7	101.7	101.6	101.0	100.4	100.0
<b>8. <u>Mortgages Held by Mutual Savings Banks</u> (\$ billions)</b>												
Base Simulation	\$54.1	\$54.8	\$55.3	\$56.1	\$56.3	\$56.8	\$57.3	\$57.9	\$58.7	\$59.6	\$60.6	\$62.0
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	99.5	99.1	98.6	97.5	97.3	96.7	96.1	95.7	94.8	94.5
10% income tax surcharge	99.6	99.1	99.1	98.5	98.4	98.2	98.2	98.3	98.0	98.1	98.2	97.8
Joint tax measures	99.6	99.1	98.8	97.5	96.5	96.6	96.2	95.7	94.8	94.4	93.7	93.7
Improved Policy Mix	100.0	100.0	100.3	100.9	101.8	102.1	102.4	102.7	103.1	103.6	104.2	104.7
5% money supply growth rate	99.9	99.9	100.3	100.9	101.5	101.6	101.6	101.8	101.8	101.6	101.2	100.9

Category Year and Quarter	1969				1970				1971			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>9. <u>Mortgages Held by Commercial Banks (\$ billions)</u></b>												
Base Simulation	\$66.8	\$68.3	\$69.2	\$70.1	\$70.7	\$70.9	\$71.5	\$72.5	\$74.0	\$76.7	\$79.5	\$80.0
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	99.7	99.1	98.4	97.4	96.7	96.2	96.1	96.4	96.7	97.1
10% income tax surcharge	99.6	98.9	98.3	97.8	97.7	97.8	98.0	98.2	98.4	98.7	98.9	99.2
Joint tax measures	99.6	98.9	98.1	97.0	96.0	95.1	94.6	94.5	94.7	95.1	95.6	96.1
Improved Policy Mix	100.0	100.0	100.2	100.8	101.7	103.2	104.5	105.5	105.9	105.7	105.2	104.6
5% money supply growth rate	99.9	99.8	100.0	100.6	101.6	102.7	103.6	104.1	104.1	103.6	102.9	102.1
<b>10. <u>Residential Construction Expenditures (\$ billions)</u></b>												
Base Simulation	\$33.1	\$33.5	\$33.0	\$30.9	\$31.1	\$29.5	\$30.4	\$33.8	\$37.1	\$41.5	\$44.8	\$47.5
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	99.5	97.4	94.7	92.9	92.9	92.1	93.3	94.5	96.3	97.0
10% income tax surcharge	99.2	96.9	94.7	94.1	94.8	96.1	98.3	99.9	101.0	101.4	101.0	100.3
Joint tax measures	99.2	96.9	94.5	92.2	89.6	88.6	92.2	93.6	95.8	97.1	97.6	97.0
Improved Policy Mix	100.0	100.0	100.3	101.6	104.3	106.8	108.0	109.8	110.3	110.9	110.3	110.6
5% money supply growth rate	99.9	99.5	99.6	101.1	104.1	106.3	106.2	106.4	105.2	103.5	98.2	92.0

Category Year and Quarter	1969				1970				1971			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
<b>11. State and Local Government Expenditures (\$ billions)</b>												
Base Simulation	\$107.4	\$110.5	\$112.3	\$114.6	\$117.7	\$121.5	\$125.5	\$128.5	\$131.8	\$134.8	\$137.4	\$141.0
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	99.4	99.8	99.7	99.5	99.6	99.8	99.6	99.5	99.2	99.4
10% income tax surcharge	99.4	100.0	100.5	99.8	100.6	99.9	100.2	100.1	98.8	100.1	100.0	99.1
joint tax measures	99.4	100.0	100.1	99.2	100.3	99.8	99.7	100.0	99.3	99.5	99.1	99.7
Improved Policy Mix	100.0	100.0	100.4	100.6	100.8	100.8	100.8	101.0	101.2	101.5	101.9	102.2
5% money supply growth rate	99.9	100.0	100.5	100.6	100.5	100.4	100.2	100.5	100.2	99.8	100.3	100.9
<b>12. Consumer Expenditures (\$ billions)</b>												
Base Simulation	\$564.0	\$575.8	\$583.7	\$594.4	\$604.6	\$614.0	\$623.7	\$628.3	\$650.0	\$662.2	\$673.0	\$683.4
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	100.0	100.0	100.0	99.9	99.9	99.8	99.8	99.7	99.6	99.6
10% income tax surcharge	100.3	100.3	100.5	100.5	100.4	100.4	100.2	100.2	100.1	100.0	100.0	99.8
Joint tax measures	100.3	100.4	100.5	100.5	100.3	100.3	100.1	100.1	100.0	99.8	99.7	99.6
Improved Policy Mix	100.0	100.0	100.1	100.2	100.4	100.6	100.9	101.2	101.2	102.0	102.5	103.1
5% money supply growth rate	100.0	100.0	100.0	100.2	100.3	100.5	100.6	100.8	101.0	101.1	101.1	101.1

Category	1969				1970				1971			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>13. <u>Business Fixed Investment</u> (\$ billion)</b>												
Base Simulation	95.5	96.9	100.2	101.5	99.9	101.0	102.9	98.5	101.4	103.6	104.7	108.0
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	100.3	100.9	101.5	102.2	102.6	103.0	103.1	102.9	102.8	102.2
10% income tax surcharge	100.0	100.0	99.8	99.5	99.0	98.6	98.4	98.1	98.0	98.1	98.2	98.0
Joint tax measures	100.0	100.0	99.1	100.4	100.6	101.0	101.1	101.2	101.4	101.4	101.2	100.6
Improved policy mix	100.0	100.0	100.0	100.2	100.6	101.3	102.4	103.9	105.6	107.5	109.7	111.7
5% money supply growth rate	100.0	99.9	99.9	100.0	100.3	101.0	101.8	103.0	103.9	104.6	105.1	104.9
<b>14. <u>GNP (current)</u> (\$ billion)</b>												
Base Simulation	907.0	923.5	941.7	948.9	958.5	970.6	987.4	991.8	1027.2	1046.9	1063.5	1084.2
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	100.0	100.0	100.0	100.1	100.0	100.0	99.9	99.9	99.8	99.7
10% income tax surcharge	100.0	100.1	100.1	100.0	100.0	99.9	99.9	99.8	99.8	99.8	99.8	99.6
Joint tax measures	100.0	100.1	100.1	100.0	100.0	100.0	100.0	99.9	99.9	99.9	99.7	99.6
Improved policy mix	100.0	100.0	100.1	100.3	100.6	100.9	101.3	101.7	102.2	102.7	103.3	103.9
5% money supply growth rate	100.0	99.9	100.0	100.2	100.4	100.7	100.9	101.2	101.3	101.3	101.2	100.9

<u>Category</u>	<u>1969</u>				<u>1970</u>				<u>1971</u>			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>15. <u>GNP (1958 dollars) (\$ billions)</u></b>												
Base Simulation	\$722.4	\$725.8	\$729.2	\$725.1	\$721.2	\$722.1	\$727.2	\$719.3	\$735.1	\$740.4	\$746.9	\$759.0
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	100.0	100.0	100.0	99.9	99.9	99.9	99.8	99.7	99.7	99.6
10% income tax surcharge	100.0	100.1	100.1	99.9	99.9	99.8	99.7	99.7	99.7	99.8	99.8	99.6
Joint tax measures	100.0	100.1	100.1	99.9	99.9	99.8	99.7	99.7	99.6	99.6	99.5	99.4
Improved Policy Mix	100.0	100.0	100.1	100.2	100.5	100.8	101.1	100.5	101.8	102.3	102.6	103.0
5% money supply growth rate	100.0	100.0	100.0	100.2	100.4	100.7	100.8	101.0	101.1	101.0	100.8	100.4
<b>16. <u>Price Level (GNP deflator)</u></b>												
Base Simulation	125.6	127.2	129.1	130.9	132.9	134.4	135.8	137.9	139.7	141.4	142.4	142.8
<u>Index Numbers</u>												
7% investment tax credit	100.0	100.0	100.0	100.0	100.1	100.1	100.1	100.2	100.2	100.2	100.1	100.1
10% income tax surcharge	100.0	100.0	100.1	100.1	100.1	100.1	100.1	100.1	100.1	100.1	100.1	100.1
Joint tax measures	100.0	100.0	100.1	100.1	100.2	100.2	100.2	100.2	100.3	100.3	100.3	100.2
Improved Policy Mix	100.0	100.0	100.0	100.0	100.0	100.1	100.1	100.2	100.3	100.5	100.6	100.1
5% money supply growth rate	100.0	100.0	100.0	100.0	100.0	100.0	100.1	100.1	100.2	100.3	100.4	100.5



<u>Category</u>	<u>1969</u>				<u>1970</u>				<u>1971</u>			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>17. <u>Unemployment Rate (Per Cent)</u></b>												
<u>Base Simulation</u>	3.4	3.4	3.6	3.6	4.2	4.7	5.2	5.8	6.0	5.9	6.0	5.9
<u>Index Numbers</u>												
7% investment tax credit	100.0	99.9	100.3	100.4	100.4	100.8	101.0	101.2	101.7	102.3	102.8	103.3
10% income tax surcharge	99.4	98.6	98.3	99.2	100.1	100.7	101.2	101.2	101.6	101.5	101.6	102.7
Joint tax measures	99.4	98.5	98.3	99.5	100.7	101.3	101.8	101.8	102.4	102.9	103.6	104.7
Improved policy mix	100.0	100.0	99.3	97.6	95.6	93.5	91.6	90.4	87.5	84.5	81.3	77.8
5% money supply growth rate	100.3	100.6	100.0	98.3	96.4	94.8	93.8	93.5	92.3	92.2	93.0	94.6

## Simulation of Alternative Stabilization Policies, 1972 III-1973 IV

<u>Category</u>	<u>1972</u>		<u>1973</u>			
	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>1. <u>Money Stock</u> (\$ billions)</b>						
Base Simulation	\$250.8	\$255.4	\$257.4	\$263.7	\$263.9	\$267.7
<u>Index Numbers</u>						
7% investment tax credit	100.4	101.2	101.9	100.8	100.8	100.4
10% income tax surcharge	101.2	102.7	101.4	100.4	99.6	99.6
Joint tax measures	102.2	103.1	102.5	102.1	100.9	99.8
Improved policy mix	99.8	99.2	99.2	99.2	99.2	99.3
5% money supply growth rate	99.4	98.9	99.4	98.2	99.2	99.4
<b>2. <u>Interest Rate</u> (3 mos. Tres. bill)</b>						
(Per Cent)						
Base Simulation	4.2	4.9	5.7	6.6	8.3	7.8
<u>Index Numbers</u>						
7% investment tax credit	92.9	81.6	73.7	98.5	91.6	96.2
10% income tax surcharge	78.6	63.3	91.2	95.4	114.5	105.1
Joint tax measures	64.3	63.3	75.4	80.3	97.6	107.7
Improved policy mix	104.8	114.3	107.0	103.0	98.8	97.4
5% money supply growth rate	111.9	120.4	103.5	137.9	96.4	94.9

<u>Category</u>	<u>1972</u>		<u>1973</u>			
	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>3. <u>Mortgage Interest Rate (Per Cent)</u></b>						
Base Simulation	7.7	7.7	7.8	8.0	8.7	8.9
<u>Index Numbers</u>						
7% investment tax credit	100.0	98.7	97.4	97.5	97.7	97.8
10% income tax surcharge	98.7	97.4	97.4	97.5	98.8	100.0
Joint tax measures	98.7	97.4	96.2	96.2	96.6	97.8
Improved policy mix	100.0	101.3	101.3	101.2	101.2	100.0
5% money supply growth rate	100.0	101.3	101.3	102.5	103.4	102.2
<b>4. <u>Savings &amp; Loan Deposits (\$ billions)</u></b>						
Base Simulation	\$200.1	\$207.7	\$215.9	\$221.5	\$223.0	\$225.1
<u>Index Numbers</u>						
7% investment tax credit	100.1	100.4	100.9	101.0	101.2	101.4
10% income tax surcharge	100.3	101.0	101.2	101.2	100.6	100.4
Joint tax measures	100.5	101.2	101.8	101.7	102.1	101.7
Improved policy mix	99.9	99.6	99.3	99.0	99.0	99.0
5% money supply growth rate	99.8	99.4	99.2	98.2	98.0	98.0

<u>Category</u>	<u>1972</u>		<u>1973</u>				
	<u>Year and Quarter</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
5. <u>Mutual Savings Banks Deposits</u> ( <u>\$ billions</u> )							
Base Simulation	\$89.2	\$91.7	\$93.6	\$95.1	\$95.6	\$97.7	
<u>Index Numbers</u>							
7% investment tax credit	100.0	100.4	101.2	101.7	102.3	102.2	
10% income tax surcharge	100.2	100.9	101.3	101.9	101.5	100.9	
Joint tax measures	100.4	101.0	101.7	102.5	103.4	102.9	
Improved policy mix	99.9	99.6	98.5	99.0	98.8	98.9	
5% money supply growth rate	99.8	99.4	99.0	98.0	97.7	97.8	
6. <u>Commercial Banks Time and Savings Deposits</u> ( <u>exc. CD's</u> ) ( <u>\$ billions</u> )							
Base Simulation	\$262.8	\$270.1	\$279.2	\$284.0	\$292.1	\$298.9	
<u>Index Numbers</u>							
7% investment tax credit	100.3	100.9	101.7	101.3	101.3	101.5	
10% income tax surcharge	100.5	101.4	101.0	100.5	99.1	98.8	
Joint tax measures	100.9	101.6	101.8	101.8	100.9	100.3	
Improved policy mix	99.8	99.3	99.0	98.9	99.1	99.3	
5% money supply growth rate	99.6	98.9	98.7	97.1	97.5	97.9	

<u>Category</u>	<u>1972</u>		<u>1973</u>			
	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>7. <u>Mortgages Held by Savings and Loan Associations</u> (\$ billions)</b>						
Base Simulation	\$197.9	\$206.7	\$215.0	\$223.8	\$232.2	\$238.8
<u>Index Numbers</u>						
7% investment tax credit	100.1	100.2	100.5	100.6	100.8	101.0
10% income tax surcharge	100.2	100.5	100.7	100.9	100.7	100.7
Joint tax measures	100.2	100.6	101.0	101.4	101.6	101.6
Improved policy mix	100.0	99.8	99.6	99.3	99.2	99.1
5% money supply growth rate	99.9	99.7	99.5	98.9	98.6	98.4
<b>8. <u>Mortgages Held by Mutual Savings Banks</u> (\$ billions)</b>						
Base Simulation	\$65.9	\$67.6	\$68.9	\$70.4	\$71.8	\$75.6
<u>Index Numbers</u>						
7% investment tax credit	100.0	100.3	100.9	101.4	102.1	102.2
10% income tax surcharge	100.2	100.7	101.2	101.7	101.7	101.5
Joint tax measures	100.3	100.7	101.4	102.3	103.2	103.2
Improved policy mix	100.0	99.7	99.4	99.2	98.9	98.8
5% money supply growth rate	99.8	99.6	99.3	98.3	97.9	97.6

<u>Category</u>	<u>1972</u>		<u>1973</u>				
	<u>Year and Quarter</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>9. <u>Mortgages Held by Commercial Banks</u> (\$ billions)</b>							
Base Simulation	\$94.6	\$100.0	\$103.4	\$107.4	\$111.8	\$112.4	
<u>Index Numbers</u>							
7% investment tax credit	100.0	100.0	100.1	100.2	100.3	100.2	
10% income tax surcharge	100.0	100.1	100.1	100.1	100.2	100.2	
Joint tax measures	100.0	100.1	100.2	100.3	100.4	100.4	
Improved policy mix	100.0	100.0	99.9	99.9	99.8	99.8	
5% money supply growth rate	100.0	100.0	99.9	99.8	99.7	99.6	
<b>10. <u>Residential Construction Expenditures</u> (\$ billions)</b>							
Base Simulation	\$54.5	\$56.9	\$59.0	\$59.6	\$59.3	\$54.8	
<u>Index Numbers</u>							
7% investment tax credit	100.0	100.4	101.5	103.9	106.1	107.8	
10% income tax surcharge	100.2	101.4	103.6	105.9	107.9	102.9	
Joint tax measures	100.4	101.8	104.2	107.4	109.9	111.1	
Improved policy mix	100.0	99.3	97.8	95.3	93.9	94.2	
5% money supply growth rate	99.8	98.9	97.1	93.3	88.7	87.0	

<u>Category</u>	<u>1972</u>		<u>1973</u>				
	<u>Year and Quarter</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>11. <u>State and Local Government Expenditures</u> (\$ billions)</b>							
Base Simulation	\$152.4	\$158.0	\$163.0	\$168.0	\$172.5	\$177.4	
<u>Index Numbers</u>							
7% investment tax credit	100.1	100.4	100.7	100.1	100.3	100.1	
10% income tax surcharge	100.3	100.6	100.0	99.8	99.1	99.5	
Joint tax measures	100.5	100.6	100.4	100.2	99.7	99.3	
Improved policy mix	99.9	99.6	99.6	99.6	99.5	99.4	
5% money supply growth rate	99.8	99.5	99.8	99.8	99.7	99.5	
<b>12. <u>Consumer Expenditures</u> (\$ billions)</b>							
Base Simulation	\$734.1	\$752.6	\$779.4	\$795.6	\$814.0	\$831.6	
<u>Index Numbers</u>							
7% investment tax credit	100.0	100.0	100.0	100.0	99.9	100.0	
10% income tax surcharge	99.6	99.5	99.4	99.3	99.6	99.6	
Joint tax measures	99.6	99.4	99.3	101.2	99.5	99.6	
Improved policy mix	100.0	99.9	99.7	99.4	99.2	98.9	
5% money supply growth rate	100.0	99.9	99.8	99.6	99.3	99.1	

<u>Category</u>	<u>1972</u>		<u>1973</u>			
	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>13. <u>Business Fixed Investment</u> (\$ billion)</b>						
Base Simulation	\$118.3	\$124.3	\$130.9	\$134.1	\$138.7	\$143.3
<u>Index Numbers</u>						
7% investment tax credit	100.0	99.5	98.9	98.2	97.5	97.3
10% income tax surcharge	99.9	99.7	99.9	100.4	101.0	101.3
Joint tax measures	99.9	99.3	98.8	98.2	97.8	97.9
Improved policy mix	100.0	99.4	98.4	96.9	95.2	93.6
5% money supply growth rate	100.0	100.4	101.1	102.1	103.1	103.6
<b>14. <u>GNP (current)</u> (\$ billion)</b>						
Base Simulation	\$1166.5	\$1199.2	\$1242.5	\$1272.0	\$1304.0	\$1335.6
<u>Index Numbers</u>						
7% investment tax credit	100.0	100.0	100.0	99.8	99.8	99.9
10% income tax surcharge	99.8	99.8	99.8	99.9	100.1	100.1
Joint tax measures	99.9	99.7	99.6	99.6	99.7	99.9
Improved policy mix	100.0	99.8	99.4	98.9	95.8	98.1
5% money supply growth rate	99.9	99.8	99.7	99.2	98.8	98.5



<u>Category</u>	<u>1972</u>		<u>1973</u>				
	<u>Year and Quarter</u>	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>15. <u>GNP (1958 dollars) (\$ billions)</u></b>							
Base Simulation	\$796.7	\$812.3	\$829.3	\$834.3	\$841.6	\$849.5	
<u>Index Numbers</u>							
7% investment tax credit	100.0	100.0	100.0	99.9	100.0	100.7	
10% income tax surcharge	99.8	99.8	99.8	100.0	100.2	100.2	
Joint tax measures	99.8	99.8	99.7	99.7	100.0	100.1	
Improved policy mix	100.0	99.8	99.5	99.0	99.7	98.3	
5% money supply growth rate	99.9	99.8	99.7	99.2	98.8	98.5	
<b>16. <u>Price Level (GNP deflator)</u></b>							
Base Simulation	146.4	147.6	149.8	152.5	154.9	157.2	
<u>Index Numbers</u>							
7% investment tax credit	100.0	100.0	100.0	99.9	100.0	99.9	
10% income tax surcharge	100.0	100.0	99.9	99.9	99.9	100.0	
Joint tax measures	100.0	99.9	99.9	99.8	99.7	99.7	
Improved policy mix	100.0	100.0	99.9	99.9	99.8	99.7	
5% money supply growth rate	100.0	100.0	100.0	100.0	99.9	99.9	

<u>Category</u>	<u>1972</u>		<u>1973</u>			
	<u>III</u>	<u>IV</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
<b>17. <u>Unemployment Rate (Per Cent)</u></b>						
Base Simulation	5.6	5.3	5.0	4.9	4.8	4.8
<u>Index Numbers</u>						
7% investment tax credit	100.0	100.0	100.0	100.0	100.0	100.0
10% income tax surcharge	101.8	101.9	102.0	102.0	100.0	97.8
Joint tax measures	100.0	101.9	104.0	104.1	102.1	97.9
Improved policy mix	100.0	101.9	104.0	106.1	110.4	115.2
5% money supply growth rate	100.0	101.9	102.0	106.1	110.4	113.0