BACKGROUND PAPER

Understanding Fiscal Policy

April 1978

UNDERSTANDING FISCAL POLICY
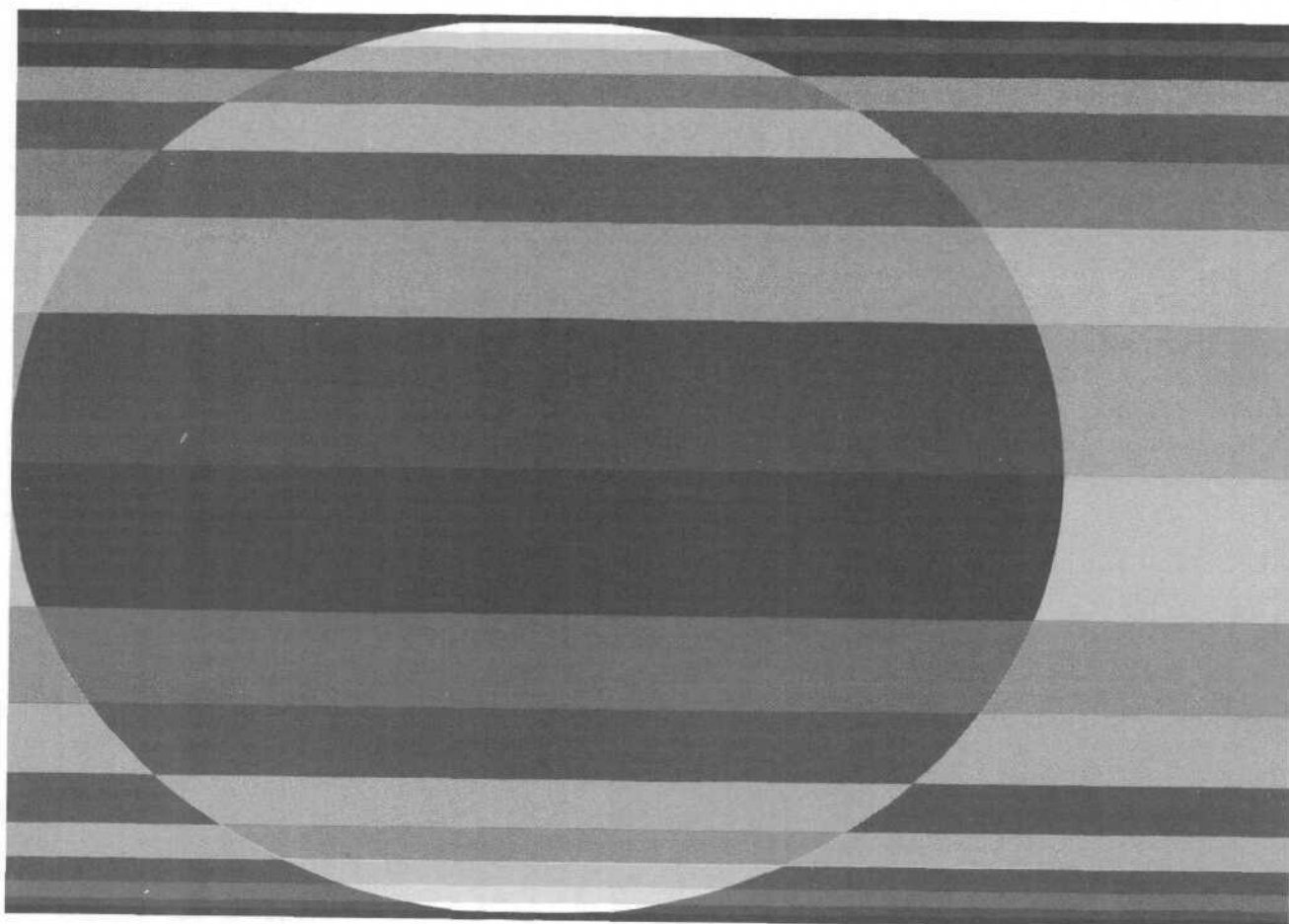
The Congress of the United States
Congressional Budget Office

PREFACE

Understanding Fiscal Policy attempts to explain the ways in which federal budget policy affects employment, inflation, and other dimensions of the economy. It analyzes how policy is likely to work, and it traces the effects of three major past policy changes. The study is written for the informed citizen, not for the trained economist. It was prepared in response to requests from Senator Edmund S. Muskie, Chairman of the Senate Budget Committee, and Representative Thomas L. Ashley, Chairman of the Task Force on Economic Policy of the House Budget Committee. In keeping with CBO's mandate to provide objective analysis, this report offers no recommendations.

The principal author of the report was Frank de Leeuw, former Assistant Director of CBO's Fiscal Analysis Division. Nancy Morawetz, Helmut Wendel, Yolanda Kodrzycki, and Michael Owen made important contributions. Alfred Fitt reviewed and commented on a draft of the report. The manuscript was typed by Marsha L. Mottesheard and Debra M. Blagburn and edited by Patricia H. Johnston; the figures were prepared under the supervision of Robert Bostick of the Congressional Research Service.

<div align="center">
Alice M. Rivlin
Director
</div>

April 1978

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FIGURES

How and by how much do fiscal policies affect general economic activity? While there is continuing controversy about the main theme of this study, there is also a steadily widening area of agreement among most economists who have examined the effects of fiscal policy. This report draws on the general area of agreement and points out some of the uncertainties that have not been resolved.

Promoting economic stability is a major objective of the federal budget. Although fiscal policy--the process of designing budget policy to promote that stability--is complex, in theory it can be broken down into three elements:

o   First, there must be a set of goals, desired levels of unemployment, inflation, and so on, or at least directions in which it is hoped key indicators of these goals will move.

o   Secondly, there must be a baseline forecast, or some view of how the economy will perform relative to the goals under current fiscal policy.

o   Finally, there must be some view as to the impact of policy alternatives, or estimates of how the baseline forecast, and hence nearness to the various goals, would be affected if fiscal policy were changed in some way.

Equipped with information on these three matters, policymakers can review and design budget alternatives from the point of view of their effect on economic stability, as well as their impact on the other objectives of the budget.

The Basic Economic Forces at Work

This study concentrates on the last of the three elements, the impact of specific fiscal policies on the economy. Different economic forces are unleashed when fiscal policy is changed.

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When the government finances additional construction outlays for mass transportation, to take one example, a direct expansionary effect occurs when people are hired and materials are purchased, and a further respending effect occurs when the recipients of these construction funds spend some of their new income on goods and services. In contrast, a restrictive ("financing") effect occurs when the higher federal deficit, resulting from the construction grants, leads to more federal borrowing and higher interest rates. Respending and financing effects are two of the forces unleashed by an increase in federal spending. They are not the only two.

Since these two effects work in opposite directions and since there are other effects as well, it is perhaps not surprising that views differ on the net outcome of all the forces at work. Even the respending effect is not a fixed proportion of the initial outlay but varies with characteristics of those who receive federal funds and, in the case of a tax cut, of those whose after-tax income is increased.

The magnitude of the financing effects varies, depending on the prevailing monetary policy. If monetary authorities were to respond to a fiscal policy action by maintaining a predetermined target path for the money supply, then interest rates would bear the brunt of the adjustment to a fiscal change and could be a significant influence working in the opposite direction from the spending and respending effects. If, on the other hand, the monetary authorities were to respond to an increase in federal borrowing by neutralizing the effects on interest rates, or keeping interest rates to some predetermined path, then the financing effects of fiscal policy would be minimal. In this case, however, the money supply would be expanding more rapidly than under the first-mentioned monetary policy and some inflationary effects would be felt after a year or two. Probably the most realistic assumption about monetary policy is in between these two extremes, with fiscal policy permitted to have some effect on both interest rates and the stock of money.

Still other forces are set in motion by a fiscal policy change. For instance, a federal grant to promote public service employment has its biggest economic effect if the program succeeds in creating jobs that would not have existed otherwise. The effects are smaller if the federal funds serve merely to finance wage payments that state and local governments would have undertaken anyhow. Even in the case of displaced local funds,

however, the federal funds may continue to have effects since they provide resources that can be used to cut state and local taxes, avoid tax increases, or undertake other state and local spending initiatives. If more federal borrowing leads only to less state borrowing, however, the aggregate economic effects will be tiny. To evaluate the economic effects of federal grants, therefore, it is important to estimate the extent of displacement of local funds for any particular program, while remembering that the federal spending that displaces specific local outlays can still have a number of economic effects.

Among the least understood effects of fiscal policy are the possible influences on personal incentives to work and to save. Even at the theoretical level, there is no clear presumption that the effects of moderate tax changes run in one direction or another. For example, a 60-year-old worker with some pension rights, when faced with an increase in taxes, might decide to retire rather than work any longer at a reduced rate of take-home pay. On the other hand, another worker could find that it was harder to build up savings under higher taxes; and, if he wished to reach some target level of savings before retiring, he might decide to postpone his retirement because of the higher tax rate. This ambiguity clouds the understanding of how tax rates affect work effort.

A similar ambiguity complicates the direction of effect of income taxes on the choice between saving and consumption. Scattered empirical evidence suggests that moderate changes in general tax rates would probably not have measurable effects on these choices. Specific groups may, however, be quite sensitive to major shifts in the incentives they encounter. Some welfare recipients, for instance, could encounter a drastic change in the work incentives they face under reform proposals, and might be expected to react significantly to the change.

An important factor in any consideration of fiscal policy is that a change in total national spending is not necessarily a change in output; it can be a change in prices instead. As a rule, when resources are fully employed, additional spending cannot increase total employment or capital use significantly, but must instead serve to drive up prices. When there are large unused quantities of resources, in contrast, additional spending is likely to add to output, although prices may be affected as well.

Thus, in an economy with idle resources, a public works project could have significant output effects, direct and indirect. The same project in a fully employed economy would require bidding labor and materials away from other uses and in the process drive up their prices. Dollars spent would still go up, but for the economy as a whole, the rise would reflect higher prices, not greater output. This example, however, is somewhat oversimplified, since it does not allow for differences in resource utilization by industry or for developments over time. Thus, idle resources may be available when a public works project is started, so that total output is initially increased, but price effects may start to dominate sometime later while the project is still underway.

Empirical Estimates of Net Outcome

It is possible to derive empirical estimates of the net outcome of these basic economic forces. The estimates in this paper are based mainly on econometric models of the economy that incorporate statistical measurements of many facets of economic behavior. The consensus of model results is that changes in fiscal policy do have important aggregate economic effects, although many policy changes pose trade-off problems-- improving some economic indicators but worsening others.

The models have a moderately favorable record in their predictions in recent years. Over time spans of one to four quarters ahead, they seem to do better than simple extrapolations of the recent past. On the other hand, they have failed to give clear signals of some of the major economic developments of the 1970s. The models could hardly have been expected to forecast some of these events, such as the quadrupling of oil prices by OPEC and its immediate aftermath. International oil prices are among the "exogenous" variables that the models do not attempt to explain but simply assume on the basis of best information currently available.

The 1974-1975 decline in output and employment, on the other hand, was not an exogenous variable, especially once the rise in oil prices was an accomplished fact. Yet, the models by and large forecast only moderate weakness rather than the worst downturn of the last 30 years. Model builders have since changed many equations so that they are sensitive to disturbances from the supply side, in addition to those from the demand

side. But it remains true that model forecasts--and indeed other economic forecasts as well--should be used with a good deal of caution.

The consensus of results among large econometric models is that, given the state of the economy as of mid-1977, an increase in the annual amount of federal spending on goods and services would have a positive effect on current dollar GNP. In other words, according to these models, forces leading to a positive GNP impact outweigh forces leading to a negative impact. These models all agree, furthermore, that the impact is smaller in the first quarter or two than after several quarters have elapsed. The peak effect on current dollar GNP implied by the models occurs in the ninth quarter for one model and the twelfth quarter for another model. These peak effects on GNP are about 1.4 to 2.9 times as large as the assumed increase in federal spending on goods and services. Initially, most of the GNP effect takes the form of higher real output rather than higher prices; but as time passes, output effects diminish and price effects account for a substantial portion of the GNP change.

When the effects of a personal income tax cut or an increase in the public service employment program were tested, the direction of results on dollar GNP, real output, total employment, and the general price level were similar to that obtained for an increase in federal purchases of goods and services. The specific magnitudes and time pattern of these effects differed, however.

The study also tested fiscal policy effects under different assumptions about the reactions of monetary policy. According to the models, different monetary policy assumptions do not result in greatly different outcomes in the first year, but the results grow to be strikingly different in the second and third years. Increases in current dollar GNP from a given fiscal policy are sharply higher when monetary policy neutralizes the impact of the fiscal change on short-term interest rates than when monetary policy holds to a given money-supply growth rate and allows interest rates to rise.

Fiscal policies not only affect the private economy, but also have a "feedback" effect on the budget. After a few quarters have elapsed, an income tax cut of $10 billion per year is likely to have a direct budget cost of only $4.5 to $6.5 billion. The biggest single offset item is higher personal income tax

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receipts caused by the stimulative economic effects of the tax cut. Other tax revenues also increase and outlays for unemployment insurance become smaller. These offsetting budgetary effects of a tax cut or a spending increase, however, are generally not large enough to make the initial fiscal policy action "self-financing." In other words, the deficit does remain larger following a general tax cut or spending increase than it would have been without such fiscal actions.

An analysis of three major policy moves--the 1964 and 1975 tax cuts and the 1969 credit crunch--provided estimates of their impact. One broad conclusion suggested by this review of past events is that these major policy changes did have significant effects on GNP, employment, and prices. Another conclusion is that other forces--movements in productivity, exports, the lingering effects of policy actions of the past, to name a few--are also of great importance, so that while policy moves of the size actually undertaken in the last 15 years modify the contours of economic developments, they do not drastically reshape economic history. It would have taken more vigorous use of policy instruments to alter completely the recent history of unemployment or inflation in the United States.

Designing Fiscal Policy

There are a number of specific problems in designing fiscal policy. One problem is to find a gauge, or indicator, that measures the net effect of fiscal policy on the economy. The budget deficit is a traditional indicator that is often used for this purpose. This measure is unsatisfactory, however, because it is so strongly influenced by developments in the economy that may have little to do with fiscal policy. It cannot disentangle changes caused by shifts in fiscal policies from the budget impact of other forces, such as monetary policy, changes in world economic growth, or shifts in business and consumer confidence. The so-called full-employment budget and some of its variants that hold constant the measured path of economic activity, therefore, are considered to be better indicators of the underlying fiscal policies. There are, however, also measurement problems with these approaches.

Since no single number is an adequate summary of all of the important dimensions of fiscal policy, it is important to remain aware of the special characteristics of the commonly used instruments of stabilization policy. These include time lags,

economic effects per dollar of budgetary change, and other features of the main taxing and spending instruments available to the Congress, such as income taxes, investment tax credits, employment tax credits, transfer payments, and general revenue sharing.

A review of the different fiscal instruments suggests that changes in the various tax rates and various spending programs have different effects on the economy; that many policy changes pose trade-off problems; and that there remains a good deal of uncertainty about the magnitude and, occasionally, about the direction of the effect of a particular policy on a specific economic indicator. Tax incentives to stimulate business investment, to cite one example, take a much longer time to affect substantially employment and output than do changes in personal income taxes; but, according to some (not all) estimates, such incentives have exceptionally powerful effects per dollar of foregone revenue when enough time has elapsed.

On the spending side, outlays for defense or health may well have more impact per dollar than income tax changes. But, since they frequently require continued and sustained funding to be effective in accomplishing their primary purposes of maintaining military strength or assuring health care, they are less amenable to change for economic stabilization purposes. Other types of spending, including some forms of income support and grant programs for state and local governments, have recently undergone rapid development as instruments of stabilization policy. Any conclusions about their effects need to be reviewed and perhaps modified as these new fiscal policy instruments continue to evolve.

CHAPTER I.   INTRODUCTION

Promoting economic stability is a major objective of the federal budget. Although fiscal policy--the process of designing budget policy to promote stability--is complex, at an abstract level it can be broken down into three elements. There must first of all be a set of goals--desired levels of unemployment, inflation, and so on, or at least directions in which it is hoped key indicators of these goals will move. Secondly, there must be a baseline forecast, or some view of how the economy will perform relative to the goals under current fiscal policy. Finally, there must be some view as to the impact of policy alternatives, or estimates of how the baseline forecast, and hence nearness to the various goals, would be affected if fiscal policy were changed in some way. Equipped with information on these three matters, policymakers can review and design budget alternatives from the point of view of their effect on economic stability, as well as their impact on the other objectives of the budget.

This study concentrates on the last of the three elements, the impact of specific fiscal policies on the economy. The next chapter of the study discusses the major kinds of economic force unleashed when fiscal policy is changed. When personal tax rates are reduced, to take one example, an immediate expansionary effect occurs when some of the increase in take-home pay is spent on goods and services. In contrast, a restrictive effect occurs when the higher federal deficit, resulting from the tax cut, leads to more federal borrowing and higher interest rates. Respending effects and financing effects are two of the forces unleashed by a reduction in tax rates. They are not the only two.

Since these two effects work in opposite directions and since there are other effects as well, it is perhaps not surprising that views differ on the net outcome of all the forces at work. Following the chapter on basic forces is a section reviewing a number of estimates, based on econometric models of the economy, of the net outcome of these forces. The consensus

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of the models is that changes in fiscal policy do have important macroeconomic effects, although many policy changes pose trade-off problems, improving some economic indicators but worsening others.

The final chapter of the report discusses problems of designing fiscal policy. It first reviews some measures of the overall posture of fiscal policy, beginning with the federal deficit. The deficit is criticized as being an unsuitable measure of the impact of budget policy on the economy. A number of alternative summary measures overcome some shortcomings of the deficit, but still fall short of being a perfectly satisfactory measure of fiscal policy. The final section of the chapter accordingly retreats from the search for an overall indicator and goes back to a discussion of some of the advantages, drawbacks, and other special features of specific fiscal policy instruments that the Congress can alter in pursuit of economic stability.

Any change in fiscal policy--a tax increase, a new spending program, a change in the provisions of an income support program--sets in motion a number of forces whose effects spread through the entire economy. This chapter explains what these forces are and how they may be expected to influence household and business behavior. The next chapter takes up the question of how strong the various forces are and what the net effect of all of them turns out to be.

DIRECT EFFECTS AND DISPLACEMENT

The story begins, of course, with the direct effects of a budgetary action--the appropriation for a new dam, the change in withholding rates to reflect a new provision in the personal income tax laws, or the expansion of a federally funded public service employment program. The first question to ask about such a budgetary change is whether it is actually being carried out according to the schedule envisioned in the legislation. As the federal spending shortfalls of recent years demonstrate, it is a mistake to assume that the translation from legislation into direct effects is automatic and prompt or that positive and negative discrepancies tend to balance out. In the case of a tax change or an income-support program, budgetary changes are usually translated into action quickly; but in the case of federal purchases of goods or grants for specific projects, there are many instances of serious delays.

Even when federal spending programs appear on paper to have been translated into action, it is necessary to ask another basic question about the direct effects: namely, whether the program outlays constitute an addition to total spending or merely a change in sources of funds from nonfederal to federal. The latter phenomenon is called displacement, and it raises questions especially in connection with employment grants to state and local governments (although they could be equally well raised in connection with local public works grants). Some studies of federal grants for state and local employment have suggested that displacement is quite substantial--that many

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of the persons filling public service employment slots would have been on local payrolls even without the federal program that pays their salaries.

Even if displacement under a particular program is 100 percent, it would not be correct to conclude that the program has no economic effects. Federal grants used to support local programs increase the total financial resources of local governments (or other sponsors), and this increase will generally lead to some change in economic behavior. Even if local governments "displace" public service employment money, the federal funds provide resources that can be used to cut taxes or avoid tax increases or to undertake (or avoid cutting back) other spending programs. Moreover, if state and local governments were to let their budget surpluses merely increase, such increases would still serve to cancel any restrictive credit market effects that are caused by the expanded federal deficit.

Since each of these uses of federal grants has its own impact on the economy, it is important not to view displacement as equivalent to nullifying the effects of federal grants. Nevertheless, for evaluating the detailed impacts of employment programs as compared to other kinds of budgetary change, displacement is an important concept to understand and to measure.

INDIRECT EFFECTS: RESPENDING

Once a spending or tax change is translated into action, successive rounds of respending can greatly magnify the direct effects. Persons hired under jobs programs, for example, will use a large fraction of the money they receive to increase their purchases of food, clothing, recreation, and other goods and services. Contractors under public works projects will spend much of the money they receive on materials and labor. The income thus generated for the providers of these services can be the basis of still more respending, including purchases of machinery and plant as well as consumer goods, labor, and materials. Additional purchases of machinery and plant are likely not only because business profits are increasing along with other incomes, but also because businessmen are experiencing a boost in orders that makes their existing capital stock appear less adequate than before. The rounds of respending make it possible for the eventual effect of a budgetary change on total national income to be much larger than the initial budgetary

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change itself. In technical language, the "multiplier," or the size of the change in total income relative to the size of the initial budgetary change, can be greater than one.

Restrictive budgetary policies, of course, work in the opposite direction. An increase in employee payroll taxes, for example, can lead to reductions in dollars spent on food, clothing, and so on, and set in motion a chain of contractions in respending opposite in its effects to the expansionary chain just described.

The example of a public employment program can be used to illustrate some of the complexities in the respending process. The initial recipients of the money will spend much of it; but many of them may have been receiving unemployment compensation or food stamps before they became employed. If so, the reduction in unemployment benefits and food stamps offsets some of the spendable income paid under the employment program and thus reduces the total effect of the program. The money that does get respent, furthermore, shows up as incomes in a variety of forms--wages, salaries, profits, interest, and rent. Since some of the respending is on imported rather than domestic goods, some of the income generated is foreign rather than domestic. All these different income sources can give rise to very different rates of further respending on goods and services. Even if respending effects were the only indirect impacts of fiscal policy, it would be no easy task to work out the net result for total income, employment, and prices.

INDIRECT EFFECTS: FINANCING

Credit-market or financing effects are another chain of indirect effects following a fiscal policy action. An increase in spending not paid for by an increase in revenue must entail a higher deficit, which requires borrowing in private credit markets. An increase in taxes not accompanied by higher spending, in contrast, reduces the deficit, and leads to less federal borrowing.

In many respects, financing effects are opposite from direct effects. A spending increase or a tax cut usually leads to tight credit markets and higher interest rates that, in turn, reduce the values of outstanding bonds and make borrowing for new investment more expensive. These changes tend to reduce the flow of income and spending at the same time that respending effects

tend to increase income. A spending reduction or tax increase has opposite effects, easing credit markets and encouraging spending.

It is at this point that fiscal policy interacts most closely with monetary policy. Exactly what impact a change in the deficit has on credit markets is quite sensitive to how the monetary authorities respond. Through their control over banking, monetary authorities directly affect bank reserves and indirectly affect the stock of money and interest rates. Monetary authorities can, thus, let fiscal changes affect interest rates or they can take actions to neutralize this influence. Similarly, they can permit fiscal policy to alter the growth path of the money stock or they can neutralize this effect.

Monetary authorities cannot, however, offset all of the effects of a change in federal borrowing. If they decide to neutralize the effect of a higher deficit in pushing up interest rates, then the only way they can do so is to supply enough bank reserves so that these additional funds keep interest rates from rising. In so doing, they will be expanding the money supply. If they decide not to expand the money supply, then they cannot prevent the rise in interest rates.

If monetary authorities respond to a change in federal borrowing by neutralizing the effects on interest rates, or keeping interest rates to some predetermined path--sometimes known as "accommodating" the fiscal change--then the financing effects of fiscal policy are at a minimum and do not seriously reduce the spending and respending effects. If, instead, monetary authorities respond by maintaining a predetermined target path for the money supply, then interest rates bear the brunt of the adjustment to a fiscal change and can be a significant influence working in the opposite direction from the spending and respending effects. Probably the most realistic assumption is in between these two extremes, with fiscal policy permitted to have some impact on interest rates and some impact on the stock of money.

There has been a lot of controversy about the importance of direct and respending effects on the one hand, and financing effects on the other. One way to characterize the debate between "Keynesian" economists and "monetarist" economists is to say that the former have tended to emphasize respending effects, while the latter have tended to emphasize financing effects. At the

present time, the controversy between extremists in either camp is dying down and a middle position is gaining ground. The middle position recognizes the importance of financing effects and monetary policy, especially over long periods of time, but also grants an important influence on economic activity to changes in the fiscal policy, at least in the short run.

INDIRECT EFFECTS: INCENTIVES TO WORK AND TO SAVE

Among the least understood effects of fiscal policy are any influences on personal incentives to work and to save. Even at the theoretical level, there is no clear presumption that these effects run in one direction or another. To be sure, extremely high tax rates--rates approaching 100 percent--will almost certainly discourage productive effort, but for moderate tax changes, the outcome is unclear. A moderate increase in taxes could lead a 60-year-old worker with some pension rights to decide to retire rather than work any longer at a reduced rate of take-home pay. On the other hand, another worker could find that it was harder to build up savings now that taxes were higher; and if he wished to reach some target level of savings before retiring, the higher tax rate might make him postpone his retirement. Higher tax rates, in other words, could make one perfectly rational person work less and another perfectly rational person work more.

The same ambiguity clouds the understanding of how rates of return affect saving. A tax change that increased the after-tax rate of return on personal saving could make individuals save more in order to reap the higher returns in the future; but it could make other individuals save less because a smaller amount of saving is now required to build up to any target level of assets.

The importance of incentive effects is thus an empirical question. The empirical evidence of the influence of taxes on incentives is fairly skimpy; it includes one series of studies of British professionals, and another series of studies of lower-income American workers. The evidence suggests that changing tax rates by a few percentage points--which corresponds to the range of fiscal policy options usually considered--would probably not have strong effects in either direction on overall work effort or saving.

While the overall incentive effects of moderate changes in a broad tax rate may be small, specific groups may be quite sensitive to major reforms of certain taxes or income-support programs. Making unemployment insurance benefits taxable, for example, could have a significant impact on the incentive to seek a job for some of the insured unemployed. Some welfare reform proposals would change the position of certain households from a negative to a significantly positive incentive to work. Small changes in work effort in the aggregate can imply major changes for those most directly affected by these programs.

INDIRECT EFFECTS: PRICE VERSUS QUANTITY

A change in total spending or current dollar gross national product (GNP) is not necessarily a change in output; it can be a change in prices instead. As a general rule, when resources are fully employed, additional spending cannot increase total employment or capital use significantly, but must instead serve to drive up prices. When there are large unused quantities of resources, in contrast, additional spending is likely to add to output, although prices may be affected as well.

Thus, in an economy with idle resources, a public works project could have significant output effects, direct and indirect. The same project in a fully employed economy would require bidding labor and materials away from other uses and in the process drive up their prices. Dollars spent would still go up, but, for the economy as a whole, the rise would reflect higher prices, not greater output.

The relationship between price effects and output effects is not, however, as simple as the previous paragraph makes it appear. Not only the aggregate quantity of idle resources, but resource availability in specific industries and regions are important. So is the time span under study; output effects tend to take place before price effects. A public works project may increase output at the time it is started but increase prices enough to neutralize the output effect over a period of years following its initiation.

Another kind of complexity in gauging the inflationary effect of a policy change is that some policies directly cause

price changes that either reinforce or offset the price effects operating through changes in the level of economic activity. An increase in employer payroll taxes, for example, raises labor costs directly, and this cost increase tends to lead to higher prices. The respending effects in this case have an opposite effects on prices, since higher taxes reduce private purchasing power, and lead to lower prices. The direct, or price-raising effects, take place fairly promptly, but they will later be offset, at least in part, by the indirect, or price-lowering effects.

A pay raise for government employees, to take another example, raises wage rates directly and may exert some upward pressure on private wages and, thus, prices through this route. Since a pay raise also entails more spending by government employees, the direct price impact and the total spending impact are in the same direction in this case, in contrast to the payroll tax case.

CHAPTER III. THE NET OUTCOME: SOME EMPIRICAL ESTIMATES

There are by now more than a dozen statistical models of the economy that attempt to capture in a set of equations the forces, described in the previous chapter, that are set in motion by a change in fiscal policy. The response of consumers to a change in disposable income, the response of business inventories to changes in sales, the response of interest rates to a change in inflation rates, the response of wage rates to a change in unemployment--these and many other relationships are part of the models now commonly used to estimate the effects of alternative economic policies.

This chapter begins with a simple account of how some of these models of the economy work. It then summarizes what a number of models say about a simple change in fiscal policy--a one-step $10 billion per year increase in government purchases of goods--under the economic conditions of early 1977. Finally, it presents estimates of the impact of certain major economic policy moves of the last 15 years.

MODELS OF THE ECONOMY AND FISCAL POLICY

What Econometric Models Do

The basic building-block of a statistical model of the economy is an equation describing how one economic variable--consumer spending, business profits, the unemployment rate, industrial wholesale prices, or any one of hundreds of others--responds to current and past movements in other economic variables. A very simple equation of this type, for example, would be one which says that consumer spending this quarter is equal to 95 percent of household disposable income this quarter. A slightly more complicated equation would be one that said consumer spending this quarter is equal to 50 percent of disposable income this quarter plus 45 percent of disposable income last quarter.
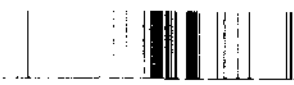
The typical equation of econometric models in common use is based on detailed analysis of many interrelationships and "lead-lag" 1/ possibilities and is far, far more complicated than these simple relationships. One of the leading models 2/, for example, divides household consumption into 13 categories and has a separate equation for each one. One typical equation involves several explanatory variables including earned income, government transfer payments to persons, and prices of different categories of consumer goods. In addition to 13 equations explaining consumption, the model has 40 equations explaining various categories of investment; 20 equations explaining how total income is distributed among wages, proprietors' income, profits, and other shares; 42 equations explaining prices; 36 equations dealing with supplies and demands in the labor market; 18 equations dealing with borrowing, lending, and interest rates; and many other equations covering various areas of economic activity. In all, this model includes about 200 behavioral equations.

A fundamental distinction running through this and other econometric models is between "endogenous" variables, or those items for which the model contains explanatory equations, and "exogenous" variables, or those items for which the user of the model simply determines values based on information outside the model. Variables in the first or endogenous category include consumption and other kinds of private spending, profits and other forms of income, output, employment and unemployment, market interest rates, and many others. Exogenous variables include discretionary federal outlays such as defense spending or public employment grants, tax rates, and key monetary policy indicators—policy variables usually projected by users on the basis of Administration and Congressional budgetary plans and Federal Reserve monetary targets. Exogenous variables also include indicators of the state of foreign economic activity and demographic variables such as the size of the population in different age groups.

1/ Thus, orders for capital goods may be entered in an equation for a whole sequence of previous quarters, each with a different weight, to estimate acquisitions of new capital equipment at a later point in time. In this case, the orders "lead" and the acquisition of capital "lags".

2/ Wharton Econometric Forecasting Associates, Inc.

To obtain a forecast from one of the models, it is necesary
to select values for all of the exogenous variables for as
far ahead as the prediction is to go, and then to solve all of
the equations of the model simultaneously to obtain values
for all of the endogenous variables. To predict economic events
in 1978, for example, it is necessary to make assumptions about
government spending, tax rates, Federal Reserve policy, and so on
through 1978 and then use these assumptions plus the equations of
the model to solve for consumption, GNP, profits, price levels,
and all the other variables. In practice, model users usually
adjust the initial model predictions, modifying judgmentally
those projection values which seem unreasonable, and re-solving
the entire system of equations subject to these modifications.

The models have a moderately favorable record in their
predictions in recent years. 3/ Over time spans of one to
four quarters ahead, they seem to do better than simple extra-
polations of the recent past. On the other hand, they have
failed to give clear signals of some of the major economic
developments of the 1970s. The models could hardly have been
expected to forecast some of these events, such as the quad-
rupling of oil prices by OPEC and its immediate aftermath.
International oil prices are among the "exogenous" variables
that the models do not attempt to explain but simply assume on
the basis of best information currently available.

The 1974-1975 decline in output and employment, on the other
hand, was not an "exogenous" variable, especially once the rise
in oil prices was an accomplished fact. Yet, the models by and
large forecast only moderate weakness rather than the worst
downturn of the last 30 years. Model builders have since changed
many equations so that they are sensitive to disturbances from
the supply side. But it remains true that model forecasts--and
indeed other economic forecasts as well--should be used with a
good deal of caution.

3/ See Stephen K. McNees, "An Evaluation of Economic Forecasts,"
    New England Economic Review (November-December 1975).

The Impact of a Change in Federal Spending

Although most of the attention models receive centers on their predictions rather than their implications for policy alternatives, the very same procedures used to make predictions can be used to derive the effects of policy changes. It is simply necessary to solve a model twice, once with one set of values of some exogenous variable and once with another set of values--say, once with a current policy projection of spending 4/ for some public works grants and once with a higher (or lower) level of spending for the same program. The difference between the two solutions is the model's estimate of the impact of that policy change on the economy. If running a model with one level of public works grants (as well as values for all the other exogenous variables) produces a projected value of GNP in 1978 of $2100 billion, and raising the level of grants, but keeping all the other exogenous variables the same, results in a GNP of $2105 billion, then the model implies that the impact of the change in grants under consideration on current dollar GNP is to raise it by $5 billion during calendar year 1978.

The same calculation can be made for a tax rate change, a change in monetary policy, a change in the rate of growth of foreign output, or any other exogenous change. The model will estimate not only the effect on GNP but also the effect on consumption, employment, federal revenues, profits, and all other endogenous variables.

To get an impression of what four widely used models 5/ have to say about fiscal policy, it is helpful to consider first a hypothetical, highly over-simplified fiscal operation consisting

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4/ Current policy spending projections assume all legislation currently in effect remains unchanged.

5/ Wharton Econometric Forecasting Assocates, Inc.; Data Resources, Inc. (DRI); M.I.T.-University of Pennsylvania-Social Science Research Council (MPS); and Chase Econometric Associates, Inc.

of a $10 billion "step increase" in the annual-rate level of federal purchases of nondefense goods that takes place in mid-1977. Nondefense purchases, that is, rise by $10 billion per year above some baseline projection and stay $10 billion above the baseline thereafter. Note that such an abrupt shift to a new spending level is unrealistic. Figure 1 shows the estimated impact of this spending increase on GNP, in both current and constant dollars, employment, and prices, according to four widely used models of the U.S. economy.

A number of features of the figure immediately invite attention. All of the models predict that, given the state of the economy as of mid-1977, such a spending increase would have an overall positive effect on GNP. According to these models, in other words, forces leading to a positive GNP impact outweigh forces leading to a negative impact. These models all agree, furthermore, that the impact is smaller in the first quarter or two than after several quarters have elapsed. The peak effect on current dollar GNP implied by the models ranges from a low of $14 billion in the ninth quarter for one model to a high of $29 billion in the twelfth quarter for another model. Since the direct spending change is only $10 billion, this range implies a range of peak multipliers from 1.4 to 2.9.

According to most of the models under review, the initial impact of a this fiscal policy change is very largely on output rather than prices. After a time, however, less and less of the impact of this illustrative step increase goes to increase output, and more and more of it goes to raise prices. According to the models, the impact on real or constant dollar GNP reaches its peak one to two years after the policy change, while price impacts begin to build up in the second or third year. These results were obtained when the policy change was started as of mid-1977. The results would be changed if the initial conditions in the economy had been quite different.

Policy Comparisons: Purchases of Goods, Public Employment, and Personal Taxes

The GNP multipliers just presented for a change in federal purchases of goods are not the same as the multipliers for other changes in the federal budget. In the course of using a number of econometric models, the Congressional Budget Office

Figure 1.
Impact of a $10 Billion Step Increase in Federal Non-Defense Purchases, 1977 Economic Conditions
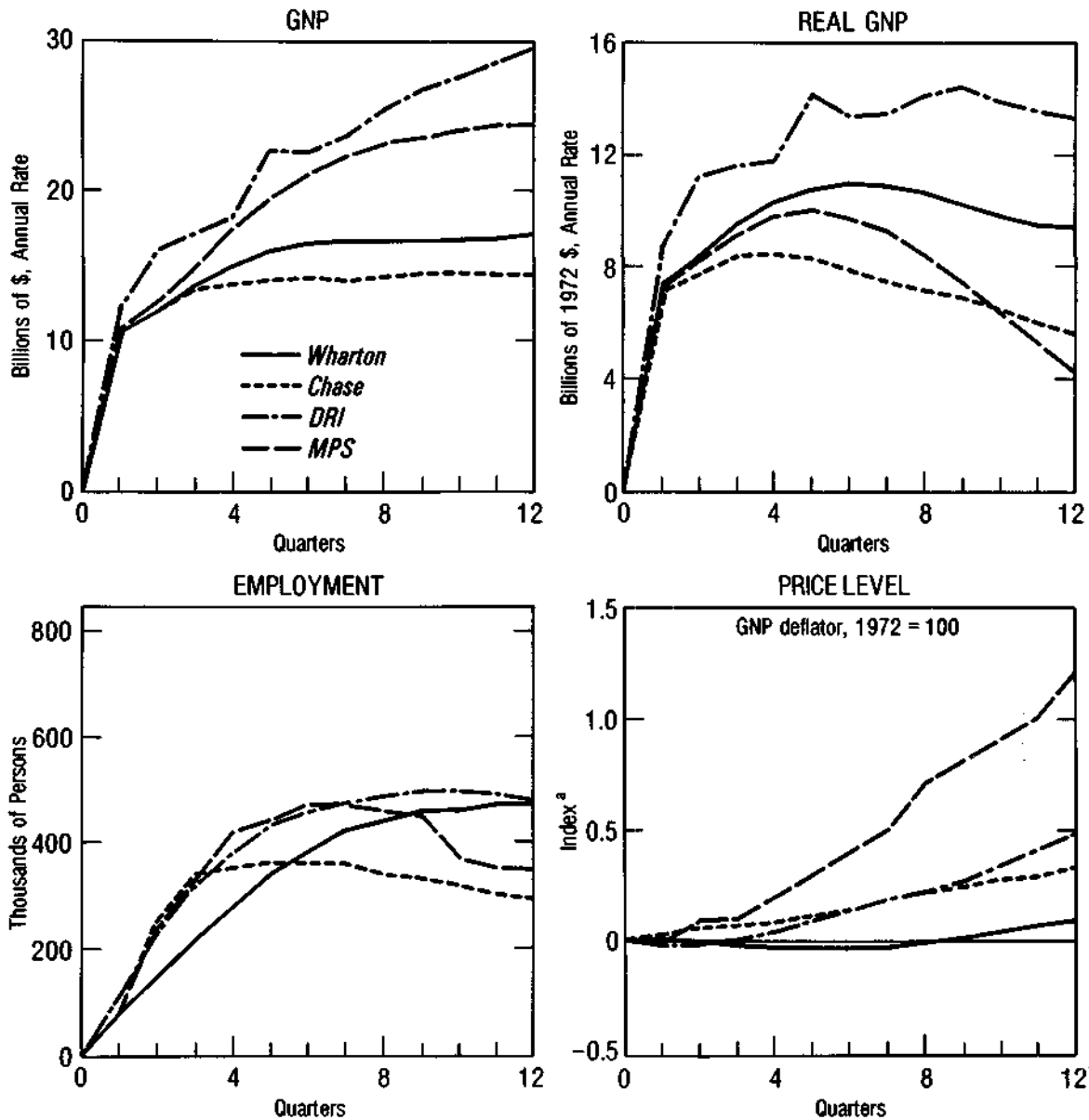
SOURCE: CBO simulations based on the following models: DRI (Data Resources, Inc.), Wharton (Wharton Econometric Forecasting Associates, Inc.), MPS (M.I.T. - University of Pennsylvania - Social Science Research Council), Chase (Chase Econometric Associates, Inc.).

NOTE: Step changes begin in first quarter.

a/ Records number of point changes in the index.

has had occasion to develop its own sets of GNP multipliers for
several different kinds of fiscal policy change. These multi-
pliers are based on a careful analysis and comparison of five
econometric models; they discount some of the more questionable
elements in each model, while still maintaining consistency in
the treatment of different kinds of fiscal action. 6/

Figure 2 compares effects of several different policies
based on CBO's system of multipliers. The figure shows the
estimated impact not only of a rise in federal purchases of
goods, but also of a rise in federal spending on a "typical"
public employment program and of a cut in personal income taxes.
In each case, the policy is in the stylized form of a $10 billion
change in level beginning in mid-1977 and continuing thereafter.
(Once more, this abrupt shift to a new level is unrealistic in
the case of spending changes, although not in the case of tax
changes.) Because of the displacement estimates of 50 percent in
this analysis, the GNP multipliers for outlays on public service
employment turn out to be slightly smaller than the multipliers
for nondefense purchases. Still smaller are the estimated GNP
multipliers for a cut in personal taxes. Despite the displace-
ment assumptions, however, employment effects are largest for
public employment; and these programs are estimated to be more
effective in stimulating jobs per dollar than federal purchases
or tax cuts.

For all three policies, real output effects dominate at
first and fade out later when price effects become increasingly
important. The public service employment option, which has
the largest employment impact, is also estimated to have the
greatest impact on prices. Price effects need not, however,
be proportional to employment effects--a public service employ-
ment program, for example, might minimize its price effects if it
were directed at hard-to-hire groups and so have less than
average impacts on wage rates. Some such targeting was assumed
in Figure 2.

The price-output pattern shown in the figure does not
apply even in broad outline to a program that has a direct
impact on the price level, such as a change in employer payroll

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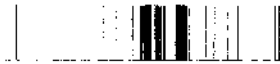
6/ See Congressional Budget Office, The CBO Multipliers Project
(August 1977).

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Figure 2.

Impact of $10 Billion Step Changes in Government Purchases, Public Service Employment, and Personal Taxes: CBO Multipliers Model

GNP

- —— Government Purchases
- ――― Public Service Employment
- ―·― Personal Tax Cut

REAL GNP

EMPLOYMENT

PRICE LEVEL

GNP Deflator, 1972 = 100
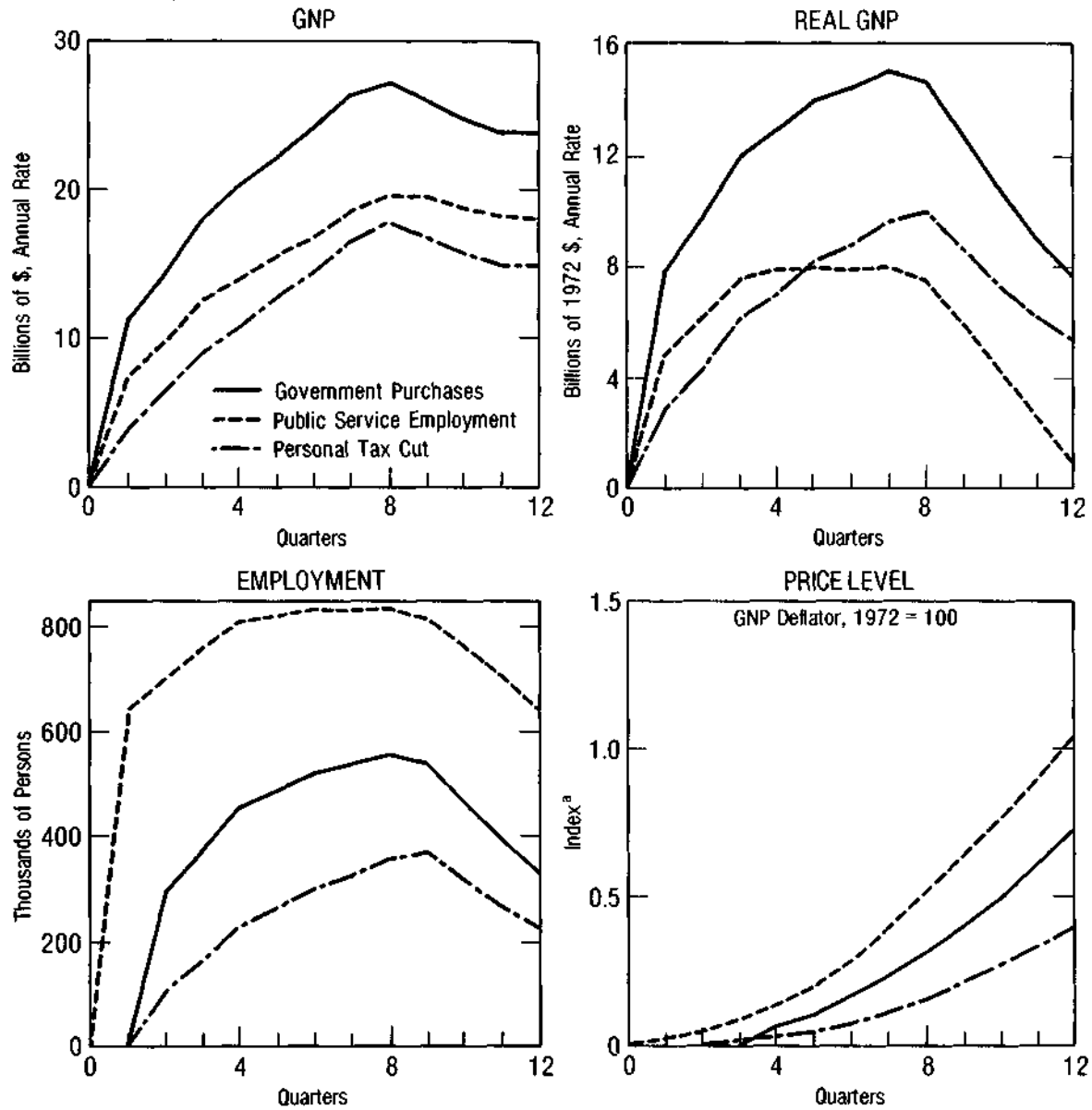
NOTE: Step changes begin in first quarter.

[a] Records number of point changes in the index.

taxes. An increase in employer payroll taxes has a fairly prompt upward effect on the price level because it adds to business costs and hence to the price businesses charge in order to cover costs. This cost-raising effect of higher payroll taxes workes in the opposite direction from the indirect effects of the policy, which are to restrain private demands and thereby reduce pressures on prices. At first, according to the models, the cost-raising effect is the stronger of the two forces and hence higher payroll taxes add to prices. After two or three years, however, it is much less clear which force predominates; higher payroll taxes depress output but is is unclear what they do to prices.

Gross and Net Budget Costs

All of the policy changes shown so far are in the stylized form of a one-time $10 billion upward shift in spending or downward shift in revenue levels. The <u>direct</u> budget cost of these policies is $10 billion per year.

The net effect of these policies on the budget, however, is less than $10 billion. The main reason is that, by causing higher levels of real and current dollar GNP, the policies lead to higher federal revenues. In addition, higher real GNP tends to reduce outlays for income-support (transfer) programs such as unemployment compensation. Offsetting these deficit-reducing forces set in motion by a spending increase or a tax cut is the fact that higher prices increase those federal outlays that are tied to the price level, such as social security payments. The net outcome of all of these forces is equal to the direct cost, minus the induced increases in revenues, minus the induced reduction in income-support outlays, plus the induced increase in inflation-adjusted program outlays.

According to most estimates, these feedback effects from revenue and income-support changes offset some but not all of the direct cost of a standard fiscal operation. In the examples shown in Figure 3, after a few quarters have elapsed, the revenue and transfer "feedback" falls in the range of 35 to 55 percent of the direct cost, leaving a net cost equal to 45 to 65 percent of the direct cost. The biggest single offset item is higher personal income tax receipts. Other important items include payroll taxes (employer and employee share), corporate profits taxes,

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Figure 3.

Direct and Net Budget Costs of $10 Billion Step Changes in Government Purchases, Public Service Employment, and Personal Taxes: CBO Multipliers Model

INCREASE IN GOVERNMENT PURCHASES

INCREASE IN PUBLIC SERVICE EMPLOYMENT

REDUCTION IN PERSONAL TAXES
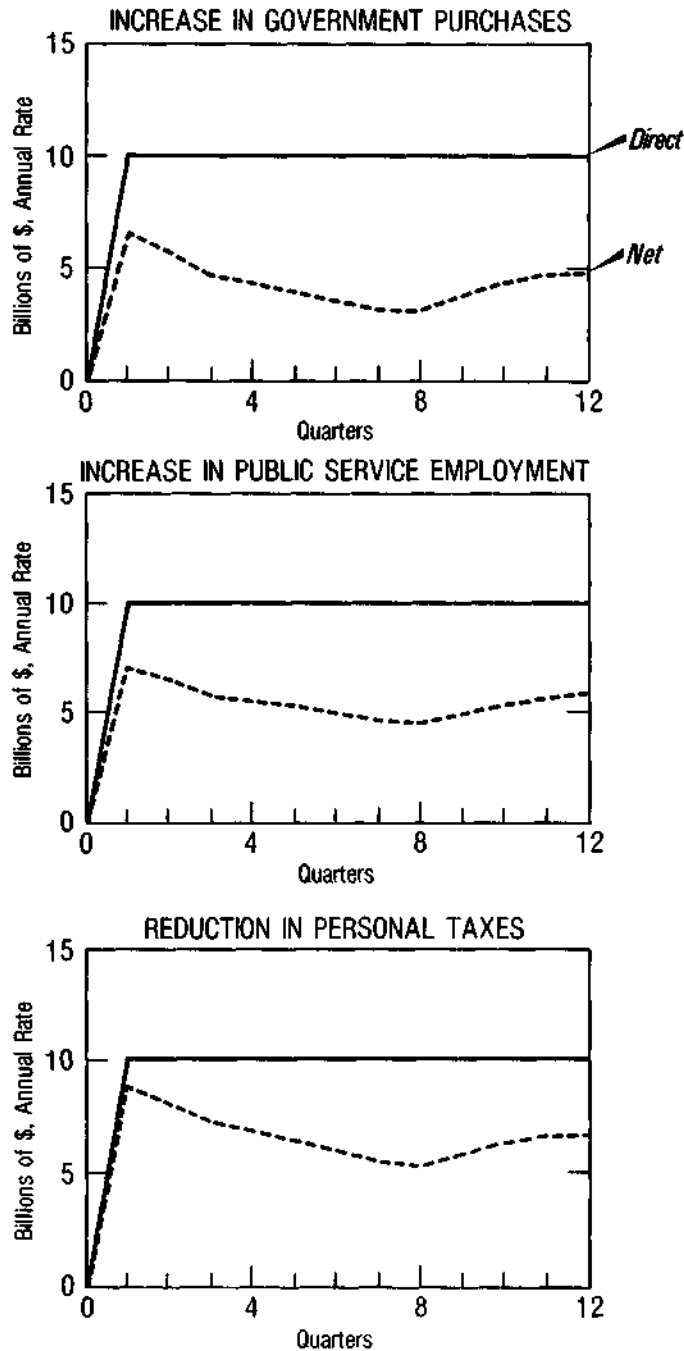
and reduced outlays for unemployment insurance. Since these feedbacks do not completely offset the initial fiscal change, a final consequence of the fiscal policy action is a higher deficit and higher interest payments on the debt.

It is helpful to decompose the feedback of revenues and outlays from an expansionary fiscal policy change into two parts. The first consideration is the multiplier effect of the policy change on GNP. Thus, a $10 billion change in fiscal policy that changes GNP by $20 billion has a multiplier of 2. The second consideration is the average tax rate on GNP; if taxes go up by $3 billion and transfers fall by $0.5 billion for every $10 billion rise in GNP, then the tax-and-transfer-reduction rate is 35 percent. The recapture of direct budget costs from an expansionary fiscal policy is the product of these two ratios, or the multiplier times the effective tax-and-transfer-reduction rate. Thus, a $10 billion change in fiscal policy that causes GNP to rise by $20 billion and thereby causes revenues to rise by $6 billion and transfers to fall by $1 billion recaptures 70 percent of the direct cost. This 70 percent can be expressed as the multiplier (2 in this case) times the effective tax-and-transfer-reduction rate (35 percent).

For policies that have multipliers ranging from 1.5 to 2.5 and an economy that has a marginal federal tax-and-transfer-reduction rate of 30 to 35 percent, the budget feedback is in the range of 1.5 times 0.3 to 2.5 times 0.35, or roughly 0.45 to 0.87. As long as the budget feedback is less than 1.0, a policy does not pay for itself in terms of its effect on the federal deficit. In an economy with a tax-and-transfer-reduction rate of 0.3, it would require a multiplier of 3.33 or more for a policy to pay for itself. The higher an economy's tax-transfer rate is, the lower the size of its required multiplier; but higher tax rates themselves tend to lower the size of actual GNP multipliers, since they reduce the amount of respending from a given increase in incomes.

The consensus among econometric models is that standard spending increases or across-the-board cuts in personal taxes do not have effects on GNP high enough to be self-financing.7/

7/ On this point, see also Herbert Stein, "The Dream of Balancing the Budget," The AEI Economist (November 1977), p. 6.

This consensus view is based on the assumption that monetary policy permits interest rates to rise when fiscal policy expands--a key assumption that will be discussed below. Even under this assumption, some models indicate that certain specialized fiscal instruments, such as an investment tax credit adopted under favorable circumstances, do have high enough multipliers to "pay for themselves."

Fiscal Policy and Monetary Response

One characteristic of fiscal policy effects important to keep in mind is the sensitivity to what is assumed about monetary policy. As discussed earlier, the effects of a fiscal policy change depend a great deal on whether monetary authorities use their control over bank reserves to neutralize the impact of the fiscal policy on interest rates, to neutralize the impact of the policy on the money supply, or to follow some other strategy, such as supplying the same level of bank reserves they would have supplied in the absence of the policy. Figure 4 shows the estimates, according to one model, of what difference the response of monetary authorities makes in the estimated effects of the $10 billion one-step increase in federal purchases. 8/

The results are striking. A so-called "accommodating" policy increasing bank reserves enough to neutralize the impact of a fiscal change on short-term interest rates leads to high multipliers--high enough, according to this model, for the net budget cost of the program to be very close to zero. Initially, the lower interest rates resulting from this monetary policy would stimulate housing and plant and equipment expenditures in particular. What was described in the first chapter of this report as the financing effects of an expansionary fiscal move are fully offset in this case, leaving respending effects largely unchecked.

In sharp contrast, a policy of neutralizing the impact of a fiscal change on the money supply cuts the current dollar GNP multiplier to less than one and causes the real GNP and employment effects to become negative by the end of three years.

8/ The estimates are based on the MPS model.

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Figure 4.

The Monetary Response and the Impact of a $10 Billion Increase in Federal Purchases

GNP

- Bill Rate Unchanged
- Reserves Path Unchanged[a]
- Money Supply Unchanged

REAL GNP

EMPLOYMENT

PRICE LEVEL
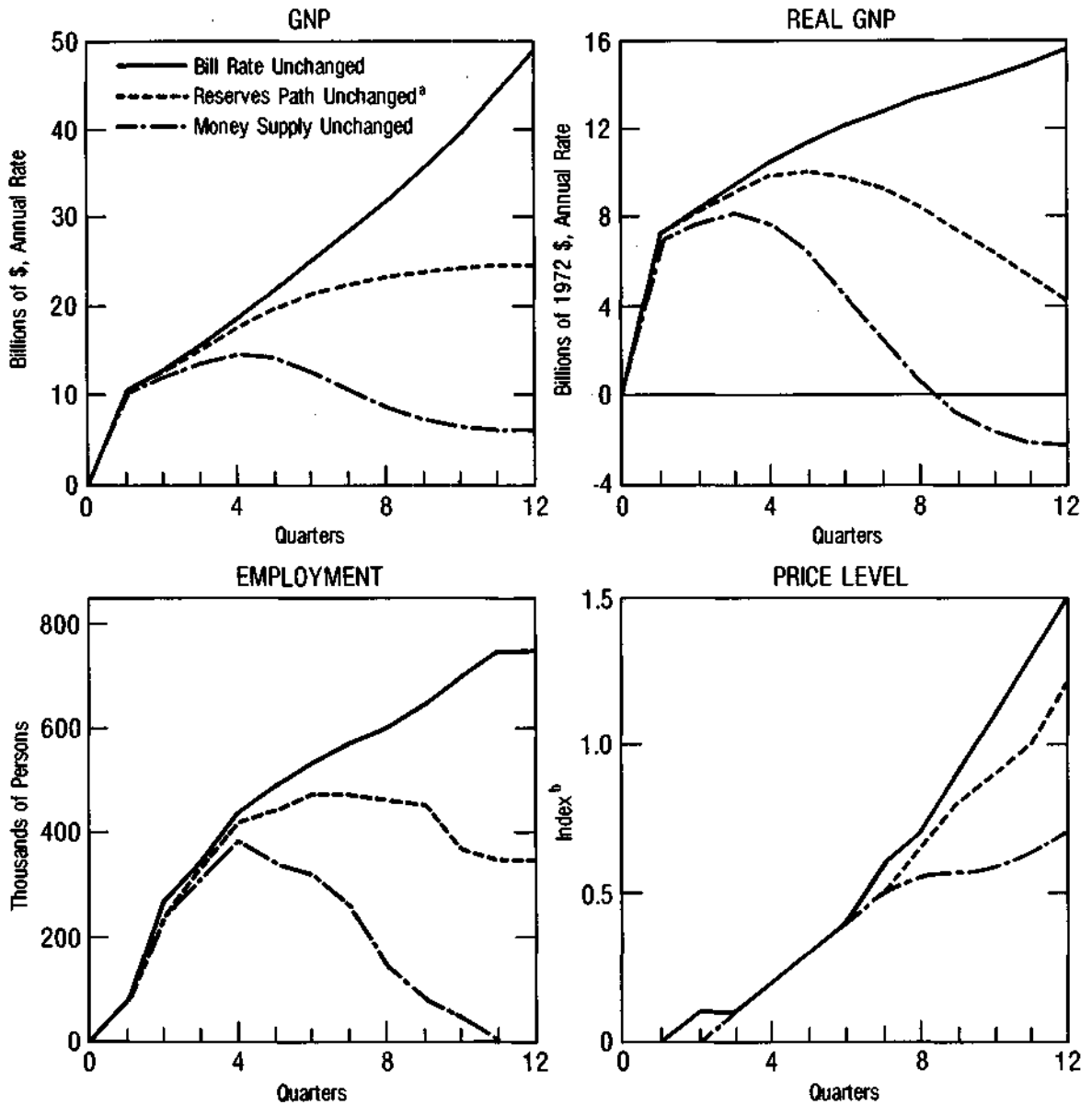
NOTE: Step changes begin in first quarter.

[a] Unborrowed reserves only.
[b] Records number of point changes in the index.

For the case of maintaining the same level of bank reserves, 9/ as in the absence of the policy, the results are intermediate between these two extreme cases. These intermediate results are close to those shown for other models, that in fact generally assume a monetary response of an unchanged supply of bank reserves rather than one of the two alternative extreme assumptions.

Clearly, any discussion of the impact of fiscal policy is incomplete without an indication of what is assumed about the response of monetary authorities. The discussion in this report, like most of the econometric models, takes the supply of bank reserves as an exogenous variable. This corresponds to the assumption underlying the middle line in the panels of Figure 4. Thus, when the path of bank reserves is held unchanged, the results fall somewhere in between the assumptions of neutralizing the effect on interest rates (complete accommodation) on the one hand, and neutralizing the effect on the money supply on the other.

THE IMPACT OF SOME PAST MAJOR FEDERAL FISCAL POLICY MOVES

The step changes in fiscal policy discussed in the previous section are much simpler than actual fiscal and monetary policy moves of the last 15 years. This section reviews the estimated effects of some of the major ones among these policies, beginning with perhaps the most widely discussed of them, the cut in personal income taxes in 1964. Intended explicitly to "get the American economy moving," the cut amounted to 1.5 percent of GNP, a fairly large change in the federal budget during peacetime.

The effects of that tax cut, according to Wharton and DRI, are summarized in Figure 5. They are shown in the form of a solid line depicting what actually happened to the economy (and therefore including the effects of the tax cut) and dashed lines showing each model's estimates of what would have happened to the economy had there been no tax cut. The models clearly imply that the tax cut did raise GNP. By the end of two years, the amount of increase is variously estimated at $11 billion to $23 billion.

9/ More precisely, unborrowed bank reserves.

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Figure 5.
Economic Effects of the 1964 Personal Tax Cut

GNP

Billions of Current $, Annual Rate

Quarters

BUDGET SURPLUS OR DEFICIT (−), NIPA BASIS

Billions of Current $, Annual Rate

Quarters

EMPLOYMENT

Millions of Persons

—— Actual Historical Data
—— Without Tax Cut (Wharton Simulation)
---- Without Tax Cut (DRI Simulation)
—·— Without Tax Cut (MPS Simulation)

Quarters

UNEMPLOYMENT RATE

Percent

Quarters

PRICE LEVEL

GNP Deflator, 1972 = 100

Index

Quarters

INFLATION RATE

Percent Change from a Year Before, GNP Deflator

Percent

Quarters

The effect of the 1964 tax cut on the federal deficit has been a matter of controversy. Some have claimed that the tax cut provided so much economic stimulus that the increased revenues and reduced income-support outlays resulting from higher incomes more than offset the direct costs of the tax cut in foregone revenues. According to the models, this was not the case. The direct effect of the tax cut was to reduce revenues by some $12 billion (annual rate) after the initial buildup. The increase in output and later in prices produced by the tax cut, according to the models, recaptured $3 to $9 billion of this revenue at the end of two years. The result was a net increase in the federal deficit of only about 25 to 75 percent of the full $12 billion.

It is true that total revenues, unchanged from 1963 to 1964 (calendar years), rose by $9 billlion from 1964 to 1965 and by $18 billion and $8 billion, respectively, in the two succeeding years. But most of this rise was due to economic growth that would have taken place even without the tax cut. As Figure 5 indicates, the gain in GNP from 1964 to 1967 was by no means all or even mainly attributable to the tax cut. GNP rose by $155 billion from the first quarter of 1964 to the first quarter of 1967, and there is no model or economist who would attribute all, or anything approaching all, of this increase to a $12 billion cut in personal taxes.

Employment was also raised by the tax cut, and the unemployment rate lowered by nearly a percentage point. Toward the end of the period, which corresponded to the years of high capacity utilization at the peak of the Vietnam War, the actual unemployment rate was below 4 percent, while the calculated rate without the tax cut would have remained close to 4.5 percent. The models estimate that this reduction in unemployment from an already low level had significant effects on the overall price level, raising it by 1.4 to 2.2 percent.

Results for the 1964 tax cut naturally invite a comparison of the tax cut enacted during the 1975 recession and extended in 1976. The 1975 cut was a complicated collection of changes in the standard deduction, tax credits for each personal exemption as well as for low-income families, personal income tax rebates, one-time payments to social security recipients, and other features. Its direct size during 1975 was $18 billion. According to the multipliers developed by CBO, the 1975 tax cut had a peak effect on current dollar GNP of $30 billion (annual

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rate), more than the 1964 tax cut in dollar amount but less in relation to the total size of the economy (see Figure 6). Employment effects of the two tax cuts were roughly the same-- very roughly three quarters of a million jobs in each case.

Most changes in federal spending, in contrast to tax changes, have been dominated by goals other than economic stabilization. Economic conditions have been a major impetus, however, behind the recent growth in spending for public service employment. Once allowance is made for displacement, the net job creation due to the buildup of these programs has probably been less than that due to the 1975 tax cut. While the number of jobs created per dollar of spending has been relatively large, many fewer budget dollars have been allocated to public service employment than to the permanent tax change provisions of the 1975 legislation.

For comparison with these fiscal policy changes, it is of interest to present estimated effects of at least one large change in monetary policy; namely, the tightening of money in 1969. In the second half of 1969, the annual growth rate of the broadly defined money stock receded to below 1 percent, while in the next year this growth rate was back to about 7 percent. It is possible to ask the models what would have happened to the economy had Federal Reserve open-market operations kept the growth rate of the broadly defined money supply at no lower than 5 percent during 1969 and early 1970. Figure 7 shows the estimated results of this policy.

According to both models used for this simulation, avoiding the 1969 runup of interest rates would have moderated signifi- cantly the rise in unemployment during the ensuing two years. Instead of reaching a six percent rate, the models suggest that unemployment would have gone no higher than five percent. One of the two models indicates a substantial cost in terms of infla- tion--about 1.5 percentage points more on the inflation rate by the end of the second year of the simulation. The other model indicates almost no inflation effects--a surprising and not very credible result, due perhaps to special difficulties in simu- lating this model during the late 1960s. This latter result serves as a reminder that all of the foregoing model simulations should be used with caution, perhaps especially those relating to monetary policy.

Figure 6.

Economic Effects of the Tax Reduction Act of 1975

GNP

Billions of Current $, Annual Rate

—— Actual Historical Data
----- Without 1975 Tax Cut
(CBO Simulation)

Quarters

BUDGET SURPLUS OR DEFICIT, (—), NIPA BASIS

Billions of Current $, Annual Rate

Quarters

EMPLOYMENT

Millions of Persons

Quarters

UNEMPLOYMENT RATE

Percent

Quarters

PRICE LEVEL

GNP Deflator, 1972 = 100

Index

Quarters

INFLATION RATE

Change from a Year Before, GNP Deflator

Percent

Quarters

Figure 7.

Economic Effects of the 1969 Credit Crunch

GNP

- —— Actual Historical Data
- —·—· No Credit Crunch (Wharton Simulation)
- ----- No Credit Crunch (DRI Simulation)

Billions of Current $, Annual Rate

1100

1000

900

0   4   8   12

Quarters

BUDGET SURPLUS OR DEFICIT, (−), NIPA BASIS

Billions of Current $, Annual Rate

20

10

0

-10

-20

0   4   8   12

Quarters

EMPLOYMENT

Millions of Persons

80

78

76

0

0   4   8   12

Quarters

UNEMPLOYMENT RATE

Percent

7

5

3

0

0   4   8   12

Quarters

PRICE LEVEL

GNP Deflator, 1972 = 100

Index

100

90

80

0   4   8   12

Quarters

INFLATION RATE

Percent Change from a Year Before, GNP Deflator

Percent

7

6

5

0   4   8   12

Quarters

Three broad conclusions are suggested by this review of some major fiscal and monetary policy actions. The first is that policy moves within the range of recent experience do, as far as one can tell, have significant impacts on GNP, employment, and prices. The second is that other forces--movements in productivity, exports, the policy actions of the past, to name a few--are also of great importance, so that while policy moves of the size actually undertaken in the last 15 years modify the contours of economic developments, they do not drastically reshape economic history. It would have taken more vigorous use of policy instruments to alter completely the recent history of unemployment or inflation in the United States.

The final point is that very seldom is there an available policy alternative all of whose impacts are clearly desirable. Policies that have expanded the number of jobs have often tended eventually to worsen the rate of inflation and to add to the federal deficit. Policies that have reduced the deficit have often tended to reduce the number of jobs as well. The task of designing fiscal policy is not an easy one.

CHAPTER IV. DESIGNING FISCAL POLICY

This study began by setting out a broad framework within which fiscal policy is made, a framework including (a) setting goals; (b) making a forecast of how close the economy will come to these goals under some baseline assumption about fiscal policy; and (c) developing estimates of the impact of changes in policies on the forecast. The previous chapter looked at evidence relating to this third point--evidence about the effect of fiscal policy on GNP, employment, inflation, and some other economic aggregates. CBO found a general consensus that changes in fiscal policy do have important macroeconomic effects; that different fiscal instruments--various tax rates and spending programs--have different effects on the economy; that many policy changes pose trade-off problems, improving some economic indicators and worsening others; and that there remains a good deal of uncertainty about the magnitude and, occasionally, about the direction of the effect of a particular policy on a specific economic indicator.

This chapter turns from reviewing the evidence to the problems of designing actual fiscal policy. The first part of the chapter reviews some of the overall measures of fiscal policy--the federal deficit is the best known of these--and their usefulness as a guide to making fiscal policy. The second part discusses specific fiscal instruments--tax rebates, permanent tax cuts, employment programs, and others--and suggests some of the special characteristics which affect the impact that each of these instruments has on the economy.

SUMMARY MEASURES OF FISCAL POLICIES

The Unified Budget Deficit

The unified budget deficit, voted by the Congress in its budget resolutions, is the best-known, single-number summary of fiscal policy. The deficit has been very large in recent years-- $45 billion, $66 billion, and $45 billion in fiscal years 1975 through 1977, respectively, compared to an average of $14 billion in the earlier 1970s.

All too often, the unified budget deficit is taken to suggest that fiscal policy has been enormously expansionary in recent years. While it is essential for accounting purposes, the unified deficit, unfortunately, is a very misleading indicator of discretionary fiscal policy because it responds very sensitively to changes in the economy that do not necessarily have anything to do with fiscal policy. Most importantly, weakness or strength in private demands and incomes cause revenues to fall or rise and hence affect the unified budget deficit. Reinforcing this tendency is the automatic response of income support programs, such as unemployment insurance, to a deterioration or improvement in economic activity. A severe recession causes the unified budget deficit to rise not only because the fall in incomes depresses revenues, but also because the fall in real incomes increases payments for unemployment compensation, food stamps, and other outlays. The recession of 1973-1975 and the subsequent failure to close fully the gap between actual and potential output that opened up at that time is the main cause of the large unified budget deficits of recent years.

Federal outlays respond not only to changes in real income but also to inflation. Some major federal programs--social security is the most important--are tied automatically to the rate of inflation, and certain other categories of outlays tend to rise semi-automatically when prices go up. A boom, which drives up the level of prices, thus increases outlays of certain kinds as well as increasing revenues. If the outlay effect were as large as the revenue effect, then the deficit would be un-affected; but in fact the revenue effect tends to be stronger than the outlay effect. The main reason for this is that infla-tion drives households into higher income brackets and personal income taxes consequently increase more than in proportion to inflation. On balance, therefore, the deficit is reduced by a general increase in prices.

What should the reaction be to a large change in the deficit brought about not by Congressional action but by general economic developments? Most economists would answer that changes of this sort in the deficit are healthy developments. Reductions in the deficit caused by a general boom in output and prices help to curb the boom because higher tax collections and lower income support outlays tend to curb private demands. An expansion in the deficit during a recession is similarly a healthy development since a fall in tax receipts and increases in income support payments help to sustain demand and fight the recession.

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Automatic movements in the deficit should, according to the conventional view, be welcomed and, if necessary, reinforced by deliberate policy changes. When a recession causes a loss of revenues, that loss should not trigger an attempt to cut back on spending to close the deficit, but on the contrary might be the occasion for a further cut in taxes or an increase in spending to reinforce the stabilizing effect on the private economy of such changes in the federal deficit.

A key assumption underlying this conventional wisdom--and one that obviously has not always applied in the 1970s--is that movements in the rate of inflation are caused by changes in aggregate demands, with high inflation rates accompanying booms and low inflation rates accompanying recessions. In recent years, there have been unfortunate experiences with bouts of inflation originating from the supply side--from crop failures or from the actions of a cartel in raising world oil prices--and these have no necessary connection with a general boom in the domestic economy. (In fact, they tend to depress economic activity since they raise domestic prices without increasing domestic real incomes.) Furthermore, the U.S. economy is now in a period in which the momentum of past inflation seems to be the dominant force accounting for current price rises. Under these circumstances, it is not at all clear that automatic movements in the unified budget deficit or surplus represent a healthy reaction that should be welcomed and possibly reinforced. The conventional view of the significance of deficits is only partly valid in today's economy. It remains true, however, that the unified deficit is not a suitable single-number summary of federal fiscal policy.

The National Income and Product Accounts Deficit

The principal drawback of the unified deficit as an indicator of fiscal policy is the one just mentioned--its sensitivity to a whole host of developments in the private economy that have no necessary connection with Congressional policy changes. In addition, there are other shortcomings of the unified deficit. One of them is the fact that it records taxes at the time the money is collected, rather than at the time the liability is incurred. In the case of corporations, the effect of taxes on economic behavior appears to be more closely related to taxes on a liability, or accrual, basis than to taxes on a cash payment basis. Another problem with the unified budget deficit is that certain financial transactions, such as oil leasing on the Outer Continental Shelf and the direct lending activities

of government corporations, such as the Farmers Home Administration, are included in the unified deficit, although their effect on the overall economy is much smaller per dollar than the impact of general spending and tax receipts.

These conceptual shortcomings in the unified deficit from the point of view of its economic impact are corrected by moving from the unified budget deficit to the deficit as recorded in the National Income and Product Accounts (NIPA) of the United States. The NIPA deficit generally parallels movement in the unified deficit but displays occasional differences because of these timing and financial adjustments. For fiscal year 1977, the NIPA deficit was $48 billion, compared to a unified deficit of $45 billion. The NIPA deficit shares with the unified deficit the sensitivity to a host of private economic changes that makes it unsuitable as a single indicator of federal fiscal policy.

Refinements of the Surplus-Deficit Concept

Full-employment Budget. The full-employment budget was the earliest attempt to correct the unified or NIPA budget for the key difficulty--considered as an indicator of fiscal policy--of responding to developments in the private economy. The method of doing so is to express receipts and outlays not at their actual historical value but at what they would be were the economy at some standardized rate of unemployment. The rate of unemployment chosen was usually 4 percent in the past, but full-employment budget numbers now use somewhat higher rates for recent years.

As has often been pointed out, the full-employment budget adjusts only for departures from a standard unemployment rate, but not for changes in the rate of inflation. The full-employment budget remains quite sensitive to the rate of inflation, and the complications arising from the varied sources of inflation in recent years have made the interpretation of this fiscal policy measure extremely difficult.

In addition, the full-employment budget has other defects that require further adjustments. One difficulty is that this budget evaluates discretionary changes in fiscal policy by the effect that they would have at full employment (at least in theory--in practice, this is often modified) rather than at actual employment levels. Thus, enactment of an expansionary

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program which would "trigger out" before the economy reached a low rate of unemployment would in theory have no effect on the full-employment budget, although it has an effect on the actual economy.

Another problem with the full-employment budget is that, like the actual budget, it weights each fiscal policy move according to the number of dollars involved, and not according to some measure of its impact on the economy. Thus, in spite of the fact that corporate tax changes are generally viewed as having smaller short-run effects on output and prices (per dollar of tax) than personal income tax changes, the full-employment budget gives the two types of changes equal weight.

Standardized Budget. A variation on the full-employment budget, the so-called "standardized budget surplus," attempts to correct for some of these defects. The standardized budget surplus measures changes in discretionary programs at the actual position of the economy, rather than at some hypothetical full-employment rate. In doing so, it correctly includes policy changes that have an impact at the time they are enacted but would fade out before full employment. By restricting itself to new discretionary policy actions, it also largely eliminates the automatic effects of the rate of inflation on receipts and on certain categories of expenditures. The standardized surplus does not, however, make any change in the practice of using budget cost, rather than some measure of budget impact on the economy, as the yardstick for fiscal policy measurement.

Figure 8 compares the historical behavior of a number of these measures of fiscal policy. The middle panel of the figure shows actual GNP as a percent of potential GNP, as estimated by the Council of Economic Advisers, to indicate how fully the economy's resources were used in each of the years from 1959 through 1977. The top panel of the figure shows two measures of the year-to-year change in the actual surplus or deficit, the unified and the NIPA surplus or deficit. The figure shows that in the three recession years of 1961, 1970, and 1975, both measures fell sharply, largely because the fall in actual as a percent of potential GNP had a depressing effect on revenues and caused increases in outlays for income-support programs. These moves toward larger deficits, as discussed earlier, were healthy reactions to economic downturn, helping to cushion

Figure 8.
Changes in Budget Surplus or Deficit, Four Measures: NIPA, Unified, Full-Employment, and Standardized

CHANGE IN BUDGET SURPLUS AS A PERCENT OF GNP
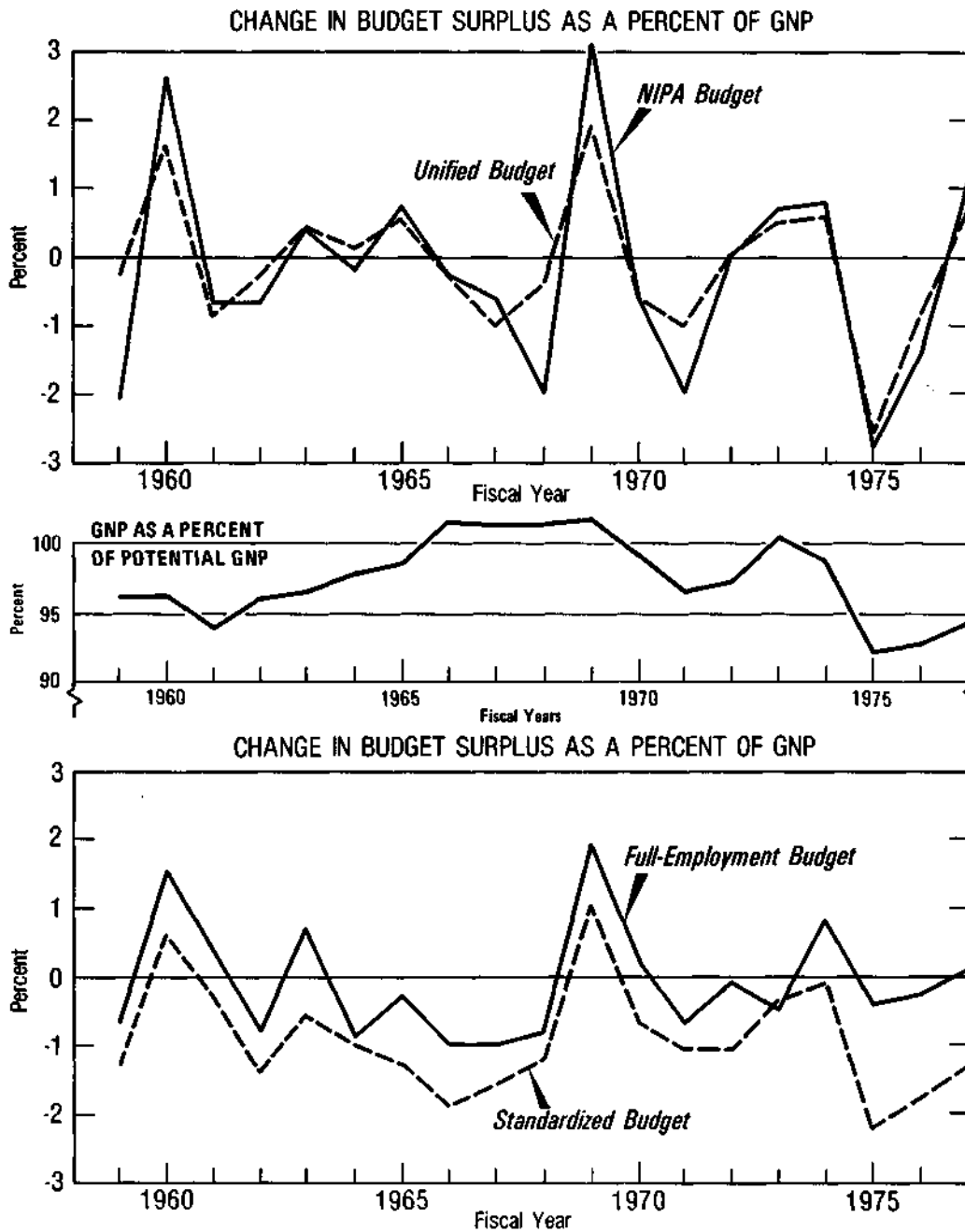
NOTE: The middle panel is presented as a reference point for the top and bottom panels.

the shock to households and businesses. The figure indicates that there were also many changes in the actual surplus or deficit not caused by economic changes--the tax cuts of 1962 and 1964 and the Vietnam buildup, for example.

The bottom panel of Figure 8 shows two more refined measures of fiscal policy, changes in the full-employment budget and changes in the standardized budget. Even these two measures fall in the three recession years of 1961, 1970, and 1975, although they fall much less than the actual surplus/deficit. The fact they do fall indicates that not all of the actual deficit increases of those years were automatic; there were some discretionary changes in an expansionary direction as well. More striking, perhaps, is the significant increase in both measures in the year preceding each of the three recessions. The figure suggests that sharp fiscal changes in a restrictive direction carry the danger of causing or hastening a recession.

The full-employment measure is persistently above the standardized budget measure, and by an amount that tends to increase over time. The principal reason is that the full-employment budget includes automatic increases in taxes which accompany inflation, while the standardized budget excludes them. According to the full-employment budget, fiscal policy has changed little since the 1975 tax cut; that conclusion is actually the result of a near-offset between further expansionary moves by the Congress and automatic tax increases due to inflation. The standardized budget includes the expansionary moves but omits the inflation-induced tax increases, and, therefore, indicates that discretionary fiscal policy has been expansionary since 1975.

In principle, one can go further than either of these measures and weight the dollars in each element of fiscal change according to some measure of influence on the economy. The task is enormously difficult not only because there is no widespread consensus on the ultimate impact per dollar of each instrument, but also because these effects build up over time at varying rates. In spite of these obstacles, some economists have attempted to construct measures of this sort. 1/

1/ See, for example, Alan Blinder and Stephen Goldfeld, "New Measures of Fiscal and Monetary Policy, 1958-73," American Economic Review (December 1976), pp. 780-796.

Further experimentation with "weighted standardized surplus" measures is likely to improve understanding of fiscal policy, but this measure is probably too speculative to be an official statistical series or to serve as an important policy guide. At the present time, changes in both the full-employment budget and the standardized budget provide guides to fiscal policy that are more useful than the actual deficit, but there is no basic substitute for separate analysis of changes in each important fiscal instrument as the needs of the economy change and as new policy proposals are developed.

SOME MAJOR FISCAL INSTRUMENTS

Since no single number is an adequate summary of all of the important dimensions of fiscal policy, it is important to remain aware of the special characteristics of the commonly used instruments of stabilization policy. Accordingly, this final section of the study comments briefly on the time-lags, economic impact per dollar, and other features of the main taxing and spending instruments available to the Congress.

An ideal instrument of stabilization policy, if there were one, would have at least four characteristics. It would first of all be easy to implement as well as to remove or reverse promptly. Secondly, it would have a favorable, or at least minimally unfavorable, unemployment-inflation tradeoff--that is, it could either be used to reduce unemployment with a minimal effect on inflation, or be used to reduce inflation with very little cost in extra unemployment. Thirdly, it would have a favorable jobs/deficit tradeoff, requiring as small as possible a net budget cost per job created. Finally, it would interfere as little as possible with the efficiency of the private economy.

Although none of the common fiscal instruments has all of these advantages, the list of advantages is a useful standard against which to compare each instrument. It is not the only standard to use, however, since many of the instruments have major impacts on other goals besides stabilizing the economy. Thus, payroll taxes have major effects on the status of the social security funds and are raised in spite of rather than because of their effects on inflation and unemployment. Similarly, payments to individuals have important effects on the distribution of income, and public works programs have major

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effects on selected local areas. The paragraphs below touch on the other goals of some of the major budget instruments as well as their effectiveness for general stabilization of the economy. 2/

The Individual Income Tax

Promptness is the great advantage of changes in the individual income tax for stabilizing the economy. At times, the Congress has been able to work out a tax change bill within two to four months, and the Treasury is able to translate a completed action into changes in the take-home pay of millions of Americans within weeks after enactment. Not only are income tax changes prompt in taking effect, they are also easily reversible from a technical point of view, although politically tax reductions are much more popular than tax increases, of course.

A rebate of income taxes is even more prompt than a permanent change in tax rates or deductions. A $10 billion rebate can be paid out entirely within two or three months after enactment, while the direct effects of a $10 billion annual change in tax rates or deductions are generally spread out over a year. There is widespread doubt, however, whether a rebate has nearly as much impact on the economy per dollar of cost (gross or net cost) as does the first year of a permanent cut in taxes. Many economists view consumption decisions as influenced more by long-run income prospects, which are affected by a permanent tax cut but not a rebate, than by windfalls such as a one-time rebate.

According to most analyses, even a permanent income tax cut is a relatively expensive way of reducing unemployment in terms of budget dollars (net or gross costs) per additional job. As noted earlier in this study, the contention that a permanent cut in individual income tax generates enough revenue so that its net cost is zero is one which careful analysis does not support.

2/ A somewhat similar discussion of fiscal instruments appears in an earlier CBO report, Temporary Measures to Stimulate Employment (September 1975).

Nor does a change in individual income taxes, according to most analyses, have any special advantage in avoiding inflation. A few dissenters from this view feel that low income taxes increase the willingness of some persons to hold jobs or work longer hours, and thereby lift the potential noninflationary level of output of the economy; but this is not a widely held position. Another aspect of the individual income tax that needs to be considered is that proposals to change provisions inevitably raise distributional issues as well as macroeconomic ones.

Corporate Income Taxes

Like the personal income tax, the corporate income tax can be changed promptly and--subject to the same political constraints--can be reversed easily.

There is much less agreement about the economic impact of the corporate income tax than there is about the personal tax. One channel of influence is that the increased cash flow accompanying a cut in business taxes may increase investment, but this channel has not been found to be very important in recent investment analyses. Some models of the economy translate changes in the corporate income tax into movements in stock prices, with significant effects on personal wealth and hence on consumer spending. It is safe to say, however, that most changes in the corporate income tax in the past have not been based on any precise view of their economic impact, but rather on the grounds of preserving equity between personal taxes and corporate taxes.

Investment Tax Credits

A growing number of models of the economy find a powerful GNP impact per dollar for the investment tax credit. Other changes in the tax treatment of capital spending, such as accelerated depreciation or inflation-adjusted depreciation, should also have powerful effects if the investment tax credit does, since they have similar effects on the after-tax return on investment. Changes of this kind, furthermore, are easy to enact and to implement. The investment tax credit has, in fact, been varied a number of times since it was first introduced in 1962.

Time lags in economic impact are the great shortcoming of the investment tax credit as a stabilization device. Because of the long lags involved in business investment decisions, it may be a matter of a year or two before a change in the investment tax credit begins to have substantial effects on employment and output. This is a contrast with the personal income tax or with federal purchases, which may not reach their peak effects for a year and a half, but which begin to have substantial effects long before that.

A special effect of the investment tax credit is that it promotes an increase in the amount of capital per employee and thus in the long run leads to a more capital-intensive economy. According to some economists, this shift to more capital per employee is accompanied by a shift in the demand for labor from blue-collar to white-collar workers and frequently also by a shift toward greater energy use. These possibilities need to be considered along with the short-run macroeconomic impact in assessing the value of this fiscal device.

Payroll Taxes

The employee share of the social security tax has macroeconomic impacts similar to those of the individual income tax. Both taxes reduce take-home pay and thereby influence consumer spending, and both taxes raise revenues and thereby reduce the size of the deficit. Changes in both can be implemented promptly.

The incidence of the two taxes is quite different; a much higher proportion of payroll taxes than income taxes is paid by low-income workers, while a much higher proportion of income taxes than payroll taxes is paid by middle- and high-income households and property income recipients. This difference in incidence could lead to a difference in overall impact if the saving behavior of the rich differed greatly from the poor. Contrary to most popular speculation, what facts there are on saving by income class do not suggest large differences in the proportion of lifetime income saved at the margin.

The way in which costs, prices, and incomes adjust to changes in the employer share of payroll taxes--both social security and unemployment insurance--is less understood. Most

analyses indicate that the principal initial impact is on business costs and prices. The higher prices that are set in response to an increase in employer payroll taxes reduce the real value of wealth and cause higher interest rates, and thereby depress real output and employment. Possibly there is another type of depressing effect on output if the higher payroll taxes were to cause employers to offer lower wages. According to this analysis, in summary, raising the employer payroll tax worsens both inflation and unemployment.

Why then has the payroll tax been raised so frequently? Clearly, economic stabilization is not the reason; from the point of view of stabilization goals, lowering payroll taxes would be an advantageous move. Rather, the payroll tax has been raised to maintain the solvency of the social insurance trust funds in spite of effects on the general economy. This conflict between the trust fund effects and the aggregate economic effects of payroll taxes is one of the difficult dilemmas facing policymakers at the present time.

In some countries, temporary changes in value-added taxes 3/--similar to employer payroll taxes with respect to their general impact on costs--are an important instrument of fiscal policy. A temporary cut in an element of business costs can lead to temporary price discounts, which should stimulate buying while the temporary cut is in effect without any long-run impact on prices. A temporary increase should have the reverse effect. These are desirable features if fiscal policy is aiming to offset a short-run disturbance in private spending. However, the use of payroll taxes in this way has not been tried in this country.

Employment Tax Credits

The apparent success of the investment tax credit in stimulating business investment was one of the arguments in favor of a similar approach to increasing employment by introducing an

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3/ A value added tax is a tax on the sales of a firm. A deduction is granted for the cost of purchases from other firms, so that only the value added by each firm remains subject to tax. Taxes paid by previous firms in the production chain on capital goods purchased usually are refundable.

employment tax credit. The latter tax credit can promote employ-ment two different ways: (1) by encouraging a higher ratio of labor to capital and other inputs for any given level of output; and (2) by moderating pressures on prices while maintain-ing the earnings of workers, thus enabling workers to buy more goods and stimulate output and employment.

The first of these employment incentives is a long-run proposition since, especially at a time of economic slack, firms have a good deal of unused or under-used capital on hand and hence have little immediate incentive to economize on the use of capital. Moreover, the employment tax credit is likely to be weaker in promoting labor-intensive production than the invest-ment tax credit in helping capital intensity. The reason is that capital goods are first purchased and then used for many years, while labor is purchased at the time it is used. If an investment tax credit is in effect, a firm knows it can lower its yearly costs over the entire lifetime of a machine by taking the credit on the initial purchase price. If an employment tax credit is in effect, however, a firm can be sure of lowering its costs for only the present year by taking the credit; there is a risk that next year the employment tax credit could be terminated.

Many employment tax credit proposals involve a base level of employment in each firm (say, last year's employment) with employment credits extended only for workers hired in addition to the base level of employment. If a given budget amount has been allocated to employment tax credits, this approach clearly allows a stronger incentive at the margin than if the available funds had to be allocated over all existing and new employees. Still, the base-level approach has its drawbacks. Some firms would have expanded employment above the base even without the incentive, and they get rewarded even if their behavior is unaffected by the credit, while other firms need to retrench with or without the employment credit, and they cannot be provided with an incentive to retrench their workforce at a slower pace. The difficulty in both cases is that no simple definition of the employment base level is appropriate to all businesses.

The second macroeconomic channel of the employment tax credit comes into play when the credit permits firms to reduce prices; this channel might generate roughly as much new purchas-ing power as a personal tax reduction of equal budget cost. There could also be the same effect on take-home pay as in the case of a tax cut if labor were to succeed in bidding up wage

rates to acquire some of the subsidy rather than businesses lowering prices. Still another possible outcome with more uncertain results, is that business could increase its profits rather than passing forward the subsidy in lower prices.

A generalized employment tax credit that would cover all new and old jobs can be considered as the opposite of employer payroll taxes. The one lowers a firm's employment costs while the other raises them, both by amounts related to the firm's employment or payroll. Employment tax credits are thus a logical device for offsetting the macroeconomic impact of employer payroll taxes. It would take a substantial credit, involving billions of dollars of foregone revenue, to offset fully the sizable increases in social security payroll taxes in prospect over the next few years.

Transfer Payments

From the point of view of impact on the economy, transfer payments--social security payments, veterans' benefits, unemployment compensation, and other payments to individuals--are the opposite of personal income taxes. An increase in social security payments adds to the money households have to spend and adds to the deficit, while an increase in personal income taxes reduces money households have to spend and reduces the federal deficit. Like personal incomes taxes, transfer payments can be changed promptly; however, there are very few actual instances of reductions in transfer payments other than automatic ones caused by a decline in the number of persons eligible. Decisions about transfer payments, like decisions about taxes, have special power to affect the incomes of particular groups--the retired, the unemployed, and veterans, among others.

Probably most changes in transfer payments, like changes in personal taxes, have less economic impact per dollar than federal purchases of goods. Transfers need not be equivalent to personal taxes in this respect if the persons directly affected by a tax change have different spending-saving patterns from those directly affected by transfer programs. Unemployed household heads, for example, probably spend a higher fraction of any addition to their income than do employed household heads. It follows that payments to unemployed household heads should generate more GNP per dollar than a cut in taxes that is spread

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among all taxpayers. There is, however, very little data useful for measuring whether the difference is significant. Perhaps for this reason, models of the economy generally do not allow for such differentials.

Again like the income tax, most transfer programs respond automatically to changes in economic conditions. A recession and the accompanying rise in unemployment raises transfer payments; unemployment compensation and welfare payments rise; and possibly, through changes in the number of early retirements, social security benefits rise. These changes, like the drop in revenues during a recession, illustrate the tendency of the federal deficit to grow when the private economy weakens and thereby to help cushion the impact of a recession.

In the case of a step-up in the rate of inflation the response of transfer payments is also to increase--automatically in the case of social security and semi-automatically in the case of unemployment compensation which tends to be linked to recent levels of wage rates. These responses succeed in protecting the beneficiaries against inflation by preserving the real purchasing power of old age payments and the real value of unemployment insurance. At the same time, however, these responses add to total spending and hence increase the overall inflationary pressure in the economy. The automatic response of transfer payments to inflation is thus stabilizing from the point of view of the individuals directly involved, but--unlike personal tax payments--is not stabilizing for the economy as a whole.

General Revenue Sharing

General revenue sharing is another category of spending that can be altered promptly in response to changes in economic conditions. Whether prompt federal action in this case means prompt economic impact, however, is less certain. It depends on the speed with which state and local governments change their spending and tax behavior in response to federal grants. What evidence exists suggests that the state and local response is slow, somewhat slower than the household response to a change in take-home pay. A long lag in state and local responses would make revenue sharing a less effective device for stabilizing the economy than some of the other fiscal instruments.

The entire system of federal grants has grown and changed very rapidly in recent years, however, and the present lags may grow smaller as states and localities become accustomed to dealing with the newly evolving system.

The relatively recent innovation of countercyclical revenue sharing links the total amount of outlays in this category to the aggregate unemployment rate. It thereby provides some automatic cushioning of the shock of a recession to states and localities. To the extent that the state and local governments anticipate and hence respond promptly to these countercyclical grants, these grants also cushion the shock of a recession to the economy as a whole.

Public Service Employment Programs

An increasingly important instrument in recent stabilization policy has been public service employment, almost all in the forms of grants to state and local governments to support job programs aimed at certain population groups.

Public service employment potentially can be a very powerful creator of jobs per dollar spent. In most expansionary fiscal moves, a relatively small proportion of the increase in national income goes directly to the newly employed. A significant proportion goes into increasing profits, another significant proportion into increasing average hours of those already employed, and, at least under some circumstances, a significant proportion to raising the wage level of those already employed. Public service employment can reduce the fraction going into higher profits and higher average hours and can focus on groups of workers whose average wages are relatively low.

Public service employment programs will not achieve this potential, however, if the rate of displacement--that is, substitution of federal for state and local money to pay for programs that would have been undertaken in any case--is very high or if the lags in setting up local programs and hiring qualified persons are long. Some investigators have reached pessimistic conclusions about the impact of public service employment grants because of pessimistic assumptions about these factors. The estimates presented earlier in this report, based on less pessimistic assumptions, indicated high employment effects per

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dollar of public service employment grants. All such conclusions must be rated highly tentative at the present time because of the rapid development and change in the public employment system.

Public service employment programs also can potentially cause less price pressure per job created than other fiscal instruments. They have this potential not only because the jobs pay relatively low wages, but also because the programs can be aimed at those groups with especially high unemployment rates. This potential would not be realized, however, if a public service employment program paid higher wages than the persons directly affected could expect to receive in the labor market under high-employment conditions. Again, it is much too early for a final verdict on these rapidly changing programs.

Public Works

Public works is the new construction of public facilities such as schools, hospitals, dams, sewage treatment plants, and mass transportation structures. Like public service employment, it has been a part of recent efforts to stimulate the economy.

Evidence supports two propositions about public works as a fiscal instrument. First, it is relatively powerful per dollar of direct budget cost. Like other federal purchases of goods, it is more powerful in this respect, according to almost all models, than general tax cuts or transfer payments. Secondly, there are long lags in starting up or terminating public works projects. Because of the long lags, it is probably a more appropriate fiscal instrument when there appears to be a need for fiscal stimulus or restraint extending several years into the future than when the needs of the economy are known for only a short period ahead. The lags are a disadvantage in using public works to counter short-run swings in the private economy.

Other Federal Spending Programs

There are many types of federal expenditures that have not been covered in the discussion so far. Usually, these programs satisfy a very specific public need--such as defense, aid to education, medical research, and health care delivery--so that a rapid expansion and subsequent contraction of outlays,

which might serve the interest of stabilization policy, could markedly reduce the effectiveness of these programs in meeting their long-term goals. Often, the timing of these programs needs to be designed carefully for technical reasons and they require sustained long-term effort to yield benefits. For this reason, outlays of this kind--say, for health care delivery--are less amenable to countercyclical action than public works. The latter consists of investment projects whose date of completion can be altered without tremendous loss, since the finished investment is likely to last for a long time and thus will render a continuous stream of services once it is completed.

In sum, most spending programs outside the areas of cash transfer payments, revenue sharing, public service employment, and public works at either the local or federal level, are difficult to organize as an instrument of stabilization policy. This is not to say, however, that with careful planning and attention, these other types of expenditures could not also be utilized to help make government outlays a stabilizing tool. Such an approach would require more than simply an appropriation of funds; it would require careful follow-up on the speed and efficiency with which funds are channeled into the private economy, and perhaps authority to change the allocation of funds if bottlenecks develop.

A FINAL NOTE

Fiscal policy instruments are evolving. Targeted public service employment programs were unused in the 1950s and hardly used in the 1960s. The investment tax credit dates back only a decade and a half. Employment tax credits have barely been tried. It is very likely that the future will bring continuing innovations in the use of these and other policy instruments. Not all of these measures will turn out to represent progress; but if fiscal policy is to be made more effective, the way to improvement lies through innovation and observing the consequences in a careful and unbiased manner.

Because fiscal policy is constantly evolving, the discussion in this section of the report can be no more than a guide to the instruments of fiscal policy as of 1977. In a few years there may be enough changes in the characteristics of existing fiscal instruments and enough development of new instruments so that this section of the report is obsolete. That would be a highly desirable development, if it meant an improvement in the power of fiscal policy to stabilize the economy.

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