Editors' Introduction and Summary

THIS ISSUE COMPLETES THE SECOND VOLUME OF *Brookings Papers on Economic Activity*, a publication that appears three times a year and contains the articles, reports, and highlights of the discussion from conferences of the Brookings Panel on Economic Activity. Financed by grants from the Alfred P. Sloan Foundation and the Alex C. Walker Foundation, the panel was formed to promote professional research and analysis of key developments in U.S. economic activity. Prosperity and price stability are its basic subjects.

The expertise of the panel is concentrated on the "live" issues of economic performance that confront the maker of public policy and the executive in the private sector. Particular attention is devoted to recent and current economic developments that are directly relevant to the contemporary scene or especially challenging because they stretch our understanding of economic theory or previous empirical findings. Such issues are typically quantitative in character, and the research findings are often of a statistical nature. Nonetheless, in all the articles and reports, the reasoning and the conclusions are developed in a form both intelligible to the interested, informed nonspecialist and useful to the macroeconomic expert. In short, the papers aim at several objectives—meticulous and incisive professional analysis, timeliness and relevance to current issues, and lucid presentation.

The four principal articles and four reports presented in this issue were prepared for the sixth conference of the Brookings panel, held in Washington on November 11–12, 1971. These papers generated spirited discussions

at the conference. Many of the participants offered new insights and helpful comments; many had reservations or criticisms about various aspects of the papers. Some of these comments are reflected in the summaries of discussion contained in this issue, some in the final versions of the papers themselves. But in all cases the papers are finally the product of the author's thinking and do not imply any agreement by those attending the conference. Nor do the papers or any of the other materials in this issue necessarily represent the views of the staff members, officers, or trustees of the Brookings Institution.

Summary of This Issue

In the first major article in the volume, George L. Perry explores the implications of the changing demographic composition of the work force for aggregate output and productivity in the economy. Potential gross national product is the output that would be produced with the economy operating at high employment levels. The difference between potential and actual GNP at any time is the GNP gap. Using a new analysis that takes account of the changing composition of the work force, Perry explores the relation between the GNP gap and the unemployment rate and investigates the rate of growth of potential GNP and its proximate determinants—labor productivity and potential manhours of labor input.

Perry notes that the composition of the work force matters because individuals contribute different amounts to output when they are employed. Using relative wages to measure relative output per manhour for each age-sex group, Perry constructs a measure of weighted employment—"effective labor input"—for the economy that he uses in place of conventionally measured total employment.

Perry pays particular attention to developments over the last several years. He estimates that the potential labor force grew at an average annual rate of 2.4 percent in the 1965–70 interval after growing at half that rate in the preceding decade, implying a substantial acceleration of potential output. Using his analysis of potential output growth based on his new measure of labor input, Perry concludes that potential output did indeed accelerate, but by much less than the acceleration of the labor force alone would imply. He concludes that potential GNP per manhour—economy-

wide productivity—in fact slowed from a 2.7 to a 2.4 percent growth rate, and that potential average hours of work per employee, which had been declining throughout the postwar period, declined considerably faster in the 1965–70 interval. Combining his estimates of potential growth in the labor force, productivity, and average hours of work, Perry estimates that potential gross national product grew at a 3.9 percent rate up until 1955, at a 3.5 percent rate in the 1955–65 decade, and at a 4.2 percent rate from 1965 to 1970.

The slowdown in the growth of potential productivity that Perry identifies for the last period comes about entirely from the spurt in the employment of women and young people, who contribute relatively little output per manhour. Potential output per unit of effective labor input did not depart from its long-run trend. A small part of the faster decline in average hours of work per employee in the last part of the period is also due to the changing employment mix.

In analyzing the gap between potential and actual GNP, Perry notes that labor force participation rates, productivity, and average hours of work per employee are all lower the higher the unemployment rate. Compared with the multiplier in "Okun's law," which associated a 3.2 percent GNP gap with each point in the unemployment rate, Perry's estimates indicate that the gap relation is 2.7 percent of GNP for each percentage point of unemployment. A large part of the difference in these estimates arises because Perry explicitly identifies as transitory a portion of productivity changes that accompany especially fast or slow GNP growth. These transitory changes do not contribute permanently to Perry's estimate of the size of the gap that is associated with a particular unemployment rate.

These same results shed light on the widely noted slowdown in productivity growth during the last few years. During the 1965–70 period, actual economy-wide productivity fell 5.3 percent below a naïve projection of past productivity trends. Perry estimates that 2.7 percentage points of this are accounted for by the expected adverse effect on productivity of slow growth in actual GNP over the interval; another 1.5 percentage points are attributable to the demographic change in employment that occurred; and 1.1 percentage points are left as an unexplained shortfall in productivity at the end of the period. He notes that the substantial productivity gains occurring in 1971 will make up at least some of the unexplained shortfall, leaving productivity behavior largely accounted for by the demographic changes and the rise in the unemployment rate that have occurred.

Looking ahead, Perry projects that potential output will grow at an average annual rate of 4.3 percent over the decade of the 1970s. This rate is substantially faster than that for any other decade in recent history. At year-end 1971, Perry estimates the GNP gap at about $77 billion, or a little over 7 percent of GNP. If full employment is to be restored, actual GNP will have to grow fast enough to close this gap as well as to keep up with the economy's rapidly growing potential. If real GNP expands at a 6.0 percent rate after the end of 1971, the unemployment rate would still be about 5.5 percent by the end of 1972. And even if expansion proceeds at a 7.0 percent rate after the end of 1971, unemployment would still be 5.2 percent by the end of 1972. According to these estimates, a rapid rate of expansion would have to be maintained for an extended period in order to restore full employment to the economy.

In the second article, William Poole investigates the questions of how rapid a return to full employment should be sought by expansionary policies and what general rules might govern policy formulation. A very rapid and vigorous recovery would yield obvious benefits, but it might impose some less obvious costs. In particular, the use of extraordinarily expansionary fiscal and monetary policies, such as might be required to achieve full employment very rapidly, might reduce the smoothness and sustainability of growth once full employment had been reached. If the economy were given an extremely strong push upward, that force might continue to raise demand strongly even after the recovery had been completed and more moderate growth was desired.

An optimal path for the economy is thus hard to achieve in a complex world and an optimal policy is hard to specify. Poole considers two types of strategies that can be used to guide policy formulation and evaluates how each would handle the problem of reaching and maintaining full employment. A "goal-oriented" strategy applies varying amounts of stimulus or restraint in an effort to keep economic activity close to some optimal feasible path. It may require large and frequent changes in policy instruments, and could contribute to fluctuations in activity if the response of the economy to policy changes were not predicted with sufficient accuracy. An "instrument-oriented" strategy maintains a set of rules for monetary and fiscal policy regardless of the state of economic activity. While less ambitious about holding the economy on its desired path, it has been espoused by some economists as a safer strategy for the long run.

Poole investigates the performance of goal-oriented and instrument-oriented strategies by assuming that the key features of the economy are captured by the SSRC-MIT-Penn (SMP) econometric model. He begins with the actual economic conditions prevailing at the end of 1970 and evaluates hypothetical time paths of economic performance, as estimated by the SMP model, that follow from alternative monetary policies. To keep the scope of his investigation within manageable limits, Poole focuses solely on the growth path of the money supply, ignoring other aspects of monetary policy and assuming that fiscal policy is held steady throughout.

In Poole's experiments, or "simulations," an instrument-oriented policy does not permit a smooth achievement of an equilibrium full employment path. For example, steady growth of the money supply at an annual rate of 7 percent produces full employment in a reasonable period. But the strong momentum of the recovery makes the economy overshoot full employment. As excess demand persists, inflation speeds up, and liquidity requirements grow more rapidly; hence real interest rates are pushed up, discouraging investment. Thus, the economy turns down eventually, and then falls below the full employment path.

A goal-oriented strategy that looks ahead and adjusts the money stock to accord with the requirements for economic growth along the full employment path yields more favorable results. That strategy deals effectively with the problem of overshooting by making monetary policy gradually less stimulative as the recovery proceeds. If the gap between actual and potential output is closed at a moderate rate and if some limits are placed on fluctuations in the growth of the money supply, the oscillations in economic performance can be kept relatively small.

A goal-oriented strategy would encounter problems, however, if the world should prove to be "accelerationist"—that is, one in which the maintenance of an unemployment rate below some "natural" rate leads to continuously accelerating inflation. Under these circumstances, policy makers cannot feasibly engineer a quick return to full employment followed by stable growth. Poole counsels the need for caution, so long as policy makers cannot be confident that the world has a stable long-run tradeoff between inflation and unemployment rather than accelerationist tendencies. Pursuing a suggestion of David Fand, Poole shows that some safeguard against accelerationist tendencies can be obtained by aiming at a path of desired GNP in current dollars rather than in real terms. Then if prices tend to accelerate unexpectedly, the policy will automatically achieve

a lower path of real GNP and thus cushion the economy against accelerating inflation.

Poole's specific results reflect the characteristics of the SMP model, which is at best only a sketch of the economy. Yet, several general implications may be relevant to the real world: To promote a brisk recovery in a slack economy, monetary and fiscal policy should be especially expansionary; a shift toward restraint in policy will be in order as the economy approaches full employment; and some renewed stimulation is likely to be required for a time after full employment is reached.

Nancy Teeters investigates the built-in flexibility on the expenditure side of the federal budget. It is widely recognized and emphasized that federal revenues respond automatically to fluctuations of economic activity, and that this response helps to dampen economic fluctuations. Comparatively little attention has been paid, however, to the automatic cyclical response of federal expenditures. Nancy Teeters notes that major innovations in the scope and magnitude of federal programs during the sixties make it particularly appropriate at this time to assess the extent of built-in flexibility in expenditures.

Fluctuations in real economic activity have virtually no direct and automatic effect on federal purchases of goods and services, but they do affect several programs of transfer payments and a few programs of grants to states and localities. The statistical estimates of the paper reveal that the number of recipients of government transfer payments is sensitive to changes in employment and unemployment. As would be expected, the number of beneficiaries of unemployment compensation is related to movements of unemployment. Nonetheless, because the coverage of unemployment insurance does not extend to the entire labor force, the relationship is imperfect. The automatic response of unemployment insurance benefits to overall unemployment has been enhanced recently by legislation that expanded coverage and also lengthened the period of benefits when unemployment is high. Currently, the difference between a global unemployment rate of 4 percent and one of 6 percent implies a difference in unemployment insurance benefits of about $4 billion a year.

Although no other expenditure program matches unemployment compensation in the quantitative importance of its built-in flexibility, several have this characteristic to a notable degree. Retirements of those eligible for old-age and survivor insurance are found to be influenced by both the

rate of increase and the level of unemployment among married men. Apparently, added unemployment takes a considerable time to exert its full effect on the number of social insurance beneficiaries and hence on federal outlays. Although the number of recipients of aid for families with dependent children rose in the late sixties when unemployment was declining, statistical estimates permit the tentative judgment that the size of the welfare rolls is swollen by unemployment. The medicaid program for the poor also expands when unemployment rises. In addition, programs of pension and disability benefits for veterans have a discernible (although quantitatively unimportant) relationship to national unemployment: Those who are marginally able to work are apparently less likely to take advantage of their eligibility for benefits when the labor market is strong. Finally, the newly created program of public service employment grants is triggered on and off by a formula based on the level of unemployment and is thus explicitly designed to have built-in flexibility.

In a summary set of estimates, the author finds that automatically responsive federal outlays in 1971 have been about $6½ billion higher than they would have been if unemployment had remained at the 4.2 percent rate of the first quarter of 1970. Moreover, she estimates that, if the rate of unemployment should remain at 6 percent, that figure could rise to $10 billion in 1972 and to $13 billion in 1973. The government's official estimate of the unified full employment budget at the beginning of 1971 made allowance for the major revenue shortfall associated with the economy's operating below full employment, but it made no allowance for any extra expenditures automatically induced by a slack economy. The adjustments estimated in this paper imply that expenditures for fiscal year 1972 are some $8 billion above levels that would prevail at full employment. An adjustment of this magnitude significantly alters the estimate of the full employment surplus or deficit.

The paper also includes a discussion of a few proposed innovations that would increase the built-in flexibility of federal expenditures. The automatic response of unemployment compensation could be increased by a further expansion of coverage or by lowering and redefining the "trigger" on the extension of the period of benefits during a situation of high unemployment. Most significantly, built-in flexibility could be strengthened by the introduction of a cyclical revenue-sharing program that would provide federal grants to states and localities geared to a formula based on the national and state unemployment rates. Such a program would be intended

to make up for the erosion of revenues that states and cities now suffer during a period of weak economic activity.

Two papers in the present volume deal with manpower policies as a way of improving the inflation-unemployment tradeoff in the economy. In a report, Charles C. Holt, C. Duncan MacRae, Stuart O. Schweitzer, and Ralph E. Smith summarize their proposals for manpower policy based on their continuing research on the inflation-unemployment problem. They key their specific manpower proposals to an analytic model of the inflation-unemployment tradeoff and use estimates and assumptions about the relationships in the model to make specific evaluations of the costs and benefits that could be expected from their proposals.

Holt and his associates identify some major factors behind the nation's disappointing inflation-unemployment tradeoff: excessive job turnover; inefficient means of searching for jobs and workers; and occupational and geographic mismatches of job vacancies and available workers that lead to unemployment dispersion. In order to reduce job turnover by accomplishing better matches of workers and jobs and in order to speed placements by improving the efficiency of searching for matches by both employers and workers, Holt and his associates call for a substantial improvement and enlargement of the government's Employment Service. In order to alleviate skill shortages and reduce the present dispersion of unemployment rates among different occupational categories, they recommend occupational training on a large scale; assistance to employers in restructuring their jobs so that they can be filled by available workers; and subsidies to day care centers to enable mothers to fill jobs in which skill shortages exist. In order to help reduce geographical imbalances in labor market tightness, they propose advisory and financial assistance for workers moving to new jobs. And in order to reduce the rapid turnover that leads to high unemployment among young workers, they recommend improved vocational counseling, work-study programs, and employment subsidies.

The authors are very optimistic about what their programs can accomplish, if fully implemented. They foresee a potential reduction of 2.1 percentage points in the unemployment rate at the same degree of inflationary pressure, making it possible for fiscal and monetary policy to lower the unemployment rate from, say, 4.5 percent to 2.4 percent with no net increase in inflationary pressure. They estimate that the total outlays for programs to accomplish this end would be $14 billion annually, and point out that the

government's real share of this could be much smaller, both because the higher levels of economic activity that would be achieved would themselves generate revenues to help pay for the programs, and because business could be expected to share part of the expense.

In the fourth major article in the volume, Robert Hall offers his assessment of what manpower programs could achieve, reviewing both our experience with existing and past programs and the likely results of various proposed programs. He notes that the tradeoff between inflation and unemployment in the economy is worse than we would like and that measures to improve this tradeoff are urgently sought. His evaluation of manpower programs asks how successful they can be in improving the tradeoff by selectively improving the employment experience of workers in parts of the labor force where unemployment is unusually high.

Hall separates programs aimed at solving the problem of high unemployment groups into three categories: (1) those that accept the existing characteristics of the supply of labor and aim for better matches between workers and jobs by improving placement efforts, counseling workers, and the like; (2) those that try to change the characteristics of the labor supply by upgrading skills and abilities; and (3) those that try to enlarge the number of *good* jobs available to disadvantaged workers by inducing employers to hire them for better jobs than are normally available to them. Hall argues that the basic reason that unemployment is high among certain groups of workers is the shortage of good jobs in the economy—jobs with the prospect of stable employment and advancement—even when overall unemployment is low. As a result, he is basically pessimistic about programs of the first two types because they do not deal with the more fundamental paucity of good jobs.

Hall extensively analyzes the proposals made by Charles Holt and his collaborators at the Urban Institute whose policy conclusions are presented in the report just summarized. If the prospects held out by the Holt group are quite optimistic, Hall's view stresses the other end of the range of prospective outcomes. He questions whether there are large returns to expanding the government's Employment Service, arguing that the service can operate effectively only within a limited part of the job market that does not include most of the good jobs in the economy. The good jobs are filled in other ways and, in general, already have long lines of workers waiting to fill them. He also notes that, to the extent an expanded Employment Service

succeeded in achieving faster placement of workers, it would encourage faster turnover since workers could quit more readily in the knowledge that they could find a new job more quickly. Thus this aspect of even a successful expansion of the Employment Service would impede the improvement of the inflation-unemployment tradeoff. Hall also doubts whether enough teenagers could be involved in work-study programs to have a large effect on the tradeoff. And he questions the wisdom of even attempting to equalize present differences in occupational and geographic unemployment rates on the grounds that a good part of such differences are intrinsic to the particular occupations and locations so that a forceful equalization of unemployment rates, if it were attempted, would be inefficient and more inflationary.

Hall goes on to review some studies that evaluate historical experience with training programs designed to upgrade workers. He concludes that a small improvement in the employment experience of workers completing training programs is the main benefit that can be identified. While he recognizes the usefulness of these programs to the individuals involved and to the lessening of the incidence of poverty, he does not find a large improvement in the inflation-unemployment tradeoff as a result.

While Hall considers the provision of good jobs a superior alternative to other forms of manpower policy, he is not optimistic about the prospects for accomplishing this aim. He notes that the JOBS program has not been successful in subsidizing the training of disadvantaged workers, although the voluntary part of the program, which depends on business to provide good jobs on its own, has had some notable successes. He also finds that the recently enacted public employment program does not impose the restrictions necessary to assure that good permanent jobs will go to the disadvantaged. Hall concludes that it will be very difficult to design a program based on marginal subsidies or penalties that would succeed in providing good jobs to the disadvantaged. He notes that a program of mandatory employment quotas, along the lines of the proposal made recently by Galbraith, Kuh, and Thurow, would work. But he is quick to point out the political infeasibility of such an approach.

The strikingly different hopes that Hall and Holt and his colleagues express for future manpower policies illustrate how little hard information is available about the effects of such policies. But the papers add to the framework of knowledge about how labor markets operate and agree on many parts of this framework. They differ most noticeably in evaluating the prospects for changing the existing state of these markets.

In one of the shorter reports of this issue, Charles Bischoff assesses the near-term outlook for business spending on plant and equipment using statistical models that he presented in an earlier article in this journal. Reviewing the 1971 results, he finds that business fixed investment has been somewhat stronger than most statistical relationships have indicated. Bischoff selects those equations for equipment and construction that have been performing most satisfactorily, and uses them to forecast capital outlays in 1972 and 1973.

Assuming that overall growth of real GNP is about 6 percent in 1972 and that long-term bond yields remain steady, and taking account of recent tax changes affecting investment, Bischoff projects an increase in business fixed investment for 1972 of 10 percent in current prices, or about 7 percent in constant prices. This predicted rise in outlays suggests that investment will make an important contribution to the economic expansion in 1972.

Even if the growth of overall output slows somewhat to a rate near 5 percent in 1973, Bischoff expects a further acceleration of investment, with a gain of 16 percent in current prices and 10 percent in real terms during that year. Bischoff's results suggest that the investment outlook for 1973 depends critically on the realization of vigorous overall recovery during 1972. If the growth of real output in 1972 were much less than 5 percent, Bischoff would expect an actual downturn in real capital outlays in 1973. On the other hand, if overall economic growth exceeds 7 percent in 1972, the outlook would point to a dramatic capital boom in 1973. Bischoff's estimates also imply that the newly enacted investment tax credit will stimulate investment, with a direct impact amounting to nearly 2 percent of outlays in 1972 and to more than 3 percent in 1973.

In a brief supplementary note to his major article in the last issue, William Branson reports on new statistical estimates that he obtained pursuing suggestions made by several participants in the Brookings panel. The new estimates strengthen his earlier conclusion that heavy investment in human capital is a key determinant of the products in which the United States has comparative advantage in world markets. The new calculations suggest that research and development expenditures may be a less significant influence on comparative advantage than indicated earlier. On the other hand, Branson now finds a more significant relation of comparative advantage to the special contribution of scientific and technical workers in particular industries.

Albert Rees reports on the operations of the Construction Industry Stabilization Committee and draws lessons from that experience relevant

to the general wage restraint efforts in Phase II. First, Rees judges that a tripartite organization for wage restraint can work effectively so long as the objectives do not call for an abrupt deceleration of wage increases. Second, he believes that the experience of the construction pay panel underlines the need for the public members to play a mediating role between business and labor. Third, he argues that concern for equity adjustments of wage rates must be present in the economy-wide restraint program as it has been in the program for construction. While the basic standard for construction wage increases, apart from equity adjustments, has been 6 percent, equity adjustments have brought the average to 11 percent. As Rees sees it, the need for such adjustments will be smaller in other industries, but he nonetheless feels that they may add 2 percentage points to the average of wage increases. Finally, he stresses the importance of a case-by-case review of collective bargaining settlements. In his opinion, settlements covering only a few workers can be extremely important in establishing patterns for other workers in comparable jobs. Hence, he infers that a program that focuses only on settlements involving large numbers of workers would not be likely to succeed.

Participants in the Conference

Participating in the conference and discussing these papers were the members of the Brookings panel, the senior advisers to the panel, and a few guests with special expertise in the material covered. The following are members of the panel for 1971:

Charles W. Bischoff *Yale University*
Barry Bosworth *Brookings Institution*
William H. Branson *Princeton University*
Richard G. Davis *Federal Reserve Bank of New York*
Robert J. Gordon *University of Chicago*
Robert E. Hall *Massachusetts Institute of Technology*
Arthur M. Okun *Brookings Institution*
George L. Perry *Brookings Institution*
William Poole *Federal Reserve Board*
Craig Swan *University of Minnesota*
Lester D. Taylor *University of Michigan*
Nancy H. Teeters *Brookings Institution*

These senior advisers attended the conference:

William C. Brainard *Yale University*
Daniel H. Brill *Commercial Credit Corporation*
David I. Fand *Wayne State University*
R. A. Gordon *University of California, Berkeley*
Walter W. Heller *University of Minnesota*
Charles C. Holt *The Urban Institute*
Saul H. Hymans *University of Michigan*
F. Thomas Juster *National Bureau of Economic Research*
John H. Kareken *University of Minnesota*
Lawrence R. Klein *University of Pennsylvania*
Lawrence B. Krause *Brookings Institution*
Paul A. Samuelson *Massachusetts Institute of Technology*
Warren L. Smith *University of Michigan*
Robert M. Solow *Massachusetts Institute of Technology*

Writings and comments of these guests are also incorporated into this volume:

James H. Blackman *National Science Foundation*
Edward F. Denison *Brookings Institution*
Peter Henle *U.S. Department of Labor*
C. Duncan MacRae *The Urban Institute*
Joseph A. Pechman *Brookings Institution*
Albert Rees *Princeton University*
Stuart O. Schweitzer *The Urban Institute*
Ralph E. Smith *The Urban Institute*

Several others at Brookings contributed to the quality and style of this volume: Mendelle T. Berenson edited the manuscript; Evelyn Fisher reviewed the accuracy of the facts and figures; Richard H. Mullins, Nancy Hwang, and Herbert F. Lowrey, Jr. assisted in the research; and Mary Green and Evelyn Waltz prepared the manuscript.