Editors' Summary

THIS ISSUE of *Brookings Papers on Economic Activity* contains articles and reports presented at the thirty-second conference of the Brookings Panel on Economic Activity, which was held in Washington, D.C., on September 17 and 18, 1981. Two articles focus on inflation, attempting both to illuminate our understanding of economic performance during the past fifteen years and to evaluate some alternative theoretical models of inflation. A third article examines one important attempt to end inflation: the economic policies of Mrs. Thatcher's Conservative government in the United Kingdom. A fourth article presents a new analysis of inventory fluctuations. A short report in this issue examines the debt of less-developed countries; a second analyzes the uncertainty surrounding monthly unemployment statistics.

THE Conservative government of Margaret Thatcher has been in power in the United Kingdom since mid-1979. It enjoys a majority in the Parliament that has allowed it full reign in implementing new economic policies with the knowledge that it would have several years for these policies to work before it would face a new general election. In the first article of this issue, Willem H. Buiter and Marcus Miller analyze and evaluate the first two years of the economic program that the Thatcher government has pursued. Buiter and Miller start by summarizing the actual economic developments that have transpired during these first two years. A recession in employment and output has developed that is far worse than any previous postwar decline and that is comparable in its severity to the onset of the 1925–35 depression in the United Kingdom. Although inflation has recently subsided to near a 10 percent annual rate, wages and retail prices accelerated during the first several quarters under

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the new government. At the same time, the British pound continued appreciating in relation to other currencies, causing, together with the rapid domestic inflation, a decline of nearly 50 percent in the competitiveness of British goods relative to the goods of other industrial nations. This loss of competitiveness, in turn, was a major cause of the recession. The relative importance of policy and of other exogenous events in causing these economic developments is one concern of the authors' analysis.

Buiter and Miller identify three main features of Mrs. Thatcher's economic policies, each of which was clearly enunciated by the new government: (1) a steady, and gradually slowing, growth in sterling M3, to be achieved by a steady reduction in the government budget deficit, which in the United Kingdom is described as the public sector borrowing requirement (PSBR); (2) a reduction in personal and business income tax rates coupled with an increase in indirect taxes, particularly the value added tax; (3) a renouncement of incomes policies as a means of directly influencing wage and price decisions. The authors deliver a mixed verdict on how these policies were implemented and on how much sense they made.

They sharply criticize the commitment to growth targets for sterling M3 and the attempt to achieve those targets by reducing the PSBR. They point out that sterling M3, which depends importantly on the volume of bank lending, is not linked to the PSBR and, indeed, is largely beyond the direct control of the authorities unless they are prepared to manipulate the interest rates banks can pay relative to market interest rates—a form of interference the government explicitly abandoned. When sterling M3 grew by 17 to 19 percent a year during the government's first two years, compared with a target range of 7 to 11 percent, any expectational or symbolic significance there might have been in meeting announced targets for money growth was lost. Nonetheless, monetary policy was restrictive if measured by a variety of other indicators, including the real monetary base or real M1, both of which have declined in each quarter since the Thatcher government came to power, and real interest rates, which have risen sharply. At the same time, the thrust of fiscal policy became successively tighter as the growing economic recession automatically enlarged the deficit and, in response, the government reduced discretionary budget expenditures in an attempt to contain it.

The increase in the value added tax added four points to the price level

and thus to the recorded inflation rate in the retail price index during the first year of the new government. This was one shock to the price level that could have been avoided. The second shock was the 25 percent increase in wages that the Thatcher government granted public employees when it first took office, fulfilling a campaign pledge that it would go along with the wage increase planned by the outgoing Labour government. The third exogenous shock that pushed up the price level in 1979–80 was rising OPEC oil prices.

Buiter and Miller devote special attention to oil because of the growing importance of North Sea reserves and production to the British economy. Some observers, and some discussants at the meeting, reasoned that North Sea oil was an important cause of the appreciation of the pound sterling and the corresponding loss of competitiveness that occurred. The authors, however, assign North Sea oil a minor role in this regard. They acknowledge several avenues through which North Sea oil and the 1979 increases in OPEC oil prices (OPEC-2) would lead to some loss of competitiveness by the United Kingdom relative to industrial nations that are not self-sufficient in oil: the increased permanent income provided by North Sea oil, the greater attractiveness of sterling for international investors resulting from oil self-sufficiency, and the expansion in exports that oil importing nations must achieve to pay for their enlarged oil costs. But they estimate that all these effects together cannot account for much of the loss of competitiveness of nearly 50 percent that occurred between 1979:1 and 1981:1.

Instead, Buiter and Miller reason that monetary policy was the main cause of the appreciation in the pound sterling, explaining that and other economic developments of this period along the lines of the overshooting model presented by Dornbusch and Krugman (*BPEA, 3:1976*). In their view, money was expected to be tight under Mrs. Thatcher, and this expectation was reflected promptly in higher interest rates and a rising exchange rate. Because inflation did not slow, and actually worsened during the first year under the new government, the real exchange rate appreciated sharply, reducing the demand for British exports and provoking a massive reduction in inventory accumulation and production. Thus the authors explain the deep recession by three proximate causes: tight monetary policy, operating largely through the exchange rate; tight fiscal policy brought on partly through procyclical attempts to offset the automatic

fiscal stabilizers that were enlarging the PSBR; and exogenous price increases from oil, value added taxes, and government wages that contributed to the real tightening in both monetary and fiscal policy.

The Thatcher experiment can be viewed in several ways. It can be seen either as an attempt to stop inflation at whatever cost or as an attempt to choose particular policies that would be especially effective in fighting inflation with a minimum cost in lost jobs and output. Looked at in this second way, it has been seen as an experiment in monetarism, in policy credibility, and in supply-side economics. Buiter and Miller make no attempt to reach a final verdict on the Thatcher experiment. It is too early to tell whether the current deep recession might have any lasting favorable effects on business efficiency and productivity or how much permanent improvement will have been achieved in the fight against inflation. They do offer some preliminary assessments of the Thatcher policies and the results they have thus far produced.

On the debit side, the economic downturn has already been much deeper than had been generally expected and certainly deeper than the government had ever predicted, at least publicly. Unless the Thatcher experiment is viewed simply as an attempt to stop inflation at whatever cost, the authors conclude policymakers misjudged the adverse effects of their policies on output and employment. If monetarism was seen as a way to cure inflation at minimum cost, it has not succeeded. The steady slowing of the narrower monetary aggregates that was achieved produced no monetarist miracles; it contributed to a massive real output decline rather than a rapid disinflation. The supply-side tax changes, particularly the shift from income tax to value added tax, have thus far mainly added to inflation through the price-wage spiral.

Buiter and Miller observe that, ironically, the Thatcher government's disbelief in incomes policy blinded them to the importance of their own wage settlements. They point out that with nearly one-third of the British work force employed in the public sector, government pay decisions inevitably constitute a form of incomes policy. When the Thatcher government granted 25 percent wage increases in its first year, it established a very high standard for wage increases throughout the economy. It gave only 7½ percent increases in 1981 and is offering only 4 percent for 1982, and these drastic slowdowns represent an important direct influence currently moderating wage-setting throughout the economy. Thus whether regarded as incomes policy or not, the authors argue that the

direct influence of the government on wage increases will be an important factor determining future inflation.

Precisely because it has steadfastly ignored the deepening recession, and has continued a procyclical fiscal policy in the face of it, Buiter and Miller believe the government has gained credibility for its restrictive policies. It is too early to tell whether this credibility will now hasten further disinflation from the rate of 10 percent or so that the economic downturn has achieved and, more importantly, whether it will permit recovery and renewed expansion without inflation speeding up again. The authors are mildly optimistic on this score, noting that the massive downturn has clearly ended the virtually open-ended commitment to accommodation of wage-push inflation that characterized policy during much of the past two decades.

IN RECENT YEARS most industrial economies have been plagued by inflation, high unemployment, and low real growth, and it has become a common view that inflation is bad for the real economy. Yet economists find it difficult to prove whether aggregate demand policy and inflation are to blame for the poor real performance, or whether inflation and the poor real performance are both reflections of other factors such as energy and food price shocks. A connection between inflation and its variability would be one indication that inflation affects real activity and inflicts welfare costs on the economy. If higher inflation is also more variable through time, and presumably harder to predict, it will make returns to investment and saving less certain. The connection between inflation and its variability through time was discussed previously in *Brookings Papers* by Okun (*BPEA, 2:1971*) and by Gordon (*BPEA, 2:1971*). Another cost of less predictable inflation is that it may distort relative prices. In the second paper of this issue, Stanley Fischer directly examines the relation between inflation and the variability of relative prices.

There is no shortage of theoretical models that can explain a statistical relation between inflation and relative price variability. Unfortunately, it is difficult to choose among the models empirically. Yet they have different implications for policy and attribute different welfare significance to inflation and relative price changes. In the market-clearing framework with rational, but not error-free, expectations, unanticipated monetary shocks cause both inflation and relative price changes that distort the allocation of resources. According to this model, misperceptions are

crucial to the generation of welfare costs. However, in models with menu costs—costs of changing prices—or price rigidities, markets are not always in equilibrium and inflation, whether misperceived or not, may distort relative prices. In any of these models, relative price shocks or shifts in the composition of demand or supply can be responsible for both inflation and relative price variability. In a world with price rigidities, such shocks pose a policy dilemma—whether to accept inflation or underutilization of resources.

Fischer's discussion of the range of theoretical possibilities makes it apparent why theory alone is not able to identify the source of current economic difficulties. Fischer also observes that because disturbances sometimes originate with policy and sometimes come from nonpolicy shocks, and because they may be either aggregate or sectoral shocks, it is unlikely that a single stable relation exists between relative price variability and inflation.

Fischer tries to discriminate among the theoretical possibilities using two simple tests. First, he notes that the different theories associate different mathematical "functions" of inflation with relative price variability: in some it is anticipated inflation that matters, in others actual inflation; in some it is the change in inflation that matters, in others it is its level, and so forth. Making use of these distinctions, Fischer regresses relative price variability on the various candidate functions of inflation for different price indexes and sample periods. He finds it possible only to reject the view that anticipated inflation is neutral. Otherwise, he finds considerable instability in the results across sample periods, which suggests that different types of shocks have predominated at different times. Thus the regressions do not discriminate between approaches in which aggregate demand policies producing inflation also produce relative price variability and those approaches in which relative price disturbances are the main source of the relation.

Fischer's second test is for "Granger causality"—a consistent ordering—between inflation and relative price variability. Price changes for food and energy tend to dominate relative price variability when the 1970s are part of the sample. For the measure of variability that includes these commodities, causality runs primarily from variability to inflation during the post-1956 period. When these two prices are removed from the variability measure, his results are consistent with either inflation or variability preceding the other or with both being caused by some other disturbance

to the economy. Thus he regards it as unlikely that either inflation or variability has consistently caused the other.

Fischer turns to vector autoregressions to investigate the interrelations among inflation, relative price variability, and various other variables. This technique regresses each variable on lagged values of itself and all the other variables, thus imposing a minimum of restrictions on the data. Given his interest in considering alternative theories, this is an advantage, and Fischer regards it as a convenient way of summarizing empirical regularities as well as suggesting the predominant channels through which shocks affect the economy. Fischer investigates two vector autoregressive systems. The first system (the six-variable system) includes the full employment surplus, the growth rate of the money supply, the growth rate of real GNP, and the Treasury bill rate, in addition to inflation and relative price variability. The second (the eight-variable system) removes food and fuel prices from the variability measure and includes their price changes separately, thus allowing them to exhibit their own effects on the other variables. The two systems give very different results and indicate that it is important to treat food and energy shocks separately if the behavior of the economy is to be understood by these techniques.

Fischer examines the results contained in the vector autoregressions by tracing the current and future effects on all variables of a disturbance or innovation in a particular variable. In the six-variable system, the high contemporaneous correlation between inflation and relative price variability (which is dominated by food and fuel price shocks) makes it impossible to sort out the causality between these two variables. When food and energy inflation are treated separately in the eight-variable system, and thus are omitted from the measure of variability, innovations in energy prices have a substantial effect on inflation. There is now no significant association between inflation and relative price variability. Furthermore, price variability now has no significant macroeconomic effects.

To indicate the quantitative importance of the various sources of disturbance, Fischer computes variance decompositions that attribute the variation in each variable to its own innovations and to innovations in other variables. He finds that own innovations are overwhelmingly the most important for a small number of periods ahead. When food and fuel prices are included in the variability measure, policy has little effect on either inflation or relative price variability, though they have a modest effect on each other. However, the inflation-relative price subsystem does

have powerful effects on real GNP growth and the Treasury bill rate. Without food and energy prices, variability has virtually no effects on other variables. Inflation is now dominated by its own past history and, to a lesser extent, by energy and food price shocks. Money supply innovations now have a modest impact on relative price variability and no impact on inflation.

Fischer regards these and other results as convincing evidence that energy and food price shocks have dominated the relations among economic variables for this sample period—particularly the relation between the inflation rate and relative price variability. At the same time, the results do not rule out some role for unanticipated monetary disturbances as a cause of relative price variability, since money innovations are the most important variable, apart from energy, affecting it.

A major reason for examining the relation between inflation and relative price variability is the possibility that inflationary shocks caused by policy affect the allocation of resources by distorting relative prices. In the last section of the paper, Fischer directly examines the variability of quantities and finds that it is significantly affected by the variability of relative prices only when the latter includes the energy and food shocks of the 1970s; a regression stopping in 1972 shows no significant relation. Furthermore, he finds no significant association between the variability of quantities and the inflation rate itself, even after 1972. Fischer also provides an illustrative calculation indicating that welfare effects from relative quantity variations are likely to be swamped by the welfare effects from variations in total output. He calculates that the welfare loss from the variation in relative quantities experienced during 1956–80 are many times smaller than the welfare loss from producing 1 percent less GNP.

Monetary and fiscal policy receive neither much credit nor blame for the behavior of real GNP during the period, nor does the inflation rate or the variation of relative prices excluding energy and food. The variation in real GNP is explained by its own past values and by the Treasury bill rate and food and energy prices. Fischer's results thus cast serious doubt on the view that erratic policy has added noise to an otherwise essentailly stable relative price structure. This paper directs the attention of researchers instead toward the analysis of supply shocks and their transmission through a modern industrial economy.

IN THE THIRD ARTICLE of this issue, Alan S. Blinder takes a fresh look at models of inventory behavior. He begins by documenting the important

role that inventory investment plays in cyclical fluctuations of the economy. Although inventory investment averages only about 1 percent of GNP, it almost always accounts for a major share of the decline in GNP during contractions. Indeed, the decline in inventory investment during recessions has often exceeded the decline in total GNP, so that final sales have actually risen while GNP was falling. Blinder shows that, in the seven postwar recessions, inventory change has on average accounted for most of the peak-to-trough decline in GNP. Furthermore, the variance of changes in inventory investment are greater than the variance of changes in any other major component of GNP—consumption, fixed investment, government purchases, or net exports.

Aggregate inventories are a heterogenous collection of raw materials, goods in process, and finished goods at the manufacturing, wholesale, and retail level. Blinder argues that retail trade inventories, which are approximately 20 percent of total inventories, are the most important component in cyclical fluctuations although they have been studied the least. They comprise roughly 40 percent of the total volume of inventory changes, and their variance around trend is almost twice that of any component of manufacturing inventories. The importance of automobile inventories at the retail level is striking. The variance of changes in automobile inventories is roughly as large as that for all manufacturing inventories taken together. Thus Blinder focuses his attention on developing and estimating a model appropriate to retail trade.

Most empirical studies of inventory behavior have utilized the familiar stock-adjustment equation in which there is production smoothing. In this model, production or orders only partially adjust to discrepancies between desired and actual inventories, and inventory fluctuations absorb some or all of short-run fluctuations in sales. According to Blinder, this formulation has both conceptual and empirical difficulties. The theoretical rationale for production smoothing is increasing marginal costs of production or ordering. Blinder believes it is much more plausible that firms, particularly retailers, face economies of scale and therefore find it more economical to produce or order in large lots. Under such circumstances, retailers will not smooth orders; instead, orders will either be zero or sufficient to restore inventories to their desired level.

Blinder also finds it hard to reconcile production smoothing with the basic fact that the variance of production exceeds the variance of sales both for the entire economy and for many individual sectors. Furthermore, the econometric studies that have used the stock-adjustment equa-

tion generally give results that seem inconsistent with the underlying rationale of the model. The coefficient showing the effect of unexpected sales on inventories is typically near zero, indicating that the buffer stock or smoothing motive is relatively unimportant. In addition, the speed of adjustment of actual to desired holdings is estimated to be very slow, with only 10 to 20 percent of a discrepancy being eliminated in a quarter. Such slow adjustment is hard to reconcile with the nearly complete adjustment of production to unexpected sales and with the fact that the biggest swings in inventories are never more than a few weeks of sales.

These empirical difficulties with the conventional econometric specification of inventory equations, together with Blinder's belief in the greater plausibility of economies of scale in ordering, lead him to explore the use of the *S*, *s* model as the basis for empirical analysis of retail inventory behavior. In this model, at the level of decisionmaking in the individual firm, inventories are allowed to dwindle to some minimum level, *s*, at which time a purchase or order is made to restore inventories to their maximum level, *S*. The model's predictions of the effects of changing economic variables on *S* and *s*, and hence on average inventory holdings, are qualitatively similar to the predictions of other theories—average inventory holdings increase with expected sales, but less than proportionately, and are inversely related to interest rates and other holdings costs. However, the dynamics of adjustment are strikingly different from those of the production smoothing-buffer stock model. Depending on where initial holdings are in the *S*, *s* range, increases in sales may lead to higher or lower end-of-period inventories. Inventories completely insulate production or orders from sales some of the time, but at other times a small sale leads to a large order. A firm's orders are likely to be negatively correlated—immediately after an order it is less likely for another order to occur than after several periods in which no orders are made. Blinder notes this behavior is in sharp contrast to that predicted by the typical production smoothing-buffer stock model for which discrepancies between desired and actual inventories are gradually eliminated through time and for which the marginal effect of sales on orders is a constant.

Because of the complex dynamics of the *S*, *s* rule, aggregation of behavior across firms is inherently difficult. An important feature of Blinder's paper is his careful attention to this aggregation problem in econometric specification of his retail inventory equations. He shows analytically, and by simulating a simple version of his model with a small number of firms,

what effect various shocks such as shifts in the distribution of sales or changes in the values of S and s have on aggregate orders and inventories. To assist in estimation, Blinder uses the theoretical results to provide restrictions on the response of orders to expected or unexpected sales and to other variables affecting S and s.

Blinder estimates his simplified S, s model for eight retail sectors and for all retailing. He also estimates the conventional stock-adjustment model using the same data. Blinder views the results as, on balance, favorable to the S, s model. The standard errors of the S, s equations are almost as low as the stock-adjustment model even though the stock of inventories is excluded as an explanatory variable from the S, s equations. There is a notable lack of serial correlation among the errors. However, neither model does very well in producing coefficients that are significant and of the "right" sign. Despite the relatively disappointing empirical results, many discussants at the meeting found the attempt to implement the S, s model extremely interesting and believed it provided a promising framework for future empirical work.

The behavior of inventories during 1979–80 contains two major puzzles. First, inventory investment, which usually peaks more or less contemporaneous with GNP, peaked in 1979:2, three full quarters before GNP, and troughed in 1980:1, the GNP peak. Second, retail inventories were liquidated while sales expanded briskly in 1980:4. The behavior of total inventories in the second half of the year was even more unusual, with substantial liquidation of total stocks occurring in both the third and fourth quarters. Blinder finds no evidence that changes in inventory management, either because of computerization or of lessons learned from the 1973–75 recession, were responsible for significantly lower inventory-sales ratios coming into the recession. However, he does give some credence to the hypothesis that the 1980 recession was forecast further in advance than other recessions, so that inventories were trimmed early; this still leaves developments in the second half of 1980 unexplained.

Blinder examines the predictions of two versions of his model and of the stock-adjustment model for the period from April 1979 to June 1980 to see whether inventory behavior at that time appears as surprising after controlling for the relevant variables—expected and unexpected sales and interest rates. None of the models does well. The rapid buildup of retail inventories from April to July 1979 is missed entirely by the stock-

adjustment model; the *S*, *s* model does better but still underpredicts by about 2½ standard errors. The equations all miss the extremely large liquidation of automobile inventories in September 1979. Less than a third of the rapid inventory liquidation in December 1979 and January 1980 is predicted by the *S*, *s* model, and almost none is predicted by the stock-adjustment model. Thus inventory behavior during the 1980 recession remains a puzzle. Whatever its cause, Blinder notes that this period of rapid inventory liquidation left retailers with lean stocks at the onset of the recession, which may have prevented the 1980 recession from being more severe.

INFLATION continues to be the most prominent problem confronting policymakers in the industrial world. In the fourth article of this issue, Charles L. Schultze uses the history of U.S. business cycles during the twentieth century to enlighten our understanding of the inflation process and to evaluate competing theories for explaining and dealing with inflation. This long time-horizon allows him to compare the postwar period in the United States with earlier years when labor and product markets were different and when the modern instruments of fiscal and monetary policy were unimportant or nonexistent.

Schultze is primarily concerned with analyzing the relation between inflation and aggregate demand relative to supply during normal periods of economic expansion and recession. Thus he treats separately observations from the two world wars and their immediate aftermaths, when economic developments and expectations were so markedly abnormal that the behavior of inflation was altered, and also separates out the Great Depression. He also contrasts the inflationary period that started in the mid-1960s with developments during the rest of the century.

The most persistent and important finding in this historical analysis is that most final goods prices were as insensitive to cyclical variations in demand in the earlier years of the century as they have been in the post–World War II period. Farm prices are an exception: they moved much more procyclically in the prewar years. But the private nonfarm deflator and the consumer price index excluding food—the two broadest measures of price performance in the rest of the economy—both showed about as little cyclical sensitivity before the war as after. The low sensitivity supports much previous research showing that the present inflation is likely to slow only gradually in response to policies restricting demand.

The finding that this insensitivity has been present throughout this century indicates it did not result from policies or institutions that arose in the postwar period.

To characterize the cyclical behavior of prices, Schultze calculates a flexibility coefficient, defined as the acceleration (deceleration) of prices divided by the accompanying acceleration (deceleration) of nominal GNP. Unlike most researchers who rely on annual or quarterly data, he uses the cycle as his basic unit of observation, calculating the average inflation and average GNP growth during successive periods of cyclical expansion and contraction. For the private nonfarm deflator, he estimates flexibility coefficients both by simply averaging the accelerations and decelerations in prices and nominal GNP and by estimating several alternative statistical regressions. The mean changes show prewar and postwar flexibility ranging from 0.15 to 0.19, while the statistical regressions give flexibility estimates between 0.09 and 0.15 over the two periods combined.

The flexibility coefficient indicates what portion of a nominal GNP slowdown corresponds to a slowdown in inflation. An average value of 0.15, for instance, implies that, if inflation were initially 8 percent a year and nominal GNP was growing 12 percent a year, a four percentage point reduction in nominal GNP growth would slow the inflation rate by 0.6 point to 7.4 percent a year. Thus real GNP growth in this example would decrease by 3.4 percentage points, from 4.0 percent to 0.6 percent a year.

Schultze shows that this finding does not square with the new classical (market-clearing) models of macroeconomics, in which supply is not affected by correctly perceived inflation. By contrast, models of the macroeconomy that emphasize price and wage stickiness, with markets failing to clear in response to variations in aggregate demand, can easily account for the low flexibility coefficients that he finds.

Schultze also finds no evidence that accelerating inflation must accompany expansions in output. Over the long history of cyclical expansions that he chronicles, inflation in the private nonfarm sector typically did not grow faster as the expansion continued. It usually speeded up in the first year of expansion, increased only half the time in the second year, and rarely increased in subsequent years on those occasions when expansions lasted longer. He also confirms this proposition with monthly data on consumer and wholesale prices, finding their rates of inflation invariably slowed before expansions peaked.

Schultze does find that the flexibility of wholesale prices was substantially lower in the postwar period than earlier. Wage flexibility also declined, but it had been very low earlier as well. Schultze views the evidence on wage flexibility as consistent with the increasing prevalence of long-term contracts in the unionized sector and conjectures that longer-term commitments between workers and employers have also contributed to reduced wage flexibility. Although these results might appear to contradict the results from the nonfarm deflator, they do not because wholesale prices correspond to such a small portion of value added, and because wage flexibility was so low in both the prewar and postwar periods.

Schultze's main results for the period before the mid-1960s support the simplest of several models of the inflation process that he considers: over normal cyclical periods, variations in the price level are largely determined by variations in real output and employment relative to trend. Thus the inflation rate is approximately related to changes in the unemployment rate when these are appropriately adjusted for structural changes in composition of the work force. He considers two important amendments to this model. One is the addition of a norm rate of inflation described by Perry (*BPEA, 1:1980*). Schultze shows that there were only small norm shifts in the peacetime periods up to the mid-1960s, thus supporting the idea that the norm does not shift readily. Even the wartime inflations did not lead to new inflation plateaus, presumably because the circumstances that led to them were widely recognized as abnormal.

The other amendment he considers is a role for the level of unemployment in explaining inflation—the conventional Phillips curve. Schultze finds that the unemployment level, in addition to unemployment changes, has been important in the postwar period, as most previous research has shown; but the effect of the unemployment level was relatively unimportant or apparently nonexistent in the prewar years.

The 1961–69 expansion contrasts noticeably with other expansions of the century, with inflation gradually accelerating during the last half of the decade. This expansion also differed in other important respects from other peacetime cycles. It lasted more than twice as long as any previous expansion, and unemployment was consistently held at very low levels throughout its last four years. Schultze argues that these differences were responsible for the aberrant price behavior of the period, bringing about a substantial upward shift in the norm rate of inflation.

During the decade of the 1970s, Schultze observes that supply shocks

raised prices in an economy that had already experienced the norm shift from the unique expansion of the late 1960s. These supply shocks, which increased actual inflation, further raised the inflation norm, adding to the size of the problem that now confronts policymakers. He concludes that the same low price flexibility that kept inflation in check throughout most of the century now makes the problem of disinflation especially difficult.

THE SECOND INCREASE in OPEC oil prices in 1979 and the high level of interest rates that has prevailed throughout the world in its aftermath have renewed concerns over the debt burden of developing countries. In the first report of this issue, Robert Solomon reviews the current debt position of less-developed countries, following up his earlier report on the aftermath of OPEC-1 (*BPEA, 2:1977*). By 1978 the current account surplus of OPEC nations as a whole had been reduced to near zero, and the deficit of nonoil developing countries had declined to $38 billion, a smaller percentage of their GNPs than before OPEC-1. In the years between 1974 and 1978 the $180 billion cumulative deficits of nonoil LDCs had been readily financed to the surprise of many observers at the time: indeed, as a group they increased their reserves by $39 billion. This was accomplished by a combination of direct investment by foreigners, official grants and loans to the poorer countries, and $90 billion of net bank lending that was concentrated in the fastest growing LDCs.

Between 1978 and 1980 the OPEC current account surplus grew to $112 billion and the deficit of nonoil LDCs rose by $45 billion to $82 billion, with more than half the increase directly attributable to the cost of oil imports. Solomon shows that, despite these developments, the recent debt positions of LDCs were well within historical benchmarks—except for Brazil, which has resorted to restrictive trade measures and a recession to improve its current account in the face of a large debt burden. But he warns that two important conditions that helped the LDCs after OPEC-1 may not be present in the years ahead. After OPEC-1, expansion in the industrial economies, led by Japan and the United States, provided growing markets for LDC exports; and real interest rates remained low. Stagnation in the industrial economies this time—and, even worse, any protectionism arising from such stagnation—could limit the ability of LDCs to service their debt by expanding exports. Short-term interest rates in the Eurodollar market, which determine LDC borrowing costs, were more than 10 percentage points higher in mid-1981 than they had been

four years earlier, while inflation rates were only slightly higher. Although interest rates have declined in recent months as a result of the U.S. recession, many observers expect them to rise again as the decline in output ends. If real interest rates do not stay down, the LDC debt burden will increase substantially and, Solomon believes, the LDCs will be in serious trouble.

IN THE SECOND REPORT of this issue, Lawrence H. Summers suggests caution in interpreting the reported monthly unemployment rate. Difficulties in seasonally adjusting the rate have been discussed in *Brookings Papers* by Brittain and by Lovell (*BPEA, 1:1976*) and in many other professional forums. But the monthly unemployment rate continues to be one of the most useful indicators of cyclical performance in the economy and is closely followed by politicians and analysts. Summers does not reopen the conceptual issues surrounding the unemployment rate. But he does estimate, for the first time, the combined effect of uncertainty in the published monthly figures that arises from response error, sampling error, and seasonal adjustment error.

Taking into account all errors, Summers estimates that the standard error of monthly changes in the rate is 0.22 percentage point. This implies an interval of 0.44 point on either side of the observed change—an interval nearly one point wide—is needed to bracket the true change with 95 percent confidence. This range of uncertainty is not greatly reduced by averaging adjacent months, and only narrows substantially with annual data for which seasonal adjustment is not a source of error. Despite the range of uncertainty about the actual rate, Summers notes that the reported rate is the best available point estimate of unemployment. When the reported rate moves up 0.22 point in a month, there are five chances in six that some increase actually occurred (although much of this probability reflects changes that are too small to alter the rate calculated to one decimal point). In conclusion, Summers urges analysts and policymakers to examine alternative labor market indicators, such as employment from the establishment survey and unemployment insurance claims, in addition to the monthly unemployment rate.