GEORGE L. PERRY
Brookings Institution

Policy Alternatives for 1974

ECONOMISTS are accustomed to analyzing the effects of aggregate levels of activity on prices. In the past two years, they have had the unaccustomed task of analyzing the effects of price changes on the aggregate level of activity. The problems started in early 1973 with the food price runup, the switch to Phase III of the controls program, and the devaluation of the dollar, and accelerated with the quadrupling of world petroleum prices since the summer of 1973. Primarily as a result of these events, aggregate-demand management has had to contend with an explosion of prices that has been unprecedented for at least a generation in size and persistence and, more unusual, in redistributive effects on purchasing power.

Inflation in the postwar United States has not generally involved substantial losses of real income by wage earners. In the aggregate, the excess of wage increases over price increases has been fairly constant, resulting in a correspondingly steady improvement in average real wages. However, during 1973 and 1974, real average hourly earnings in the private nonfarm sector fell by 5 percent. This decline compares with a *rise* of about the same amount that would have been predicted from the average of postwar experience. Part of the decline represented a redistribution of income to the farm sector of the economy. Other parts corresponded to the worsening terms of trade resulting from devaluation and to a widening of profit margins in the domestic business sector that followed the end of Phase II con-

Note: I am grateful to Jan Broekhuis for research assistance.

trols.[1] And a large part, particularly during 1974, was due to a redistribution of income to foreign and domestic oil producers.

Such redistributions affect aggregate demand if the gainers and losers have different propensities to spend on U.S. goods and services. For a variety of reasons, developments before the surge in oil prices did not clearly call for a deliberate restoration of the consumer purchasing power that had been lost to inflation: Some capacity had to be diverted to expanding the nation's trade surplus. The farm sector was expected to enlarge its capital outlays as well as consumption spending, and much of the 1973 shift of income in its favor was expected to reverse itself. Some price increases during Phase III reflected the restoration of normal relations between wages and prices. And finally, unemployment was below 5 percent and declining gradually until late in the year. On balance, it was hard to make a case for an expansionary shift in aggregate-demand policy during most of 1973.

The situation changed drastically once the rise in world oil prices began. In the fourth quarter of 1973, unemployment started rising and real final sales dropped. Most important, by the end of 1974, the increase in oil prices had added an estimated $37 billion to the annual cost of petroleum products used in the United States.[2] A rise this big could not have been projected from the price increases already in place as of the first of the year; but even that early, a rise of $20 billion could have been foreseen.[3] In addition to destroying consumer purchasing power, by the end of the year these price increases had a further impact on aggregate demand by adding an estimated 2.6 percent to the demand for money.[4]

Noticeable offsets to these depressing effects of high oil prices could not have been expected on balance. Exports to oil producers could rise by only a small fraction of the higher import bill, especially in the short run. The expected rise in real investment in the domestic oil and coal industries would be limited by material and manpower shortages and fully balanced

1. The prospect of this widening was discussed by Robert J. Gordon, "The Response of Wages and Prices to the First Two Years of Controls," *BPEA* (3:1973), pp. 765–78.

2. George L. Perry, "The Petroleum Crisis and the U.S. Economy," paper prepared for the Conference on the Impact of Higher Oil Prices on the World Economy (Brookings Institution, November 1974; processed).

3. Walter W. Heller and George L. Perry, "The U.S. Economic Outlook for 1974" (National City Bank of Minneapolis, January 8, 1974; processed).

4. This estimate assumes that money demand has a price elasticity of 1.0 on a price index for GNP plus imports.

by cutbacks in the expansion plans of utilities that were already apparent at the first of the year. Meanwhile, automobile production was slumping badly and, in the face of sharply higher gasoline prices, was likely to remain even weaker than the decline in real income would account for.

Policy Responses

Neither fiscal nor monetary policies offset the depressing impact of higher oil prices during 1974. Spending in fiscal year 1974 ended up $7 billion *below* the original budget estimate, and the full employment surplus was allowed to rise steadily from $7.7 billion in the third quarter of 1973 to $30.4 billion four quarters later.[5] After declining in the first two months of the year, interest rates rose very rapidly into midsummer. The federal funds rate rebounded from a low of 8.8 percent in early March to a brief peak of 13.5 percent four months later. Commercial paper rates rose from 7¾ percent to nearly 12 percent over a similar period and averaged 11.5 percent in the third quarter. The money supply never grew fast enough to keep pace with inflation and almost completely leveled off during the summer months.

Using the public version of the SSRC-MIT-Penn (SMP) model, table 1 presents estimates of the difference some alternative policies would have made in economic performance since the oil crisis. Several remarks are in order concerning these estimates. First, no attempt was made to benefit from perfect hindsight to find an optimal policy. Indeed, with the economy experiencing inflation alongside falling real output, it would be hard to get agreement on the target for an optimal policy. The policy alternatives tried here are those corresponding roughly to the kinds of proposals that were made during 1974 by outside observers. Second, the estimates are based on a particular model and reflect its particular characteristics. Compared with my own view of the world, the model gives somewhat weaker responses to fiscal policy and stronger responses to the money supply. However, for a combined policy containing fiscal and monetary actions working in the same direction, its overall GNP response appears reasonable. Third, the

5. *Economic Report of the President together with the Annual Report of the Council of Economic Advisers, February 1975*, p. 64. Part of this rise was clearly inadvertent. As the *Report* indicates, full employment receipts in the third quarter of 1974 would have been $5 billion to $7 billion lower without the extraordinary inventory valuation adjustment estimated for that quarter (p. 63).

model erred substantially in tracking actual developments in 1974, just as we human forecasters did. Accordingly, after presenting results from the model, I offer some conjectures on how these errors might have been smaller under alternative policies, and how the model's projections of alternative policies might be amended.

For monetary policy, three alternatives are modeled: (1) a constant 6 percent rate of money growth starting in the fourth quarter of 1973, right after the oil embargo; (2) money growth of 6 percent plus the percentage required by increases in oil prices each quarter;[6] and (3) a constant 7 percent interest rate on commercial paper, achieved by allowing the rate to continue the decline that started early in 1974 until it reaches 7 percent at the end of the first quarter of that year.

For fiscal policy, the only alternative modeled is a $20 billion reduction in personal taxes starting in the first quarter of 1974. Since, unlike monetary policy, fiscal measures cannot realistically be adapted quarterly to economic changes, this alternative represents a compromise in several directions. It is a smaller tax cut than the ultimate loss in purchasing power due to oil prices, but about large enough to offset the loss projected at the start of the year. It also assumes more rapid passage of tax-cut legislation than is reasonable. But taken as a proxy for changing the full employment surplus in the budget, it is not unrealistically fast. Part of the rise that occurred in the surplus could have been headed off at almost any time by avoiding the curtailment of scheduled expenditure programs.

MONETARY POLICIES

The monetarist policy of steady 6 percent growth in the money supply (first bank, table 1) produces an estimated path for the economy only slightly different from that actually followed. Actual money growth was faster than 6 percent in the first three quarters of the projection period, and slower thereafter.[7] Real GNP is slightly lower with the 6 percent rule in all

6. The addition to money demand is assumed equal to the rise in final sales directly attributable to the increase in oil prices ($37 billion by the last half of 1974) taken as a percent of GNP. Estimates of the increases in final sales resulting from oil-price increases are from Perry, "Petroleum Crisis."

7. In the SMP model, a quarter's money supply is defined as its level at the end of a quarter. For example, for the fourth quarter, the estimate is made by averaging the December and January levels. This dating gives somewhat different quarterly averages and changes from other datings that are commonly used.

Table 1. Increments in Selected Economic Indicators from Alternative Economic Policies, Quarterly, 1973:4–1975:1

Policy and quarter	Gross national product		Private nonfarm business deflator (percent)	Commercial paper rate (percentage points)	Money supply (percent)	Unemployment rate (percentage points)
	Current dollars (billions)	1958 dollars (percent)				
6 percent growth in money supply						
1973:4	−0.8	−0.1	0.0	0.4	−0.4	0.0
1974:1	−2.1	−0.2	0.0	0.8	−0.7	0.0
2	−4.2	−0.3	0.0	0.8	−0.8	0.1
3	−4.4	−0.3	0.0	−0.6	0.2	0.1
4	−3.1	−0.2	0.0	−2.1	1.1	0.1
1975:1	−2.2	−0.1	0.0	−1.5	1.0	0.0
6 percent growth in money supply plus markup to cover increase in fuel prices						
1973:4	0.0	0.0	0.0	0.0	0.0	0.0
1974:1	1.5	0.1	0.0	−0.8	1.0	0.0
2	3.8	0.3	0.0	−1.4	1.6	−0.1
3	9.0	0.7	0.0	−2.5	2.7	−0.2
4	15.6	1.1	0.1	−3.3	3.6	−0.3
1975:1	21.2	1.5	0.1	−2.0	3.6	−0.4
Commercial paper rate fixed at 7 percent						
1973:4	0.0	0.0	0.0	0.0	0.0	0.0
1974:1	0.5	0.0	0.0	−0.3	0.3	0.0
2	6.4	0.5	0.0	−3.5	4.9	−0.1
3	13.4	1.0	0.0	−4.5	6.2	−0.3
4	19.7	1.4	0.0	−2.1	4.2	−0.4
1975:1	25.0	1.7	0.0	0.4	2.2	−0.5

quarters, but the difference from the actual path of output is small. Interest rates rise even faster than they actually did during the first half of 1974, but are noticeably lower than actual by year's end.

If the growth in the money supply had departed from the 6 percent path merely to the extent of accommodating the expanded demand for money required by oil-price increases (second bank, table 1), the economy would have been noticeably stronger during 1974, although unemployment still would have reached 8 percent by the first quarter of 1975. The commercial paper rate would have remained about 2 percentage points below the levels

Table 1 (*continued*)

Policy and quarter	*Gross national product*		*Private nonfarm business deflator (percent)*	*Commercial paper rate (percentage points)*	*Money supply (percent)*	*Unemployment rate (percentage points)*
	Current dollars (billions)	*1958 dollars (percent)*				
$20 billion reduction in personal income taxes						
1973:4	0.0	0.0	0.0	0.0	0.0	0.0
1974:1	5.6	0.4	0.0	0.3	0.0	−0.1
2	10.8	0.8	0.1	0.7	0.0	−0.3
3	13.1	0.8	0.1	1.2	0.0	−0.3
4	14.4	0.8	0.2	1.6	0.0	−0.4
1975:1	15.1	0.8	0.2	1.3	0.0	−0.3
Markup in growth of money supply to cover increase in fuel prices plus tax reduction						
1973:4	0.0	0.0	0.0	0.0	0.0	0.0
1974:1	7.2	0.5	0.0	−0.6	1.0	−0.1
2	15.1	1.1	0.1	−0.9	1.6	−0.4
3	23.3	1.6	0.2	−1.6	2.7	−0.6
4	32.4	2.1	0.3	−2.2	3.6	−0.7
1975:1	39.8	2.5	0.4	−1.0	3.6	−0.8
Commercial paper rate fixed at 7 percent plus tax reduction						
1973:4	0.0	0.0	0.0	0.0	0.0	0.0
1974:1	6.6	0.5	0.0	−0.3	0.6	−0.1
2	18.9	1.4	0.1	−3.5	5.5	−0.4
3	30.9	2.1	0.2	−4.5	7.3	−0.7
4	42.1	2.8	0.4	−2.1	5.6	−0.9
1975:1	51.8	3.3	0.5	0.4	4.0	−1.1

Source: Projections from public version of the SSRC-MIT-Penn model.

actually reached in the second and third quarters of 1974, averaging 9 percent in the peak summer quarter.

Only a slightly stronger economic performance results from allowing the commercial paper rate to decline to 7 percent during the first quarter of 1974 and stay there (third bank, table 1). The model estimates an extremely volatile path of money growth to accompany this policy: very rapid growth in the second quarter of 1974 and a substantial decline in the last two quar-

ters of the projection. There are two things to note about this result: First, although money growth would have departed from its actual path in the direction indicated by the model projection, the quantitative estimates also reflect the erratic behavior of money demand during the year and should probably be modified. Such modification is discussed below in connection with table 2. Second, this result exposes the inadequacy of a policy designed to hold short-term interest rates fixed at a time, like the end of 1974, when real product demand is falling sharply. Although the constant-interest-rate policy would have put real GNP an estimated 1.7 percent above the actual level in the first quarter of 1975, it still permits a substantial rate of decline in real GNP after the third quarter of 1974.

TAX REDUCTION

In the model projections, the effectiveness of a $20 billion cut in personal income taxes depends heavily on the monetary policy that accompanies it. The tax cut alone, with the money supply constrained to the levels actually experienced, adds $11 billion to GNP by the second quarter of the year; but the increment rises only to $15 billion three quarters later (fourth bank, table 1). While consumer spending rises promptly, the lack of any accommodation by monetary policy drives interest rates up even faster than their actual rise, with the commercial paper rate averaging 13 percent in the third quarter of the year. Investment demands are choked off, sharply restricting the improvement in total GNP.

Combining the tax reduction with a monetary policy that accommodates the increases in fuel prices on top of the 6 percent growth path gives a substantially bigger lift to real output and employment (fifth bank, table 1). Interest rates do not rise nearly as sharply during the year with this policy mix, peaking about 1½ points below the levels actually reached in the third quarter of the year and staying below actual rates throughout the projection period. GNP grows steadily relative to its actual path every quarter, with a $40 billion difference by the first quarter of 1975, or a 2.5 percent higher real GNP.

The combination of the tax cut with a monetary policy that holds the commercial paper rate at 7 percent from the second quarter of 1974 on is easily the most supportive of the policy alternatives (sixth bank, table 1). GNP is $52 billion higher than actual in 1975:1, representing 3.3 percent more real output and 0.5 percent higher prices, as measured by the private

nonfarm business deflator. The unemployment rate is a full point lower than actual by the start of 1975 under this alternative. The increment associated with this combined tax-and-interest-rate policy is greater than the sum of the effects of a tax cut and fixed interest rates taken separately. The combined policy involves a slightly faster growth in the money supply throughout; by the first quarter of 1975, the money supply is 4.0 percent greater than actual and 1.8 percent greater than its level with the policy of fixing the commercial paper rate alone.

ALTERNATIVE ECONOMIC PATH

In table 2, the results of the policy combining a $20 billion tax reduction and a fixed rate on commercial paper are laid out more fully. The table compares the actual paths of GNP, its major spending components, and other key economic variables, with their estimated paths under the alternative policy. The projections for the alternative policy embody the same errors experienced by the model in tracking the actual path of GNP over the interval shown. In fact, had the alternative policy actually been pursued, some of the surprises in the economy that led to these errors would not have been the same, and the model projections should be amended accordingly. In particular, inventory accumulation, growth in the money supply, and the unemployment rate may not be well represented for the alternative policy because of the nature of the surprises in the economy during 1974. In turn, modifying these variables would alter the projected GNP as well. In addition to the amendments suggested by model errors in 1974, the structure of the model may not adequately capture the extent to which the downward momentum of the economy in late 1974 would have been avoided by a stronger expansion earlier in the year.

Money demand and interest rates. The model uses the Treasury bill rate in the money-demand equation. The commercial paper rate is estimated from the Treasury bill rate. For the first half of 1974, the model predicted actual money demand reasonably well, given the actual path of Treasury bill rates and GNP. However, the spread between the commercial paper rate and the Treasury bill rate widened sharply, to more than 4 percentage points in July. This gap represented a substantial error in the prediction of commercial paper rates in the model. Partly as a result of this error, a huge increment to the growth of the money supply is projected for the alternative policy. In the second quarter, the commercial paper rate is 3½ percentage

Table 2. Performance of Selected Economic Indicators under Actual and Alternative Policies, Quarterly, 1973:4–1975:1

Policy and quarter	Billions of dollars								Percent			
	Gross national product	Consumption	Business fixed investment	Residential construction	Inventory change	Net exports	Government purchases	Gross national product (1958 dollars)	Private nonfarm business deflator[a]	Commercial paper rate	Unemployment rate	Growth in money supply[a]
Actual												
1973:4	1,344.0	823.9	141.9	53.6	28.9	9.3	286.4	845.7	8.7	9.0	4.6	7.8
1974:1	1,358.8	840.6	145.2	48.4	16.9	11.3	296.3	830.5	13.2	8.3	5.1	7.1
2	1,383.8	869.1	149.4	48.8	13.5	−1.5	304.4	827.1	14.4	10.5	5.1	6.5
3	1,416.3	901.3	150.9	46.2	8.7	−3.1	312.3	823.1	12.8	11.5	5.5	2.0
4	1,430.2	895.8	151.2	40.4	17.8	1.9	323.8	803.8	13.3	9.1	6.6	2.3
1975:1	1,419.2	916.3	147.4	35.2	−18.0	5.4	332.8	782.3	11.3	6.6	8.3	6.4

Commercial paper rate fixed at 7 percent plus $20 billion reduction in personal income taxes												
1973:4	1,344.0	823.9	141.9	53.6	28.9	9.3	286.4	845.7	8.7	9.0	4.6	7.8
1974:1	1,365.4	848.2	145.6	48.5	16.5	9.8	297.2	834.4	13.4	8.0	5.0	9.7
2	1,402.7	881.8	150.8	49.7	16.1	−5.3	309.5	837.9	14.8	7.0	4.7	29.5
3	1,447.2	920.8	154.6	49.2	13.8	−9.3	317.8	839.7	13.4	7.0	4.8	8.8
4	1,472.3	920.3	158.6	45.3	26.2	−5.7	328.2	825.3	13.9	7.0	5.7	−4.5
1975:1	1,471.0	944.7	159.5	40.7	−7.4	−2.9	336.3	807.7	12.0	7.0	7.2	−0.1
Difference												
1973:4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974:1	6.6	7.6	0.4	0.1	−0.4	−1.5	0.9	3.9	0.2	−0.3	−0.1	2.6
2	18.9	12.7	1.4	0.9	2.6	−3.8	5.1	10.8	0.4	−3.5	−0.4	23.0
3	30.9	19.5	3.7	3.0	5.1	−6.2	5.5	16.6	0.6	−4.5	−0.7	6.8
4	42.1	24.5	7.4	4.9	8.4	−7.6	4.4	21.5	0.6	−2.1	−0.9	−6.8
1975:1	51.8	28.4	12.1	5.5	10.6	−8.3	3.5	25.4	0.7	0.4	−1.1	−6.5

Sources: Actual—official federal government data; projection—public version of the SMP model.
a. Percent change at annual rate.

points below its actual levels, and is accompanied by a bill rate an estimated 4.7 percentage points below actual since the prediction error between the two rates is maintained. This difference in the bill rate, along with a $20 billion higher GNP, in turn requires the 23 percent increment in the growth rate of money that is projected in the table: the model projects the money growth required to achieve a bill rate averaging 3½ percent in the second quarter.

In fact, the errors in predicting the commercial paper rate from the bill rate may well have resulted from the dramatic rise in the federal funds rate and the expectation of rising rates that it engendered. With short rates stable, the spread between bills and other short rates would not have widened as it did and the swings in the growth of the money supply would have been far smaller than those projected for the alternative forecast in table 2.

Because it is the bill rate that was out of line with other rates in the middle quarters of 1974, while it is other rates that most heavily affect real activity in the model, the other characteristics of the alternative policy forecast would not change substantially with these amendments to the projected path of money growth.

Inventory accumulation. Large prediction errors are also present for inventory change in 1974. The rate of accumulation in the fourth quarter of the year is underpredicted by about $14 billion, basically representing the unintended building of stocks in that quarter. The increment of $8½ billion to inventory accumulation estimated for the alternative policy leads to a projected accumulation rate of $26 billion. While the motivations for inventory behavior are particularly difficult to untangle, there is little reason to believe that a stronger economy would simply have added $8½ billion of *desired* accumulation on top of the large amount of *unintended* accumulation in that quarter. Predictions about the volatile inventory sector are highly speculative, but it seems more reasonable to believe that accumulation, and GNP, would have been lower than projected for the alternative policy in the fourth quarter of 1974, with the inventory swing between the fourth and first quarters smaller than projected by the model. The recessionary swing in real GNP would also be modified as a result.

Unemployment and prices. During 1974, the unemployment rate remained below predictions based on the path of real output. Okun has conjectured that employers maintained their work force to an unusual degree

on the expectation that output would soon revive.[8] The SMP model reflects the unusually low unemployment rate primarily in large underpredictions of productivity during 1974. Again, the alternative policy projection maintains these underpredictions. But if Okun's conjecture is correct, employers would have been unlikely to keep the same increment of "excessive" labor with output levels that were higher and therefore nearer their expectations. Thus, the unemployment rate probably would not have been lower in the stronger economy by nearly as much as the model predicts. There probably existed the potential for substantially higher production in 1974 without a corresponding lower level of unemployment and greater degree of labor market tightness. This conjecture also implies that disposable income, consumption, and GNP would have been somewhat smaller than projections of the alternative policy in the model.

While this adjustment to the unemployment projection also suggests a smaller increment to the price deflator projected by the model, the predicted effect over a short period would be small enough and confidence in the inflation equations is shaky enough that forecasts here are especially risky. One cannot rule out the possibility that, although unemployment rates would have been somewhat higher than projected, the effect of lower unemployment on prices would have been greater than the model predicts. On the other hand, with somewhat more confidence, one can believe that the greatest part of the double-digit inflation in 1974 was unrelated to unemployment or other aspects of utilization and, furthermore, would not have been passed forward into wages to any great degree. On this view, absent a runaway boom, inflation would have slowed considerably in 1975 in any case, even if not quite so much as it has in fact.

Downward momentum. It is my clear impression that econometric models are generally too sluggish in periods of sharp cyclical swings in the economy. Just as they fail to predict fully the steepness of a recessionary slide, they generally do not "add back" enough GNP when projecting the effects of policies designed to head off the recession. Strong accelerator effects operate to pull the economy down once it begins to slip, and even models that give good estimates of the economy in most quarters will fail to capture these responses. Part of this problem has just been discussed in connection with inventories in late 1974. More generally, a policy mix strong

8. Arthur M. Okun, "Unemployment and Output in 1974," *BPEA* (2:1974), pp. 502–03.

enough to restore normal growth rates during the middle quarters of 1974 might have avoided any decline in GNP thereafter, even though the model will not project that "happy result" since it implies extraordinary add-ons to GNP in the recession quarters and therefore much more GNP response per unit of stimulus than in the immediately preceding quarters. Thus, the model projections that make the recession very hard to avoid may be too gloomy. A policy response that spurred prompt growth in GNP in 1974 could well have paid large dividends in avoidance of the sharp recession that emerged late in the year.

Morals and Messages

The adjustments just discussed apply, in different degrees, to the other model estimates presented in table 1. In particular, the analysis of money demand implies that the policy defined in terms of faster money growth would have lowered the commercial paper rate more than predicted in table 1 and thus stimulated the economy to a greater degree. While such adjustments are worth noting, they do not alter the basic messages of this exercise for policy alternatives during 1974.

Increases in oil prices pushed the economy toward a predictable recession in 1974, and neither fiscal nor monetary policy was adjusted so as to offset their depressing impact. Policies very different from those actually pursued were required to confine the downturn to the first quarter of 1974. The strongest policy considered, combining a stable 7 percent rate on commercial paper after the first quarter with a $20 billion tax cut effective the first of the year, would have kept real GNP crawling forward in the second and third quarters. A bigger push would have been needed to avoid the steep decline that followed.

For what it is worth, the 6 percent track for money growth would have weakened the economy even more than the actual experience. And the similarly stubborn constant-interest-rate policy would have been obviously perverse by the end of 1974, since it could contribute nothing to heading off the economic tailspin.

The model plainly shows that, if the economy needs a push, it pays to use both hands. The strongest, combined, policy lifts output by considerably more than the sum of the separate lifts from holding interest rates constant and cutting taxes. This commonsense result would, of course, hold even if

one believed that tax cuts were somewhat more effective than they are estimated to be in the SMP model.

For many reasons, this point is valid even though, in principle, more stimulus or restraint from one instrument can substitute for less from another for purposes of stabilizing aggregate output. Policies differ in their timing, and fiscal measures can give the economy a prompter lift. Whether or not they ought to be, policymakers may be restrained from using a sole instrument very aggressively: if there is already some reluctance to apply the rates of money growth that rapid expansion will require even with the assistance of tax cuts, one would have to expect still more resistance to the greater money growth that would be required without an expansive fiscal policy. Similarly, the budget deficit, and political concerns about it, would have to be deeper if fiscal policy had to work alone. More concretely, the uncertainty about how much stimulus or restraint is correct grows when only one instrument is used. This point, originally analyzed by Brainard,[9] becomes especially relevant when the economy is far from its desired level, as it is today, and the required policy change is large.

A year buffeted by all the unusual developments of 1974 shows pragmatism clearly dominating simple rules. Although no search was made in this paper for an optimal policy, if economic goals had given weight to avoiding deep recession, its ingredients would have included early fiscal stimulus, avoidance of the sharp runup in interest rates during the first half of 1974, and sharply lower interest rates once the weakness later in the year became evident.

Discussion

A NUMBER of participants commented on the performance of various sectors, offering their amendments to Okun's interpretations. James Tobin felt that Okun tended to overstate the strength of plant and equipment expenditures in 1974 by focusing on current-dollar magnitudes. In real terms, capital expenditures had turned out to be sharply lower than businessmen's expectations early in the year. R. J. Gordon suggested that the end of price

9. William Brainard, "Uncertainty and the Effectiveness of Policy," *American Economic Review*, vol. 57 (May 1967), pp. 411–25.

controls was an important contributor to the high inflation rate of the second half of 1974 and that the effect was predictable from the record of price-cost behavior during the controls period. Gardner Ackley saw links among the unusual strength of inventory accumulation during 1974, the price explosion following the removal of controls, and shortages or supply constraints in important basic materials. He viewed much of the inventory building as speculative—although more to ensure supplies than to profit from rising prices. Those efforts to accumulate supplies kept materials scarce and prices high.

Saul Hymans cautioned Okun against heavy reliance on the component shares of disposable personal income as an explanation for the performance of consumption. Any model that relied solely on concurrent changes in disposable income would be a poor predictor of consumer outlays. A satisfactory model must include additional variables and lag structures. Okun agreed in principle, but suggested that, when the shares display a consistent cyclical pattern, they can provide a cross-check on more sophisticated equations.

F. Thomas Juster inferred from the performance of consumption in 1974 that saving behavior could not be explained well solely by income. In his research, a variable reflecting the price expectations of consumers, as reported in surveys, helps a great deal to explain saving behavior from 1970 on. Consumer expectations of prices lagged behind actual price movements in 1974, and unanticipated inflation pushed up the saving rate. With inflation now slowing down, that variable points to a particularly strong recovery of consumption in 1976 as the saving rate drops sharply. Okun responded that the 1976 experience should be a good test of Juster's success in fitting the saving rate to the acceleration in the inflation rate. He felt that the results to date were impressive but might be coincidental. The saving rate jumped in 1970, and, except for 1972, has remained high since. Concurrently, the economy has experienced rapid inflation except for a significant deceleration in 1972.

Franco Modigliani emphasized the point made by both Perry and Okun that monetary policy early in 1974 was a major force in the economic contraction in the second half of the year, most notably in the housing collapse. Michael Wachter doubted that, in the fall of 1974, monetary and fiscal authorities could have instituted the expansionary policies simulated by Perry because of their uncertain impacts on an economy experiencing a 5.4 percent unemployment rate and a 14 percent inflation rate and because of the general failure to realize that conditions could change so rapidly. While

Perry had mentioned the possibility of threshold effects on real activity, Wachter thought it plausible that the economy was at an inflation threshold in the third quarter. Although the highly restrictive policies that were pursued are difficult to justify, a big stimulative push at that time might conceivably have kept the rate of inflation above 10 percent. Walter Salant commented that errors were made in private policy (such as the pricing of 1975 auto models) in 1974 as well as in fiscal and monetary policy, and that they compounded the problems of forecasting and public policymaking.

Several panel members elaborated on Okun's discussion of forecasting and the 1974 predictions. Juster observed that the ASA-NBER forecasts exhibited consistent turning-point errors throughout 1974; not only the survey's average, but also the most pessimistic (that is, the least inaccurate) forecasts kept predicting an imminent upturn. He interpreted recent forecasting performance as indicating that the profession has a long way to go before it can predict for a world that is not very stable; he urged forecasters to consider the importance of expectational factors when the economic situation is changing rapidly. Tobin suggested that most models are continually being revised to avoid repeating past forecasting errors, and that this process may build in persistence and sluggishness that would preclude accurate forecasting of a major change in activity, upward or downward.

Much of the discussion of the Perry paper centered around the reasonableness and interpretation of the simulation results. John Shoven reminded Perry that the econometric model he had simulated had not predicted a serious recession; he wondered how confident one could be in the results of its simulations of policy alternatives. Joseph Pechman summarized Perry's results as suggesting that the unemployment rate would have been reduced by only a little over 1 percent with an expansive fiscal-monetary combination. Tobin felt that the model might underestimate the constructive impact of timely policy for the same reasons that it underestimated the severity of the recession. Hymans took issue with Perry's methodology in analyzing the results of the model's simulations. He argued that one cannot accept some variables as plausible estimates while rejecting others, since they are all simultaneously determined. Perry accepted this point, but felt justified in highlighting aspects of the simulations with which he was strongly dissatisfied. Agreeing with Tobin on the problem of sluggishness, he expressed particular concern about the lack of adequate accelerators in the model. He stressed that the simulations were more instructive in assessing the relative impacts of alternative policy measures than in forecasting particular variables.