

**THE ANNUAL REPORT
OF THE
COUNCIL OF ECONOMIC ADVISERS**

LETTER OF TRANSMITTAL

COUNCIL OF ECONOMIC ADVISERS,

Washington, D.C., January 28, 1974.

THE PRESIDENT:

SIR: The Council of Economic Advisers herewith submits its Annual Report, January 1974, in accordance with Section 4(c)(2) of the Employment Act of 1946.

Respectfully,



HERBERT STEIN,
Chairman.



WILLIAM J. FELLNER.



GARY L. SEEVERS.

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CHAPTER 1

Economic Problems and Policies

FOR EIGHT YEARS economic policy and the news about the economy have been dominated by inflation. The story has been a frustrating one. Over the period from the end of 1965 to the end of 1973 consumer prices rose by 45 percent, or at an average rate of 4.8 percent a year. There were fluctuations. Twice during the period the rate of inflation declined significantly. But in the last of the 8 years the rate of inflation was higher than in any of the others. During the 8 years the inflation came in various forms—sometimes led by wages, sometimes by prices, by foods, by oil; sometimes it was domestic and sometimes imported. Many programs have been launched to stop it—without durable success. Inflation seemed a Hydra-headed monster, growing two new heads each time one was cut off. The problem was not confined to the United States; indeed inflation was worse in most other countries.

Several important points seem clear to us from the experience of the past 8 years. One is that while continued rapid inflation is not inevitable, the course of unwinding it will be long and difficult. There is by now a great deal of inflation built into our system. For one thing, both workers and employers are now used to high increases in money wages which reflect the expectation of rapid inflation, and only gradually can these be moderated. Inflation is similarly built into the level of interest rates. The public is highly sensitive to inflation and reacts in an inflationary way to any news which confirms its expectation of inflation. Against this background, to hope that we can “wring the inflation out of the system” by the end of some short period is to assure disappointment. Whoever undertakes now to fight inflation must be prepared to stay the long course. We think it is necessary to do this, and also to recognize why we must do it. Experience extending over almost a decade teaches us that if we do not fight inflation effectively it will accelerate.

The American people have prospered over the past 8 years. Our real incomes have risen. Our real consumption expenditures have risen, and our real assets have risen, in total and per capita. These are facts of great importance. But they do not relieve us of the need to bring inflation under control, and to accept the cost of doing so for the sake of avoiding the greater costs of an accelerating inflation.

We have specific problems, too, aside from the general inflation problem. There are many things the American people want to do, collectively or individually. They want to maintain an adequate defense, to clean up the environment, to provide more generously for the disadvantaged, to improve standards of health, and also to continue to raise the quality of their lives in all the ways that involve more private consumption. At the same time, we see unusual obstacles to more rapid increases of production—the increased costs of energy being the most obvious one at present. Beneath the tide of inflation the basic economic problem of increasing production goes on and requires attention, even in a country as rich as ours.

The problems of specific price increases must be distinguished from the general inflation problem. Increases in some individual product or service prices beyond the average are essential, if we are to maintain supplies and allocate shortages. The attempt to suppress the increase of particular prices, while it may be necessary in emergencies, is in general not an effective way to combat inflation and is harmful to production.

WHERE WE STAND AT THE OUTSET OF 1974

We enter 1974 in a condition of high inflation and in the early stage of a slowdown, one result of which will be to reduce the rate of inflation, although not immediately. All the features of this situation—the high rate of inflation, the slowdown of output, and the slowdown of demand—are intensified by the higher prices and reduced imports of oil. Moreover, the oil situation makes the period ahead even more than usually difficult to predict. Decisions of the oil-exporting countries, resulting from a mixture of economics and politics, cannot be foreseen. American businesses and consumers are faced with unprecedented increases in relative prices and curtailments in supply, and no one can tell just how they will react in their consumption and investment. Other oil-importing countries will be seriously affected by price and supply developments in oil, and their responses will have repercussions here.

The rapid price and wage increases that were being experienced at the end of 1973 will undoubtedly be carried on and passed through in the early part of 1974. In the fourth quarter of last year, wholesale industrial prices other than for energy products rose at an annual rate in excess of 11 percent. Much of this rise will appear in retail prices in early 1974. Similarly, large increases that have already occurred in crude oil prices have not yet been fully reflected in retail prices. Wholesale food prices were also rising as the year ended, and the outlook was that tight supplies would boost retail prices in the first months of 1974. The rate of wage increases had been drifting up during 1973, and since the cost of living was also continuing to rise rapidly, this trend of wages was unlikely to be reversed soon.

Thus, a high rate of price and wage increases, although possibly not as high a rate as in 1973, seems inevitable in the first part of 1974. But

beyond the early months, the course of inflation is as yet undetermined. Prices of oil and related products will not go on rising at the rate of late 1973 and early 1974, but will presumably reach some new high level from which they will be no more likely to rise than to fall. There is also a prospect of larger world food supplies. In general, as we go through the year the course of prices will be less and less a reverberation of what happened in 1973 and increasingly the outcome of events and policies in 1974.

The year 1974 also began with demand rising less rapidly than during most of 1973 and production possibly not rising at all. In the fourth quarter of 1973, total expenditures for the purchase of output rose at an annual rate of about 9½ percent, compared to about 12 percent in the year ending in the third quarter. Real output rose at the rate of about 1 percent after an increase of about 5½ percent in the preceding year. There seems little doubt that this sluggishness will continue in the early part of 1974 and that total output may decline. Automobile production is being cut back sharply, partly because of the effect of high prices and shortages of gasoline on the demand for large cars. The recent weakness of housing starts and permits indicates declining residential construction during the first part of the year. The high prices for oil being paid to foreign suppliers will hold down expenditures for U.S. output. There will be some cases, although one cannot be sure how many, in which production is held back by shortages of energy or energy-related materials.

Just as a high inflation rate seems predetermined for the early part of the year, so does a fairly low rate of increase of production, which might in fact for a while be negative. But the situation at the beginning of the year does not appear to presage a very long or severe slowdown. There are a number of factors tending to support the expansion of the economy, including substantial planned increases of business fixed investment. How soon a revival will come, and how strong it will be, also depend on events and policies of 1974.

GENERAL ECONOMIC IMPLICATIONS OF THE ENERGY PROBLEM

The nature of the problems with which policy has to contend in 1974 depends substantially on the energy situation—on the volume of oil imports, on their prices, and on the policies adopted in the United States. Total imports of oil expected in 1974, before measures were taken by some exporting countries beginning in October 1973 to curtail shipments and raise prices, were about 40 percent of expected petroleum consumption in 1974. This was about 20 percent of expected energy consumption in 1974, since petroleum would have supplied about 50 percent of total energy use. The countries participating in the embargo of the United States had been expected to supply, directly and indirectly, about 16 percent of our petroleum use and 8 percent of our energy use. This would have been the extent of the initial supply reduction if the embargo had been fully effective.

This curtailment of supply does, of course, lead to adaptations. Prices of oil imported into the United States are free from price control, as are prices of oil produced by certain small (stripper) wells and of "new" oil produced by other wells in excess of their base period production. These prices can be passed on in prices of refined products. Thus, a shortage of oil in the United States raises the prices of oil in these categories and increases the supply, both of imported oil and of domestic oil, offsetting some of the initial effects of the curtailment. Also the higher prices reduce the quantity consumers and businesses want to buy. Therefore, the whole initial curtailment does not appear as a gap between desired quantities and available quantities.

In time, and despite the existence of the price controls, prices might rise enough to clear the market, and there would be no "shortage" in the sense of inability to buy petroleum products at the prevailing prices. The uncontrolled prices, whether of imports, of "new" oil, or of oil from stripper wells, would rise to a level which, when averaged in with the controlled prices, would equate the quantities demanded and supplied. Although prices of petroleum products in the United States rose very rapidly after October 1973, and this apparently served to cut down the desired consumption, they had not risen enough by the end of January to eliminate shortages. The impact of the remaining shortages is being distributed through the economy by allocations and other controls, by voluntary conservation measures, and to some extent by a first-come-first-served process.

The Secretary of State has recently expressed the hope that the embargo on the export of oil to the United States from some Arab countries would soon be lifted. The effect of such action on the U.S. economy would depend upon the price and production policies of the oil-exporting countries. The higher their production levels, and the lower the world price, the smaller will be the current economic problems for the United States and for other importing countries. In any case it seems necessary to reckon with a significantly higher price for imported oil in 1974 than in 1973, although how much higher is uncertain. This conclusion would imply smaller U.S. imports than would otherwise have occurred, but a larger dollar cost of imports. It is probably also reasonable to assume that the curtailment would increasingly be reflected in higher domestic prices rather than in shortages at the existing prices.

This combination of limited oil imports and higher prices will have four kinds of economic effects in the United States and in other oil-importing countries.

1. *Limitation on capacity to produce.* Beyond some point, inadequacy in the supply of energy can make it impossible to produce certain products, or high energy prices can make it impossible to produce certain products at costs at which they can be sold. However, it does not appear that this point will be exceeded or that our capacity to produce will be significantly curtailed by the energy situation. Part of the U.S. energy supply is utilized

directly for consumption, particularly for home heating and for personal transportation. Some is used in industry for lighting or heating that may be convenient but is not necessary for production. In general, it appeared when the embargo began that the initial curtailment of imports could be absorbed out of these "nonproductive" uses without impairing our capacity to produce. This would not have been entirely true, because there would have been shortages of particular products and in particular places. But it did not appear that the output and employment loss resulting from inability to produce would be substantial, although there would be other negative effects. This view has been fortified since it appears that the net curtailment of imports may be less than initially feared. Maintenance of capacity to produce in the presence of import curtailment will depend on limiting consumption use of petroleum products, especially the use of heating oil for homes and gasoline for personal transportation. This will cause inconvenience, although curtailment on the scale foreseen would not cause hardship. Concentration of the available supply in the uses most essential for production and employment will be brought about in part by higher prices. This can be, and is, supplemented by voluntary conservation measures and by mandatory allocations.

2. *Restraint on the demand for output.* The reduced availability and higher price of gasoline will curtail the demand for large automobiles, for the services of motels, and for other tourist services. The shortage of heating oil and gasoline will cut the demand for new houses. How serious these effects are will depend in part on the amount of the cut in oil supplies or on the rise in the price. One should note that the effect of a price rise can be as great as the effect of a shortage in diverting expenditures from oil-related products. All of these effects will also depend on how consumers react, not only in restricting purchases of petroleum-related products but also in switching purchases to other things. The problem is compounded by uncertainties, both about imports and about public policy, which may cause a more negative reaction than the most probable facts would justify.

3. *The real income loss due to costlier energy.* The foregoing are the transitional problems created by the present energy situation. The initial loss of capacity to produce caused by the curtailment of energy supplies will in time be offset by shifts of production in directions that use less energy. The initial loss of demand for output associated with energy will in time be compensated for by a shift of consumers' demands to other products, and possibly by an increase in demand for American products by the oil-exporting countries. In addition to these transitional problems there will be a continuing effect on the real standard of living of the American people as a result of being cut off from low-cost sources of oil. That means we shall have to pay more of our own products or assets to foreigners in exchange for their oil, that we shall have to devote more of our own resources to producing energy domestically, and that we shall have to accept methods of production or forms of

consumption we would not have chosen if more oil had been available at a lower price.

How much these costs will amount to is exceedingly difficult to estimate. A clue to their magnitude is given by the fact that the increased cost of U.S. oil imports due to the oil price rises of October and December 1973 would be less than 1 percent of the gross national product (GNP) in 1974, with a volume of imports that would have occurred at the pre-October prices. This is probably an outside estimate of the costs in 1974 (aside from the transitional costs already noted) because there would be adaptations of various kinds. The amount is large and justifies a strenuous effort to reduce it, by getting the foreign price down and by developing cheaper sources at home. Whether the cost will continue to rise, relative to GNP, will depend on the costs of producing additional amounts of energy from new sources.

4. *Balance of payments and other international consequences.* All of the other oil-importing countries of the world will suffer the effects of the cut in supplies and the increase in prices of oil. In fact, most of these countries will be more seriously affected than the United States, because their imports of oil are larger relative to their total supply of energy and to their total GNP. The position in the Western European countries is expected to be qualitatively similar to that in the United States. The short-run depressing effect on their domestic demand as a result of the high import prices will be greater than the cut in their ability to produce caused by the oil shortage. For Japan the situation may be different, and the effect on her ability to produce may be more severe. In any case there will be a marked slowdown, and possibly an absolute decline, in demand and output in most of the countries of the world with which we do business, except for the oil-exporting countries.

This outcome will influence the United States in a number of ways. It should help to retard the increases in prices of industrial raw materials, just as the worldwide boom contributed to their rise. The increase in the value of the dollar in the last quarter of 1973 should also help to slow down the rise of dollar prices of internationally traded commodities. The net effects on trade are not clear. Oil prices will be lower here than elsewhere, at least for a time, because of the price control on a large part of our oil supply; and this situation will tend to stimulate exports of products with a large oil component, such as petrochemicals. On the other hand, the reduction of income and activity abroad and the depreciation of foreign currencies will tend to cut our exports. This factor will probably be the dominant one, although its net effect is likely to be small except for one reservation to be noted.

At present prices of oil, the oil import bills of the industrialized countries will be so large that many if not all of them will have current account deficits—that is, their foreign expenditures for goods and services will exceed their foreign earnings. This will be true even after allowing for the added purchases that the oil-exporting countries may make from the industrialized countries. The oil-exporting countries will have large current account sur-

pluses, which in one form or another will be invested in financial or real assets in the industrialized countries.

This combination of transactions does not require any decline in the level of economic activity in the industrialized world—aside from the transitional difficulties already noted—or slowdown in the rate of growth. In fact, there may be a stimulus to the rate of growth, as the higher oil prices extract funds from consumption and return them to investment via the investment of the oil-exporting countries. However, there could be severe repercussions if the financial aspects of these transactions are not well managed.

Several possibilities can be envisaged which could lead to cumulative recession. One possibility is that some of the industrialized countries might lose large amounts of monetary reserves, or incur large liquid liabilities to the oil-exporting countries which would impel the industrialized countries to try to build up their reserves. Or industrialized countries having current account deficits might feel it important to correct those deficits, even though their overall balances of payments are not in deficit. Some countries will have overall deficits and might try to correct that situation. In any event, the single-country response is likely to be to try to export more and import less, either by squeezing down the economy at home or by checking imports and spurring exports. That is, the single-country response could well either create recession at home or export recession. If many countries are following this policy at once, the compound result could be a large and unnecessary decline in the world economy.

GOALS FOR 1974

The goals for 1974 must be realistically connected with the conditions existing at the beginning of the year. As we have already explained, we believe that the conditions existing at the beginning of the year make it extremely likely that inflation will continue at a high rate through the early part of 1974. A slow rate of economic expansion is also likely during this period, and possibly a decline, with rising unemployment. After some period, probably after the first half of the year, the course of the economy will be influenced more by policies still to be adopted. The idea of a “goal” is more relevant to this later period than to the months immediately at hand. For this later period, three possible paths for the economy can be distinguished.

1. Total spending can accelerate strongly, bringing production quickly back to a full-employment level. This path would create new price pressures which would replace the diminishing pressures expected in energy and food and contribute to an acceleration of wage increases.
2. The contraction can continue, with unemployment rising throughout the year. Anti-inflationary pressure would be strengthened along this path.
3. The economy can begin a moderate expansion, one which will bring a halt to the rise in unemployment and yet resist an upsurge of inflation

outside the food and fuel sectors and get the benefit of a much lower rate of further price increase in these two sectors. There would be an expectation that a significant reduction of price increases in food and fuel would be followed in time by a reduction elsewhere if the economic environment is not overheated. This would be accompanied by a gradual decline of the unemployment rate.

The third possible path is most consistent with attaining as well as maintaining the goals of the Employment Act. The first is a prescription for undiminished and probably accelerating inflation. The second exacts too high a price in unemployment.

Of course, no one knows with certainty or precision the relations among output, unemployment, and prices along any of these paths. They only reflect general emphases which can be utilized as guides to policy. Moreover, even if the desired path could be precisely described, no one could precisely describe the policy that would achieve it. All of these usual uncertainties are heightened this year by the difficulty of foreseeing the effects of the radical change in the energy situation. This unusual degree of uncertainty makes it more important than ever that we be prepared with means for adapting policy if events seem to be moving outside a reasonable range of the roughly defined target path.

What is implied by the path that at present seems to us the best of the feasible ones for the economy, given the inescapable effects of the energy shortage, is an increase of about 8 percent in the nominal value of GNP from calendar 1973 to 1974, to about \$1,390 billion. Of this rise, about 1 percent would be an increase in real output and about 7 percent an increase of prices (as measured by the GNP deflator). Changes from calendar 1973 to 1974 are, of course, significantly influenced by what has already happened in 1973; and hence changes so expressed do not describe an expected path for 1974, though they are implied in any expected path. As for the expected path during 1974, this would leave real output approximately flat, and perhaps declining for an interval, in the first half of the year but would bring a rise by somewhat more than the normal trend rate in the second half. Inflation would be rapid in the early part of the year, mainly as a consequence of energy and food prices, and then subside to rates significantly below those experienced in 1973. Unemployment for the year would average a little above 5½ percent.

We would emphasize two aspects of this path. First, it is at the same time our view of a feasible target and a prediction of what will be achieved if the planned policy is carried through. Second, that the path is feasible and that it will be achieved by the planned policy are both uncertain to a significant degree. This means that the target or the policy may have to be changed as new information emerges, although changes involve costs and should not be made unless the case for them is clear.

A description of the implications of this path for the main sectors of the economy appears at the end of this chapter.

POLICIES FOR ACHIEVING THE 1974 GOALS

The general contour of the economy described for 1974 is consistent with the private forces now apparently at work. In the early months of the year, consumers will make the move to spending a larger part of their income on an imported product—namely oil—because of the higher price. This will tend to reduce their spending for the purchase of other goods and services and will offset the rise of other categories of demand, such as business investment and government spending. But the adjustment to spending more money on imported oil will be completed early in the year; this drag on the expansion of the economy will then be removed and the expansive forces will become more effective. (Expenditures for foreign oil will not decline, but they will not be rising significantly.) As the year progresses, housing construction will rise in response to greater availability of credit and greater certainty about the distribution of fuel oil and gasoline; and production of new automobiles will increase as the manufacturers improve their ability to turn out small cars. Meanwhile, the period of maximum increase of energy prices and food prices should have passed.

The main functions of policy will be to keep the dip in the early part of the year from going too far and to assist the revival later in the year, but to avoid stimulating too rapid a surge.

1. *Fiscal policy.* The budget proposed by the President will tend to restrain the decline of the economy during 1974 but would inject no fiscal stimulus to push the economy above its average rate of expansion. If the economy were operating at about the same rate of utilization of the labor force in 1974 as in 1973, the size of the budget surplus would change very little between the 2 years. Thus one can say approximately that if the economy were moving along its normal growth path the budget would not be tending to divert the economy from that path in either direction.

However, if the economy operates, as expected, at a lower rate of activity relative to its potential in calendar 1974 than in calendar 1973, the budget will swing significantly toward deficit. This change will result chiefly from the lower level of receipts accruing to the Federal Government at lower levels of economic activity, and partly from higher unemployment compensation payments. As a consequence, private incomes after taxes rise relative to output, thus sustaining demand and moderating the slowdown of the economy.

In calendar year 1972, unlike 1973, Federal receipts were swollen by exceptionally large net overwithholding of personal income tax estimated to amount to about \$9 billion. An estimate of the economic effect of the budget in 1972 and 1973 depends heavily on the impact attributed to this overwithholding. If the amount overwithheld was less like a personal tax than like personal saving accruing in the form of a government obligation, fiscal policy moved in a restrictive direction from 1972 to 1973. Thus, if the amount overwithheld is subtracted from recorded receipts, there was a swing of

about \$14 billion from deficit to surplus between the 2 years on the assumption of a constant rate of economic activity at full employment. Over \$3 billion of that swing would have been due to the higher rate of inflation in 1973, but the remaining \$10 billion would represent an independent fiscal policy force restraining even the normal rate of growth. Such restraint was appropriate, given the inflationary condition of the time. Since we had in 1973 both a reduction of unemployment and an increase in the rate of inflation, the actual swing from deficit to surplus was larger—about \$17 billion, or about \$26 billion if overwithholding is excluded from actual 1972 receipts.

If the overwithheld amount is treated like any other tax receipt, little shift in the full-employment budget position appears between 1972 and 1973. However, exclusion of the overwithholding from receipts seems to us to come closer to representing the economic effect of the budget, and the full-employment estimates in Table 1 are calculated in that way. On this basis it appears that whereas the direction of fiscal policy was significantly restrictive from 1972 to 1973 it is fairly neutral from 1973 to 1974, offering support if the economy declines but otherwise not exerting any upward or downward push.

The foregoing observations relate to the balance of Federal receipts and expenditures in the national income and product accounts. These accounts are more useful for analysis of overall economic impact than the unified budget accounts stressed in the Budget Message, primarily because they exclude certain expenditures which do not enter directly into the stream of U.S. income or expenditure. The references to the behavior of the surplus or deficit at a constant rate of economic activity are to calculations of the surplus as it would be at the actual or forecast rate of inflation if the economy were operating at 4 percent unemployment and at an annual growth rate of 4 percent (rather than the 4.3 percent used in Council Reports of the past 4 years). The level of these surpluses depends on the unemployment rate chosen, but the year-to-year changes in the surplus are not sensitive to the unemployment rate chosen if the chosen rate is approximately stable from year to year. Reference to a higher unemployment rate would reduce the levels of the surpluses but not have much effect on the year-to-year changes.

It is also useful to try to take the effect of changing inflation rates out of the change in the surplus because such a procedure gives a clearer picture of the budget changes that are autonomous, that is, not responses to economic fluctuations. An increase in the inflation rate will affect both receipts and expenditures, but it will affect receipts much more promptly and hence increase the surplus. This increase in the surplus tends to restrain the expansion and thus the increase of the inflation rate. But it is also a symptom of not having prevented a rise of the inflation rate and so is evidence of anti-inflationary policy only in a rather negative sense. Unfortunately, the effect of the change in the inflation rate can be measured only very approximately.

Table 1 shows the annual surpluses and changes according to four different methods of measurement.

TABLE 1.—Federal budget surplus or deficit under alternative assumptions, national income accounts basis, calendar years 1969–74

[Billions of dollars]

Calendar year	Actual budget surplus or deficit (—)	Full-employment budget surplus or deficit (—) under alternative assumptions ¹		
		4 percent unemployment	4 percent unemployment, standardized inflation rate ²	Variable unemployment rate ³
Level:				
1969.....	8.1	8.8		4.9
1970.....	-11.9	4.0		.3
1971.....	-22.1	-2.1		-5.0
1972.....	-15.9	-7.7		-10.4
1973.....	.6	5.8		3.1
1974 ⁴	-4.6	6.0		2.1
Change from previous year:				
1970.....	-20.0	-4.8	-4.8	-4.6
1971.....	-10.2	-6.1	-5.3	-5.3
1972.....	6.2	-5.6	-5.6	-5.4
1973.....	16.5	13.5	10.2	13.5
1974 ⁴	-5.2	.2	.3	-1.0

¹ \$9 billion in overwithholding excluded from 1972 receipts.

² Change in surplus or deficit between 2 succeeding years assumes that inflation rate is constant at rate of first year.

³ Assumes that unemployment rates of the civilian labor force are constant at their 1956 levels in each of four sex-age categories: Males and females 16–24 years and males and females 25 years and over. Instead of staying at 4 percent, the overall unemployment rate used to represent a constant rate of utilization of the labor force in this estimate rises to about 4.6 percent by 1973 because the labor force was increasingly composed of groups (females, youths) characteristically having higher unemployment rates than older males.

⁴ Excludes transfer of \$2.1 billion worth of rupees to the Indian Government expected in the first half of 1974.

Sources: Department of Commerce (Bureau of Economic Analysis), Office of Management and Budget, and Council of Economic Advisers.

In view of the uncertainties facing us, it is extremely important to be prepared with fiscal measures to support or restrain the economy if it is clearly running outside the general track described here for 1974. The Administration is now in the process of preparing for support action. A decision to take such measures would have to be made with great caution, however, in view of the additional supply bottlenecks that might be caused by the energy shortage.

Greater protection for those unemployed because of the prospective conditions, and greater assurance against an even more serious slowdown, would have been provided if Congress had enacted the proposal submitted by the Administration last year to improve the unemployment compensation system. The President has again strongly urged the Congress to act promptly on these proposals; he will also submit additional unemployment insurance amendments to extend the duration of benefits and expand coverage in labor market areas that have large increases in unemployment.

2. *Monetary policy.* Because of the lag which we believe exists between changes in money and changes in economic activity, the influence of monetary policy on the economy during 1974 will largely result from the monetary expansion during the second half of 1973 and the first half of 1974. The monetary expansion in the second half of 1973 can be described by an increase in the narrowly defined money stock (M_1) of somewhat under 5 percent and an increase in the broadly defined money stock (M_2) of about

8 percent, at annual rates. Continued growth in M_2 at approximately this rate would be consistent with our expectations concerning the increase in money GNP during 1974. At present we expect money GNP to increase by about 8 percent during the year. For more than a decade the proportionate increase of money GNP tended to be the same as that of M_2 , though in some years the deviations from this proportionality were substantial, and half-yearly deviations were often quite large. Hence, the foregoing conclusion seems reasonable, barring the emergence of further evidence as yet unforeseen.

The prospect for trends in interest rates is particularly difficult to appraise at present. Inflationary expectations tend to raise money rates, while the temporary slowdown of business activity is apt to have the contrary influence for a while, even though business fixed investment is likely to rise at a rate well above that of GNP. Among the interest-reducing influences, the prospective capital inflows resulting directly or indirectly from current account surpluses of the oil-exporting countries also need to be taken into account. All this relates to interest rates in general. Terms on which mortgage credit is available will be influenced by the success that depository institutions have in attracting new savings funds in competition with market alternatives, and by the subsidization policies of the Administration with respect to this category of borrowers.

As will be explained in Chapter 2, by steepening inflationary expectations an overgenerous increase in the money supply would steepen rather than moderate trends in money rates of interest.

3. *Housing policy.* The economic path described for 1974 implies a bottoming out of housing starts in the first quarter of 1974 at a level only slightly below the fourth quarter of 1973 followed by a rise beginning in the spring. The Administration took a number of steps in September 1973 to cushion the decline then under way. In January a two-pronged action was taken to revive the mortgage market. The Department of Housing and Urban Development was authorized to purchase mortgages on up to 200,000 housing units at $7\frac{3}{4}$ percent, substantially below the prevailing market interest rate. In addition, the maximum interest rates on FHA-VA mortgages were lowered to $8\frac{1}{4}$ percent from $8\frac{1}{2}$ percent, thereby setting the pattern for reduced mortgage rates.

4. *Managing the energy shortage in the United States.* If the economy is to follow the general path we have outlined it will be essential that output not be seriously hampered by the shortage of energy. This stipulation means, first, that the total supply of fuels made available for industrial production, including transportation related to it, must be adequate to sustain the aggregate level of economic activity projected for the year. Second, the supply must be distributed among users in a way that avoids bottlenecks.

How easily these two conditions can be met will depend upon the volume of oil imports. We believe that the volume of imports will be sufficient to permit their fulfillment, but it would be imprudent to assume that they can be met without care in the distribution of energy among various uses.

The rise in prices of petroleum products which has been occurring helps to bring about the desired distribution. As the prices rise, the less valuable uses—which tend to be those which generate the least output and employment—are foregone. At a higher price, a factory which uses oil for space heating will cut down the temperature before it cuts down the use of oil in the production process. A higher price will cause a consumer to cut down the use of his car for pleasure driving, rather than for getting to work. It is commonly said that the use of energy will be reduced relatively little by a price increase. That may or may not be correct. But even if the cut in energy use is “relatively little” compared to a price increase, the price increases that have occurred or are in prospect are sufficiently large to have a substantial effect on the total use of energy and its distribution.

The oil price increases that have taken place under the controls program have been justified as a necessary means of increasing supply and maintaining orderly markets. Imported oil, “new” oil, and oil from small wells are exempt from control. Other oil is controlled and sells at prices considerably below those of uncontrolled oil, but the control price has been raised on two occasions to keep the price spread from becoming too large. Although necessitated by supply considerations, these price increases have played a useful role in the allocation of supply. To make sure that the price increases do not yield excessive profits that are not justified by their contribution to increasing supply, the Administration has proposed an Emergency Windfall Profits Tax. This tax would take a large proportion, up to 85 percent, of the additional revenue earned by producers of crude oil as a result of higher prices.

Other methods are being used to distribute supplies of oil in ways that will meet production requirements. The Federal Energy Office (FEO) has encouraged refineries to limit the production of gasoline in order to increase the production of other products more essential to industrial output. This enforces a cut in automobile driving, although it does not solve the question of who gets the available gasoline. The FEO has taken steps to prepare for coupon rationing of gasoline, although it is believed that a combination of increased supplies, higher prices, and conservation measures, largely voluntary, will make such rationing unnecessary.

The Emergency Petroleum Allocation Act of 1973 requires the establishment of a system of mandatory allocation of oil products, and the FEO has now set up such a system. It specifies limits to the amounts of petroleum products that refineries or distributors can deliver to described classes of customers (but stops short of individual consumers). The limits are generally described in percentages of current requirements or base-period use. The limits differ by class of user, in accord with FEO’s estimate of the essentiality of the use to the productive process and to society. Such a system necessarily involves elaborate paperwork and a large degree of arbitrariness. Confidence that the economy will not be seriously hampered rests upon the expectation that increased supply and higher prices will narrowly limit the shortages to be distributed by the allocation system.

A third method, which seems to have been highly effective, has been voluntary conservation. This has been especially useful in stretching out the supplies of gasoline and home heating oil, but it has also helped to bring about a reduction in the nonproductive use of energy in industry.

The measures taken in recent months to deal with the energy shortage are too numerous to recount here. What further steps may be needed cannot now be foreseen. It must be emphasized, however, that satisfactory progress through 1974 will depend upon a flexible use of prices, allocations, and voluntary measures to channel energy efficiently into industry.

5. *Wage and price controls.* When Phase IV controls were instituted in August, the President announced that it would be our policy to work our way and feel our way out of controls. There would be no pre-set terminal date and we should avoid a disorderly transition, but the determination would be to end the system of comprehensive controls. This policy has been followed in the last 5 months. A number of industries have been decontrolled since Phase IV began and the pace of decontrol has been accelerating.

Experience under Phase IV has shown the wisdom of pressing on with the removal of controls. The controls have not recently been very effective in restraining inflation, and the general uncertainty cast over the economic process by the actual or potential operations of a detailed control system endangers the healthy economic expansion we seek. The last point is very important. Too many business decisions for too long a period ahead are being influenced by puzzlement over the kinds of controls businesses will be subjected to. We badly need business investment and economic growth in the years ahead, and continuation of general controls tends to interfere with that aim.

Just how fast the process of decontrol should properly go, and what residue of controls will endure, if any, cannot now be precisely told. But achievement of the desired reduction of inflation during the year does not, in our opinion, depend upon any significant influence from the controls.

6. *International cooperation.* The ability of the United States to get through the economic uncertainties of 1974 successfully would be enhanced by reasonable stability in the rest of the world, especially in the industrialized countries that are the chief suppliers and customers of the United States. There are two main things the United States can do to further that stability.

First, the United States can take the lead in an international effort to bring about a reliable international flow of oil at reasonable prices. Powerful moves by the United States and other industrialized countries to develop energy sources as potential alternatives to the oil now controlled by a few nations will be helpful in normalizing the flow of oil. The President has called the first of a series of international meetings on this subject to take place February 11.

Second, the United States can participate in a common effort to assure that the effects of high oil prices on the balance of payments do not lead the industrialized countries into a round of competitive deflation, depreciation, or trade restriction. This effort should include consideration of possible ways to supplement the now existing means of providing temporary support to countries finding themselves in a critical financial condition as a result of greatly enlarged oil import costs.

GOALS BEYOND 1974

Concern with the stabilization problems of 1974 should not divert attention from those other problems whose consequences will come chiefly after 1974 but which need to be dealt with now and continuously. Most of these problems arise from the need to increase our ability to produce—in total as well as in particular directions. This emphasis on ability to produce is essentially an emphasis on efficiency, on managing our resources so that we get as much out of them as we can. It is neutral about what should be produced and even about how much should be produced, only stressing the ability to produce more of what is wanted, if it is wanted.

We think emphasis on ability to produce is important at this time, because in the years ahead the desire of the American people for more output is likely to be especially strong, and unusual obstacles may hinder fulfillment of this demand. The need to devote more resources to obtaining energy will be a drag on output. The country is almost certainly ending the period of large transfers of the labor force out of agriculture into other pursuits. By 1980, we will probably come to the end of a period in which the labor force grew much more rapidly than the population and thus helped to raise output per capita. Environmental considerations may tend to slow down the growth of output, at least as output is usually measured.

For these reasons, emphasis on the capacity to produce—on efficiency and productivity—is especially important now. Of course, even in the field vaguely labeled “economic” the Nation always deals with a multiplicity of goals. For example, the distribution of the national income among persons will always be a subject of concern. We hope that the information presented in Chapter 5 will be illuminating in this connection. The Nation has other goals about the uses of the national output. One sees evidence, for example, of a great interest in devoting more of the national output to improvement of health, and in achieving that aim more efficiently. The President will be submitting suggestions to this end. It seems most useful for us to concentrate here on the problem of production.

Many aspects of Government policy affecting capacity to produce are discussed in more detail in later chapters of this report. We present here only a brief survey of the field.

DEVELOPMENT OF LOW-COST ENERGY FOR THE FUTURE

Throughout the 1960's the United States employed quantitative restrictions on petroleum imports to limit dependence on foreign sources of supply. However, the availability of imported petroleum at a price below the domestic price led to a weakening of the import restrictions and in 1973 to abandonment of the quota system altogether. As a result, imports have provided a rapidly expanding share of the domestic market.

The energy crisis that occurred in late 1973 as a result of the embargo by some of the oil-exporting countries alerted the Nation to the risk of depending on imports for a commodity that is vital to our economic well-being, and the supply of which is largely controlled by a few countries. Reductions in oil shipments to the United States and a sharp rise in the price of imported oil have caused substantial economic disruption. Had these events occurred later, when the United States was projected to be even more dependent on imported petroleum, the loss of jobs and the effect on incomes might have been far greater.

Oil imports may become more readily available, and the price may decline. However, the possibility of a subsequent sharp price rise or supply curtailment makes it risky for the United States to remain heavily dependent on imports to supply domestic needs.

The Nation has the capability to become self-sufficient in energy production. This capability will, however, require substantial capital investment and large expenditure on research and development. The private sector will be willing to make the needed investment only if there is a reasonable assurance that returns will be adequate to justify the commitment of resources to long-term investments.

In response to this situation, the President has announced Project Independence, a program to develop the capability for self-sufficiency in energy production by 1980. The choice of policies to implement Project Independence should be made largely on economic grounds. Because energy can be expected to cost more in the 1980's than it did in 1972, important changes in production methods, in the composition of output, and in consumption will occur. These changes will develop most rapidly, and with the least cost to society, if relative prices are allowed to allocate resources and to influence production decisions. There are many uncertainties regarding which of the new energy technologies will prove to be economic. By relying on the market mechanism to guide production decisions, we can avoid becoming locked into production methods and energy sources that prove to be uneconomic.

A major component of Project Independence is a program of Government-funded research and development to accelerate the development of technologies that will ensure an adequate supply of low-cost energy for the future. Although the private sector will continue to undertake most of the energy research and development, there is a need for a more active Government role. In part this is because the returns from expenditure on research and development will be heavily influenced by Federal policies regarding en-

vironmental control, leasing of mineral rights, and import restrictions. In addition, the development of new energy technologies to some extent involves expanding our knowledge of fundamental processes. In such cases, although the research and development provides a large gain to the economy as a whole, there may be little opportunity for any one firm to derive a large enough part of this gain to warrant undertaking the research. Moreover, private research and development is usually oriented toward projects with a relatively quick payoff, whereas much of the needed expenditure must be devoted to the development of energy sources that may not be competitive for some time.

SAVING AND PRIVATE INVESTMENT

To keep output per worker rising rapidly, when the labor force is also rising rapidly, requires a high rate of investment in productive facilities. Our total investment requirements in the years ahead will be greatly increased by the need to invest in energy development and environmental improvements.

These energy and environmental investments do not raise productivity as conventionally measured, though the former may prevent a decline in productivity if energy shortages would otherwise continue, and the latter may also prevent an ultimate decline in productivity. Both types of investment thus represent part of the increased resource costs imposed on energy-using or environment-using industries, in one case by adverse supply developments and in the other by social choice. Environmental benefits enhance economic well-being, and increased reliance on domestic sources of energy adds to security of production. Still, one can probably say, the American people expect rapidly rising output of the ordinary, marketable kind; and this expectation will require rapidly rising total investment to accommodate rising energy and environmental investment along with increasing investments of other kinds.

Part of total investment is provided through the Federal budget, in the form of direct expenditures for capital purposes, loans to private businesses and individuals, or grants and loans to States and localities. The budget for fiscal 1975 includes \$19 billion for such outlays, excluding defense and excluding expenditures for education, training, health, and research and development. The largest single item is expenditures for transportation, primarily highways, followed by expenditures for public works.

These direct investments in the Federal budget make a useful contribution to economic growth, if they are wisely selected and well managed. Such direct investments have numerous advocates in the Federal budget-making process. But attention needs to be called to another way in which the Federal budget could contribute to investment and growth, although it has few advocates: running a budget surplus, or at least avoiding a budget deficit except under appropriate conditions.

If the Federal Government runs a deficit and borrows under conditions of strong private investment demand, its borrowing absorbs funds which

would otherwise have been invested in private projects. Unless all of that deficit is used to finance direct Government investment, which is unlikely, the deficit depresses total investment. On the other hand, if the Government runs a surplus in these circumstances, it will repay some of its debt and make more funds available for private investment, unless the surplus is generated by taxes all of which come out of private saving, an unlikely condition. When there is a great deal of slack in the economy, a budget deficit will help to support the level of economic activity needed to supply both the incentive to invest and the savings for investment. However, when productive resources are fully utilized, the smaller the Federal deficit is, or the larger the Federal surplus, the higher private investment is likely to be. This fact partly explains the principle adopted by the Administration that expenditures should not exceed, and at times may properly be less than, the receipts that would be collected at full employment.

Government policy affects incentives for private investment, in total and in particular sectors, in a number of ways, including policies relating to taxes, international trade, and international financial policy, as well as credit guarantees, subsidies, and so on. All of these involve well-known conflicts of objectives and difficulties of measuring costs and benefits. We may now be running into a problem which is new, at least in magnitude, and potentially very serious: the uncertainty created for private investment, and all private long-term commitments, by Government economic controls that are unprecedented in scope and unpredictable in operation. Taken together, the price and wage controls, the controls connected with the energy shortage, and the environmental regulations add up to a massive entry of Government into the affairs of almost every business in the country. The management of these controls involves a great many close or arbitrary decisions, to be made in many instances by a very few people. They could go either way, and the private businessman who must invest in the light of these controls cannot tell which way they will go.

These uncertainties could become a major obstacle to new private investment, even though we do not now see good evidence of its having already happened. Concern on this score is not a conclusive argument against any particular control, although it is a strong argument for avoiding controls. And it does argue for as much stability as can be achieved in the management of the controls that are inescapable.

THE FINANCIAL SYSTEM

In his 1970 Economic Report the President said:

Because our expanding and dynamic economy must have strong and innovative financial institutions if our national savings are to be utilized effectively, I shall appoint a commission to study our financial structure and make recommendations to me for needed changes.

After studying the findings of this commission (the Hunt Commission), the President, on August 3, 1973, sent to Congress a series of recommendations. In them a more efficient financial system is envisioned, in which finan-

cial institutions can operate with greater freedom and less imposed specialization. By fostering more competition among financial institutions, the proposed measures would improve the efficiency of our financial system in channeling funds from savers to borrowers. Savings would earn the highest rate of return the competitive market structure could allow, and the savings would be put to the most productive use. Under such a system, interest rates would play a greater role in determining the volume and the distribution of funds. Social projects deserving priorities, such as low- and moderate-income housing, would be taken care of with subsidies instead of regulations.

Among the recommendations, interest rate ceilings on deposits would be phased out over a period of 5½ years. Federally chartered thrift institutions would be authorized to offer third party payment plans, including negotiable orders of withdrawal (NOW's) and credit cards to individuals and corporations; but they would also be given expanded lending powers in making consumer and real estate loans and in acquiring high-grade private debt securities. National banks would likewise be able to offer NOW accounts and make real estate loans with fewer restrictions. Interest ceilings on Government-backed mortgages would be removed, and a mortgage interest tax credit of up to 3½ percent to financial institutions and up to 1½ percent to individuals supplying mortgage funds would be made available.

The President's recommendations, if enacted by Congress, would strengthen the financial markets in general and mortgage markets in particular. The expanded lending and borrowing powers would increase the flow of funds into financial institutions. Further, the mortgage tax credit would reduce the dependence of the mortgage market on thrift institutions by encouraging other types of financial institutions, as well as individuals, to invest in mortgages. The resulting mortgage market would be less vulnerable to a credit squeeze than it has been, and the burden of monetary restraint would be more evenly distributed throughout the economy.

On another financial matter, the time may be at hand when a move in the direction of greater uniformity of reserve requirements among depository institutions is warranted. Varying reserve arrangements among State and federally supervised banks have resulted in removing an increasing proportion of the money supply from the direct influence of Federal Reserve requirements and have made short-term shifts of deposits among member and nonmember institutions a source of uncertainty in the implementation of monetary policy. Care must be taken that any change in the reserve structure of the Nation's banks should not work to the disadvantage of smaller institutions or change the balance among supervisory authorities; but within these constraints it now appears desirable that deposits which form the money supply should be subject to direct influence by the Federal Reserve, regardless of the source of supervision of the institutions that hold them. The Federal Reserve has recently submitted its own proposals in this field.

TRANSPORTATION REFORM

Last year the Congress passed and on January 2, 1974, the President signed the Regional Rail Reorganization Act, which is a pragmatic attempt to deal with the pervasive insolvency of railroads in the heavily industrialized Midwest and Northeast. Several of the eight principal bankrupt railroads had threatened liquidation, and such a bill was needed because the risk of even a very short period of suspended service was too great to be tolerated. If the services of the Northeast's railroads are so vital to the rest of the economy, one must ask why so many of them were in such a weakened financial condition. Factors more general and basic than those that normally cause bankruptcy are responsible.

Poor management and unrealistically rigid labor contracts are popular explanations of the railroads' inability to adapt to changing technology and a changing economy. These proximate causes largely reflect, however, a more fundamental cause—inefficient and intransigent governmental regulation.

Governmental regulation of the railroads can be traced to two sources. The public wanted the Government to protect them from the industry in a time of near monopoly and the members of the industry wanted the Government to protect them from each other. This "protection" has been expensive for both the railroads and the public. The elaboration of regulations intended to provide this protection has created a complex set of specifications for the behavior of firms that has tended to ossify with time. As a result railroad companies have increasingly given up control of fundamental management decisions to the Interstate Commerce Commission (ICC) in return for the policing of industry competition by the agency. Moreover, railroad management's attention began to focus more on the rules that delimited its discretion than upon the underlying economic realities in the markets in which they operated. As these realities changed, railroad management found itself increasingly inept at adjusting—the result being an increasing incidence of bankruptcy.

The Transportation Improvement Act

The Transportation Improvement Act of 1974, proposed by the Administration, is an important first step toward solving some of the more general problems of the railroad industry. It is also an imperative step toward a long-term solution of the problem of the bankrupt railroad; because the viability of the rail system that will emerge from the wreck of the Penn Central will depend in an important way upon successful regulatory reform. Among the more important reforms facilitated by the bill would be liberalization and rationalization of procedures for the "abandonment" of unprofitable lines. In 1971 the railroads were required by the ICC to maintain service on 21,000 miles, about 10 percent of the total, of lightly traveled track for which revenues were less than operating costs.

To cover these losses, railroads must charge higher rates on profitable routes. This subsidization distorts resource use and interferes with the effi-

ciency of the entire transportation system, and hence the entire economy, as well as increasing the financial problems of the rail industry. Requiring railroads to continue to operate short and uneconomic branch lines diverts traffic that could be carried more efficiently by truck; and conversely the higher rates on longer hauls result in a diversion to trucks of freight that could be moved more efficiently by rail. Since trucks use considerably more fuel (and emit more pollutants) than trains per ton-mile of freight carried, the magnitude of this inefficiency grows directly with the increasing relative scarcity of energy supplies.

The proposed act will also facilitate the substitution of truck transportation for rail services on abandoned lines, by more or less automatically authorizing truck service between any point on the abandoned line and connecting rail service points.

Need for Further Reform

Although enactment of this bill will add to the efficiency of the rail industry, several basic problems remain on the agenda for transportation reform in the coming year. The longer-term viability of the Nation's railroads will require substantial investments in improved technology, and in improvement and diversification of types of freight service, as well as investments to rehabilitate deteriorating physical facilities.

It is vital, however, that a comprehensive evaluation of the regulatory and institutional structure of both the railroads and the entire surface transportation industry be completed *before* such investments are made. Many aspects of modern railroad operation are not determined by either technological or profitability considerations. They are adaptations to obsolete regulatory policies and labor practices. Investment in conventional railroad technology as it exists today may inhibit productivity and actually reinforce the resistance to the institutional reforms that will be required for the development of a more rational and efficient surface transportation system in the future.

Changes in corporate structure may also be desirable. Costs of transferring freight from one railroad to another significantly reduce the savings that rails enjoy relative to trucks on long-haul shipments. This would imply that end-to-end mergers of railroads might be important mechanisms for reducing the real cost of rail transportation. Yet formidable administrative barriers must be surmounted by companies attempting end-to-end mergers under current regulatory practices.

The Administration's concern with the efficiency of the surface transportation system is not limited to stopping the spreading insolvency that infects the railroad industry. It will be difficult to exploit fully the opportunities for increasing productivity in the railroad industry unless major changes take place concurrently in the trucking industry.

The regulation of trucks in interstate common carriage that began in the midst of the Great Depression has also evolved into a web of regulatory

constraints. Restrictions on entry into market areas, limitations on the type of goods carried, and mandated "gateways"—creating required routes which may be so circular as to be bizarre—have resulted in an industry burdened with regulatory inefficiency. Partially loaded trucks, often required to return empty even when alternative cargoes are available, are common. Such inefficiency is a result of regulatory policy. There are no technological reasons why the motor freight industry could not operate as an essentially competitive sector of the economy.

A comprehensive analysis of the trucking industry is now under way and will provide a basis for the design of a comprehensive set of regulatory reform proposals to be completed by the fall of 1974.

EFFICIENT INTERNATIONAL EXCHANGE

Economic growth is significantly enhanced by an openness to foreign economies which permits a relatively free international exchange of goods and capital based on economic incentive. International trade makes goods available that might otherwise be lacking, or only available at much higher costs. It can also make available to domestic producers ideas about new products, new product designs, or new methods of production. For producers it can be an added incentive to adopt more efficient methods of production.

We have been reminded in recent months that in some circumstances there can be a danger, both political and economic, in excessive dependence on foreign supplies. The United States must guard itself against this danger, by unilateral or multilateral action. However, if this objective is realistically defined it will be found not to limit greatly the scope for beneficial expansion of international trade.

Despite a fairly extensive removal of trade barriers in the past 25 years, substantial barriers to international trade and investment remain in effect. The inefficient location of productive facilities because of these barriers constitutes a loss of economic welfare to the country as a whole. Efforts to negotiate a reduction of the remaining trade barriers are therefore important toward improving the efficiency of the U.S. economy. The trade legislation now before Congress would give the President authority to negotiate a substantial reduction of such barriers.

Negotiations in the trade area also have to deal with the economic interdependence that results from trade. Abrupt economic shifts emanating from abroad can from time to time create a temporary economic dislocation at home which needs to be moderated or offset by government measures. Since such measures will have further repercussions abroad, governments need to agree on some basic rules and procedures that they can follow when their interests conflict. Multilateral negotiations are designed to improve some of the current rules and procedures, as well as to reduce existing trade barriers.

An international monetary system is a prerequisite for the efficient exchange of goods and capital. Without such a system, international exchange is confined to barter. To function efficiently, the international monetary sys-

tem has to provide sufficient quantities of commonly accepted means of payment and a procedure for adjusting the relationship between one currency and another. It also has to provide a set of rules on such questions as the conversion of one currency into another, restrictions on the conversion of currencies, transfers of liquid funds from one country to another, as well as a set of procedures for resolving differences in national approaches to such problems. The current negotiations to reform the international monetary system are designed to improve the existing rules and procedures.

SUPPLEMENT

Prospects for 1974

Earlier in this chapter we noted that 1974 would be a year of little output growth and considerable inflation but that in both respects the second half of the year should be better than the first. The energy crisis has clouded near-term prospects much more than usual. There is great uncertainty, not only about the overall GNP change and its distribution between price and real volume but also about the components of demand. It seems fairly likely that this year's 8 percent increase in nominal GNP should reflect slower rates of increase, compared to last year, in consumption, gross private domestic investment, and net exports, and a faster rate in combined government purchases. The specific changes are much less certain, but the Council presents the following projections of individual demand components underlying this year's overall total.

Business Fixed Investment

The Council expects nonresidential fixed investment to show a rise of about 12 percent from 1973 to 1974. It is likely to be the major source of strength in demand this year. Despite the small rise in production in the final quarter of 1973, the condition of shortages that prevailed in many industries earlier in 1973 continued through the end of the year. Capacity utilization was still very high, especially in the basic materials industries. Delivery times were still long. Aside from the automobile industry, inventories were rather low relative to output and sales. All of these were indicative of tight supply conditions that constituted a strong stimulus for business to invest in new plant and equipment in the coming year.

This is not to say that the character of investment demand will be the same as in 1972 or 1973. The slowdown of the rise in aggregate demand during 1973 and the leveling in profits are likely to bring a smaller rise in new investment initiatives than in the preceding 2 years. Even so, the large volume of new investment under way assures a sizable increase in real expenditures in 1974. Unfilled order backlogs in capital goods industries at the end of December were some 35 percent greater than they had been a year earlier.

In early 1974 the Commerce Department released a survey which showed that businessmen were planning a rise of 12 percent in capital expenditures in the coming year. The rise was particularly large for manufacturing—17 percent—and planned increases within manufacturing were above average (21 percent) for materials-producing industries. The Commerce Department survey is broadly consistent with a McGraw-Hill survey, which was run about 2 months earlier, projecting an overall rise of 14 percent from 1973 to 1974.

Neither of these surveys sheds any light on the effect of the energy crisis on investment plans; and because of variations in sample coverage and for other reasons, the difference in results between the two surveys is not considered significant. The Council believes that on balance the energy crisis may result in some reduction in business purchases of cars and trucks, but aside from this the negative and positive effects of the energy crisis on investment will be roughly offsetting. Some industries directly affected by the crisis have already cut back investment (airlines, for example), while some firms in other industries may be holding back on commitments until they understand the implications that the current crisis holds for future fuel supplies. On the other hand, the crisis is stimulating capital outlays to support the search for new energy sources in this country, and conversions to other types of fuel will entail new capital expenditures.

Inventory Investment

Inventory investment is likely to be a little higher this year than in 1973—perhaps by \$2 billion. In the final quarter of 1973 there was a very large increase in inventory accumulation, a good part of which represented a rise of retail stocks of new cars. Even so, total nonfarm stocks relative to total output measured in real terms at the end of 1973 were low, gauged by post-World War II experience. The first half of this year should see a working off of unwanted automobile stocks at the same time that other industries continue to accumulate inventories in an effort to restore more normal relationships between stocks and output.

Residential Construction

Housing starts in the final quarter of 1973 appeared to be reflecting the effects of the stringency in mortgage markets last summer, and possibly temporary effects arising out of the energy crisis. Very late in the year there were reports that builders were uncertain about the impact of reduced fuel supplies on new construction, while potential buyers of homes in outlying areas were hesitant because of uncertainty about the availability of gasoline for extended commuting. But this, and the extent to which homeowners were making new expenditures for better insulation of their homes, cannot be considered hard information. While there is no assurance about improved energy supplies, the coming months should at least dispel the present uncertainty and permit those builders and those consumers who can buy and rent new homes to make decisions.

A more fundamental factor concerns financial conditions. Net inflows into savings and loan associations have risen since late summer, and thrift institutions now have more funds available for mortgage lending. On the basis of past experience this improvement in the availability of mortgage funds should be reflected in a turnaround in starts this spring. Recent actions taken by the Federal Government should also help spur the recovery. The reduction in FHA and VA mortgage rates in January should help make these programs more attractive to home purchasers, and increased purchases of mortgages by GNMA should increase the supply of mortgage funds for these programs.

The underlying demand for housing—as measured by the need to provide shelter for new households and for the replacement of houses removed from the housing stock—remains strong. However, the inventory of unsold homes at the start of the year is likely to act temporarily as a brake on new starts and dampen the increase after this spring. For all of 1974 the Council foresees starts of approximately $1\frac{2}{3}$ million private units, which would represent a decline of almost 20 percent from the 1973 total. Outlays are expected to decline by 15 percent.

Government Purchases

Federal purchases of goods and services, after rising very little from 1972 to 1973, are expected to increase about 10 percent in the coming year, with increases in both defense and nondefense outlays. State and local purchases, further supported by the revenue sharing program, are expected to rise by 12 percent, which is close to the increase of the preceding year.

Net Exports

Prior to the energy crisis it was expected that net exports would show a further improvement from 1973 to 1974. The effect of the devaluation of the dollar and the continued strength of foreign demand were expected to stimulate exports. The slower growth of output in the United States was expected to slow the growth in imports. Thus, a further moderate improvement over the high rate of net exports that prevailed in the second half of 1973 appeared to be a reasonable prospect.

The oil crisis has drastically modified this outlook. For the time being at least, foreign countries are expecting much slower real growth than they anticipated previously. While exports will be greater than in 1973, they will not rise as much as they would have without the crisis. The main factor affecting imports is the huge increase in prices of imported oil. Cutbacks in the physical volume of crude oil and refined products will be much more than offset by the rise in price. The full effect of the price rise should be felt by the second quarter. In nominal terms the net exports are expected to fall close to zero for 1974 as a whole.

Consumer Spending

Consumer expenditures are likely to increase about as much as GNP in 1974. Spending should be rather sluggish in the first half but should show a marked improvement in the second.

Consumers had already shown a pronounced reaction to the energy crisis in late 1973, when they reduced their purchases of domestically produced cars from an annual rate of 10 million units in the third quarter to about 8 million units in the fourth. The decrease was much more than had been anticipated by forecasters prior to the energy crisis, and the fact that large car purchases were weak, while long delivery times were required for small car purchases, pointed up the special influence of the crisis on auto demand. It is not clear whether the cutback by consumers had run its course by early January, when dealer sales of domestic cars were running at a seasonally adjusted annual rate of about $7\frac{1}{3}$ million units. As small car supplies improve through the year consumers should come into the market in increasing numbers, although the pickup in car purchases is not likely to be appreciable until this summer. Another reason for the improvement in consumer spending from the first to the second half of 1974 is that the major downward adjustment of demand resulting from reduced gasoline supplies and higher prices is likely to be completed in the first half of this year.

Prior to the energy crisis some slowdown in the growth of consumer spending had been expected in the first half of 1974 because of the earlier shift in fiscal and monetary policy and the independent effect of the housing decline. Offsetting these influences is the stimulation from sharp increases in Federal transfer payments. These include the 7 percent social security increase scheduled for this April and the further 4 percent increase in July; the rise in payments due to the federalization of adult welfare programs; increased payments for food stamps and increased retirement benefits for Federal workers and veterans. All told, Federal transfer payments to persons as measured in the national accounts are scheduled to rise by \$14 billion (annual rate) from the second half of 1973 to the first half of 1974. As an offset, the increase in the taxable wage base this January from \$10,800 to \$13,200 will reduce personal income by \$2 billion, as calculated in the national income accounts. In fact, this rise will be felt by those consumers whose wages exceed \$10,800 only in the second half of the calendar year, as employers make deductions from employees' earnings for a longer period than under the old taxable base. Although the net fiscal stimulus will have run its course by midyear, the pickup elsewhere in the economy in the second half should serve to increase consumer incomes and spending.

CHAPTER 2

Developments and Policy in 1973

A FEW FACTS STAND OUT about the American economy in 1973, and the story of the year is mainly the story of the relation among them:

1. From calendar 1972 to calendar 1973 real output rose about 6 percent; but from the end of 1972 to the end of 1973 it rose only 4 percent.
2. From calendar 1972 to calendar 1973 prices of this output rose about 5 percent; but from the end of 1972 to the end of 1973 prices rose 7 percent.
3. On both bases of comparison expenditures for the purchase of output rose by about 11 percent.

The explanation of the large increase in expenditures for the purchase of output in 1973 involves the following factors, although the relative weight to be given to each and which ones were active and which permissive are unclear and in dispute:

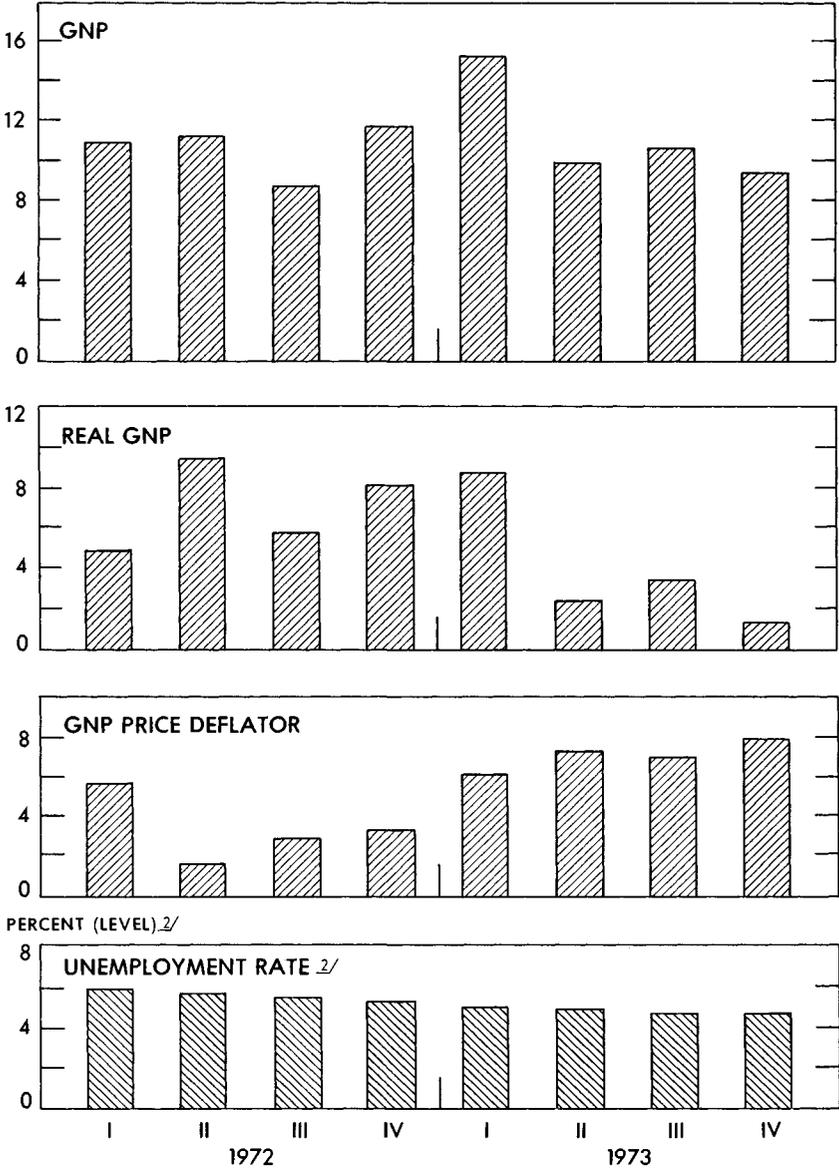
- Total output approached a ceiling early in the year, so that the price rise accelerated and demand for output was stimulated in anticipation of future shortages and price increases.
- During 1972 the money supply grew 7.7 percent as narrowly defined and 10.9 percent as broadly defined. In 1973 the corresponding figures were 6.1 percent and 8.8 percent.
- The shift to more restrictive fiscal policy turned out to be insufficient to prevent an excessive rise in demand in view of the other forces at work.
- Foreign demand for American output increased substantially.

These factors interacted and multiplied in various ways. The rise of prices boosted inflationary expectations which, either directly or through an effect on interest rates, made people willing to spend more relative to their money holdings. Rising expenditures generated more incomes and, in turn, more spending. Limited production of food, great foreign demand for it, and, later in the year, the embargo on oil had particularly sharp effects on the prices of food and energy. Different models of economic behavior would arrange these factors differently, but probably all models would invoke these factors in one way or another.

Chart 1

Changes in GNP, Real GNP, GNP Price Deflator, and the Unemployment Rate

PERCENT CHANGE FROM PRECEDING QUARTER ^{1/}



^{1/} SEASONALLY ADJUSTED ANNUAL RATES.

^{2/} SEASONALLY ADJUSTED.

SOURCES: DEPARTMENT OF COMMERCE AND DEPARTMENT OF LABOR.

The whole process depended, at least for its magnitude, on the fact that in 1973, at an earlier stage than had been anticipated, supply limitations made it impossible to obtain further rapid increases of production. If we could have increased output more readily in response to the strong demand, prices would have risen less, and the additional spur to demand resulting from the rising prices could have been avoided. The rise of output during 1973, especially after the first quarter, was limited by a slow growth of productivity while the labor force was growing quite fast. The slow growth of productivity, in turn, resulted from shortages of certain basic materials used for further production, retardation in the flow of labor out of agriculture, an increase in the proportion of less experienced workers in the labor force, and supply difficulties in agriculture. At the end of the year energy shortages may have been hurting productivity, although given the limited information now available this is not entirely clear and does not in any case bulk large in the statistics for 1973 as a whole.

The foregoing remarks and much of the remainder of this chapter are meant to explain what was unexpected and disappointing about the economy in 1973, notably the inflation. This question holds the most interest, and perhaps the most lessons, for the future. Worth emphasizing, however, is that in terms of the objectives of the Employment Act, "maximum employment, production, and purchasing power," 1973 was a successful year. Total employment was at a record high, as was the proportion of the working-age population employed. Production was also higher than ever before and close to its potential. The purchasing power of the American people, measured by consumers' real income after taxes, per capita, also reached a record level and was well above the 1972 average.

DEMAND AND OUTPUT IN 1973

The year 1973 started out on a very expansive note. Closing figures for 1972 showed that from the third to the fourth quarter real GNP had increased at an annual rate of 8.1 percent and nominal GNP at a rate of 11.7 percent. These were followed by still larger increases in the first quarter (Chart 1). The real increases were unsustainable in terms of the economy's potential to produce, and the nominal increases were undesirable from the point of view of stabilization policy.

The slowdown that policy had aimed for finally came in the spring. In the second and third quarters of 1973 the deceleration of the rise was moderate for aggregate demand but substantial for total output. Against a background of strong and rising demand by business and foreigners, the slower rise in total expenditures took the form of some softening in automobile demand from extremely high levels reached early in the year and a weakening in housing. All of this had its impact on production, but the production rise was also held down by shortages of many basic materials and limitations on capacity in a number of industries.

During the fourth quarter the downturn in housing became more pronounced, and the adverse effects from the energy crisis began to be evident. A marked slump in automobile sales led to a build-up of inventories in dealers' hands and to cutbacks in production. It was clear from the pattern of sales that the fear of a gasoline shortage was the dominant influence on fourth quarter sales, since throughout the period demand for small cars increased, while demand for large cars declined.

TABLE 2.—Changes in gross national product in current and constant dollars, 1968 to 1973

	[Percent]				
Component	1968 to 1969	1969 to 1970	1970 to 1971	1971 to 1972	1972 to 1973 ¹
CURRENT DOLLARS					
<u>Percent change:</u>					
Total GNP.....	7.6	5.0	8.0	9.4	11.5
Personal consumption expenditures.....	8.1	6.6	8.0	8.9	10.8
Durable goods.....	8.0	.6	13.5	13.3	11.7
Nondurable goods.....	6.5	7.3	5.7	7.6	12.1
Services.....	9.7	8.2	8.5	8.5	9.2
Gross private domestic investment.....	10.3	-1.9	12.4	16.4	13.0
Business fixed investment.....	10.9	2.1	3.8	13.2	15.1
Residential structures.....	8.5	-4.5	37.0	26.4	7.4
Government purchases.....	5.2	4.6	6.7	8.8	8.7
Federal purchases.....	.0	-2.6	2.0	6.5	2.4
State and local purchases.....	10.3	10.9	10.4	10.5	13.2
<u>Addendum:</u>					
Final sales.....	7.6	5.4	7.9	9.5	11.5
Domestic final sales.....	7.7	5.3	8.2	10.0	10.6
<u>Change in billions of dollars:</u>					
Inventory accumulation.....	.7	-3.3	1.5	.0	1.4
Net exports of goods and services.....	-.6	1.7	-2.8	-5.4	9.2
CONSTANT (1958) DOLLARS					
<u>Percent change:</u>					
Total GNP.....	2.7	-0.4	3.2	6.1	5.9
Personal consumption expenditures.....	3.6	1.8	3.9	6.1	5.3
Durable goods.....	5.3	-2.1	10.0	12.8	10.2
Nondurable goods.....	2.1	2.6	2.5	4.4	3.8
Services.....	4.5	2.7	2.8	4.9	4.5
Gross private domestic investment.....	5.0	-6.4	6.7	11.4	7.2
Business fixed investment.....	6.0	-3.6	-1.4	10.0	10.5
Residential structures.....	2.2	-6.3	30.6	19.3	-1.7
Government purchases.....	-1.2	-4.5	-.6	3.3	1.3
Federal purchases.....	-5.9	-12.5	-5.3	-.2	-5.8
State and local purchases.....	4.0	3.6	3.3	6.1	6.4
<u>Addendum:</u>					
Final sales.....	2.7	-.1	3.0	6.2	5.9
Domestic final sales.....	2.8	-.3	3.3	6.5	4.8
<u>Change in billions of dollars:</u>					
Inventory accumulation.....	.3	* -2.8	1.4	-.7	.6
Net exports of goods and services.....	-.8	2.1	-1.9	-2.4	8.0

¹ Preliminary.

Source: Department of Commerce, Bureau of Economic Analysis.

The 11.5 percent increase in nominal GNP from calendar 1972 to calendar 1973 was the largest annual rise in 22 years. It featured a dramatic shift from deficit to surplus in net exports, as well as unusually strong demand by consumers, especially for durable goods; by business for new plant and equipment; and by State and local governments. There is also reason to believe that inventory demand was strong last year but that supply conditions did not permit this demand to be satisfied. Federal purchases and housing rose less than average and decreased in real terms (Table 2).

Somewhat over half of the rise in demand from 1972 to 1973 was matched by increased physical volume, the 5.9 percent increase coming quite close to the 1972 rise and exceeding the long-term average of about 4 percent (Table 2). The inflation component of the rise in money GNP accelerated significantly from the 3.2 percent rate of 1972 and the 2.7 percent average of the past 25 years.

NONRESIDENTIAL FIXED INVESTMENT

Last year's rise in nonresidential investment extended the upturn that began in 1971 after a year of declining real outlays. The investment expansion gathered strength in late 1971, when rising production increased capacity requirements and accelerated the rise in internal funds. The liberalized depreciation regulations and investment tax credit of late 1971 helped to bolster the rise in cash flow. The exceptionally large increases in output during late 1972 and early 1973, coinciding with similar production increases abroad, put severe pressure on domestic capacity in several industries, especially those producing basic materials. In view of these pressures it is not surprising that manufacturing firms, with a 21 percent rise, dominated last year's increase in plant and equipment outlays.

TABLE 3.—Changes in manufacturing plant and equipment outlays and value of starts, 1971 to 1973

Industry	Percent change	
	1971 to 1972	1972 to 1973 ¹
Total outlays ²	5	21
Materials-producing industries ³	4	26
Primary metals.....	-1	27
Paper.....	10	37
Chemical.....	(4)	25
Petroleum refining.....	-22	8
Rubber.....	29	45
Textile.....	20	8
Stone, clay, and glass.....	41	25
All other.....	8	23
Total starts.....	26	35

¹ Preliminary. Expenditures include anticipated outlays for fourth quarter 1973. For starts, fourth quarter 1973 was assumed by the Council of Economic Advisers to be equal to average of second and third quarters of 1973.

² As published by the Department of Commerce, Bureau of Economic Analysis. The two groups "materials-producing" and "all other" will not add up to the Commerce total because nonmanufacturing petroleum outlays ordinarily included in petroleum in this particular survey have been excluded by the Council of Economic Advisers from each group.

³ Includes lumber not shown separately.

⁴ Less than 0.05 percent.

Source: Department of Commerce, Bureau of Economic Analysis (except as noted).

A number of points may be noted about recent changes in manufacturing plant and equipment outlays. First, 1973's large increase reflects in part the sharp rise in new starts in 1972 (Table 3). Second, the acceleration of the rise in outlays, as compared to the year before, was most pronounced in materials-producing industries. Third, the rise in manufacturing outlays in real terms since 1968 has been far below the previous postwar average. For materials-producing industries real outlays rose 1.9 percent per annum from 1968 through 1973, compared to a rise of 2.8 percent per annum from 1948 through 1968 (Table 4).

TABLE 4.—Changes in manufacturing real plant and equipment outlays, 1948 to 1973

Period	Percent change (annual rate)	
	Materials producing industries ¹	All others manufacturing industries
1948 to 1968.....	2.8	4.1
1948 to 1953.....	2.2	2.0
1953 to 1957.....	4.7	4.3
1957 to 1965.....	2.4	5.4
1965 to 1968.....	2.1	4.1
1968 to 1973 ²	1.9	2.4

¹ Consists of primary metals, paper, chemicals, petroleum refining, rubber, textiles, stone, clay, and glass, and lumber.
² Preliminary.

Note.—Based on expenditures in plant and equipment survey, deflated by the implicit price deflator for nonresidential fixed investment.

Sources: Department of Commerce (Bureau of Economic Analysis) and Council of Economic Advisers.

INVENTORIES

Inventory investment was quite low in the first 3 quarters of 1973, contrary to the expectations of the Council and of most forecasters. Additions to inventories were only slightly higher in 1973 than in 1972, and gauged by the postwar ratio of stocks to output, inventories appeared low during the year. Two main explanations have been put forth to account for this behavior. The first is that businessmen were cautious in their inventory policy last year, partly because of their experience during the 1970 recession and partly because they expected that the rapid upsurge in demand and output in late 1972 and early 1973 could not be sustained. A second possibility, to which the Council attaches greater weight, is that the rise in demand was so strong and the limits to raising production so numerous that businessmen were unable to build up stocks to any significant extent until the end of the year.

The slowdown of the rise in final sales in the last quarter of the year (a decrease in real terms) was accompanied by a sharp rise in inventory accumulation. Much of this reflected the backing up of automobile inventories in the hands of dealers, since producers did not make an immediate adjustment to the pronounced decline in sales. Apart from automobiles the increase in inventory accumulation in real terms was not especially large.

HOUSING

In early 1973 there were indications that the 3-year expansion in housing starts was coming to an end. Sales of single-family homes had grown little after the summer of 1972; and vacancy rates of rental housing, while not high, had been edging up. During the first half of 1973 the inflow of savings into thrift institutions showed a pronounced decline compared to 1972, and lenders consequently reduced the volume of their mortgage commitments. The situation became acute in July and August, when institutions experienced a net outflow of funds, although that was reversed late in the year. A further discussion of mortgage markets appears below.

From the first to the third quarter, starts fell from a seasonally adjusted annual rate of 2.4 million units to 2.0 million. In the final quarter, however, the summer stringency in mortgage markets was reflected in a precipitous decline in starts, which dropped to an annual rate of 1.57 million units. Starts for 1973 as a whole, not counting mobile homes, were some 13 percent below the 1972 total.

Despite the record volume of completions, the rise in housing vacancies from 1972 to 1973 remained moderate: 0.2 percentage point for rental units and 0.1 percentage point for homeowner units. Although both of these are up from the troughs reached in 1970 and 1971, they are low by the standards of the 1960's, mainly because household formation and losses from the housing inventory (due to demolitions and other factors) have remained very high.

CONSUMER SPENDING

Consumer demand rose sharply from 1972 to 1973 under the influence of higher incomes. Rising wage and salary payments in the private sector and striking gains in incomes of farm proprietors played major roles in the 10¼ percent rise in personal income, the largest since 1951. Transfer payments were also up substantially for the year as a whole, mainly because of the 20 percent increase in social security benefits that became effective in the final quarter of 1972, although that influence was diminished by the rise in social security taxes starting in January 1973. Under ordinary circumstances disposable income (after tax) should have risen less than personal income, but taxes rose less than usual because of the refund early in 1973 of some \$9 billion in personal income taxes overwithheld in 1972; this figure also reflects smaller than usual final settlements on 1972 tax liabilities. The refund contributed about 1 percentage point to the 10¾ percent increase in disposable income.

The 11 percent rise in consumer spending was accompanied by little change in the saving rate for the year as a whole. In 1970 and 1971, when the economy was sluggish and the recovery weak, the rate had been very high, the 8.1 percent annual average for each year being the highest since just after the end of World War II. The vigorous recovery seems to have been a decisive factor in the decline in the saving rate to 6.2 percent in 1972. However, decisions by consumers to spend a still larger fraction of their disposable

income do not appear to have played a major part in last year's upsurge in consumer expenditures (Table 5).

TABLE 5.—Disposition of disposable personal income, 1960-73
[Percent of disposable personal income]

Disposition of income	Current dollars		
	1960-72 average	1972	1973 ¹
Personal consumption expenditures:			
Food ²	17.4	15.7	15.7
Durable goods.....	13.7	14.7	14.9
Automobiles.....	4.8	4.9	4.9
All other expenditures.....	59.9	60.7	60.6
Total expenditures.....	91.0	91.2	91.2
Plus: Transfers and interest.....	2.5	2.6	2.7
Equals: Total outlays.....	93.5	93.8	93.9
Plus: Saving.....	6.5	6.2	6.1
Equals: Disposable income.....	100.0	100.0	100.0
	Constant (1958) dollars		
Personal consumption expenditures:			
Food ²	17.7	15.5	14.3
Durable goods.....	15.4	18.0	18.8
Automobiles.....	5.4	6.1	6.2
All other expenditures.....	58.0	57.7	58.0
Total expenditures.....	91.1	91.2	91.2

¹ Preliminary.

² Excludes alcoholic beverages.

Source: Department of Commerce, Bureau of Economic Analysis.

The influence on consumer spending of the overwithholding of Federal income taxes in 1972, and their subsequent refunding in 1973, remains uncertain. When taxes were overwithheld in 1972, it was feared that the overwithholding might have an adverse effect on consumption. Perhaps it did, but if so, this effect was swamped by decisions of consumers to reduce their saving rate. The Council's position last year was that the overwithholding was viewed as temporary by consumers and that in accordance with the permanent income hypothesis it affected saving rather than spending.

At the start of 1973 the Administration expected that consumers would begin to reduce their withholdings to some extent in order to eliminate the overwithholding that had started a year earlier. This expectation did not materialize. In effect, consumers seem to have changed their pattern of paying income tax liabilities for a given year. That is, they overpay in the year of liability and prefer to receive refunds the following year, giving the Government substantial interest-free loans.

Last year's refunds were not accompanied by a rise in the saving rate, but the exact manner in which the refunds affected expenditures is not clear. Refunds by the Internal Revenue Service did not become very large until the second quarter of 1973. However, the upsurge in consumer spending came in the first quarter, and spending increases then subsided. If the refunds were important in the spending rise of early 1973, the anticipation by consumers of

refunds must have contributed to the bulge, which was pronounced in durable goods.

Despite last year's large price rise, real personal consumption expenditures for 1973 were up some $5\frac{1}{4}$ percent over 1972. This may be compared to the 6 percent real rise in 1972 and an average rise of 4 percent in the post-World War II years. Real spending in all major categories increased except for food expenditures, which declined by about $2\frac{1}{2}$ percent.

In aggregate, real consumption gains after the first quarter were comparatively small, and the large increases in expenditures after early 1973 were absorbed mainly in higher prices. Several factors seem to have been at work here. Even before the fourth quarter there was some softening in auto demand from the exceptionally high levels of sales (12.5 million unit annual rate) reached in the first quarter, although reports were common in the spring and early summer that shortages of parts were holding back production and sales of automobiles. A leveling out in real purchases of durable goods other than autos after an exceptional rise early in the year may have been related to the decrease in housing. Real food consumption also declined after the first quarter because of the reduction in domestic output, the increase in exports, higher prices, and the shift to lower-cost foods. Whether the extraordinary increases in food prices also had an adverse effect on other types of spending taken as a whole is not clear. The saving rate did not change much. The question is complicated by the fact that the higher food prices were paid largely to American farmers, whose additional purchases of non-food items could partly offset any reduction in such expenditures by the rest of the population. In aggregate, real consumer outlays for all personal consumption except durables and food rose at an annual rate of 5 percent from the first to the fourth quarter of 1973.

NET EXPORTS

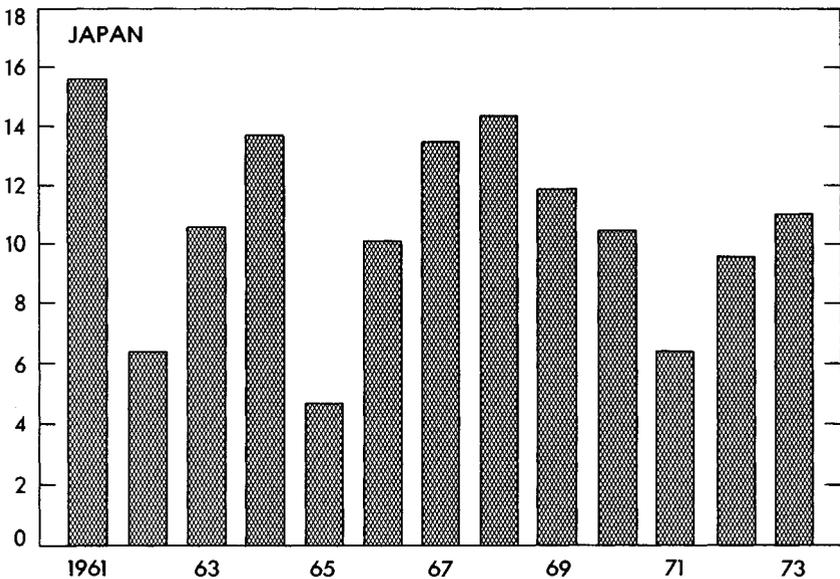
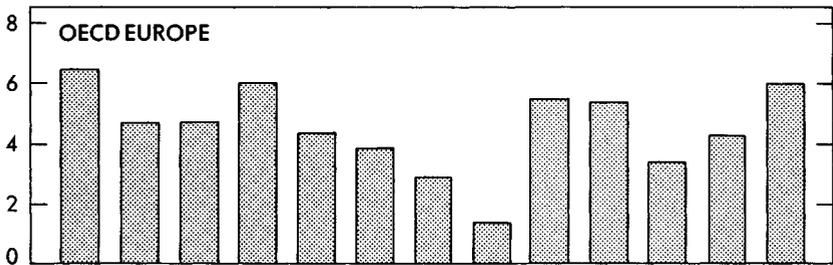
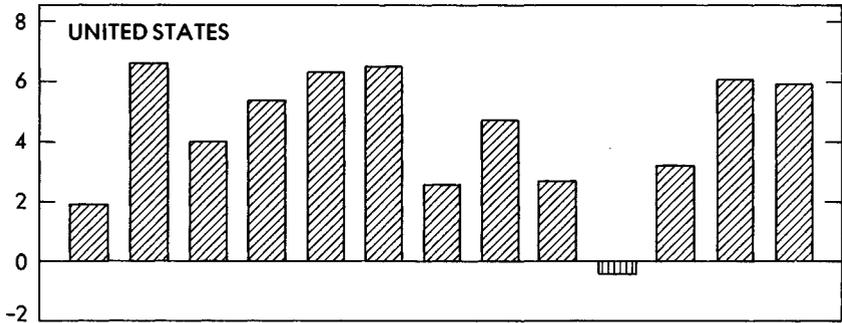
A major element in the big expansion of demand during 1973 was the change in our net export position. In the fourth quarter of 1972 the United States was a net importer of goods and services at the annual rate of \$3.5 billion. In the fourth quarter of 1973, net exports were at the annual rate of \$8.0 billion. This swing of \$11.5 billion was equal to 8.5 percent of the increase in spending during 1973. It exceeded the acceleration in total spending from 1972 to 1973; that is, if net exports are excluded, the rise in total spending is changed to 10.7 percent in 1972 and 10.3 percent in 1973. Not all of the increase of net exports may have been a net addition to total spending, since the financing of the net exports may have reduced some domestic spending. On the other hand, the direct effect of the increase in net exports would have a multiplied effect on *total* spending, because the initial effect would increase incomes in the United States and raise consumption.

The increase in net exports resulted from three developments. First, there was a boom in the rest of the industrial world, far exceeding expectations (Chart 2). Second, low food supplies in the rest of the world boosted the

Chart 2

Changes in Real GNP

PERCENT



SOURCES: DEPARTMENT OF COMMERCE AND ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT.

volume and the prices of farm exports from the United States. Third, the depreciation of the U.S. dollar helped to increase exports from the United States and to restrain the growth of imports.

THE LABOR MARKET

With aggregate output up substantially for the second year in a row the demand for labor remained strong. Civilian employment increased by 2.7 million persons in the course of the year, while the civilian labor force grew by 2.6 million. The 3.3 percent rise in employment was the largest December-to-December percentage increase since 1955. Unemployment declined through the first 3 quarters of the year and then edged up.

THE LABOR FORCE

The civilian labor force expanded sharply during 1973 and for the entire year was 2.1 million above the average level in 1972. This 2.5 percent increase followed a 1972 gain of similar proportions and substantially exceeded the average rise of 1.8 percent a year in the preceding decade.

The civilian labor force can be augmented in three ways: (1) Through reductions in the Armed Forces; (2) through population increases in the working-age groups; and (3) through increases in the proportion of the population seeking work. By 1973 reductions in the Armed Forces had ceased to be a major factor in enlarging the civilian labor force. For the year as a whole the Armed Forces averaged about 100,000 less than in 1972, a marked contrast to the reductions of 400,000 which occurred in both 1971 and 1972. The 1.7 percent increase in the working-age population was in line with the long-term trend. The main factor accounting for the larger than average increase in the civilian labor force in 1973 was the sharp rise in the participation rate. In the fourth quarter of the year a record 61.2 percent of the civilian working-age population participated in the labor force, a large increase from the 60.4 percent participation rate a year earlier. In 1972 and 1973 the movement toward increased labor force participation was reinforced by the large expansion in demand.

The rise in participation was most pronounced for women from ages 20 to 24. In 1973, 61 percent of women in this age group were either at work or looking for a job, compared to 58 percent in 1971 and only 46 percent as recently as 1960. The long-term upward movement in the participation rate for young women has several causes. There has been a trend toward smaller families and toward starting them later. In addition, mothers with preschool children have increased their work outside the home. The continued strong expansion of the service industries, which typically employ a large percentage of women, the relative increase in university training of young women, and the broadening of all women's employment opportunities have contributed to this trend.

Men in the 20 to 24 age group also sharply increased their participation in the civilian labor force for the second year in a row, following 10 years

of essentially declining participation rates. One reason for these declines was the absorption into the Armed Forces of many young men who would otherwise have been part of the civilian labor force. In addition, selective service legislation, which provided exemption from the draft for those continuing their education, induced many others to stay in school. Recently the growth in college enrollments has slackened, and a number of young men who might otherwise have continued their schooling are instead entering the labor force either directly after high school or after a year or two of specialized training.

Teenagers have also displayed an increased tendency to join the labor force. A large proportion of teenagers in the labor force are in school, holding or seeking part-time jobs. During the past few years a wider availability of part-time jobs has contributed to the upward trend in the labor force participation of younger workers. The tight labor market of 1973 accelerated this rise as it did in 1955, 1966, and 1972.

EMPLOYMENT AND HOURS

Last year's increase in the demand for labor took the form of a large increase in employment and little change in the average length of the workweek. The failure of weekly hours to rise is not an unusual cyclical development for an advanced stage of a business expansion. In the early phases of a business cycle upswing, employers prefer to lengthen hours rather than hire new employees, because the latter course of action is often more costly and employers are uncertain about the duration of the expansion. Part-time workers are consequently put on full-time schedules, and full-time workers are switched increasingly to overtime. There are limits to this kind of switching, however, because overtime involves premium pay; at some point it becomes more profitable to add additional workers, or an additional shift, when that option is available.

Another factor that served to hold down average weekly hours in 1973 was the behavior of labor turnover. Average weekly hours are total man-hours worked during the week divided by the number of persons on the payroll. Labor turnover was quite high during the year, because increased job availability led many workers to switch their jobs. As some employees quit and others are hired to take their place, an increased proportion of those listed on the payroll during the survey week have put in less than a full workweek.

UNEMPLOYMENT

The overall unemployment rate averaged 4.9 percent in 1973, well below the 5.6 percent average of 1972. Unemployment declined for almost all demographic, occupational, or industry groups (Table 6).

Last year we described "maximum employment," which is the goal specified in the Employment Act, as "a condition in which persons who want work and seek it realistically on reasonable terms can find employment." We believe that condition was approximately met in 1973, even though the aver-

TABLE 6.—Unemployment rates for selected groups, selected years, 1956–73

[Percent]

Group	1956	1965	1972	1973
All civilian workers.....	4.1	4.5	5.6	4.9
RACE				
White.....	3.6	4.1	5.0	4.3
Negro and other races.....	8.3	8.1	10.0	8.9
AGE-SEX				
Men 20 years and over.....	3.4	3.2	4.0	3.2
Women 20 years and over.....	4.2	4.5	5.4	4.8
Both sexes 16–19 years.....	11.1	14.8	16.2	14.5
OCCUPATION				
White-collar workers.....	1.7	2.3	3.4	2.9
Professional and technical workers.....	1.0	1.5	2.4	2.2
Managers and administrators, except farm.....	.8	1.1	1.8	1.4
Sales workers.....	2.7	3.4	4.3	3.7
Clerical workers.....	2.4	3.3	4.7	4.2
Blue-collar workers.....	5.1	5.3	6.5	5.3
Craft and kindred workers.....	3.2	3.6	4.3	3.7
Operatives.....	5.4	5.5	6.9	5.7
Nonfarm laborers.....	8.2	8.6	10.3	8.4
Service workers.....	4.6	5.3	6.3	5.7
Farm workers.....	1.9	2.6	2.6	2.5
INDUSTRY				
Nonagricultural private wage and salary workers.....	4.7	4.6	5.7	4.8
Construction.....	10.0	10.1	10.3	8.8
Manufacturing.....	4.7	4.0	5.6	4.3
Durable goods.....	4.4	3.5	5.4	3.9
Nondurable goods.....	5.2	4.7	5.7	4.9
Transportation and public utilities.....	3.0	2.9	3.5	3.0
Wholesale and retail trade.....	4.5	5.0	6.4	5.6
Finance and service industries.....	4.0	4.1	4.8	4.3
Government workers.....	1.7	1.9	2.9	2.7
Agricultural wage and salary workers.....	7.4	7.6	7.6	6.9

Note.—Rates by occupation for 1956 refer to persons 14 years of age and older. Data for later years are for 16 years of age and older.

Source: Department of Labor, Bureau of Labor Statistics.

age unemployment rate was 4.9 percent rather than the 4.0 percent which conventionally defines full employment. There is no single statistic which can signal the achievement of the condition which we seek. But the combination of evidence for 1973 is strongly suggestive. During the year the rise in total employment was extraordinarily large, and the proportion of the population over the age of 16 employed was at a postwar high.

A condition of “maximum employment” in overall terms will imply different rates of unemployment for different groups of the population. For example, under conditions of abundant employment opportunities, suppose that young men leave their jobs twice a year on the average and spend on the average 3 weeks each time searching for the job they prefer. In that case young men will have on the average an unemployment rate of $11\frac{1}{2}$ percent, that is, 6 weeks of unemployment divided by 52 weeks in the labor force. Suppose that 20 percent of the employed adult men quit their jobs each year and spend on the average 5 weeks seeking a new one.

The unemployment rate for adult males would then be about 2 percent. If the labor force consisted of an equal number of young men and adult men, the average unemployment rate would be $6\frac{3}{4}$ percent. But if it consisted of five times as many adults as youths, the average rate would be $3\frac{2}{3}$ percent. This illustrates how changes in the composition of the labor force can greatly change the overall unemployment rate that is associated with a constant condition of maximum employment for each group of the labor force.

TABLE 7.—*Unemployment rates by sex and age, selected years, 1956–73*
[Percent]

Sex and age	1956	1965	1972	1973
All civilian workers:				
Actual.....	4.1	4.5	5.6	4.9
Standardized for age and sex ¹	4.1	4.3	4.9	4.1
Males:				
16–19 years.....	11.1	14.1	15.9	13.9
20–24 years.....	6.9	6.4	9.2	7.3
25–54 years.....	3.0	2.7	3.1	2.5
55 years and over.....	3.5	3.3	3.2	2.5
Females:				
16–19 years.....	11.2	15.7	16.7	15.2
20–24 years.....	6.3	7.3	9.3	8.4
25–54 years.....	4.1	4.3	4.9	4.4
55 years and over.....	3.3	2.8	3.5	2.8

¹ The standardized rate was computed by assuming that the age-sex composition of the labor force remained unchanged from 1956 to 1973.

Sources: Department of Labor (Bureau of Labor Statistics), and Council of Economic Advisers.

One way of seeing how labor force composition affects the aggregate unemployment rate is to weight the actual unemployment rates for each age-sex group by the composition of the labor force at a specific time. If each age-sex group shown in Table 7 is weighted according to its importance in the labor force in 1956, when unemployment averaged 4.1 percent, one finds that the overall unemployment rate in 1973 would also have averaged 4.1 percent rather than the 4.9 percent actually experienced. This wide dis-

TABLE 8.—*Composition of the civilian labor force, selected years, 1956–73*
[Percent]

Sex and age	1956	1965	1972	1973
Total civilian labor force.....	100.0	100.0	100.0	100.0
Both sexes 16–19 years.....	6.5	7.9	9.3	9.5
Adult women.....	29.4	31.8	34.3	34.6
20–24 years.....	3.7	4.5	6.1	6.3
25–54 years.....	20.6	21.2	22.1	22.4
55 years and over.....	5.2	6.1	6.1	5.9
Adult men.....	64.1	60.2	56.4	55.8
20–24 years.....	5.2	6.6	7.7	8.0
25–54 years.....	45.6	41.7	38.1	37.8
55 years and over.....	13.3	11.9	10.6	10.0

Note.—Detail may not add to totals because of rounding.

Source: Department of Labor, Bureau of Labor Statistics.

crepancy reflects the large increase in the proportion of the labor force made up of women and young workers of both sexes, two groups whose unemployment rates are substantially higher than the national average. The higher than average unemployment rates for women and for teenagers are closely related to their labor force participation patterns. In addition to their jobs, people in these groups have responsibilities in household management or schooling, which tend to weaken their attachment to the labor force. Since a new entry or a reentry into the labor force is generally followed by a period of searching, and hence unemployment, these groups have higher unemployment rates almost by definition. Even among persons in their early twenties, there are many who have not yet developed an attachment to a specific occupation and who thus change their jobs frequently.

Teenagers, persons in the 20 to 24 age group, and women 25 or older accounted for only 41 percent of the civilian labor force in 1956. By 1973 they accounted for 52 percent (Table 8). The gap between the actual unemployment rate and the fixed-weight unemployment rate follows this changing proportion closely. The difference between the two rates was 0.2 percentage point in 1965, 0.5 point in 1969, and 0.8 point in 1973.

A number of other aspects of the employment situation suggest that if we were not at "maximum employment" in 1973 we were at least very close to it (Table 9). The average duration of unemployment declined, and the proportion of the unemployed who were without jobs for 5 weeks or less was high, indicating a large turnover among the unemployed and relatively short durations of search for work. Only 38.7 percent of the unemployed had lost their last job, which was nearly the same as the proportion in 1968, when the overall unemployment rate was 3.6 percent. Aside

TABLE 9.—Aspects of labor utilization, selected years, 1948-73

Period	Unemployment rate (percent)		Job losers as percent of total unemployment	Average monthly labor turnover rate in manufacturing (per 100 employees)			Ratio of help-wanted ads to non-agricultural employment	Average weekly overtime hours in manufacturing
	Total	Adult males		Quits	Layoffs	New hires		
1948.....	3.8	3.2	(1)	3.4	1.6	(1)	1.03	(1)
1953.....	2.9	2.5	(1)	2.8	1.6	3.6	.86	(1)
1955.....	4.4	3.8	(1)	1.9	1.5	3.0	.77	(1)
1959.....	5.5	4.7	(1)	1.5	2.0	2.6	.73	2.7
1965.....	4.5	3.2	(1)	1.9	1.4	3.1	.91	3.6
1966.....	3.8	2.5	(1)	2.6	1.2	3.8	1.07	3.9
1967.....	3.8	2.3	41.3	2.3	1.4	3.3	1.00	3.4
1968.....	3.6	2.2	38.0	2.5	1.2	3.5	1.06	3.6
1969.....	3.5	2.1	35.9	2.7	1.2	3.7	1.13	3.6
1970.....	4.9	3.5	44.3	2.1	1.8	2.8	.86	3.0
1971.....	5.9	4.4	46.3	1.8	1.6	2.5	.76	2.9
1972.....	5.6	4.0	43.2	2.2	1.1	3.3	.91	3.5
1973 ²	4.9	3.2	38.7	2.7	.9	3.9	³ 1.07	3.8

¹ Not available.

² Preliminary.

³ 11-month average.

Sources: Department of Labor (Bureau of Labor Statistics) and The Conference Board.

from job losers, the remainder of the unemployed had either left their last job voluntarily, newly entered the labor force, or reentered it after a period of absence. The proportion of employees in manufacturing who quit was high, an indication of much voluntary turnover and confidence about finding other jobs. The proportion of employees laid off was similarly low. Available measures showed job vacancies were plentiful.

PRODUCTIVITY AND POTENTIAL OUTPUT

Although the rise of employment during 1973 was exceptionally high, the rise of output was just about average. Consequently the rise of output per worker was significantly less than average. Hours of work per worker did not decline, as they had been doing on the average for a long time. Total hours of work rose even faster, relative to their long-term trend, than employment; and output per man-hour—commonly called productivity—lagged significantly below its trend rate of increase. The failure of productivity to rise more rapidly, and therefore of output to rise more rapidly, was partly a reflection of last year's excess demand. It also contributed to excess demand and to the inflation of 1973.

We have no good measures of productivity in the government sector. This sector is arbitrarily considered to have no productivity growth when total real output and its rate of increase are calculated, though changes in the importance of government relative to private sector output can affect the trend of total productivity. It is possible to say more, however, about productivity in the private sector of the economy.

In the past 25 years (1947–72), output per man-hour in the private economy rose at an annual rate of 3.2 percent, whereas in the private nonfarm economy it rose at an annual rate of 2.7 percent. The private total rose faster than the nonfarm, partly because productivity rose faster in the farm sector than in the nonfarm sector, and partly because of the continuing shift of workers from agriculture to the nonagricultural sector. This shift raises average productivity because productivity in agriculture is lower, even though it is rising more rapidly.

Recently, however, productivity has been rising less in the total private economy than in the private nonfarm economy. Productivity in agriculture declined between 1972 and 1973 instead of rising more than in the nonfarm sector. Moreover man-hours in agriculture as measured in the productivity series fell less than usual last year, and although the rise in nonagricultural man-hours was large the shift in the farm-nonfarm proportion was not as big as usual. These two factors together depressed the rise of total private productivity below the rise in private nonfarm productivity. Productivity in the nonfarm sector rose very strongly through 1972 and the first quarter of 1973. Thereafter it essentially leveled out for the remainder of the year, leaving the increase between 1972 and 1973 at 3.1

percent and much less during the year 1973. Productivity growth has a cyclical pattern, tending to be greatest in the period of most rapid expansion, then to slow down as output nears its peak and during the early period of contraction, but to revive before the recession ends.

Some decline in the rate of productivity growth in 1973 was anticipated as the economy passed beyond its period of most rapid expansion. The degree of the slowdown was unexpectedly great, however, considering that output at the beginning of the year was still more than 2 percent below its conventionally estimated potential. A number of relevant factors were at work:

1. Many industries had trouble achieving large output gains because it was hard to obtain raw and intermediate materials, such as chemicals, steel, paper, and copper. Capacity utilization in basic materials-producing industries was pushed to a postwar high as a consequence of surging demand after several years in which additions to capacity had been low. Capacity utilization in fabricating industries was not so high. Estimates of capacity utilization in manufacturing vary, but in any case output was limited by the lack of materials (Table 10). The shortage of some materials was aggravated by large exports which resulted from the foreign boom, the depreciation of the dollar, and the maintenance in the United States of price ceilings below world price levels.

The shortages of basic materials apparently did not prevent a large rise of manufacturing output and of productivity in manufacturing. We say “apparently” because the manufacturing figures are derived in a different way from that used for the nonfarm output figures, and the two may not be consistent. Nevertheless, the basic materials shortages may have prevented a still further rise of output and employment in manufacturing; and it may have diverted a higher proportion of the enlarged number of workers into nonmanufacturing industries, where productivity was lower and where the influx of workers depressed productivity further. As noted earlier, inventory accumulation was low most of last year, and a larger rise in manufacturing output might have permitted more normal ratios of stocks to sales.

2. The 1973 work force consisted to an unusual degree of new entrants to the labor force and reentrants—chiefly women and young people, all of whom on the average tend to work in less productive occupations than adult males with work experience.

3. An unusually high rate of turnover of workers occurred during 1973. A large number of people quit each month, and a large number of people were newly hired. This meant that a high proportion of the people in each job category were new to that work, if not to the labor force, and required training and experience before they became normally productive. Furthermore, this would give employers an incentive

to maintain a somewhat larger work force than they would otherwise require, as assurance against the departure of experienced workers.

4. Another factor that may have acted to restrain the rise in output per man-hour was the behavior of average weekly hours. As noted before, weekly hours in the private nonfarm sector remained virtually level throughout the year. Increases in man-hours resulting from increased hours rather than from increased employment will usually lead to a rise in output per man-hour, since a smaller proportion of total man-hours is lost to start-up and shut-down routines. In 1972, 35 percent of the increase in man-hours resulted from a longer workweek. In 1973, however, only 5 percent of the increase in man-hours in manufacturing was attributable to longer working hours.

TABLE 10.—Aspects of capacity utilization, selected years, 1948-73

Period	Capacity utilization (percent)					Percent of manufacturers needing more capacity	Ratio of unfilled orders to shipments in durable goods manufacturing	Percent of companies reporting	
	FRB manufacturing			FRB major materials	Wharton manufacturing			Slower delivery of materials	60 days or longer for commitments for materials
	Total	Primary processing	Advanced processing						
1948.....	92.7	98.1	89.8	87.9	92.4	(1)	(1)	32	(1)
1953.....	95.5	94.3	96.1	87.3	92.3	(1)	(1)	31	53
1955.....	90.0	93.7	87.7	89.8	90.9	(1)	4.27	66	63
1959.....	81.4	82.7	80.7	81.5	82.2	(1)	3.44	60	66
1965.....	89.0	91.1	87.8	90.7	90.2	47	3.12	67	64
1966.....	91.9	92.1	91.8	91.2	95.9	50	3.51	73	71
1966.....	91.9	92.1	91.8	91.2	95.9	50	3.51	73	71
1967.....	87.9	85.7	89.1	86.8	92.9	45	3.38	44	65
1968.....	87.7	86.8	88.1	89.5	94.7	43	3.27	53	64
1969.....	86.5	88.5	85.4	90.7	96.0	45	3.13	65	63
1970.....	78.3	81.5	76.5	86.6	88.3	42	2.90	51	55
1971.....	75.0	79.3	72.7	85.8	85.6	31	2.59	48	54
1972.....	78.6	84.6	75.4	90.2	90.0	35	2.59	63	57
1973 ²	83.0	89.8	79.4	94.9	95.8	49	4 3.00	88	78

¹ Not available.

² Preliminary.

³ Average of first 3 quarters.

⁴ Based on seasonally adjusted data through November.

Sources: Board of Governors of the Federal Reserve System (FRB), Department of Commerce, and Wharton School of Finance.

Our experience in 1973 raises the question whether we were at "potential" even though output was, on the average for the year, 2¾ percent below the commonly measured figure of "potential" output. Being at potential does not mean that output cannot be raised further. In 1973, although employment was still rising rapidly, output increased slowly and the rate of productivity increase sagged and actually fell in the second and fourth quarters. A more rapid rise in output would probably have required an even more rapid increase of labor input, if it had been available, and would have depressed labor productivity further.

The conventional measurements of potential assume that the labor force and productivity rise, and that weekly hours of work decline, along an esti-

mated smooth trend from a period in which the unemployment rate was about 4 percent. A recent calculation by the Bureau of Labor Statistics, (*Monthly Labor Review*, December 1973) using these elements, leads us to the estimate that potential was growing by 4 percent per annum after 1969 if we assume that output was at potential in the second quarter of 1969. On this basis, actual output was about 2 percent below potential in 1973. What the experience of 1973 suggests, however, is that potential does not grow year by year at a constant rate. It is a simplification to assume that the labor force, hours of work, the stock of capital, the availability of supplies from abroad, and other determinants of potential move smoothly and continuously. Reliance on a reasonable simplification of this kind is inevitable for inferring the level of potential for those future years about which we have as yet no detailed evidence. But for the years that are past, and probably also for a period immediately ahead, we know more and should be able to do better than read the level of potential off the smooth trend. Looking at it in this way, it seems reasonable to say that the conditions peculiar to 1973 held "actual potential" below the trend, without at the same time saying that in the future the actual potential will always be below the trend derived from past data.

THE BEHAVIOR OF PRICES

During 1973 prices rose more rapidly than at any time since the Korean war. From December 1972 to December 1973 the consumer price index (CPI) rose 9 percent and the wholesale price index 18 percent. The comprehensive GNP deflator rose 7 percent from the fourth quarter of 1972 to the fourth quarter of 1973. Its 8 percent annual rate of increase in the fourth quarter of last year was far above the rise projected by the Administration a year ago.

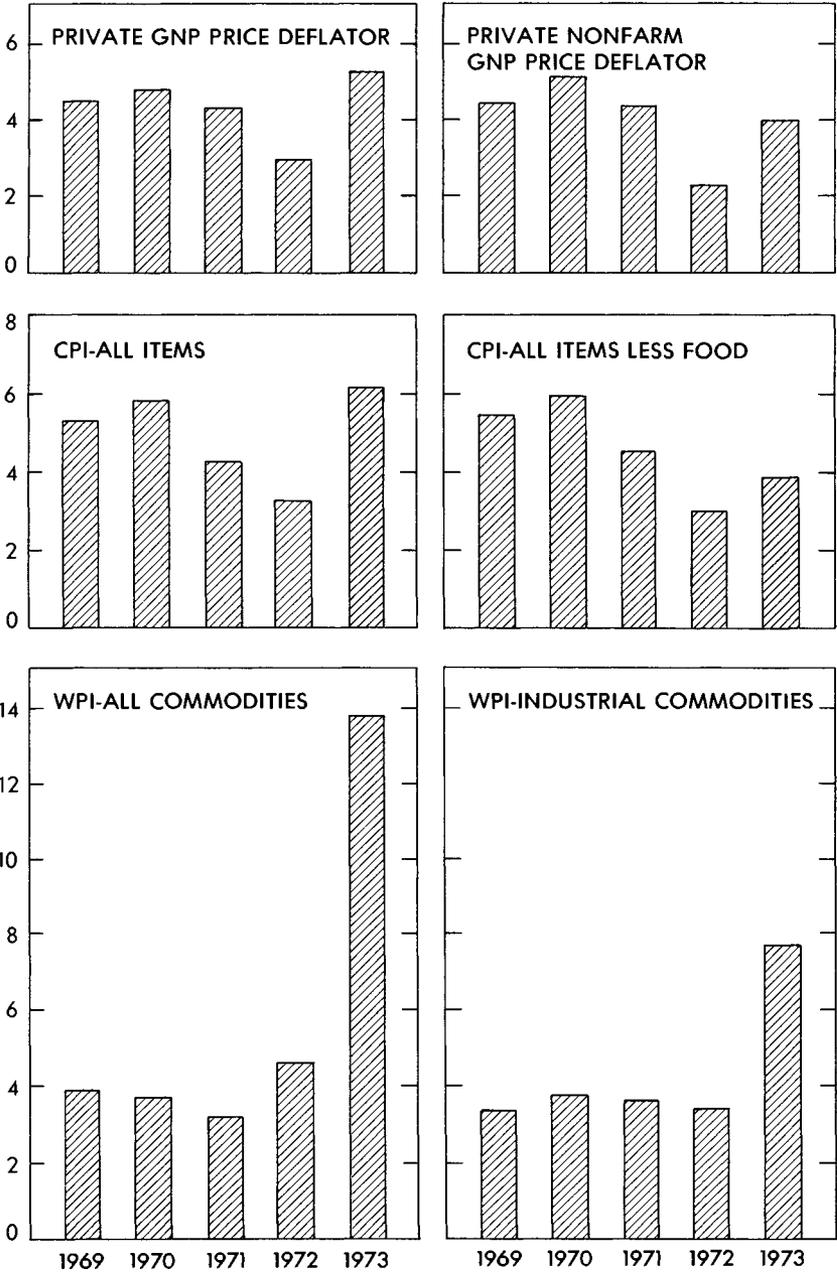
There is no simple explanation for this price behavior which was the most extraordinary in almost a generation and which confounded the Council and most other economists alike. The simultaneous upsurge in demand in the United States and in foreign countries, the shortfall in agricultural production of 1972 and early 1973, the decline in the international exchange value of the dollar, the unexpected capacity problems in materials industries, the increases in petroleum prices late in the year as a result of the Arab oil embargo, the shifting character of domestic price controls—all of these tell part of the story of last year's inflation. Chapter 3 deals with the Economic Stabilization Program and Chapter 4 with the problems of energy and agriculture. The present section touches briefly on some of the broad measures of prices and wages, chiefly in the context of the national income accounts.

Price behavior in the private sector of the economy, as measured by the deflator for private GNP, shows the same broad pattern as the overall GNP

Chart 3

Changes in Selected Price Measures

PERCENT CHANGE FROM PRECEDING YEAR



SOURCES: DEPARTMENT OF COMMERCE AND DEPARTMENT OF LABOR.

deflator. The rate during 1973 was substantially above the high rates during 1969 and 1970, but the differences between 1973 and 1969-70 are greatly narrowed when attention is focused on the private nonfarm deflator alone (Table 11). Similarly, because farm and food prices have greater weights in the wholesale and consumer price indexes, the latter show larger increases from 1972 to 1973 than the private nonfarm deflator (Chart 3).

TABLE 11.—Changes in gross national product price deflators, selected periods, 1948 to 1973
[Percent change; seasonally adjusted annual rates]

Period	Total GNP	Private GNP	Private nonfarm GNP	Nonfinancial corporations
1948 to 1973 average ¹	2.7	2.4	2.5	2.1
1968 IV to 1969 IV.....	5.3	5.0	4.8	2.8
1969 IV to 1970 IV.....	5.3	4.8	5.3	5.1
1970 IV to 1971 IV.....	3.6	3.1	2.9	1.6
1971 IV to 1972 IV.....	3.3	3.2	2.5	2.9
1972 IV to 1973 IV ¹	7.1	7.1	5.5	² 4.4

¹ Preliminary.

² Estimate by Council of Economic Advisers.

Source: Department of Commerce, Bureau of Economic Analysis (except as noted).

Table 12 brings together changes during 1972 and 1973 for the major indexes and some of their components. The acceleration in the advance of prices is evident throughout the indexes, but the sharp advances in prices of farm products, food, and energy products dominate the extraordinary price behavior of last year.

The role of import prices is also noteworthy. The price deflator for imports rose 26 percent during 1973. If these rising import prices were merely passed through dollar for dollar to final purchasers in the United States, they would have accounted for about one-fourth of the rise in prices paid by U.S. purchasers in 1973.

The farm deflator rose 54 percent from the fourth quarter of 1972 to the corresponding quarter of 1973, reflecting exceptional increases in the first 3 quarters of the year. The great increase in U.S. farm and food prices began in 1972 as a reaction to the reduced world output caused by adverse weather in several parts of the world. The single most important shortfall occurred in the Soviet Union and led that country to enter world markets for extremely large quantities of food and feed grains. Poor weather in other countries also contributed to the tightening of world food markets, and the United States, as the major source of additional supplies, was faced with a huge increase in demand.

The sharp increase in demand continued in 1973. Rising incomes in this country contributed to an increase in the demand for food, especially during the first part of the year. International events again added to the demand pressures on U.S. food supplies. Two devaluations of the dollar in a 15-month period, followed by further depreciation in the dollar exchange rate after February, added to the export demand for U.S. food commodities, as

TABLE 12.—Changes in selected price measures, 1971 IV to 1973 IV
[Percent; seasonally adjusted annual rates]

Price measure	1971 IV to 1972 IV	1972 IV to 1973 IV	1973 ¹			
			I	II	III	IV
Implicit GNP price deflator:						
Total GNP ²	3.3	³ 7.1	6.1	7.3	7.0	³ 7.9
Private nonfarm GNP.....	2.5	³ 5.5	4.3	6.0	4.5	³ 7.0
Farm GNP.....	22.9	54.2	50.6	75.8	107.4	3.0
Consumer price index:						
All items.....	3.5	8.4	6.1	8.4	9.1	9.9
Food.....	5.2	19.4	18.6	20.2	24.6	14.5
Nonfood items.....	2.9	5.2	3.2	5.1	4.4	8.2
Energy ⁴	2.9	12.8	8.2	11.6	5.7	27.0
Other nonfood.....	3.0	4.5	2.5	4.1	4.7	6.8
Wholesale price index:						
All commodities.....	5.6	17.3	17.4	22.7	18.8	10.7
Farm products and processed foods and feeds.....	11.4	31.0	49.1	41.2	49.9	-6.8
Industrial commodities.....	3.5	12.0	6.5	15.2	6.5	20.5
Energy ⁵	5.6	46.0	12.8	41.3	22.2	133.2
Other industrials.....	3.3	8.2	5.9	12.6	4.9	11.3

¹ Changes from preceding quarter.

² Includes general government not shown separately.

³ Preliminary.

⁴ Includes gasoline and motor oil, fuel oil and coal, and gas and electricity.

⁵ Includes fuels and related products and power.

Sources: Department of Commerce (Bureau of Economic Analysis), and Department of Labor (Bureau of Labor Statistics)

did the widespread and strong economic expansion abroad. Exports of agricultural commodities rose sharply from \$9.4 billion during 1972 to \$17.5 billion in 1973, a development which was instrumental in the sharp increase in U.S. farm commodity prices.

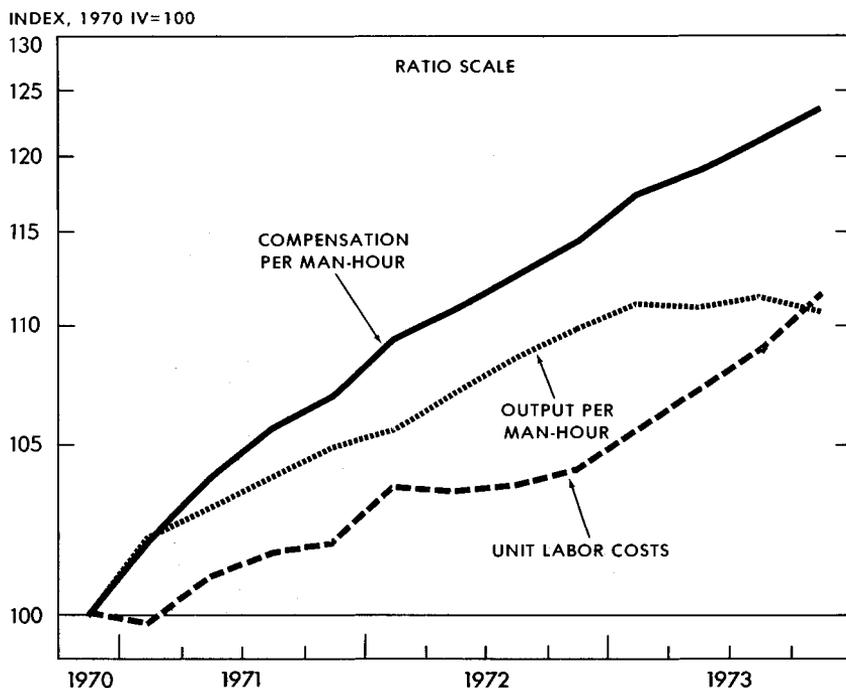
Last year saw a continuation of the major changes in agricultural policy that were initiated during 1972 to further the expansion of supplies and thus restrain price increases. Farm and food product prices, nevertheless, reached new highs during the year. Wholesale farm product prices in December, although 12.4 percent below the August peak, were 36 percent above their level a year earlier, while retail food prices were 20 percent higher. Although the expansion in acreage lifted gross farm-food production, the production of livestock products declined slightly, and with exports higher, there was a 2.5 percent reduction in food supplies reaching consumers. Disruptions in the pattern of supplies occasioned by the controls created serious shortages during the third quarter of the year.

COMPENSATION AND UNIT LABOR COSTS

The slowdown in productivity growth during 1973 was accompanied by a quickening of the rate of increase in compensation per man-hour. As a result, unit labor costs rose sharply and contributed to substantial price increases in the private nonfarm economy (Chart 4). Nevertheless, preliminary data suggest that these price increases fell short of the increase of unit

Chart 4

Productivity, Compensation, and Unit Labor Costs in the Private Nonfarm Economy



NOTE.—DATA RELATE TO ALL PERSONS.

SOURCE: DEPARTMENT OF LABOR.

labor costs in the same sector. This is true even though real compensation per man-hour—money compensation deflated by the consumer price index—is likely to have suffered a small decline instead of having risen as it usually does.

Wage rate adjustments under major collective bargaining agreements were substantially lower in 1973 than in 1972. For the first year of the contract, increases averaged 5.8 percent, down from 7.3 percent in 1972; the slowdown for wages and benefits combined was a little smaller. (See Chapter 3 for further treatment of wage rates.)

Wage changes under such bargaining agreements are limited in scope because only one-fourth of all workers are unionized and only one-half of these are covered by large contracts. A useful indicator of wage rate behavior is the Labor Department's index of adjusted average hourly earnings, which is applicable to all private nonfarm industries. The index holds constant overtime hours in manufacturing and industry mix, but it does not cover fringe benefits or compensation of employees other than

production workers, and it is sensitive to the occupational composition of the work force within industries, which tends to be related to age and sex.

From 1972 to 1973 the adjusted earnings index rose 6.2 percent, essentially the same increase as from 1971 to 1972. Although last year's increase was less than that of 1971, the index has shown a good measure of stability during the past 6 years (Table 13). Monthly data suggest some step-up in the rate of increase in the second half of 1973, although within the year the figures tend to be rather erratic. However, compensation per man-hour in the private nonfarm sector increased by 7.6 percent in 1973, the largest increase in more than 20 years. This acceleration was attributable mainly to a large rise in what is labeled benefits in Table 13, the major part of which in 1973 came from the increase in employers' social security taxes in the first quarter.

TABLE 13.—Components of percent change in compensation per man-hour in the private nonfarm sector, 1965-73

[Percent]

Period	Production workers			Employees other than production workers	Benefits, all employees	Compensation per man-hour, all employees
	Hourly earnings ¹	Overtime in manufacturing	Industry shifts			
Change from preceding year:						
1965.....	3.7	0.1	0.0	-0.4	0.2	3.6
1966.....	4.0	.3	.2	.7	.6	5.8
1967.....	4.6	-.3	-.4	.9	.0	5.6
1968.....	6.6	.2	-.5	.9	.3	7.5
1969.....	6.6	-.1	.2	-.3	.3	6.7
1970.....	6.7	-.2	-.6	.9	.4	7.2
1971.....	7.0	-.1	-.4	-.3	.8	7.0
1972.....	6.3	.3	-.2	.0	.4	6.8
1973 ²	6.2	.1	.3	.1	.9	7.6

¹ Adjusted for overtime in manufacturing and interindustry shifts.

² Preliminary.

Source: Department of Labor, Bureau of Labor Statistics.

From 1972 to 1973 labor costs per unit of output (unit labor costs) rose by 4.4 percent, or much more than the 2.6 percent rise in 1972. The acceleration in the increase of unit labor costs resulted partly from rising hourly labor costs and partly from a reduced rate of increase in productivity.

Nonfinancial Corporations

Table 14 brings together for nonfinancial corporations the components of annual price change over the past few years. Although it constitutes a convenient set of accounts for examining prices, it does not permit one to draw inferences regarding causation. However, the previous remarks about factors underlying changes in productivity and hourly compensation would also be applicable here. The reader should keep in mind that the price deflators are not the equivalent of prices charged by corporations. The deflators apply only to the value added in production by nonfinancial corporations and not to the cost of goods and services purchased by corporations.

TABLE 14.—Changes in prices, costs, and profits per unit of output for nonfinancial corporations, 1970 to 1973

[Percent change]

Item	1970 to 1971	1971 to 1972	1972 to 1973
Percent change per unit of output:			
Prices.....	3.1	2.3	3.6
Employee compensation.....	1.6	2.7	3.9
<i>Compensation per man-hour</i>	7.2	6.8	7.6
<i>Output per man-hour</i>	5.5	4.0	3.7
Other costs.....	3.5	-.3	.0
Capital consumption allowances.....	4.0	1.5	.0
Indirect business taxes ¹	5.0	-2.4	.0
Net interest.....	-1.6	.0	.0
Profits ²	12.6	6.0	9.9
Percent change in output.....	3.5	7.4	7.8

¹ Also includes business transfer payments less subsidies.

² Before taxes and including inventory valuation adjustment.

Note.—Detail may not add to totals because of rounding.

Sources: Department of Commerce (Bureau of Economic Analysis) and Department of Labor (Bureau of Labor Statistics).

The deflator for corporate output rose 3.6 percent from 1972 to 1973 after a 2.3 percent rise in the preceding year. Rising unit labor costs and profits plus inventory valuation adjustment account for all of last year's price rise. Nonlabor costs per unit, which make up about 22½ percent of price, showed little overall change; this was essentially the pattern of change from 1971 to 1972. The faster rise in unit labor costs last year in comparison with the year before reflected an acceleration of the rise in compensation per man-hour and a somewhat smaller increase in output per man-hour. Profits per unit rose quite sharply for the third straight year, but they still remained below the average level from 1964 through 1968.

The 10 percent rise in profits per unit of output and the 8 percent rise in output yielded a 19 percent rise in aggregate profits of nonfinancial corporations, the largest since 1959. Profits of domestic financial corporations rose somewhat faster, and profits originating abroad rose still more. The latter consist of earnings of foreign branches and affiliates remitted to U.S. parent corporations. Part of the increase in profits originating abroad was attributable directly to the depreciation of the dollar.

The profits mentioned thus far refer to profits inclusive of the inventory valuation adjustment (IVA). If this adjustment is excluded, the increase in reported or book profits was considerably greater: 31 percent, rather than 19 percent, for nonfinancial corporations. In 1972 the IVA resulted in a downward adjustment of \$7 billion in book profits; last year the corresponding downward adjustment was \$17 billion.

The IVA has been an integral part of the national income and product accounts since they were first established. The adjustment is made because

the profits that companies report are strongly affected by the accounting methods they use. Most companies rely on the first-in-first-out method. Under this system, when prices of purchased goods are rising, the prices at which purchases are charged to costs will ordinarily be less than the prices of goods in ending inventories. The effect is to reduce the cost of goods sold and to raise profits. The amount by which profits are inflated under such accounting procedures is analogous to capital gains resulting from inflation, which are not included in the calculation of national income. In the national accounts this correction is applied to the valuation of inventory change on the product side and affects proprietors' income and profits on the income side.

Although the share of profits plus IVA as a percentage of gross product originating in nonfinancial corporations rose for the third year in a row, the 1973 share was still lower than in any year from 1947 through 1969 (Table 15). Last year's increase in the profit share was matched by a decrease in all costs except employee compensation: indirect business taxes, capital consumption allowances, and net interest. The last two have shown a strong secular increase; and, as indicated below, they are partly responsible for the decrease in the profit share.

Over the postwar years depreciation laws and regulations have undergone many changes—in the direction of liberalization—that have influenced the level of profits. Holding constant these methods of calculating depreciation would still leave the 1973 profits share low in comparison to the years from 1947 to 1969. For example, according to a special analysis of the Commerce Department, if one used historical costs for the valuation of assets, service lives of assets equal to 85 percent of the Treasury Department's Bulletin F, and the double declining balance method of depreciation, the 1973 ratio of corporate profits to output would be raised by 0.3 percentage point, whereas for the 1947–69 period it would be essentially unchanged. A further allowance for interest, a return on capital whose importance has risen over the postwar years, would narrow the difference between 1973 and the 1947–69 average even more but would still leave the 1973 profit ratio lower by 2.7 percentage points. (Estimates for 1973 are those of the Council.)

Most companies use historical costs for calculating depreciation, and for the most part the Commerce Department accepts in the national accounts the depreciation reported for tax purposes. The current value of output should reflect current prices, and costs of production should reflect current costs. If depreciation is standardized with replacement rather than historical costs, last year's profit share would be reduced by 2.0 percentage points. In terms of depreciation calculated with replacement costs the spread in profits between 1973 and the 1947–69 average is considerably greater than the spread that reflects the use of historical costs.

The share accounted for by employee compensation, which as a rule has moved countercyclically, was unchanged from 1972 and was exceeded only

in 1970. Employee compensation consists of wages and salaries as well as of supplements, most of which are made up of employers' contributions for social insurance and for private pension and welfare funds. If all supplements to wages and salaries are excluded from employee compensation, the wage and salary share appears to have declined each year since 1970 and to be well below the postwar average of 59 percent. The 9 percent share accounted for by supplements was far above the average of 5.7 percent.

TABLE 15.—*Distribution of gross product originating in nonfinancial corporations, 1947-73*

[Percent]

Period	Total	Compensation of employees		All other costs				Profits ²
		Total	Wages and salaries	Total	Capital consumption allowances	Indirect business taxes ¹	Net interest	
1947-----	100.0	65.9	62.8	14.8	4.8	9.3	0.7	19.4
1948-----	100.0	63.9	61.0	14.5	5.0	8.8	.7	21.6
1949-----	100.0	63.8	60.7	16.1	5.9	9.5	.8	20.1
1950-----	100.0	62.4	58.7	15.5	5.7	9.2	.6	22.1
1951-----	100.0	63.1	59.2	15.1	5.8	8.7	.6	21.7
1952-----	100.0	64.8	60.9	16.1	6.2	9.2	.7	19.1
1953-----	100.0	65.9	61.9	16.6	6.6	9.3	.7	17.4
1954-----	100.0	65.9	61.5	17.6	7.7	9.1	.8	16.6
1955-----	100.0	63.9	59.5	17.5	7.9	8.9	.7	18.6
1956-----	100.0	65.3	60.7	17.7	8.0	9.0	.7	16.9
1957-----	100.0	65.6	60.6	18.6	8.4	9.3	.9	15.8
1958-----	100.0	65.9	60.8	19.9	9.1	9.7	1.1	14.2
1959-----	100.0	64.7	59.3	19.1	8.7	9.3	1.0	16.2
1960-----	100.0	65.5	59.8	19.7	8.9	9.7	1.1	14.8
1961-----	100.0	65.1	59.3	20.4	9.2	9.9	1.3	14.5
1962-----	100.0	64.3	58.2	20.8	9.7	9.8	1.4	14.9
1963-----	100.0	63.9	57.7	20.9	9.7	9.8	1.4	15.2
1964-----	100.0	63.3	57.1	20.8	9.5	9.8	1.5	16.0
1965-----	100.0	62.6	56.3	20.4	9.4	9.5	1.6	17.0
1966-----	100.0	63.2	56.5	20.0	9.3	8.9	1.8	16.8
1967-----	100.0	64.0	57.2	20.9	9.7	9.1	2.1	15.1
1968-----	100.0	64.2	57.2	21.2	9.7	9.3	2.2	14.7
1969-----	100.0	65.7	58.4	21.8	9.9	9.3	2.5	12.5
1970-----	100.0	66.9	59.1	23.3	10.4	9.8	3.1	9.8
1971-----	100.0	65.9	57.8	23.4	10.5	9.9	3.0	10.7
1972-----	100.0	66.2	57.7	22.8	10.4	9.5	2.9	11.1
1973 ³ -----	100.0	66.3	57.3	22.0	10.0	9.2	2.8	11.7

¹ Also includes business transfer payments less subsidies.

² Before taxes and including inventory valuation adjustment.

³ Preliminary.

Note.—Detail may not add to totals because of rounding.

Source: Department of Commerce, Bureau of Economic Analysis.

Changes in Real Income

In an evaluation of the year it is important to know whether the net effect of economic developments resulted in an increase or decrease in the economic well-being of the people. There are many different aspects to economic well-being, some of which are difficult or impossible to measure. Even with measurable dimensions of welfare, such as income, subjective reasons lead people to apply different weights to increases in income obtained by different recipients. There is no one statistic that is universally accepted as a measure of economic well-being.

Two measures of changes in income that receive particular attention are real per capita disposable personal income (DPI) and real net spendable weekly earnings for a worker with 3 dependents. From the fourth quarter of 1972 to the fourth quarter of 1973 real per capita DPI increased by 2.4 percent, whereas the real net spendable weekly earnings series declined by 3.1 percent.

Real per capita DPI, as published by the Commerce Department, refers to personal income less Federal and State income taxes; this is deflated by the deflator for personal consumption expenditures and the result is divided by the population. Personal income, which is net of deductions for personal contributions for social insurance, includes income in cash and kind; transfer payments as well as wage and other income earned in current production; and imputed income. Disposable personal income was somewhat low in 1972 because of the overwithholding of taxes, which were subsequently refunded in 1973.

The real net spendable weekly earnings series of the Labor Department reflects earnings of production workers in the private nonfarm economy. The average hourly earnings of all private nonfarm production and nonsupervisory workers listed on payrolls are multiplied by the average weekly hours of these workers to obtain average weekly earnings. The payroll and Federal income tax liability is computed on the assumption that these earnings are realized through the year and that the worker is married, has three dependents, and no other income. The weekly tax liability (which excludes State income taxes and which was unaffected by the overwithholding of Federal incomes taxes) is subtracted from the weekly earnings data to obtain net weekly earnings, which are then deflated by the consumer price index to obtain real net weekly spendable earnings. The Labor Department makes similar calculations for single persons.

As noted above, from the fourth quarter of 1972 to the fourth quarter of 1973 the change in per capita real DPI exceeded that of real net spendable weekly earnings by 5.5 percentage points. About 30 percent of this difference is explained by differential movements of after-tax income of the two series. The disposable personal income series rose 10.8 percent, compared to a rise of 9.2 percent in the net earnings of all production workers. Slightly more than half of the aggregate difference occurred because the number of production and nonsupervisory workers on private nonfarm payrolls grew faster than the total population: 4.0 percent for the former and only 0.7 percent for the latter. The remaining difference is due to the different price deflators: the deflator for personal consumption expenditures rose 7.4 percent during the period, while the CPI rose 8.4 percent.

The consumer price index, which is used to deflate the spendable earnings series, reflects weights as of 1960-61, whereas the DPI series uses current expenditure weights. One consequence is that food, whose relative importance in consumer budgets has tended to decrease over time, has a heavier

weight in the CPI than in the deflator. Also, the personal consumption expenditures deflator excludes and the CPI includes mortgage interest, which rose very rapidly last year. On the other hand, an alternative PCE deflator using fixed 1967 rather than current weights rose almost $\frac{1}{2}$ percent more than the regular PCE deflator during 1973.

The spendable weekly earnings series as a measure of well-being may have a downward bias in periods of strongly rising employment. When economic opportunities are abundant, many married women, students, and retirees enter the labor force. On the average these groups have less training, are likely to earn less than the average hourly wage, and are more likely to work less than a full workweek. Both factors will tend to depress the average weekly earnings of those employed, although each worker has gained in economic well-being. There is also a tendency for multiple jobholdings to increase in periods of strong demand, which would have a similar effect. In addition, the spendable earnings series treats each worker as a family head, when in fact the number of employed persons per family may rise, especially in a period when total employment is rising rapidly, as in 1973.

FISCAL POLICY IN 1973

After supporting the expansion of general business activity in 1972, fiscal policy moved toward restraint in 1973. This was accomplished by the successful control of expenditures. Deferrals, cutbacks, or terminations of non-essential programs helped keep Federal outlays at more than \$3 billion below the \$250 billion target for fiscal 1973 presented in the January 1973 budget. Receipts, on the other hand, rose more than was anticipated, partly because of unexpectedly high rates of inflation. With outlays moderately lower and receipts considerably higher than projected, the unified budget deficit for fiscal 1973 turned out to be \$14 billion, rather than the \$25 billion projected a year ago.

In January 1973 the Administration presented a budget of \$256 billion in receipts and \$269 billion in outlays for fiscal 1974. Since then, the estimate of receipts has been raised to \$270 billion, and projected outlays have been raised to \$274½ billion, the result being an estimated deficit of \$4½ billion in the unified budget. On the full-employment basis, however, a surplus of \$4 billion is estimated for fiscal 1974, compared to an approximate balance projected a year ago. In fiscal 1973 the budget showed a full-employment deficit of about \$2 billion.

FEDERAL EXPENDITURES

On the national income accounts (NIA) basis, actual Federal expenditures rose from \$245 billion in calendar 1972 to \$265 billion in calendar 1973 (Table 16). The increase of 8 percent was smaller than the 10½ percent rise from 1971 to 1972. Last year was the first time since 1969 that Federal expenditures grew less rapidly than GNP.

About \$8 billion of the growth in expenditures from calendar 1972 to calendar 1973 was due to the 20 percent increase in benefits from old age, survivors, and disability insurance that went into effect in October 1972, and to the liberalization of retirement and entitlement provisions at the start of 1973. Federal purchases of goods and services rose much less last year than from 1971 to 1972. All of last year's rise in purchases is accounted for by pay increases for civilian and military employees. A 5.1 percent increase in the wages and salaries of Federal employees took effect in January 1973 and was followed by a 4.8 percent rise in October, but the simultaneous reduction in Federal employment (including the Armed Forces) caused Federal payrolls to rise by only 5 percent. The other half of total Federal purchases of goods and services, purchases from the private sector, changed little after a 7 percent rise the year before.

Grants-in-aid to State and local governments rose by \$3½ billion in 1973, when general revenue sharing had its first full year of operation. The general revenue sharing program, enacted in 1972, provides from \$6.0 to \$6.5 billion of grants-in-aid each year through calendar 1976. About \$10 billion has been distributed to more than 38,000 State and local governments from December 1972 through December 1973. About half of this amount had been authorized for 1972. The initial planned-use reports filed by most of the recipient units of government indicate that approximately half of them would spend shared revenues in such a way as to relieve tax pressures.

TABLE 16.—Federal Government receipts and expenditures, national income accounts basis, calendar years 1972–73

[Billions of dollars]

Receipt or expenditure category	1972	1973	
		January 1973 budget projection ¹	Actual ²
Federal Government receipts.....	228.7	251.6	265.4
Personal tax and nontax payments.....	107.9	108.7	114.5
Corporate profits tax accruals.....	37.8	42.6	49.8
Indirect business tax and nontax accruals.....	19.9	20.8	21.0
Contributions for social insurance.....	63.0	79.6	80.1
Federal Government expenditures.....	244.6	265.6	264.7
Purchases of goods and services.....	104.4	106.3	106.9
Defense.....	74.4	72.8	74.2
Other.....	30.1	33.6	32.7
Transfer payments.....	82.9	96.6	95.4
Grants-in-aid to State and local governments.....	37.7	42.1	41.2
Net interest paid.....	13.5	15.6	15.9
Subsidies less current surplus of government enterprises.....	6.1	5.2	5.4
Surplus or deficit (—).....	–15.9	14.0	.6

¹ January 1973 projected percent changes applied to revised 1972 actual data.

² Preliminary.

Note.—Detail may not add to totals because of rounding.

Sources: Department of Commerce (Bureau of Economic Analysis) and Office of Management and Budget.

It is interesting to note that after rising by 24 percent from 1971 to 1972 the increase in personal tax and nontax receipts of State and local governments was halved from 1972 to 1973, even though increases in personal income were slightly larger in the latter period. General revenue sharing may well have contributed to this change.

The new program has also allowed a number of long delayed but high priority projects for capital improvement and construction by State and local governments. A 3-year decline in real public construction outlays stopped last year. More recently, general revenue sharing funds have been relied upon more and more to meet the current operating costs of human resource and economic development programs, primarily in public education, public safety and health, as well as in environmental protection, conservation, and public transportation. In sum, the financial stability, vitality, and independence of State and local governments has been increased noticeably by the general revenue sharing program.

FEDERAL RECEIPTS

Federal receipts (NIA) grew from \$229 billion in calendar 1972 to \$265 billion in calendar 1973 (Table 16). The 16 percent increase was twice the rate of growth of expenditures. Little more than one-fourth of this increase can be attributed to a change in tax rates or in tax structure. For the most part, receipts grew automatically because of the increase in the various tax bases provided by the real growth of GNP and by inflation.

Compared to the January 1973 NIA estimates, personal tax and nontax receipts turned out to be higher in 1973, partly because the accelerated inflation affected personal incomes and partly because individuals permitted their Federal income taxes to be overwithheld at the same rate as they had in 1972. The projection of NIA receipts at the start of last year assumed that individuals would reduce their withheld taxes in order to bring about a closer balance between 1973 withholdings and 1973 tax liabilities. The estimated reduction of \$3.5 billion did not materialize. Corporate profits tax accruals were more than \$7 billion higher than had been anticipated at the start of the year. The rise in these taxes was due largely to the sharp increase in book profits produced by unexpectedly high rates of price inflation.

The only major discretionary change affecting 1973 receipts occurred in social security (OASDHI) taxes. Social security includes old age, survivors, disability, hospital, and supplementary medical insurance and accounts for most of the Federal receipts included in contributions for social insurance. At the start of 1973 the combined rate for employers and employees was raised from 10.4 percent to 11.7 percent of earnings. Simultaneously the maximum amount of annual earnings subject to the tax was increased from \$9,000 to \$10,800. These two measures together raised OASDHI tax receipts by \$10 billion and thus accounted for over one-quarter of the \$37 billion rise in total Federal receipts from 1972 to 1973. Including the automatic

effect of covered wage and employment growth, total OASDHI receipts rose by about \$14 billion.

By comparison, in 1969 the combined payroll tax rate was 9.6 percent and the maximum amount of earnings subject to the tax was \$7,800. From 1969 to 1973 social security taxes and contributions rose by 67 percent, compared to a rise of 39 percent in employee compensation and an increase of about 21 percent in the consumer price index. In 1969 contributions for social security represented 20 percent of Federal receipts, and OASDHI benefits accounted for 17 percent of Federal expenditures. In 1973 these ratios had risen to 24 and 23 percent respectively.

Rapid growth in the importance of payroll taxes in relation to total taxes lowers the elasticity of Federal receipts with respect to income. The average annual earnings of all covered employees were about \$8,000 in 1973. Those workers whose annual earnings exceeded the 1973 maximum of \$10,800 did not pay more tax when their earnings grew. The periodic increases that have been made in the tax ceiling on covered earnings mitigate the regressive effects of the payroll tax and provide for increased benefits. The latest rise to \$13,200 occurred January 1, 1974.

BALANCES OF THE FEDERAL BUDGET

As the economy moved towards full utilization of resources from 1971 to 1973, the actual Federal budget balance (NIA) rose from a deficit of \$22 billion to a slight surplus. At the same time, the full-employment budget balance increased about one-third as much as the actual balance, or by \$8 billion. The smaller rise in the full-employment balance reflects the fact that the actual real rate of growth from 1971 to 1973 exceeded the growth rate of potential GNP, which is used to calculate full-employment revenues. The calculations in this report are based on potential growth rates of 4 percent annually in constant dollars.

The traditional calculation of the full-employment budget involves adjusting actual Federal expenditures for those changes in unemployment benefits (normally reductions) which would be expected if the economy were operating at 4 percent unemployment. Apart from this adjustment, full-employment expenditures are assumed to be equal to actual expenditures. To estimate Federal receipts at full employment, one must project the shares in full-employment income of taxable personal income, corporate profits, and wages and salaries. Retrospectively, personal tax and nontax receipts at full employment are then calculated, as are corporate profits taxes and contributions for social insurance, by applying the respective average tax rates observed each quarter to the corresponding tax bases in potential GNP measured in current dollars. Total potential GNP is used as the tax base for indirect taxes. Prospective calculations also take into account changes in tax laws scheduled for future years, as well as a gradual rise in the average tax rate on personal incomes, a rise produced by the growth of incomes subject to progressive rates of taxation.

Comparisons between 1972 and 1973 show that the full-employment balance increased by \$14 billion. On a quarterly basis, however, the increase was uneven; the large rise in social security benefits ahead of taxes in the fourth quarter of 1972 and the phase-in of revenue sharing contributed to the full-employment deficit for that year. Furthermore, if the \$9 billion of overwithholding of individual income taxes that started in 1972 and has persisted since is included in full-employment receipts, as it is in actual receipts, the change amounts to only \$5 billion instead of \$14 billion. In 1972 overwithheld taxes were about \$9 billion, but in 1973 refunds of overwithheld 1972 taxes were offset by overwithholding of 1973 taxes.

The limitations of the traditional measures of potential output were discussed earlier in this chapter. Despite these limitations, the full-employment surplus calculation based on the traditional concept of the potential GNP that is consistent with 4 percent unemployment is useful in the long run for evaluating changes in fiscal policy. At a constant price level, changes in the balance at full employment—whatever consistent definition of full employment one may choose—reflect changes in full-employment expenditures, discretionary changes in tax receipts, that is, those produced by changes in tax laws, and changes in tax receipts along the full-employment path of output under given tax laws. When prices rise over time, changes in the full-employment budget surplus can also be produced automatically. As explained in the next section, this is particularly likely to occur in the short run when unexpected increases in the rate of inflation raise receipts more than expenditures.

INFLATION AND THE FEDERAL BUDGET AT FULL EMPLOYMENT

The increase in the Federal full-employment budget surplus from calendar 1972 to 1973 is reduced further if one takes account of the high rates of inflation that materialized in 1973. At the start of that year, the price level measured by the implicit GNP price deflator was expected to continue to rise by about 3 percent during the year, as it had during 1972. In fact, it rose by about 7 percent from the fourth quarter of 1972. Thus, for the year as a whole the level of the deflator was 2 percent above the level that had been assumed in budget planning.

In the short run, Federal receipts respond much more promptly than Federal expenditures to an unexpected increase in the rate of inflation. The bases for most taxes are raised automatically, but less than half of total expenditures will respond within a few months to an increase in the rate of inflation. Thus for each additional 1 percent rise in the price level, full-employment receipts increase by about 1.1 percent, but expenditures grow by perhaps only 0.5 percent in the short run. With the magnitudes of calendar 1973, a price level that is 2 percent higher on the average for the year raises full-employment receipts by around \$3 billion more than expenditures, leaving the full-employment surplus shown in Table 17 higher by that amount for the year than it would have been if the rate of inflation had not grown.

Since these apparent stabilization effects of the budget were called forth by an unexpectedly high rate of inflation, higher than in the past, they cannot be attributed to the fiscal policies intended at the start of the year. Rather, they may be regarded as part of the automatic stabilizing component of fiscal policy. Before one can infer changes in discretionary fiscal policies by comparing the full-employment balances of 1972 and 1973, the full-employment budget surplus for 1973 should first be adjusted for the rise in the rate of inflation from 1972 to 1973, even though the adjustment cited above is only a first approximation.

TABLE 17.—*Actual and full-employment Federal and State and local government receipts and expenditures, national income accounts basis, calendar years 1969-73*

[Billions of dollars; seasonally adjusted annual rates]

Calendar year	Federal Government			State and local government			Combined surplus or deficit (—)
	Receipts	Expenditures	Surplus or deficit (—)	Receipts	Expenditures	Surplus or deficit (—)	
Actual:							
1969.....	197.3	189.2	8.1	119.7	119.0	0.7	8.8
1970.....	192.0	203.9	-11.9	135.0	133.2	1.8	-10.1
1971.....	198.9	221.0	-22.2	152.3	148.3	4.0	-18.1
1972.....	228.7	244.6	-15.9	177.2	164.0	13.1	-2.8
1973 ¹	265.4	264.7	.6	194.8	183.8	11.0	11.6
1972: I.....	222.9	236.6	-13.8	166.2	157.8	8.4	-5.4
II.....	225.4	244.4	-19.0	175.9	160.8	15.2	-3.9
III.....	229.6	237.0	-7.4	175.3	165.9	9.5	2.0
IV.....	236.9	260.3	-23.4	191.2	171.6	19.6	-3.8
1973: I.....	253.6	258.6	-5.0	190.2	176.4	13.9	8.9
II.....	262.4	262.4	.0	192.8	181.2	11.5	11.6
III.....	269.5	265.6	4.0	196.0	185.7	10.4	14.3
Full-employment:²							
1969.....	198.4	189.6	8.8	119.9	119.0	.9	9.7
1970.....	206.7	202.7	4.0	140.4	133.2	7.2	11.2
1971.....	216.5	218.6	-2.1	159.5	148.3	11.2	9.1
1972.....	234.9	242.6	-7.7	182.5	164.0	18.5	10.8
1973 ¹	269.5	263.7	5.8	198.0	183.8	14.2	20.0
1972: I.....	230.2	234.3	-4.1	173.0	157.8	15.2	11.1
II.....	232.6	242.3	-9.7	181.6	160.8	20.8	11.1
III.....	236.6	235.0	1.6	180.5	165.9	14.6	16.2
IV.....	240.1	258.7	-18.6	195.0	171.6	23.4	4.8
1973: I.....	258.4	257.3	1.1	192.4	176.4	16.0	17.1
II.....	265.9	261.2	4.7	195.2	181.2	14.0	18.7
III.....	272.4	264.6	7.7	198.8	185.7	13.1	20.8

¹ Preliminary.

² Over-withholding of personal income taxes is not included in full-employment receipts.

Note.—Detail may not add to totals because of rounding.

Sources: Department of Commerce (Bureau of Economic Analysis), Office of Management and Budget, and Council of Economic Advisers.

THE STATE AND LOCAL AND THE COMBINED BUDGET BALANCES

As shown in the preceding table, the actual balance of State and local government receipts and expenditures grew rapidly, from \$4 billion in calendar 1971 to \$11 billion in 1973. Last year's surplus amounted to almost 6 percent of total receipts.

Relationships among Federal transfers to State and local governments and the budget surpluses and tax efforts of these units have grown closer

since general revenue sharing was introduced in October 1972. For instance, of the \$3 billion received for the third entitlement period under general revenue sharing in April and July 1973, it is estimated that almost half is being spent to reduce taxes or prevent an increase in taxes. With State and local spending rising at a somewhat accelerated rate of 12 percent from 1972 to 1973, the surplus of State and local governments declined progressively during 1973.

This decline is somewhat more pronounced if one estimates the full-employment budget surplus for State and local governments. Here essentially the same procedure is used as in estimating the Federal budget. Only a few differences arise. Full-employment receipts from contributions for social insurance are assumed to be equal to the actual social insurance contributions received by State and local governments, since these programs cover only State and local employees and therefore do not fluctuate cyclically. Full-employment expenditures are assumed to be equal to actual expenditures, since unemployment benefits enter the national accounts only as Federal expenditures.

The difference between these full-employment receipts and expenditures yields the crude estimate of the full-employment budget balance of State and local governments used in this report for the analysis of fiscal policy. More refined estimates might take into account that some State and local expenditures vary automatically with cyclical conditions. There is also some evidence that tax rates tend to be raised when the gap between actual GNP and potential GNP widens. The average tax rates at full employment may therefore deviate systematically from the actual tax rates, contrary to the assumption made in estimating full-employment receipts. Nevertheless the State and local budget calculated in this way does give a better estimate of the stance of overall fiscal policy than the actual budget.

The full-employment budget balance of State and local governments can be added to the comparable balance of the Federal Government to obtain a rough indicator of the combined fiscal policy changes generated by all layers of government. The result shows that although State and local governments reduced their full-employment budget surplus in 1973 the combined budget surplus still rose by \$9 billion—from \$10.8 billion in 1972 to \$20.0 billion in 1973, on a national income accounts basis. If increases in the full-employment budget surplus produced by an unexpected rise in rates of inflation are not regarded as “discretionary” but as part of the automatic stabilizers, particularly at the Federal level, the increase in the full-employment surplus for all levels of government combined would be reduced to about \$6 billion. However, if overwithholding is included in Federal receipts for 1972, the full-employment surplus shows a decline from 1972 to 1973. As indicated in Chapter 1, the Council believes that overwithholding should be omitted from the calculation of full-employment receipts. Viewed in this manner, therefore, the full-employment surplus on a combined governmental basis indicates a shift toward restraint from 1972 to 1973, but the shift is less than in the Federal budget alone.

MONETARY POLICY AND FINANCIAL MARKETS

For more than a decade, money GNP has tended to grow in a higher proportion than the narrowly defined money supply (M_1) but in the same proportion as both the broadly defined money supply (M_2) and privately held liquid assets as defined in Table 18. However, even with reasonable allowances for lags—with a 2-quarter lag of the growth of GNP behind the growth of M_2 and of privately held liquid assets—deviations from these relationships of proportionality have been large in some years. A reduction in the rate of growth of these aggregates tends to have a moderating effect on the growth of money GNP, even if for some purposes the short-run deviations from long-run relations are uncomfortably large.

TABLE 18.—*Changes in aggregate monetary measures and gross national product, 1968 to 1973*
[Percent change; seasonally adjusted annual rates]

Half year	M_1 (currency, plus demand deposits)	M_2 (M_1 plus time deposits ¹)	Private liquid asset holdings ²	Adjusted credit proxy ³	GNP
1968: First half.....	6.5	7.5	8.2	5.4	10.4
Second half.....	8.4	10.4	10.0	12.6	7.8
1969: First half.....	6.2	6.3	6.9	3.2	7.6
Second half.....	2.2	.6	3.0	-1.5	5.6
1970: First half.....	5.5	4.8	5.3	4.4	4.6
Second half.....	6.0	10.7	8.0	10.7	4.4
1971: First half.....	8.9	14.9	11.9	10.5	11.4
Second half.....	4.3	7.8	9.1	8.5	7.3
1972: First half.....	6.9	10.8	12.3	11.7	11.0
Second half.....	8.6	10.9	12.5	11.1	10.2
1973: First half.....	7.4	9.1	13.1	14.4	12.5
Second half ⁴	4.8	8.5	9.2	8.2	10.0

¹ Time deposits at commercial banks other than large certificates of deposit.

² Holdings of private nonfinancial investors: Currency, demand deposits, time deposits (including CD's) and savings accounts in commercial banks and thrift institutions, U.S. Government securities (savings bonds and short-term), and commercial paper.

³ Consists of member bank deposits, bank-related commercial paper, Eurodollar borrowings of U.S. banks, and certain nondeposit items.

⁴ Preliminary.

Note.—Half year changes are based on data for last quarter in each half year.

Using data for the last month of each half year would yield for the two halves of 1973 7.8 and 3.7 percent, respectively, for M_1 , and 9.3 and 7.9 percent for M_2 .

Sources: Board of Governors of the Federal Reserve System and Department of Commerce (Bureau of Economic Analysis).

Appraising the effect of a change in the money supply on money rates of interest, particularly appraising its effects in the longer run, is a matter of some complexity because money rates depend not only on the "real" yield of the available physical resources, measured as if the general price level remained constant, but also on the inflation premium which lenders insist on receiving and borrowers are willing to pay. The immediate effect produced by a high rate of increase in the money stock is to increase the supply of credit; but such a policy also tends to increase the expected rate of

inflation and thus to raise the demand for credit. However, both the demand and the supply also depend significantly on real factors which would make for positive yields from investment even if these were estimated on the basis of an unchanging general price level.

Because the demand for credit continued to rise rapidly in 1973, upward pressures on interest rates were strong and rates at year-end were well above their levels at the start of the year (Chart 5). From December 1972 to December 1973 the Treasury bill rate rose from 5.1 to 7.4 percent, the prime commercial paper rate from 5.5 to 9.1 percent, and the rate on long-term bonds of the Federal Government from about 5.9 to 6.4 percent; the FHA mortgage yield from loans on new homes climbed from about 7.6 to 8.9 percent. Until late August the stock market declined, then it rose until October without fully recovering the earlier loss. After October, stock prices fell again, leaving a substantial net decline for the year as a whole. It is hard to tell to what extent the reduction in the market value of stock equities was caused by rising interest rates and to what extent by the rising uncertainty about profits, an attitude at least partly occasioned by the energy crisis late in the year.

Monetary Policy

Monetary policy in 1973 applied somewhat more restraint than the year before, since it was aiming for a gradual return to a sustainable rate of growth in demand and output. According to preliminary estimates, from the fourth quarter of 1972 to that of 1973, M_1 grew by 6.1 percent, M_2 by 8.8 percent, and the stock of privately held liquid assets by 11.2 percent. For the preceding year these figures had been 7.7, 10.9, and 12.4 percent respectively. By the last quarter of 1973 the current growth of money GNP was reduced to about 9 percent at an annual rate from an 11.7 percent rate in the fourth quarter of 1972, a 15.2 percent rate in the first quarter of 1973, and rates of 9.9 and 10.6 percent in the second and third quarters of the year.

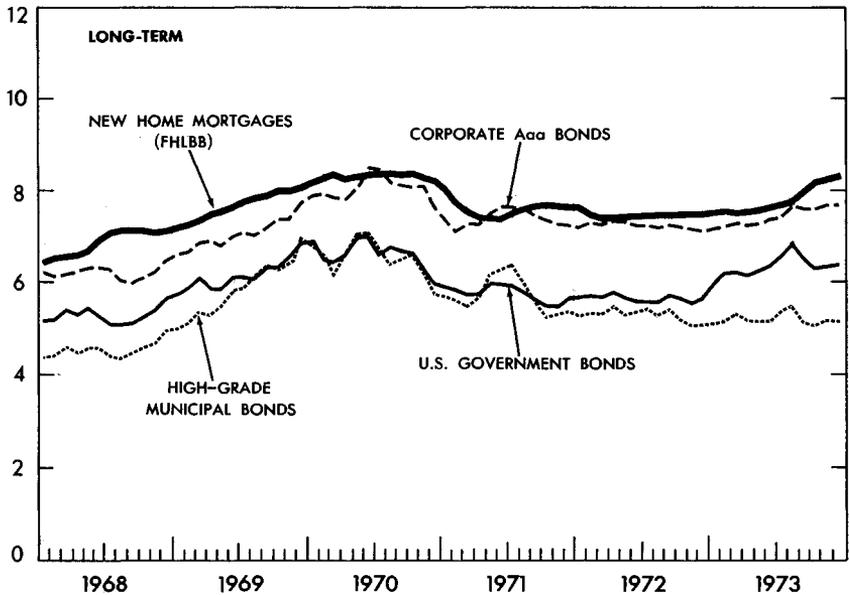
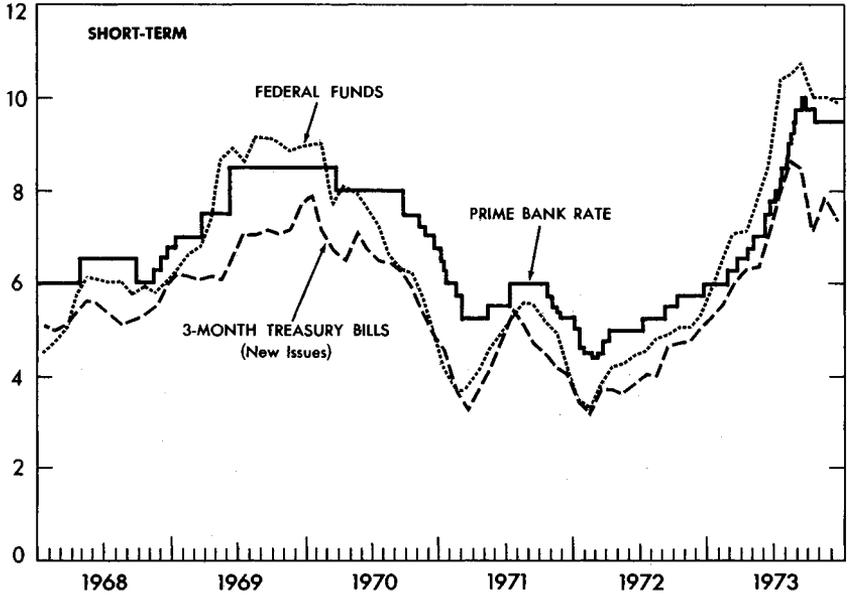
As market interest rates rose, deposits at commercial banks became less attractive than alternative open market assets, a financial market condition reminiscent of 1969. Contrary to the 1969 practice, however, when ceilings on large certificates of deposit (CD's) were set below open market interest rates—a move causing outflows of funds from commercial banks—measures were taken to ensure that commercial banks could compete for funds in the open market. The ceilings on large CD's (\$100,000 and over) maturing in less than 90 days had been removed in 1970, and the restrictions on large CD's maturing in 90 days or more were lifted in May 1973. In addition, the Federal Reserve Board in conjunction with other Federal regulatory agencies increased the maximum interest payable on time and savings deposits in July. Ceilings on CD's with maturities of at least 4 years and minimum denominations of \$1,000, but not more than \$100,000, were eliminated at the same time. In November, however, Congress passed legis-

lation requiring ceilings on all CD's of less than \$100,000. The volume of large CD's increased from \$44.4 billion in January to \$67.0 billion in August, a sharp contrast to the sizable decline in 1969.

Chart 5

Interest Rates

PERCENT PER ANNUM



SOURCES: DEPARTMENT OF THE TREASURY, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, FEDERAL HOME LOAN BANK BOARD, MOODY'S INVESTORS SERVICE, AND STANDARD & POOR'S CORPORATION.

However, steps were taken to keep credit expansion within bounds. The supply of reserves through open market operations was kept at a level where commercial banks had to borrow heavily from the Federal Reserve discount window to acquire additional reserves. The Federal funds rate, a good barometer of money market conditions, rose to about 11 percent in September from about 5½ percent at the beginning of the year.

Marginal reserve requirements on large CD's and on bank-related commercial paper were also raised from 5 to 8 percent in May to increase the effective cost of raising funds. As loans financed through large CD's continued to accelerate, these marginal reserve requirements were raised again in September, this time to 11 percent. The new regulation meant an additional \$465 million in required reserves for the banking system. Commercial banks raised the prime lending rate to a record 10 percent in response to the higher effective cost of large CD's and strong credit demand. The volume of large CD's outstanding declined from \$67 billion in August to about \$63 billion in December. The rapid rise of business loans at commercial banks came to an end. As a result, there occurred in September and October a significant rise in business borrowing by means of the placement of commercial paper by dealers in the market.

Recognizing these developments, the Federal Reserve Board lowered the marginal reserve requirement on large CD's and bank-related commercial paper from 11 to 8 percent in December. The move lowered the effective cost to banks of obtaining additional funds through the sale of large CD's and bank-related commercial paper and prevented short-term interest rates from rising even higher.

Long-Term Financing

Long-term financing by corporations was lighter in 1973 than in 1972 but showed a substantial increase in the final quarter (Table 19). The reduction was partly a reflection of the large rise in internally generated funds. In the first 3 quarters of 1973 corporate profits after taxes plus capital consumption allowances were on average 16 percent greater than the annual average for 1972. Along with rising long-term rates, this contributed to the decline in bond market activity, while declining stock prices made financing through equity issues less attractive.

With the rise in profits slowing down after midyear, and with requirements for new capacity continuing to increase, scheduled new bond offerings rose substantially in the fourth quarter. These upward pressures on interest rates were counterbalanced when investors attempted to reshuffle their portfolios in favor of longer-term securities in response to declining short-term rates.

Mortgage Markets

During the first 3 quarters of 1973 the sharp increase in short-term open market rates and the gap between those rates and yields on most types of

TABLE 19.—Offerings of new security issues, 1972–73

(Billions of dollars)

Period	Corporate securities			State and local government securities
	Total	Bonds and notes	Stocks	
1972.....	40.8	27.8	13.1	22.9
1973.....	33.1	21.8	11.3	22.8
1972: I.....	9.8	6.9	2.9	5.9
II.....	11.2	7.4	3.8	6.1
III.....	9.2	6.1	3.1	5.4
IV.....	10.6	7.4	3.3	5.6
1973: I.....	8.2	4.4	3.9	5.6
II.....	8.6	6.2	2.4	5.6
III.....	6.4	4.6	1.7	5.1
IV.....	9.9	6.6	3.3	6.4

¹ Preliminary.

Note.—Detail may not add to totals because of rounding.

Sources: Securities and Exchange Commission and *The Bond Buyer*.

savings deposits decreased the net inflow of funds into thrift institutions. The tightness in mortgage markets was less severe than in 1966 and 1969.

In 1972, conditions in credit markets were relatively easy, and net savings flows into thrift institutions were large (Table 20). The rate of this net inflow moderated during the first half of 1973, but it still remained substantial, partly because of unusually large tax refunds. Mortgage repayment flows were also ample. Mortgage loan commitments outstanding at all savings and loan associations reached a record \$15.1 billion in May. As short-term open market rates increased sharply, net savings inflows into thrift institutions excluding interest credited were reduced, and for the duration of the third quarter they turned into net outflows. Savings and loan associations decreased new commitments, borrowed heavily from the Federal Home Loan Banks (FHLB), and sold liquid assets in order to meet existing commitments. Inclusion of interest credited into the net savings flow would still yield a negative figure for the third quarter, though with seasonal adjustment the sharp diminution from earlier quarters would then leave the net third-quarter flow positive.

The progressive reduction of net savings flows to the thrift institutions tightened conditions in mortgage markets and induced Federal regulatory agencies to take steps to revive this market. In July, maximum interest rates payable on time and savings deposits by thrift institutions were adjusted upward. Also the Federal Home Loan Bank Board lowered liquidity requirements at member institutions, freeing additional funds for mortgage lending. Ceilings on FHA–VA mortgages were raised from 7 to 8½ percent in two steps in order to attract more funds to Government-backed mortgages.

Assistance to Mortgage Markets

Mortgage markets received substantial support from federally sponsored housing agencies in 1973. These agencies channeled funds from the open market to mortgage markets and thus eased the availability of mortgage credit. In addition, the President announced measures to help the mortgage and housing sector in both the short and long run.

Federal Home Loan Bank advances outstanding to member savings and loan associations reached \$15 billion in December, compared to \$8 billion at the end of 1972. The \$7 billion net increase may be compared with a rise of \$4 billion during 1969.

TABLE 20.—*Net savings flows at thrift institutions, 1968–73*

[Billions of dollars, not seasonally adjusted]

Period	Net savings flows ¹
1968	3.9
1969	-1.8
1970	6.2
1971	26.3
1972	29.9
1973 ²	10.2
1972: I	10.7
II	7.1
III	6.3
IV	5.9
1973: I	7.8
II	3.6
III	-3.7
IV ²	2.5

¹ New deposits less withdrawals. Excludes interest credited.

² Estimate by Council of Economic Advisers.

Note.—Thrift institutions consist of mutual savings banks and federally insured savings and loan associations.

Sources: National Association of Mutual Savings Banks, and Federal Home Loan Bank Board (except as noted).

The Federal National Mortgage Association, the largest financial intermediary serving mortgage markets, bought \$6.1 billion worth of mortgages during 1973, an increase of \$2.4 billion over 1972.

The President announced a series of legislative and administrative proposals in September 1973 in order to ease the tight mortgage market conditions existing at the time. First, the Federal Home Loan Banks were authorized to make forward commitments up to \$2.5 billion at a predetermined rate of interest to member savings and loan associations. Second, the Government National Mortgage Association was authorized to reactivate the Tandem Plan and offer to buy up to \$3 billion of mortgages from various types of financial institutions. Third, Congress was requested to raise the maximum amount of a mortgage loan insurable by the Federal Housing Administration, a step which would make Government-backed loans available to a larger number of home buyers who cannot obtain conventional mortgage loans. The President also sent to the Congress several recommendations designed to make it easier for home buyers to obtain mortgages in the future.

CHAPTER 3

Inflation Control Under the Economic Stabilization Act

Public Law 93-28, the Economic Stabilization Act Amendments of 1971, as amended, requires that the *Economic Report of the President* include a section "describing the actions taken under this title during the preceding year and giving his assessment of the progress attained in achieving the purposes of this title." This chapter is intended to fulfill that requirement. There is, however, no intent to represent the description of the control regulations contained herein as legally binding interpretations.

PRICE AND WAGE CONTROLS, administered by the Cost of Living Council (CLC) under authority of the Economic Stabilization Act, remained in effect throughout 1973 but underwent several substantial modifications. After the move to Phase III early in the year, the changes were in the direction of greater stringency. They reflected the strain placed on the program when economic forces caused a sharp acceleration of inflation beginning early in the year and when this in turn generated public and political demand for changes in the nature of controls. However, the extent to which these changes could contain the inflation in 1973 was limited by the serious risks of disrupting markets and adversely affecting supply.

THE ECONOMIC STABILIZATION PROGRAM IN 1973

As 1973 began, economic conditions seemed propitious for a substantial modification in the Phase II system of controls. The rate of inflation had been moderate in 1972. The consumer price index (CPI) rose 3.4 percent during the year (Table 21). Wage increases had moderated from their very high rates of early 1971, a sign that expectations of future price increases had diminished. Industrial price increases had slowed to a 2.9 percent annual rate in the last half of 1972. Thus fiscal and monetary policy supplemented by the controls program had approximately achieved their interim goals by the end of 1972.

TABLE 21.—Measures of price and wage change during the Economic Stabilization Program

[Percent change; seasonally adjusted annual rates]

Price or wage measure	Freeze and Phase II Aug. 1971 to Jan. 1973	Phase III Jan. 1973 to June 1973	Second freeze and Phase IV June 1973 to Dec. 1973	Calendar year during which controls were in effect throughout	
				Dec. 1971 to Dec. 1972	Dec. 1972 to Dec. 1973
PRICES					
Consumer price index:					
All items.....	3.3	8.3	9.6	3.4	6.8
Food.....	5.6	20.3	18.6	4.7	20.1
All items less food.....	2.7	5.0	6.9	3.0	5.6
Commodities less food.....	2.0	5.2	5.2	2.5	5.0
Services.....	3.5	4.3	8.4	3.6	6.2
Personal consumption expenditures deflator ¹	2.4	6.7	8.1	2.7	7.4
Wholesale price index:					
All commodities.....	5.7	24.4	14.3	6.5	18.2
Farm products and processed foods and feeds.....	13.3	49.8	8.8	14.4	26.7
Industrial commodities ²	2.9	14.4	17.2	3.6	14.8
Finished goods, consumer and producer ³	1.8	11.7	21.4	2.2	15.6
Crude and intermediate materials ³	3.7	16.2	14.1	4.5	14.1
WAGES⁴					
Average hourly earnings, private nonfarm economy ⁵	6.1	6.3	7.6	6.3	6.7
Average hourly compensation:					
Total private economy ¹	6.3	8.4	7.6	6.8	8.0
Nonfarm ¹	6.5	8.2	7.9	6.9	8.1
Average hourly earnings, private nonfarm economy ¹ &.....	6.2	5.8	7.5	6.5	6.7

¹ Percent changes based on quarterly data: 1971 III to 1972 IV (col. 1), 1972 IV to 1973 II (col. 2), 1973 II to 1973 IV (col. 3), 1971 IV to 1972 IV (col. 4), and 1972 IV to 1973 IV (col. 5).

² Includes a small number of items not shown separately.

³ Excludes foods but includes a small number of items not in the industrial commodity index.

⁴ Average hourly earnings are for production workers or nonsupervisory employees and average hourly compensation for all employees.

⁵ Adjusted for overtime (in manufacturing only) and interindustry shifts.

Source: Department of Labor (Bureau of Labor Statistics) and Council of Economic Advisers.

With excess capacity declining at the end of 1972, there was a clear possibility that continuation of the Phase II controls program would interfere increasingly with production, productivity, and investment decisions, and raise administrative costs, especially if the economy continued to expand as expected.

PHASE III (January 11 to June 13, 1973)

Against this backdrop it was decided to modify the price and wage controls program to make it more consistent with the further reduction in excess capacity foreseen at the time and also move toward the Administration's goal of eventually ending the controls. The new regimen of controls, known as Phase III, involved some basic changes in the regulations (Table 22).

(A more detailed presentation of the regulations of Phase III, the subsequent freeze, and Phase IV can be found in the *Quarterly Reports* of the Cost of Living Council.) To reduce the mounting delays and costs entailed in submitting requests for price increases, having them reviewed, and seeking detailed interpretations of increasingly complex rules, the basic principles of regulation developed during Phase II were to be self-administered in Phase III. The prenotification requirement was dropped in most sectors of the economy. Report-filing requirements were maintained only for the largest economic units. The Price Commission and Pay Board were absorbed into the staff of the Cost of Living Council; and this staff, together with the Internal Revenue Service (IRS) enforcement staff, was reduced. The Cost of Living Council retained authority, and subsequently used it, to impose specific, mandatory regulations where restraint seemed lacking, but in most sectors of the economy the system was not mandatory without further action by the CLC.

An important reason for the change to a self-administered program was the need for flexibility in administering the standards for wage and price behavior. Phase II had, in fact, provided important instances of flexibility, but the changed economic conditions suggested that even more was needed. In one of its first public pronouncements, on February 26, the newly formed Labor-Management Advisory Committee to the CLC made the point that no single standard or wage settlement can be expected to apply throughout the economy at any one time. This aspect of Phase III was important in the decision of leaders of labor, many of whom had earlier withdrawn from participation in the program, to join the Phase III effort.

The profit margin regulations were also modified in Phase III. The basis for calculating the profit margin limitation was changed to increase the number of fiscal years from which a firm could choose the 2 years they used in calculating their base. To permit firms to benefit from productivity increases if they practiced price restraint, the profit margin limit was waived if a firm's average price increase was no more than 1.5 percent in a year. A third change was to permit price increases "necessary for efficient allocation of resources or to maintain adequate levels of supply." Price changes were thus allowed in instances where economic growth led to exceptional demand pressures in particular markets and the alternative was shortages.

The Construction Industry Stabilization Committee and the Committee on Interest and Dividends were continued, and new committees were established in the field of health care. Special criteria were established for public utilities, making the program voluntary and ending the requirement that regulatory agencies obtain from the CLC certification that their actions accorded with Phase III controls.

Special steps were also taken to counter problems emerging in the food sector. Increases in farm product prices had led to a 7.1 percent annual

TABLE 22.—Regulations of the controls program, Phases II, III, and IV

Program	Phase II Nov. 14, 1971 to Jan. 11, 1973	Phase III Jan. 11, 1973 to June 13, 1973	Phase IV Aug. 12, 1973 to date
General Standards:			
Price increase limitations...	Percentage pass-through of allowable cost increases since last price increase, or Jan. 1, 1971, adjusted for productivity and volume offsets. Term limit pricing option available.	Self-administered standards of Phase II.	In most manufacturing and service industries dollar for dollar pass-through of allowable cost increase since last fiscal quarter ending prior to Jan. 11, 1973.
Profit margin limitations...	Not to exceed margins of the best 2 of 3 fiscal years before Aug. 15, 1971. Not applicable if prices were not increased above base level, or if firms "purified" themselves.	Not to exceed margins of the best 2 fiscal years completed after Aug. 15, 1968. No limitation if average price increase does not exceed 1.5 percent.	Same years as Phase III, except that a firm that has not charged a price for any item above its base price, or adjusted freeze price, whichever is higher, is not subject to the limitation.
Wage increase limitations...	General standard of 5.5 percent. Exceptions made to correct gross inequities, and for workers whose pay had increased less than 7 percent a year for the last 3 years. Workers earning less than \$2.75 per hour were exempt. Increases in qualified fringe benefits permitted raising standard to 6.2 percent.	General Phase II standard, self-administered. Some special limitations. More flexibility with respect to specific cases. Workers earning less than \$3.50 per hour were exempted after May 1.	Self-administered standards of Phase III. Executive compensation limited.
Prenotification:			
Prices.....	Prenotification required for all firms with annual sales above \$100 million, 30 days before implementation, approval required.	After May 2, 1973, prenotification required for all firms with sales above \$250 million whose price increase has exceeded a weighted average of 1.5 percent.	Same as Phase II except that prenotified price increases may be implemented in 30 days unless CLC requires otherwise.
Wages.....	For all increases of wages for units of 5,000 or more; for all increases above the standard regardless of the number of workers involved.	None.	None.
Reporting:			
Prices.....	Quarterly for firms with sales over \$50 million.	Quarterly for firms with sales over \$250 million.	Quarterly for firms with sales over \$50 million.
Wages.....	Pay adjustments below standard for units greater than 1,000 persons.	Pay adjustments for units greater than 5,000 persons.	As Phase III.
Special areas.....	Health, insurance, rent, construction, public utilities.	Health, food, public utilities, construction, petroleum.	Health, food, petroleum, construction, insurance, executive and variable compensation.
Exemptions to price standards.....	Raw agricultural commodities, import prices, export prices, firms with 60 or fewer employees.	Same as Phase II plus rents.	Same as Phase III plus manufactured feeds, cement, public utilities, lumber, copper scrap, long-term coal contracts, automobiles, fertilizers, non-ferrous metals except aluminum and copper, mobile homes, and semi-conductors.

¹ In some of these sectors wages were also exempted.

Source: Cost of Living Council (CLC).

rate of advance in grocery store food prices in the second half of 1972, and substantial increases were in prospect for early 1973. This development was a major threat to the moderate price behavior that had been achieved, as was obvious by comparison with nonfood prices in the CPI, which had slowed to a 3.0 percent annual rate of increase in the last 6 months of 1972. Specific mandatory controls were therefore retained on wages and prices in food processing and distribution in Phase III, a number of additional actions to expand supply were taken, and special committees were established to help coordinate activities that would moderate the increases in food prices. Prices of raw agricultural products continued to be exempt from controls.

By the spring it was clear that three specific assumptions underlying forecasts for 1973 had gone awry. In the first quarter of 1973, retail food prices, propelled by sharply higher farm prices, were already 8.1 percent above the first quarter of 1972, substantially higher than the average 3 percent increase for the first half of 1973 over the first half of 1972 that had been forecast by the Department of Agriculture in October 1972. The official year-over-year forecast had been revised by February to 6 percent; by May an earlier expectation that food prices would level off after mid-year began to appear less certain.

The second assumption concerned economic expansion in early 1973 both in the United States and abroad, which turned out to be much more robust than had been anticipated. In December 1972, after consultation with member countries, the Organization for Economic Cooperation and Development (OECD) forecast that combined real GNP for its seven largest member countries, including the United States, would grow at an annual rate of 6½ percent from the second half of 1972 to the first half of 1973. By July 1973, before second quarter data were complete, the OECD had revised the estimate upward to 8¼ percent, considerably above the growth rate of potential output. The unexpected boom was widespread; the actual rate of growth exceeded earlier forecasts in all but one of the countries. At no time since the early 1950's had such strong expansion occurred simultaneously in the larger member countries of the OECD, and much more pressure was placed on capacity than had been anticipated. (For a view of the effect that rapid expansion had on inflation in OECD countries see Table 23.)

The rate of expansion in the United States from the second half of 1972 to the first half of 1973 was fairly close to that predicted by the Administration, but the rise in output in the first quarter of the year was steeper than expected. Production in some industries was pushed to its limit sooner than had been anticipated, and unexpected shortages also occurred in others.

The third change in the economic outlook concerned the large decline in the foreign exchange value of the dollar. The realignment of exchange rates on February 12 resulted in a decline in the value of the dollar of about 5 percent with respect to our major trading partners. From March 19, when

TABLE 23.—Changes in consumer prices in OECD countries, selected periods, 1958–73

[Percent change, annual rates]

Price item and country	1958–59 Average to 1970–71	Dec. 1971 to Dec. 1972	Dec. 1972 to Sept. 1973 ¹
All items:			
United States.....	2.6	3.4	8.7
Other OECD countries:			
Canada.....	2.5	5.1	9.7
Japan.....	5.5	5.3	18.1
France.....	4.2	6.9	7.6
Germany.....	2.6	6.5	6.8
Italy.....	3.6	7.4	12.0
United Kingdom.....	3.9	7.6	9.5
All other OECD countries.....	4.0	7.1	11.0
Food:			
United States.....	2.4	4.7	23.9
Other OECD countries:			
Canada.....	2.4	7.2	17.0
Japan.....	6.0	4.9	20.1
France.....	4.0	8.7	10.7
Germany.....	2.0	8.1	5.4
Italy.....	3.1	8.8	12.6
United Kingdom.....	3.7	7.5	13.4
All other OECD countries.....	4.0	7.8	11.4
Nonfood items:			
United States.....	2.7	3.0	4.5
Other OECD countries:			
Canada.....	2.6	4.1	6.2
Japan.....	5.0	5.6	16.4
France.....	4.3	5.8	5.5
Germany.....	3.1	5.6	7.4
Italy.....	4.0	6.4	11.2
United Kingdom.....	4.0	7.7	7.2
All other OECD countries.....	4.0	6.7	10.4

¹ Seasonally adjusted. Latest date for which comparable data are available.

Sources: Organization for Economic Cooperation and Development (OECD) and Department of Labor, Bureau of Labor Statistics.

other major countries ceased to support fixed exchange rates, to July it depreciated about 6 percent more. In a setting of rapidly rising demand and output here and abroad, the extent to which these exchange rate changes, and those that had previously occurred in the 14 months after the Smithsonian Agreement in December 1971, affected prices in the United States was substantial.

Prices of imported commodities and products, which were exempt from controls at first sale into U.S. commerce, rose as a direct result of the dollar depreciation. U.S. exports were drawn out of the country at a faster rate than before because they were less expensive in foreign currencies. The increased export demand raised domestic prices of commodities, like raw agricultural products, that were exempt from controls. In a growing number of cases products that remained under price controls were also drawn out of the country, because prices of internationally traded goods had risen markedly, and controls prevented U.S. prices from rising to world market levels.

In the first few months of Phase III the observed increases in the consumer price index and wholesale price index (WPI) showed that inflation was accelerating for some important raw commodities—important not only

to the economy but also in the sense that consumers' attention focused on them. Retail meat prices rose 5.4 percent a month in February and March as a result of a 39 percent increase in livestock prices from November 1972 to March 1973. Shortages of crude oil pushed up retail fuel oil prices 7.4 percent during the winter, and a rise of 16 percent in prices of lumber and wood products was reflected in the prices of new houses and indirectly influenced the prices of existing houses.

As a result of the acceleration of inflation, pressures mounted to tighten controls. While Phase II controls were in effect, public opinion polls indicated that the popularity of a return to a price freeze diminished, reaching a point in the last quarter of 1972 at which only about a fourth of the population supported such an action. According to the polls, however, by February, 43 percent of the population wanted a return to a price freeze, and these pressures for stricter controls were reflected within the Congress. One effect of this sentiment among the public and the Congress may have been to encourage price increases in anticipation of a freeze.

The Administration was sensitive to the growing pressures from consumers and Congress and was also concerned that the acceleration of inflation would undo the gains achieved by slowing the private nonfarm wage rate increases, as measured by average hourly earnings adjusted for inter-industry shifts and overtime in manufacturing, from a peak annual rate of 8.5 percent for the third quarter of 1970 to 5.0 percent for the first quarter of 1973. The situation posed a dilemma for policy makers, however, because the major source of inflation was in commodity markets, in which controls have only limited usefulness. The problems of hides and lumber that were encountered during Phase II had made this apparent. The most effective way to slow price increases for raw commodities is to increase their supply. Numerous actions, detailed in Table 24, were taken by means of agricultural programs, foreign trade policy instruments, and stockpile policies to expand supplies of lumber, agricultural products, metals, and petroleum products. While some of these policies increased supply quickly, others required more time to take effect and had little immediate impact on the rate of inflation.

PHASE III IS TIGHTENED

The Administration recognized that controls were unlikely to be effective in holding down prices of those consumer goods that are derived almost directly from crude commodities. Nonetheless, in the face of mounting pressure, selected changes in the administration of controls were instituted in order to assure labor and consumers that everything possible was being done to contain price increases. Thus, on March 6, cost justification was required of major producers of crude oil and petroleum products who sought price increases yielding more than a 1 percent yearly addition to their revenues; for increases greater than 1.5 percent prenotification was required. This deterred price increases which would otherwise have been useful

TABLE 24.—Supply-increasing actions of the Federal Government during 1973

Commodity	Date of action	Action
Food	January 11	Direct subsidies ended for farm product exports. Mandatory wheat acreage set-asides suspended for 1973 crop. Grain to be sold from Government CCC reserves. Loans terminated on farm-stored grain. Review of Federal marketing orders initiated to encourage additional supply of fruits and vegetables.
	January 31	Livestock grazing permitted on set-aside acreages. Cabinet-level CLC Committee on Food established. CLC public Food Advisory Committee established. Feed grain acreage set-asides reduced for 1973 crop.
	March 8	Dairy price supports increased to mandatory minimums.
	March 26	Feed grain set-aside acreage further reduced.
	April 5	Interagency Task Force established to coordinate grain transportation policies.
	April 19	Rice acreage allotments increased for 1973 crop.
	April 25	Cheese import quotas increased.
	May 10	Import quotas increased on dry milk.
	June 27	Temporary export restrictions imposed on oilseed crops.
	July 5	Temporary export restrictions extended to 41 categories of agricultural commodities including edible oils, animal fats, and livestock protein feed.
	July 6	Exports of food under P.L. 480 reduced to minimum levels.
	July 18	Import quotas further increased on dry milk.
	July 19	Wheat and feed grain set-asides suspended for 1974 crops.
	August 10	Agriculture and Consumer Protection Act signed, establishing target price system to support farm incomes.
	August 28	Import quotas increased further for nonfat dry milk.
	October 3	Agricultural production and food processing given high priority in propane allocation program.
	October 25	Fertilizer price decontrolled by CLC; export monitoring system established.
	November 1	Butter import quotas increased.
November 27	Sugar import quotas increased.	
December 20	Loans on 1973 crop wheat called for January 15, 1974 delivery.	
December 21	Meat import quotas suspended for 1974.	
Metals	April 16	President requests authority to sell excess stockpile items; sales of tin, aluminum, lead, zinc, magnesium, rubber, cobalt, manganese ore made throughout the year.
	May 22	Reporting requirements imposed for ferrous scrap exports.
	July 2	Licensing requirements set up for ferrous scrap exports. Japan agreed voluntarily to limit imports of U.S. ferrous scrap in second half of 1973.
Lumber	April 12	Japan agreed voluntarily to reduce imports of U.S. softwood logs in second half of 1973.
	May 15	More efficient use of railroad cars as result of ICC changes in rail rates for lumber shipments.
	May 29	Increased sales of timber by Forest Service from national forests.
Petroleum	April 18	Mandatory Oil Import Program quotas and tariffs suspended by Presidential order. Unlimited imports of crude oil and petroleum products permitted, subject to license fees on imports above former quota levels.
	August 19	Phase IV regulations removed ceiling price from "new" crude oil.
	November 27	Ceiling price removed from crude oil from stripper wells.

Source: Council of Economic Advisers.

in encouraging additional supplies from domestic sources and signaling the rising costs of petroleum products to consumers.

Meat prices were also singled out for additional control. Meats account for about one-fourth of the consumer food budget. Consumer complaints about high meat prices had become widespread; there was concern that they would add to inflationary expectations and accelerate wage demands. On March 29, ceilings on prices of red meats at all levels of processing and distribution

were imposed, limiting prices to the highest price level that had prevailed in the preceding 30 days for at least 10 percent of the sales of each meat item. Farm prices of livestock were not controlled directly, but it was expected that beyond some limit livestock price increases would squeeze margins of processors and retailers and thereby constrain what they could pay for livestock. It was recognized that the ceilings, while not binding at the time, would probably become so for a couple of months in the summer and thus create distortions, but after that meat prices were expected to drop below the ceilings. The ceilings were not expected to interfere in any basic way with incentives to expand production, because it was thought that livestock prices were, and would remain, sufficiently high in relation to production costs.

In the late winter and spring, prices of industrial commodities, which had been increasing by about one-third of 1 percent per month in 1972, began rising by somewhat more than 1 percent per month. These large increases reflected the impact of spiraling basic commodity prices here and abroad, stemming from the rapid expansion that occurred simultaneously in major countries and the decline in the foreign exchange value of the dollar. This development signaled the building up of cost pressures, particularly for purchasers of industrial materials, which in turn accelerated a rise in finished goods prices. To slow down the pass-through of these cost pressures, prenotification requirements were reinstated on May 2 for large firms that proposed weighted average price increases 1.5 percent above price levels either authorized or in effect on January 10, 1973.

THE FREEZE (June 13 to August 12, 1973)

The disappointingly high rate of inflation in the first 5 months of 1973 continued to arouse public dissatisfaction, and few signs appeared that the inflation would slow significantly in the second half of the year. Congress and the Administration were urged to take stronger actions to contain inflation. In the circumstances it seemed necessary to establish a more stringent controls system than Phase III, but one flexible enough to respond to economic developments. This would be better than being forced into one so comprehensive, rigid, and permanent that it would have adverse effects on the economy.

On June 13, the President announced a freeze on prices, to be followed by a new set of Phase IV controls. The freeze was to last no more than 60 days, ending just as soon as new controls could be put in place. Most prices, but not wages, were prevented from rising above their June 1-8 levels. Dividends and interest rates remained subject to voluntary controls. Rents and raw agricultural products at the first sale were also excluded from the action.

More instances of price increases turned up during the 1973 freeze than in the one begun in August 1971, partly because of the extreme upward

pressures on farm and some major nonfarm commodity prices. Bad weather had reduced worldwide supplies of farm commodities in 1972. Rapidly rising incomes both in the United States and abroad and increased foreign purchasing power, resulting from the dollar devaluation, lifted demand and produced the largest increase in farm commodity prices since World War I. Little could be done through the use of direct controls to stop the price surge without interfering with production and inducing additional exports. The meat price ceilings imposed on March 29 began to interfere with livestock production under these circumstances. Increases in livestock feeding costs arising from the sharp increases in feed costs between midspring and midsummer could not be passed on to packers, who were subject to ceilings, and consequently some livestock producers limited their expansion or cut back production.

Further negative effects on food production resulted from the extension of ceilings in the June 13 freeze action to all food prices except those of farm products at the point of first sale. Feed grain and oilseed prices remained high, stimulated by strong foreign demand. Like meat processors and distributors, processors of other food products requiring these grains and oilseeds, either as feeds or as inputs for further processing, were caught between rising costs and frozen prices. Poultry and egg producers began to cut back production, although not to the extent believed by consumers. Grain millers were especially hard hit by the rapid rise in prices of wheat. Canners of processed fruits and vegetables also faced cost problems. Their selling prices were based on growers' prices a year earlier, but short supplies had subsequently pushed these prices upward. The well-publicized grocery store shortages during the freeze exemplified the developments in the food industry which hastened the move to Phase IV.

PHASE IV (August 12, 1973 to date)

Plans for a fourth phase of the controls program were prepared and either implemented or published for comment a month after the beginning of the freeze. On July 18, Stage A of the Phase IV food regulations was implemented because especially quick action was required in this sector. The new regulations permitted the dollar for dollar pass-through of all farm price increases and decreases except those for cattle, as the beef price ceilings remained in effect until September 10. On July 19 plans for Phase IV were announced and the health industry was returned to Phase III control. The final regulations were announced August 6-10 and put into effect on August 12 for the wholesale, retail, manufacturing, and service sectors.

The regulations adopted in Phase IV were designed to serve a number of ends. The main object, of course, was to slow the rate of inflation. It would be achieved, in part, by postponing some price increases in the expectation that monetary and fiscal policy would slow the rate of growth of demand and perhaps make them unnecessary. It had to be acknowledged, however, that holding prices down could have undesirable effects, among them the

spurring of domestic inflation by encouraging exports and discouraging the investment needed to ensure adequate supply in the long run. Plans for decontrol were also needed to serve the ultimate goal of return to a free market economy.

The considerations gave rise to a Phase IV system that was stricter than that of Phase II, though it contained some regulations developed earlier to deal with specific circumstances in particular industries. Phase IV was stricter than Phase II in three ways.

1. Price increases in manufacturing and service industries were limited to the dollar and cents amount of allowable cost increases, with no add-on permitted to maintain percentage markups.
2. Only cost increases since the last fiscal quarter of 1972 could be used to justify price increases. This rule wiped out some cost justification that had been built up earlier in the controls period.
3. In Phase IV new base prices were established to which actual prices could rise without cost justification; in some industry sectors these new base prices were below those of Phase II.

Special regulations were drawn up for the insurance and petroleum industries. Phase B of the food regulations took effect September 10. New regulations for the health industry were issued on January 16, 1974. The major aspects of Phase IV are summarized in Table 22 and discussed in more detail in the *Quarterly Reports* of the Cost of Living Council.

Phase IV also incorporated a new strategy for achieving a return to free markets: decontrol of selected industries in appropriate cases. Lumber, copper scrap, public utilities, and coal sold to utilities under long-term contracts were decontrolled at the outset. In the administration of Phase IV, each request for price and wage increases is reviewed individually. In suitable cases decontrol has been made contingent on agreements by the firms to expand output or capacity or to limit exports. In these and other instances, exemptions have been subject to a requirement that the firms furnish Government agencies with data on their prices, exports, and investment in new facilities.

Likely candidates for decontrol have been industries producing basic commodities for which there was excess demand, since low domestic prices promoted an unwanted rise in exports, as well as reducing supplies and providing less incentive to expand production. Thus, fertilizers and most nonferrous metals have been decontrolled during Phase IV.

In some sectors where there had not been a build-up of cost pressures, decontrol would not lead to a spurt in prices. No advantages would be gained by applying controls in these cases. Thus rents, which are difficult to regulate for administrative reasons, were exempt from Phase IV controls, as they had been in Phase III, and lumber was decontrolled for similar reasons. Partly for the same reason, both wages and prices were decontrolled in the auto industry, after a new wage contract for auto workers had been signed and

after three of the four automobile companies agreed not to raise prices of 1974 model year cars beyond those already approved by the CLC, unless economic conditions changed drastically.

Prices were decontrolled in other industries: cement, for example, where expanded capacity was needed and a long lead time is required for construction, and where there was some assurance of moderate price performance.

Areas that were decontrolled are still subject to periodic review to make certain that wage and price behavior remains acceptable and that firms are complying with agreements made at the time of decontrol.

THE EFFECTIVENESS OF CONTROLS

The most obvious question to ask about the controls program is whether it has helped to hold down the rate of inflation. As last year's *Report* noted, the answer to such a question is by no means obvious. A year ago, looking back at 1972, one could say that the rate of inflation had been lower during the controls program than earlier. Yet this was only a superficial answer. The real question was whether the inflation had been less than it would have been without the controls. Some argued that the rate of inflation had been declining before the controls were instituted. A continuation of the decline, they said, did not indicate the effectiveness of the controls but rather their ineffectiveness. This view was also superficial, because no one could be sure that the inflation rate would have continued to decline without the controls.

Last year's *Report* concluded that the controls had probably restrained inflation up to the end of 1972. The fact of the controls, plus their initial success, had reduced inflationary expectations, held down total spending, restrained the tendency to boost wages and prices, and permitted output to rise more rapidly than it would otherwise have done. This interpretation seemed at least to accord with the facts of 1971 and 1972.

The facts of 1973 are, of course, quite different. Price increases for raw commodities were extremely rapid. Farm prices rose at their fastest rate since 1917 and resulted in retail food price increases that accounted for 51 percent of the rise in the CPI during 1973. Another 11 percent of the rise in the index was accounted for by higher prices of energy purchased directly by consumers. The large rise in industrial materials prices also contributed to the rise in retail prices. As a result the rate of inflation did not diminish but increased; it outstripped the rate of the earlier period of controls as well as the rate of earlier periods without controls. But again one should ask what would have happened without controls in 1973? Would prices have risen even more than they actually did?

The answer will never be known with certainty. Still it is more difficult in 1973 than in 1972 to believe that controls have had a significant effect in reducing the rate of inflation. The reason is not simply that the inflation rate

was more than twice as high in 1973. It is partly that the scenarios on which it is usually argued that a controls system might restrain inflation do not seem plausible for 1973. Two different theories of controls might be envisioned.

1. *Equilibrium system.* The controls might either so restrain demand or increase output as to bring demand and supply into balance at a lower price level than would otherwise have prevailed. On the demand side, this might occur as a result of dampening inflationary expectations. On the supply side, because they know that controls preclude paying higher wages and charging higher prices, businesses may try to employ more workers and produce more than they would if wages and prices were uncontrolled and they could achieve larger profits by producing less. Workers may accept the controlled wage and be willing to work at it, even though they would not have been willing to work at it if they had been free to bargain for more.

2. *Disequilibrium system.* This course would imply that programs of control create shortages because at controlled prices, below market-clearing equilibrium prices, buyers want more than producers are willing to supply.

The controls system was not designed to create or deal with a shortage situation. From the beginning of 1973, and indeed throughout most of 1972, about half the prices and wages in the economy were uncontrolled, including farm prices, import and export prices, prices and wages in small business, and wages below \$2.75 per hour (below \$3.50 per hour after May 1, 1973). If controls held down prices and created shortages in controlled sectors, so that people could not spend money there, abundant opportunities existed for spending money in the uncontrolled sectors, where prices could rise. Moreover, and this is most important, many of the controlled sectors either processed or distributed products from the uncontrolled sectors. The controlled prices were margins over the uncontrolled prices. If the margins were held down enough to create a "shortage," which producers tried to fill, their action would pull up the prices of the uncontrolled materials and raise the final price until there was no shortage. This appears to have happened in the food sector during the first half of 1973 and may have contributed to the price increases for imported crude nonfood commodities.

In any case, the machinery of the system was not prepared to withstand acute shortages. That is, there was no enforcement apparatus capable of resisting the price pressures that widespread shortages would have created. Instead, the policy tried to correct shortages, either by expanding supply, or in acute cases by allowing prices to rise.

There were, of course, some shortages; but at the consumer level they were not very evident except temporarily with meat, and at the end of the year with gasoline and fuel oil. They did not cast serious doubt on the proposition that consumer prices were high enough to clear the market; in other words, people who wanted to buy things at those prices could find them.

If the proposition is true, then whether controls restrained the rate of inflation boils down to whether it can be demonstrated that they either re-

strained the rate of spending or increased the rate of production. There can be no doubt that the controls program restrained price increases in many cases. But the question, of course, is whether holding down these prices served to hold down prices on the average or only diverted the inflationary pressure from these particular prices to others. This question returns us to the effect controls may have had on total spending.

It is possible that when specific prices were held down—as they clearly were—consumers did not transfer their spending elsewhere but reduced their total spending. This might not show up as higher savings, because the lower expenditures would also mean lower incomes to someone. It might show up in a lower ratio of spending and income to the money supply, or even in a lower money supply, if at a lower price level the Federal Reserve felt less need to permit monetary expansion. However, as Chapter 2 pointed out, spending increased by an exceptionally large amount in 1973. In fact the increase was exceptional, even when the current and preceding behavior of fiscal and monetary policy is taken into account. Last year was not one in which the rise of spending was inexplicably slow and the controls could have provided a plausible explanation for the slowness. On the contrary, if the controls were holding down spending, its high rate of increase would be very hard to explain. The route by which controls are sometimes thought to hold down spending is through inflationary expectations. If controls make people confident that inflation will be moderate, they are less inclined to spend their money. To some extent this happened in 1972. But before long in 1973 people's confidence that the controls would assure price stability fell to a low point. Polls give much evidence of this sentiment, as well as of the spreading expectation of more inflation.

The supply side of the equation is more uncertain. Controls that held prices down may also have induced businesses to produce and sell more, since they did not have the alternative of profiting by raising prices. However, the increase of output during 1973 was about the same as the average annual increase in the past. Employment rose much more than the average; and output per worker, productivity, rose much less than the average. It is improbable that the controls system did anything to raise productivity. Its effect is more likely to have been in the other direction. The controls also held down U.S. prices relative to export prices, which were uncontrolled, and they encouraged export of some basic materials which, if used for further production in the United States, would have increased output. To an unknown extent this increment to exports was offset by additional imports, particularly of industrial materials, prices of which were not controlled.

So this leaves the question of whether output was increased because the controls program contributed to the rise of employment by holding down wage rates; that is, with the given increase in spending there would be, as a result of controls, more real demand for labor, more employment, more output, and lower prices. But this chain depends on the first link, namely, that the controls held down wages. The controls program undoubtedly restrained

wage increases in many cases, construction wages being an exceptionally important and well-documented instance. But whether they did, in fact, hold down the overall wage level is hard to tell.

At the beginning of 1973, the Administration and a few others believed that the year would be one of only moderate wage increases compared to those of the recent past. This view was based on the fact that wages had gained substantially over the cost of living in 1972 and that wages in different industries seemed in good balance. When consumer prices began to rise rapidly early in 1973, the question arose whether this moderate expectation would be upset, or whether the controls program would prevent such a development.

The wage picture is not clear because the measures of wage rates do not always agree, and no single ideal measure exists. Wage increases in new union contracts were lower in 1973 than in 1972 (Table 25). When fringe benefits are included, the 1973 contract increases were also lower than those of 1972, but not by so wide a margin; fringe benefits rose faster than wages. However, the index of hourly earnings, adjusted for overtime in manufacturing and for interindustry shifts, rose a little more during 1973 than during 1972 (Table 21). This index reflects not only new wage decisions but also the effects of old decisions and their implementation. It also reflects the so-called wage drift as individual workers are reclassified, but it does not reflect the relatively more rapid rise of fringe benefits.

TABLE 25.—First year wage rate changes in collective bargaining agreements covering 1,000 workers or more, 1970–73

Type of wage rate action ¹	Percent of workers affected							
	All industries				Manufacturing			
	1970	1971	1972	1973 ²	1970	1971	1972	1973 ²
All wage actions.....	100	100	100	100	100	100	100	100
No wage increase.....	(³)	1	3	1	(³)	1	2	(³)
Increase in wages.....	100	99	98	99	100	99	98	100
Under 1 percent.....		(³)	(³)	(³)		1		
1 and under 2 percent.....		(³)	2	1	(³)	(³)	(³)	(³)
2 and under 3 percent.....	(³)	(³)	2	1	(³)	(³)	2	3
3 and under 4 percent.....	1	1	4	4	1	1	2	7
4 and under 5 percent.....	1	1	6	17	1	2	7	5
5 and under 6 percent.....	3	3	20	37	6	4	23	47
6 and under 7 percent.....	17	9	21	18	33	16	26	24
7 and under 8 percent.....	11	5	14	8	18	7	20	7
8 and under 9 percent.....	8	7	7	7	10	9	13	10
9 and under 10 percent.....	5	10	8	2	6	6	1	2
10 percent and over.....	54	61	13	3	24	53	5	(³)
Not specified.....	1	1	(³)		(³)	(³)	(³)	
Number of workers (thousands).....	4,675	3,978	2,424	5,004	2,184	1,913	913	2,318
Mean adjustment (percent).....	11.9	11.6	7.3	5.8	8.1	10.9	6.6	5.9
Median adjustment (percent).....	10.0	12.5	6.6	5.5	7.5	10.1	6.2	5.5

¹ Percent of estimated average hourly earnings excluding overtime.

² Preliminary.

³ Less than 0.5 percent.

Note.—Detail may not add to total because of rounding.

Source: Department of Labor, Bureau of Labor Statistics.

The most comprehensive measure we have of what it costs an employer to purchase an hour of labor is the estimate of labor compensation per hour. This measure covers not only wages but also fringes, including the employers' share of social security contributions. Compensation per man-hour of employees and the self-employed in the private nonfarm sector of the economy rose at a more rapid rate during 1973 than during 1972, 8.0 percent in 1973 compared to 7.1 percent in 1972, partly because of the big increase in social security contributions. This rise in compensation occurred while the rate of productivity increase was declining, so that unit labor costs accelerated considerably, from an increase of 2.4 percent during 1972 to an increase of 7.1 percent during 1973. Prices, of course, also rose more rapidly in 1973 than in 1972. Nevertheless, whereas unit labor costs in the private nonfarm economy rose about as much as nonfarm prices during 1972, they rose more than nonfarm prices during 1973. This suggests—but only suggests—that labor compensation was not being held down to an unusual degree, if one considers the factors which affect employers' desire to hire labor, that is, the productivity of labor and the price of the product. Analysis of the probable behavior of wages in relation to a longer list of variables, including the condition of the labor markets, also makes it seem probable that wages rose as much as might have been expected without controls. If so, one might also conclude that the controls over wages did not raise employment and output and so restrain inflation in the demand conditions of 1973.

Despite the uncertainty about whether controls had affected inflation in 1973, no uncertainty exists about another and possibly more relevant proposition. The controls did not prevent a rate of inflation which was large compared to our past history, to the previous year, to our expectations for 1973, and to the goals of the program. This fact need not be interpreted as a criticism of the way the program was designed and managed or as implying a lack of cooperation by labor or business. It simply means that the situation the program ran into was more than it could successfully contend with.

Effectiveness During Phase III

The shift from Phase II to Phase III coincided closely with the acceleration of inflation from its moderate 1972 pace. Phase III was perceived by many, largely because of the fact that it was self-administered, as a signal that controls had come to an end. This is reflected in survey findings that the sharp rise in consumer spending early in 1973 was partly due to expectations that price increases would accelerate. One would naturally like very much to know whether or not this shift released an inflation which had been kept in check by Phase II, and which could have remained in check if Phase II had been continued. Table 26 throws light on this question. It classifies the items in the consumer price index into three categories: (1) items exempt from control in Phases II and III; (2) items subject to similar regulations in both phases; and (3) items for which the administration of Phase II rules was substantially relaxed in the transition to Phase III. The increase of the inflation rate between Phases II and III was a little

TABLE 26.—Behavior of items in consumer price index during Phases II and III, classified by type of control applicable

Item and control status	Relative importance, December (percent of all items)		Percent change, annual rates ¹		Percent contribution to change	
	1971	1972	Phase II Nov. 1971 to Jan. 1973	Phase III Jan. 1973 to June 1973	Phase II Nov. 1971 to Jan. 1973	Phase III Jan. 1973 to June 1973
All items.....	100.0	100.0	3.6	8.3	100	100
A. Items exempt from Phases II and III ²	11.3	11.5	4.4	5.5	13	7
B. Items subject to similar regulations in Phases II and III:						
Food.....	22.2	22.5	6.5	20.3	38	51
Public utilities ³	4.8	4.8	4.2	2.8	5	1
Medical care services.....	5.6	5.6	3.9	3.8	6	2
Mortgage interest rates.....	3.7	3.7	-.8	1.8	-1	1
C. Items for which Phase II controls abolished or made self-administered: ⁴						
Residential rents.....	5.1	5.1	3.8	4.4	5	3
Nonfood commodities.....	32.2	31.8	2.1	6.1	18	22
Services.....	15.2	15.1	3.3	6.2	16	13
Total A+B.....	47.6	48.1	4.8	11.7	61	63
Total C.....	52.4	51.9	2.6	6.0	39	37
Addendum: C excluding gasoline, motor and fuel oil, and coal.....	48.8	48.4	2.6	5.1	36	30

¹ Seasonally adjusted where possible. Major exceptions are property taxes, services, and residential rents.

² Major items are houses, used cars, and State and local taxes and user charges.

³ Though the Phase II requirement for certification was dropped in Phase III, the basic regulations continued in force.

⁴ Excludes components included in A and B above and does not take into account the small business exemption.

Note.—Detail may not add to total because of rounding.

Sources: Department of Labor (Bureau of Labor Statistics) and Council of Economic Advisers.

greater for the first two categories, for which the rules did not change, than for the third category, for which the rules were relaxed. Consequently the first two categories contributed a little more to the inflation of Phase III than they did to the inflation of Phase II. Thus, little evidence can be found that consumer prices rose exceptionally fast in the areas in which the administration of controls was relaxed in Phase III.

This is also largely the case even with respect to the rapid increases in the WPI. Agricultural prices were not controlled under Phase II, so the shift to Phase III presumably had no effect on them. Much of the increase in prices of raw industrial commodities occurred in industries which had profit margins below their permitted ceilings and, in some important instances, those whose product prices at the beginning of 1973 were below Phase II ceilings. There was considerable room for profit margin expansion in industries like steel, primary nonferrous metals, and petroleum. Only a tightening of Phase II rules could have eliminated this gap; but, given worldwide demand and the devaluation of the dollar, such tightening might only have led to a further expansion of exports.

* * * * *

During 1973, in all phases of the controls, there was a marked shift of relative prices. Prices of raw agricultural products and of industrial materials rose very much more than prices of finished goods and services. Undoubtedly this shift would have happened in 1973 without a controls

program. The worldwide lag in agricultural production, for which demand is quite price inelastic, would have caused a relative rise of agricultural prices. Industrial raw materials prices generally rise relative to the prices of finished goods in a boom, and in 1973 the boom affecting the world as a whole was exceptionally strong. Raw agricultural products were exempt from control, and some industrial raw materials were also exempt because they were imported. The controls, particularly the profit margin limitation, held down specific prices and may have compressed the prices representing the value added in processing and distribution, thereby diverting demand to the uncontrolled commodities. (Chart 6 shows changes in the relationship between materials prices and those of finished goods at the wholesale and retail level.) Extension of controls to these uncontrolled items would have meant more exports, less farm output, lower imports of industrial raw materials, less total output, and if not higher prices, at least more shortages.

One of the most constructive aspects of the Economic Stabilization Program, and one of the most valuable effects of the effort to control prices directly, was that it led the Federal Government to redouble its efforts to find ways of increasing supplies in many areas (Table 24). As prices skyrocketed in many sectors—chiefly food, but also lumber and other basic materials—and it became apparent that price controls would be ineffective, if not harmful, attention turned to dealing with the real problem, which was inadequacy of supply. In many cases it was discovered that the Federal Government was itself partly responsible for the limitation of supply.

The leading example is agriculture. The President, concerned with short supplies and rising prices, has brought about a dramatic change in agricultural policy during the past 2 years. The results have been striking: the elimination of many restrictions on agricultural production in the United States; a greater willingness to receive agricultural imports; removal of the subsidies to agricultural exports; and reductions of Government-owned stockpiles of farm products. These changes, more than anything that was done or could be done with direct price controls, are the Government's effective contribution to more stable food prices. Less spectacular, but still important, steps were taken to increase lumber production from the national forests and to sell excess Government stockpiles of industrial raw materials.

In any appraisal of the part the controls program played in checking inflation up to the end of 1973 or subsequently, one of the most obvious benefits must be the mobilized effort to increase supply and remove Government-imposed impediments to supply.

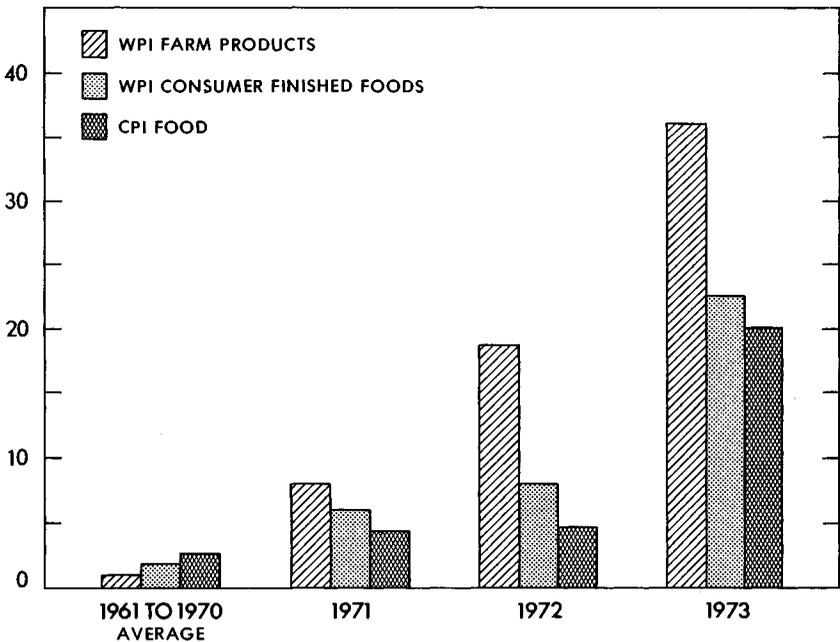
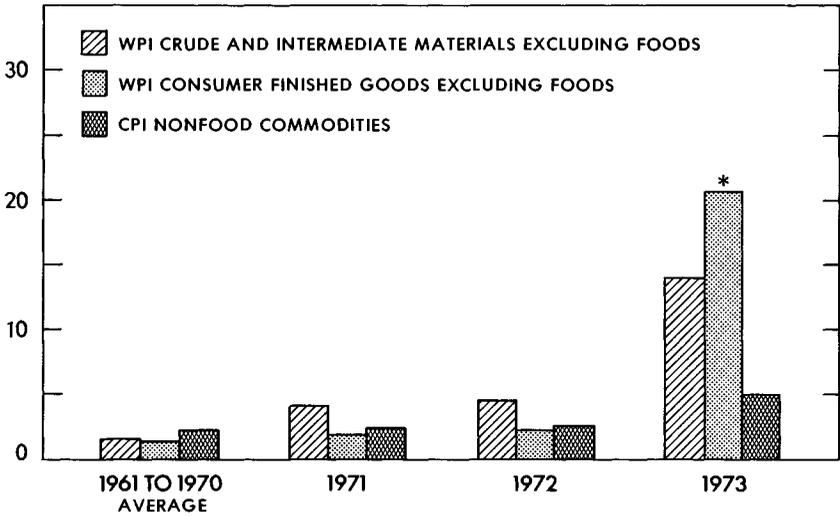
FAIRNESS OF CONTROLS

A major challenge in the development and administration of controls is the assurance of equity. Whenever the Government has as strong a hand in the distribution of real incomes as it does in a price-wage controls program, many will complain of unfairness. It is rare for anyone to think that he has received his just deserts, and this is especially true where Government

Chart 6

Changes in Related Wholesale and Consumer Prices

PERCENT CHANGE DURING PERIOD



*RISE EXAGGERATED BY INCREASE IN REFINED PETROLEUM PRODUCTS PRICES, WHICH ARE BASED ON SPOT MARKET QUOTATIONS NOT REPRESENTATIVE OF TOTAL MARKET IN 1973.

SOURCES: DEPARTMENT OF LABOR AND COUNCIL OF ECONOMIC ADVISERS.

is concerned. Some may very well have been adversely affected by controls, just as others may suffer from the implementation of various other policies. There is no strong objective evidence, however, that the controls operated in a biased manner in 1973.

As should be clear from the preceding discussion, the effect of the controls on relative incomes or relative prices is hard to define. We know what happened during the year but not how much of it was due to the controls.

Several developments in the distribution of income are relevant to the issue of fairness in the economy's performance during 1973. Since controls first went into effect, the share of national income produced in the private sector and going to workers employed there has declined slightly, edging down from 70.6 percent in the second quarter of 1971 to 70.3 percent in the third quarter of 1973. Almost all of this decrease occurred during 1973 and was offset by a rise in the profit share of national income and the income of farm proprietors.

The implication of the relatively unchanged labor share during 1973 is that if workers bought a bundle of goods and services consisting only of those they produced—excluding imports, of course—and weighted in the same proportion as this output, they would have continued to command the same share of national output as they had done previously. And since output grew during the year, even on a per man-hour basis, an unchanged labor share means that workers, before tax changes in 1973, received more goods per hour of work.

The most dramatic event in the distribution of income in 1973 was the extraordinary rise of farm income. In the year ending in the third quarter of 1973 the income of farm proprietors increased by 37 percent, whereas the total national income rose by 12 percent. Net income per farm rose 39 percent, 24 percent in constant dollars. The large rise placed farm proprietors in a favorable position despite controls imposed on meat prices on March 29. Cash receipts from livestock products rose to record highs, but rises in production costs offset a major part of the increase. Nevertheless the higher receipts from farm marketings led to record incomes and an improved relative position for farm families.

EFFECT OF CONTROLS ON COMPONENTS OF OUTPUT

Throughout 1973 considerable attention was drawn to shortages of goods, particularly in the manufacturing sector of the economy. Purchasing agents' reports that they could not obtain materials became widespread. High demand throughout the economy was the reason most frequently cited for such shortages. In some cases shortages also arose from a diversion of domestically produced supply to export markets, particularly for such materials as chemicals, metals, and lumber. Many shortages—of fertilizers and petrochemicals, for example—were traceable to the limited supply of crude oil

and natural gas. A complex set of factors can be blamed for this situation; the controls program intensified the problem but was not the only cause.

Except for meat and petroleum products, shortages of industrial materials did not carry over noticeably to consumer markets. One reason is that firms were able to substitute to some extent more plentiful materials for scarce ones in the production process, especially in finished durable goods and in the use of packaging materials. Inventories also helped to offset shortages of materials; inventories of some products would probably have been higher if materials supplies had been greater.

Flexibility in the administration of the controls program, enabling administrators to exempt some markets, decontrol others, and allow exceptions to the general rules regarding price increases, helped prevent shortages from becoming more pervasive and acute. Attention was also given to cases in which controls, without limiting current output, might discourage the investment needed to supply future output. The need to stimulate investment was, for example, an important consideration in decontrolling the cement industry and allowing a price increase by the paper industry.

Despite constant reminders by the Administration that it regarded controls as temporary, there was always the danger that the program might result in significant deferral or cancellation of investment plans. Probably the controls introduced an element of uncertainty that affected long-run planning. But the CLC did move to decontrol in important instances where it was shown that controls threatened to limit investment. And many investment plans with long lead times were undoubtedly undertaken on the likelihood that controls would be abolished by the time the new capacity came on stream.

In the agricultural sector the ceilings on meat prices contributed to subsequent reductions in livestock production. That the controls program to some extent limited the quantity of output and the investment required to produce future output is not surprising. Even the anticipation of a controls program can have this effect if producers raise prices, establish new marketing channels, or divert investment from the United States to other countries.

SUMMARY

We repeat what was said at the outset: the effect of the controls program on the rate of inflation in 1973 cannot be known with certainty either today or ever.

Controls could have worked in many ways, and economists' knowledge of the quantitative relationships determining prices is not so precise as to rule out the possibility that inflation might have been even greater in 1973 without controls. We think it would not have been much greater, however, since with the controls the rate of spending was high relative to the money supply, and output was low relative to the labor supply.

Still no one can disprove the thesis that the controls had a significant effect, although 1973 makes it a hard thesis to believe. Doubts of this kind should

come as no surprise. There is much prior evidence that price and wage controls of the kind tolerated during peacetime in free societies cannot significantly restrain inflation under the supply and demand conditions experienced in 1973.

The effectiveness of controls obviously cannot be judged by 1973 alone. The operation of the controls during 1971 and 1972, bringing about a good balance in the structure of wages, may have helped to avoid a repetition in 1973 of the kind of wage spiral the country was experiencing before August 1971. On the other hand, if controls did hold down prices during 1973, the possibility remains that these prices will catch up in 1974 or later.

CHAPTER 4

Energy and Agriculture

FOR THE BASIC RESOURCE INDUSTRIES, 1973 was an unusually eventful year. Prices in all major categories of these industries—agriculture, energy, timber, and minerals and metals—rose sharply, even in relation to the rising average level of prices. In some cases additional supplies could not be obtained even at the higher prices. These conditions reflected a worldwide state of affairs.

The growing scarcity of resources in 1973 was a significant departure from the long-term trend. Since World War II prices of basic resources have increased much less than prices generally. Wholesale prices of crude materials, for instance, increased only 13.6 percent from 1947 to 1971, compared to a 53.4 percent increase in wholesale prices of finished goods. During the same period the consumer price index rose 81.3 percent, and the GNP deflator for the private economy 78.2 percent. Prices of basic resources thus declined by a considerable amount relative to prices in the entire economy throughout most of the postwar period.

This downward trend of relative prices began to be reversed in 1972, and in 1973 it changed significantly. Some have interpreted this reversal as an early indication that along with the rest of the world we are entering a new era of increased scarcity of basic resources, during which prices for these materials will rise faster than prices for other products. Others have attributed the reversal to the coincidence of essentially temporary factors. Neither generalization can be conclusively supported at this time.

With the exception of energy, basic resource demands and prices tend to exhibit strong fluctuations. The demand for timber rises when housing construction accelerates, and housing construction is highly cyclical. The demand for minerals and metals is tied closely to the cycle of economic activity, and the agricultural sector is influenced heavily by weather conditions and its own production cycles. Thus the unusual price pressures on basic resources in 1973 are to a significant extent explained by an exceptional combination of economic fluctuations that impinged upon all basic resource industries in the context of high total demand and output.

The reduction in oil exports by several Arab nations focused attention upon a severe shortage of energy resources. But in recent years the market demand for energy has been growing faster than our capacity to produce

it at the existing price. While the oil cutbacks created obvious new short-term problems for the economy, they also precipitated what was emerging as a serious long-run problem.

It would be naive to assume that so fundamental a question as whether or not we are entering a new era of scarcity for basic resources can be answered adequately on the basis of the limited information now available. The question is nevertheless important for the following reasons.

1. Basic resource industries utilize many minerals and metals that ultimately will be exhausted. Because the opportunities to correct faulty public policy and private decisions affecting exhaustible resources are also limited, a high value to society accrues from accurate information on future demands and supplies.
2. Public policy has played a particularly important role in the evolution of basic resource industries. Specific policies in varying degrees inhibited the capacity for adaptability that is inherent in the operation of the market system. During periods of sudden and substantial change in world patterns of production and demand, these industries may therefore experience particularly difficult problems of adjustment.
3. Most basic resource industries involve commodities that are traded very extensively in international markets. The volatility of these markets, the commonly strong cyclical nature of the domestic industry, and the rapidly expanding consumption in foreign countries can combine in such a way as to create significant political and economic tensions between nations. As international markets expand and nations become more economically interdependent, such tensions could become more serious.
4. The production processes in many basic resource industries interact with the environment in an important and complex way that has in the past resulted in abuse of the environment. Public policy to protect the environment in turn interacts with—and in an ultimate sense may well determine—the appropriate public policy toward basic resource industries.

The following sections of this chapter seek to separate the enduring from the transitory factors that shape the Nation's energy and agricultural industries. This is a risky business. In the past the initial stages of new trends have often been dismissed by wise men as unusual, even unique, events; and many an authoritative forecast of an imminent new trend has proved to be based upon random episodes.

ENERGY

Energy prices have been generally lower in the United States than in other developed countries. Abundant supplies of coal, petroleum, and natu-

ral gas have contributed to the low market prices of these fuels. This situation coupled with relatively plentiful capital, and advanced technology, permitted rapid growth in conversion of fossil fuels to electric power. In addition, a generous depletion allowance and low excise tax rates have helped keep down consumer prices of energy.

Low prices and a high rate of economic growth have encouraged domestic consumption of energy to expand. From 1950 to 1972 U.S. gross consumption of energy increased at an annual rate of 3.5 percent (Table 27). In 1972 the United States consumed about one-third of the world's production of energy. Tables 28 and 29 show the distribution of U.S. energy use by sector and by source. Americans have often been accused of wasting energy, but the low prices prevailing until 1973 provided little reason to economize in its use. Because the price of labor was rising relative to the prices of capital and energy, it paid, both in industry and in the home, to substitute capital and energy for labor.

TABLE 27.—Gross consumption of energy in natural units, selected years, 1950–72

Year	Total (quadrillions of Btu's)	Natural gas (trillions of cubic feet)	Petroleum ¹ (millions of barrels per day)	Coal ² (millions of tons)	Hydropower (billions of kilowatt- hours)	Nuclear power (billions of kilowatt- hours)
1950.....	34.0	5.94	6.52	494	103	0.0
1960.....	44.6	12.27	9.89	398	154	.5
1970.....	67.4	21.37	14.70	525	253	21.8
1972 ³	72.3	22.43	16.41	526	282	54.0

¹ Includes petroleum products refined and processed from crude oil, including still gas, liquefied refining gas, and natural gas liquids.

² Includes anthracite, bituminous, and lignite coals.

³ Preliminary.

Note.—Data relate to annual totals unless indicated otherwise.

Source: Department of the Interior, Bureau of Mines.

TABLE 28.—Consumption of energy, by user sector and source, 1972

[Quadrillions of Btu's]

Source	Consumption of energy ¹			
	Total	Industrial	Transportation	Household and commercial
Total consumption.....	59.6	23.2	18.1	18.3
Petroleum ²	29.8	5.8	17.3	6.7
Natural gas.....	19.0	10.6	.8	7.6
Coal ³	4.8	4.4	(⁴)	.4
Electric power.....	6.0	2.5	(⁴)	3.5

¹ Preliminary.

² Includes petroleum products refined and processed from crude oil, including still gas, liquefied refining gas, and natural gas liquids.

³ Includes anthracite, bituminous, and lignite coals.

⁴ Less than 0.05 quadrillions.

Note.—While in 1972, 18.6 quadrillion Btu's were used for generating electricity, the electricity so generated represented only 6.0 quadrillion Btu's. This accounts for the difference between 72.3 quadrillion Btu's of gross energy consumption in Table 27 and 59.6 quadrillion Btu's of consumption by user sector.

Detail may not add to totals because of rounding.

Source: Department of the Interior, Bureau of Mines.

TABLE 29.—Use of energy inputs for electric power, 1972

[Quadrillions of Btu's]

Energy input	Total uses ¹
Total uses.....	18.6
Petroleum.....	3.1
Natural gas.....	4.1
Coal.....	7.8
Hydropower.....	3.0
Nuclear power.....	.6

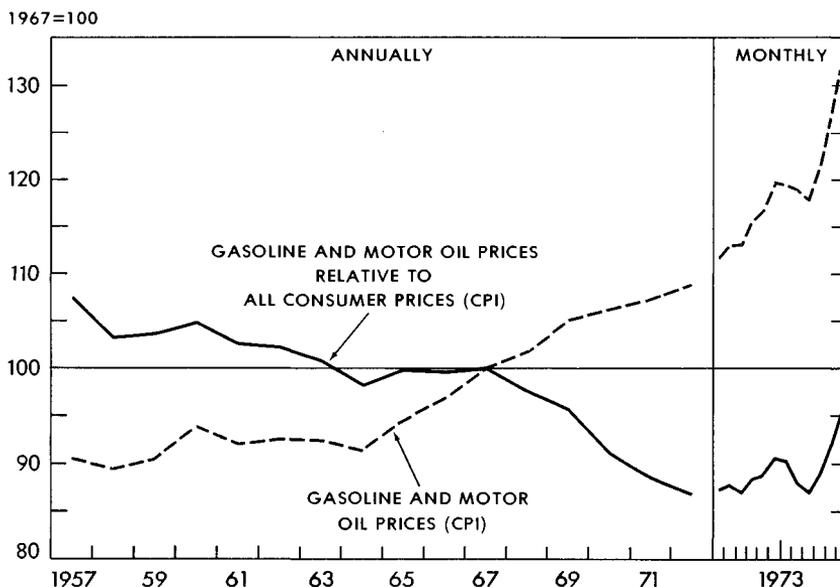
¹ Preliminary.

Source: Department of the Interior, Bureau of Mines.

Wholesale energy prices in the United States were quite stable, relative to other wholesale prices, during the 1960's. But toward the close of the decade the price of coal began to move upward, and in 1973 petroleum prices increased sharply (Table 30). Consumer prices of energy actually were declining from 1960 to 1972, relative to other consumer prices. For instance, the relative price of gasoline and motor oil fell 17.2 percent between 1960 and 1972 but began to increase steeply near the end of 1973 (Chart 7).

Chart 7

Consumer Prices of Gasoline and Motor Oil



SOURCE: DEPARTMENT OF LABOR.

TABLE 30.—*Wholesale prices, all industrial commodities and selected fuels, selected periods, 1950–73*

[1967=100]

Periods	All industrial commodities	Coal	Crude petroleum	Gas fuels	Electric power
1950.....	78.0	83.3	83.2	(¹)	(¹)
1960.....	95.3	95.6	98.6	87.2	101.2
1970.....	110.0	150.3	106.1	103.6	105.9
1972.....	117.9	193.8	113.8	114.1	121.5
1973.....	127.0	218.1	126.0	126.7	129.3
December:					
1972.....	119.4	205.5	114.7	119.2	122.9
1973.....	137.1	240.7	146.2	137.6	135.9

¹ Not available.

Source: Department of Labor, Bureau of Labor Statistics.

During 1973 the United States also experienced threats of shortages of petroleum and natural gas, and in some areas of the country electric power brownouts and blackouts. Shortages of petroleum intensified late in the year, following an October decision by several Arab nations to cut back crude oil production and to curtail shipments to the United States. By the end of 1973 our once abundant and secure energy supplies seemed to be seriously threatened; and what appeared earlier in the year as a problem turned into a crisis. To conserve scarce petroleum, a variety of restrictions previously unknown to peacetime America had to be adopted. They focused attention on the dependence of the economy on energy, the importance that oil imports have assumed, and the vulnerability of the economy to arbitrary acts by foreign states.

The energy crisis has its roots in events dating back a decade or more. To understand the present situation, it is necessary to examine the factors that have influenced energy supply and use in the United States.

Natural Gas

Since 1954 the Federal Power Commission (FPC) has regulated the wellhead price of all natural gas sold to interstate pipeline companies. The FPC maintained prices at approximately the same level throughout the 1960's. In response to increased exploration costs and constant prices, producers cut back on exploration, so that the ratio of reserves to annual production declined rapidly from over 20 in 1960 to 10.5 in 1972. At the same time, the use of natural gas was expanding rapidly. With a growing gap between production and desired consumption, producers called for deregulation to permit higher prices and to stimulate exploration.

Beginning in 1969, the regulated price was permitted to rise. The natural gas shortage continued to intensify, however, as demand received an additional stimulus from environmental limitations imposed on the use of high-sulfur coal and high-sulfur oil. The FPC estimated that in 1973 the shortage reached 7 to 10 percent of demand at the prevailing price. To restrict con-

sumption to available supplies, the industry has been forced to curtail deliveries under both firm and interruptible contracts. In addition, many gas distributors have been unable to add new customers. Recently, arrangements were made to import liquefied natural gas (LNG) at a price several times the domestic price for natural gas. Because the gas price has been maintained below the market-clearing level, a heavier burden has been placed on other fuels, mainly oil.

Petroleum

In 1959 the Mandatory Oil Import Program was adopted to limit dependence upon foreign sources of supply. This program was partly a response to the curtailment of Middle East oil exports during the Suez Crisis of 1956. Under the program, quotas were imposed on imports of oil, especially crude oil. These quotas increased the profitability of domestic production and led to additional drilling. The major oil-producing States had earlier established a maximum efficient rate of recovery (MER) for oil fields, and had limited production to some percentage of MER. This prorationing, together with import quotas, served to support the domestic price above the price of imports. In addition, prorationing resulted in excess capacity in crude oil production, in the form of production below MER.

After 1960 the only major new discoveries of petroleum in the United States were on the North Slope of Alaska and on the Outer Continental Shelf. In the "lower 48" States, the ratio of proved reserves of crude oil to annual production declined throughout the 1960's. Excess crude oil production capacity also declined as allowable rates of recovery were raised by the State regulatory agencies. This permitted output to increase rapidly during the 1960's. But after 1969 the increases in production failed to keep pace with the growing domestic demand. As an alternative to raising the supported price which would have stimulated domestic production and restrained demand, exceptions were made to the existing quotas, to permit a greater level of petroleum imports. Finally, in April 1973, the system of import quotas was abandoned altogether in favor of a flexible import fee. This fee is currently set at a low level to encourage importation.

Beginning in the late 1960's, the expansion of domestic refinery capacity failed to keep up with the growing demand for oil products. Frequent exceptions to oil import quotas and the continuing review of the Mandatory Oil Import Program gave rise to uncertainties about whether future policy would encourage importation of crude oil or of refined products. In the face of this uncertainty few new domestic refineries were built. In some cases domestic refinery construction may also have been discouraged by the difficulty of finding a site that would not arouse community objections for environmental and other reasons. In addition, the income tax credit to companies for income taxes paid to foreign governments may have increased the incentive to build refineries outside the United States.

The use of petroleum products in the United States increased by 66 percent from 1960 to 1972. Much of this increase occurred in the transporta-

tion sector, which in 1972 accounted for 53 percent of the Nation's total petroleum use. A low excise tax has made the retail price of gasoline lower in the United States than in most other developed countries. The low gasoline price and a rapid growth in incomes have contributed to large increases in the number of motor vehicles on the road and in the total mileage driven, and thus to the rapidly growing demand for gasoline. Gasoline consumption has also been increased by the trend toward heavier automobiles with air conditioners and automatic transmissions, and by the use of emissions control devices. This expansion in demand for petroleum products was underestimated, as was the need for additional refinery capacity to meet that demand, with the result that the United States became heavily dependent on imports of refined products.

Imports of crude oil and refined products rose from 22 percent of domestic consumption in 1969 to 36 percent in 1973, prior to the embargo. For the first 9 months of 1973 the U.S. share of total world oil imports amounted to 19 percent. This increased U.S. dependence on imports coincided with, and probably contributed to, a general tightening of the world petroleum market.

In the mid-1960's the governments of the oil-exporting countries gradually began to assume a greater measure of control over crude oil production and pricing decisions. The Organization of Petroleum Exporting Countries (OPEC), which was formed in 1960, began to function effectively as a cartel in the 1970's. Excess capacity in crude oil production had begun to disappear in the United States, Canada, and Venezuela, thereby strengthening the market power of the Middle Eastern nations. This market power was further increased by the rapid growth in demand for petroleum. For example, from 1960 to 1972, oil consumption grew at an annual rate of 11.0 percent in Western Europe and 17.4 percent in Japan. When it became apparent that the United States would also have to expand its oil imports, the exporting countries, working through OPEC, were in a strong position to raise prices and thus to realize monopoly profits.

Coal

Although coal is our most plentiful energy resource, its use in the United States has not expanded since 1966. Enactment of the Coal Mine Health and Safety Act in 1969, together with a host of labor problems, caused a large rise in the cost of underground mining, and a decline in output. The reduction in output, together with increased transportation rates, led to the rise in the price of coal referred to earlier. The higher price, coupled with the development of improved equipment, spurred an expansion in surface mining. But the price rise encouraged many industries and utilities to switch to other fuels. Environmental regulations imposed at both the Federal and State levels prevented the use of high-sulfur coal in some areas and accelerated the substitution of other fuels. Because of the unavailability of natural gas, most of the burden has fallen on oil.

Electric Power

Until recently it was widely expected that nuclear power would be a major factor in meeting the increased demand for electricity in the early 1970's, but construction of nuclear reactors has fallen far behind schedule. Technical problems in their design and construction have been partly to blame, but there have also been unexpected delays associated with the siting of new power plants. To some extent both the construction delays and the siting delays are attributable to time-consuming litigation resulting from increased public concern about nuclear hazards and thermal pollution of water by these reactors.

Meanwhile the demand for electricity has continued to grow rapidly. So far the increased demand has been met largely by the use of fossil-fuel power plants, but in some regions the new construction of these plants has been insufficient to meet demand at existing prices. To some extent this situation may have come about because the delays in the construction and use of nuclear reactors were largely unforeseen. There is also evidence that some electric utilities underestimated the rate at which demand would rise; the rapid growth in the number of electrical appliances was not fully anticipated. At present, however, an even more serious problem for the electric utilities than the shortage of power plants is the shortage of natural gas and residual fuel oil, together with environmental restrictions on the use of coal.

THE ENERGY CRISIS

The energy crisis originated in a large number of circumstances none of which was sufficient in itself to disrupt the economy seriously. Their convergence in 1972-73, however, touched off a dramatic change in the domestic energy supply-demand balance.

During most of the 1960's the United States retained the capability to become rapidly self-sufficient in energy production, but this capability quickly disappeared in the last part of the decade. The natural gas price was kept below the market-clearing price, thereby creating a shortage and leading to an increased demand for oil. The demand for oil was further increased by environmental restrictions on the use of high-sulfur coal as well as by delays in the construction of nuclear reactors. Domestic refinery capacity was unable to meet the rapid expansion in demand for petroleum products. Although the domestic price of crude oil was supported above the price of imports, the price was not sufficiently high to discourage a rapid growth in demand or to encourage an adequate expansion in domestic production.

Preventing a rapidly growing dependence on oil imports would have required maintaining a higher domestic price. Because the enormous oil reserves in the Persian Gulf area were expected to be available to us at a very low price, a decision was made to permit exceptions to the limitations on imports of petroleum products rather than allowing further increases in the domestic crude oil price. Partly because of this increased reliance by the

United States on oil imports, OPEC could more confidently reduce crude oil output and raise the price.

Near the close of 1973 the Federal Energy Office projected that the reduction of oil imports into the United States during the first quarter of 1974 would result in a deficit of 2.7 million barrels per day, or 14 percent of total U.S. petroleum consumption. The deficit was projected to increase to 17 percent by the fourth quarter if the import curtailment continued. This projection does not adjust for the effects of higher prices on domestic demand and production. In addition, the projection assumes that there will be no leakage in the embargo and no increases in oil imports from countries not participating in the embargo. For these reasons, the projected deficit overstates the amount by which petroleum use must be reduced through nonprice conservation measures.

RECOVERY FROM THE CRISIS

The disruption generated by the unexpected reduction of oil imports has both a supply and a demand aspect. On the supply side the country has abundant energy resources for the long run, although at costs that are substantially above past levels. But in the short run there are constraints on the rate at which exploitation of these resources can be accelerated. Some increased oil and natural gas production can be obtained from existing fields, but large increases require development of new fields. There is a long gestation period for new investment in most energy-producing industries. New oil and gas fields do not begin to produce for at least a year and are not fully developed for several years. Pipelines, refineries, and nuclear reactors all take time to build. As a result the economy has less flexibility to expand energy production in the short run than over a longer period.

There is a comparable short-run inflexibility on the demand side. Most energy is used as a production input in conjunction with some item of capital equipment: for example, in a furnace to produce heat and in an automobile to produce passenger miles. To a large extent equipment design determines the energy requirements per unit of output. In some cases there is scope for reducing energy use per unit of output, but usually only to a limited extent. By increasing load factors in airline flights, for instance, the same number of passenger miles can be obtained with less jet fuel, although the inconvenience may be greater. In other cases, as in the use of clothes dryers or air conditioners, the energy-output ratio cannot be changed.

The Nation's capital stock was built during a period when energy prices were low and were expected to remain so. In view of the prices that are likely during the next few years, much of the capital stock is inappropriately designed. To obtain a major reduction in energy use without a decrease in output, we must replace the stock of capital with machines and equipment that use energy more efficiently.

A distinction should be made, however, between industrial output and household output. The latter refers to the services provided by the use

of consumer durables. There is considerable scope for conserving energy by reducing household output: for example, lowering thermostat settings and driving fewer miles. Unlike reductions in industrial output, these measures generate little unemployment, and for this reason they play an important role in the Administration's energy conservation program. During 1974, cutting back on energy used in the household will be the best available means of conserving energy without paying a high price in increased unemployment or reduced incomes.

Pricing Policy

Because of these inflexibilities with respect to energy production and use, market equilibration of demand and domestic supply in the short run would require very large price increases, at least for a year or two. Even though price increases would gradually stimulate additional production at higher cost, profits would also increase—especially before the additional production is forthcoming—and this raises problems of equity.

If price increases are not allowed, however, there will be insufficient incentives for consumers to reduce demand and for producers to expand reserves and output. Substantial excess demand would then result, requiring an extensive system of controls, allocations, and rationing. Because of serious data limitations, it is impossible to design these measures so as to ensure that resources are efficiently used. Heavy reliance on such measures is likely to lead to an inefficient use not simply of energy resources but of all resources, and thus might delay our recovery from the crisis. One has reason therefore to question the efficacy of such controls for more than a very brief period.

In addition, holding prices down is likely to create expectations that prices will rise in the future, thus further discouraging increases in production and sales. Because fossil fuels are exhaustible resources, sales made today are at the expense of earnings in the future. If the rate of appreciation of the value of a resource is expected to exceed the rate of return on alternative investments, there is little incentive to sell. A greater return could be earned by holding back production and building up inventories than by immediate sale. It has been argued that the domestic output of natural gas has been held down during the past few years, partly because of expectations that large price increases would be permitted.

These considerations argue for letting energy prices rise so that markets will clear, and for initiating a tax to limit windfall profits. In this way, the price system is permitted to play an important role in guiding production decisions and encouraging consumers to conserve energy.

With respect to the price of domestically produced crude oil, a distinction has been made between "old oil" and "new oil," the latter referring to all oil produced on a property in excess of output in the same month of 1972. To stimulate increases in production, the ceiling price has been removed from new oil production. The ceiling price on old oil was raised to \$5.25 per barrel late in 1973 to reduce the widening gap between prices

of old oil and prices of imported and new crude. As required by the Trans-Alaska Pipeline Authorization Act, there is no price ceiling on oil produced from stripper wells, that is, those producing less than 10 barrels per day.

To limit windfall profits, the President recommended that Congress enact an Emergency Windfall Profits Tax. The proposed measure taxes increases in crude oil prices at rates graduated up to 85 percent on all sales of domestic crude oil at prices higher than base prices determined by reference to the December 1, 1973 ceiling set by the Cost of Living Council; the same price would apply in the case of uncontrolled oil. The tax, which would be phased out over 5 years, is designed to eliminate significant windfall profits resulting from short-term increases in crude oil prices, but to give producers enough incentive to invest in the expansion of crude oil output in the future.

Sound natural gas policy calls for more competitive pricing. The Administration has asked Congress to pass legislation deregulating prices on new interstate natural gas contracts. The Administration's proposal would permit the price to rise, in stages, toward the long-run, market-clearing level. Prompt steps in this direction are desirable as a means of avoiding the natural gas shortages that have recently occurred. Deregulating the interstate price will increase reserves and production and will permit users who depend on interstate pipelines for supplies to compete with intrastate users. Many electric utilities and industries now buy intrastate gas at a price above the regulated interstate rate. When the interstate price rises, more gas will flow in interstate commerce, where in many cases it will substitute for oil. Natural gas would thus be available where the need is most critical. Deregulation will also result in a greater output of natural gas liquids, a prime feedstock used by the petrochemical industry.

Prospects for Increasing Domestic Production

Production of petroleum, and of associated natural gas, can be increased within a year by expanding output from existing oil fields. Part of this increase will result from the use of secondary and tertiary recovery methods. An additional increase can come from maintaining the production of stripper wells that would otherwise be abandoned. Some stripper wells can be reworked to yield a greater rate of flow.

In 1973 most wells in the United States were producing at 100 percent of the MER. In most States the law does not permit production in excess of the MER, which is in principle the maximum rate at which oil can be extracted without seriously reducing the total amount of the resource that can ultimately be recovered from the field. But the MER is an imprecise figure. In many instances total output would be reduced by only a small amount if production went beyond the MER for 2 or 3 years. Moreover the MER should reflect economic as well as technological factors. The economically efficient rate of production is a function of market prices, both present and future. An increase in the value of oil today, relative to the expected future value, should lead to a more rapid rate of

recovery today. In some cases, therefore, it would be in the national interest to adjust the MER's upward.

Progressively larger increases in the production of petroleum and associated natural gas can be expected after 1974. Increases in the price paid for the so-called new oil will stimulate exploration, mainly offshore, and an expansion in production. It is likely that offshore production of crude oil will begin to rise by 1976. The Prudhoe Bay fields in Alaska are expected to begin producing by 1977 or 1978 and to yield up to 2 million barrels of oil per day by 1980, to be delivered via the new trans-Alaska pipeline, which received final congressional authorization in December 1973. It is expected that another pipeline will be completed by 1980 to ship associated natural gas from the Prudhoe Bay fields to the "lower 48" States. In addition, major new refinery construction and expansion plans have been announced.

In 1973, natural gas exploration increased sharply in response to increases in the wellhead price and a stepped-up rate of offshore leasing. The annual total of gas well completions in that year surpassed by 15 to 25 percent the all-time high reached in 1961. This high level of drilling is expected to be maintained in 1974 and will lead to a build-up of reserves. Production is likely to begin to rise in 1974 and to increase more rapidly in the following years, particularly if higher prices are permitted.

Energy Conservation

Higher producer prices for oil and natural gas will not only stimulate additional production but also dampen energy use and lead to a shift to coal in the industrial, commercial, and electric power sectors. An acceleration of the rate of construction of nuclear reactors and coal-fired power plants might lead to some substitution of electric power for oil and gas in the residential and commercial sectors.

Because the real prices of all fuels and electric power will be higher than in the past, there will be a substitution of other productive inputs for energy inputs, both in industry and in the household. Americans can be expected to drive cars that are smaller and have more efficient engines; to improve the insulation in their homes; and to pay greater attention to the energy requirements of appliances when making a purchase. In some parts of the country it will become economic to install solar space-conditioning systems that substitute energy from the sun for more conventional kinds. There will also be shifts in the composition of output away from energy-intensive goods and services toward those that use less energy.

These effects will restore the balance between domestic demand and production. The system of controls and allocations that was instituted at the close of 1973 to deal with the crisis will become increasingly less important, and it will be possible and desirable for energy resources to be allocated principally by the market system.

LONG-TERM PROSPECTS

The price of imported oil is now probably far above the long-run cost of supplying the entire U.S. market from domestic production. Because of OPEC's monopoly power, it is possible that the world price will remain above the long-run domestic cost for some time. The probability of this occurrence would be significantly increased if the United States were to continue to depend heavily on imports. Even if the world price were to decline, moreover, there would be a risk of a subsequent sudden sharp price rise or a cutoff of supply.

These prospects argue for an accelerated development of domestic energy resources. The United States has sufficient energy resources to last for centuries, even if demand continues to grow as rapidly as in the past. The Nation has untapped oil and natural gas resources on the Outer Continental Shelf. Synthetic hydrocarbon liquids and gas can be obtained from our vast shale and coal resources. Nuclear power may still play the role once expected of it, and the development of the breeder reactor will greatly expand the power that can be ultimately obtained from domestic uranium resources. New technologies that are being developed may eventually permit an economic use of geothermal, solar, and fusion power.

However, large capital investments are required to expand domestic energy production. The private sector will be willing to undertake this investment only if there is a reasonable assurance that the price will remain sufficiently high to provide an adequate rate of return. As long as domestic producers face the possibility of a significant decline in their price, the domestic investment required to expand production will be held back.

The risk to the domestic energy industry comes from the very low cost of producing oil in many OPEC countries. Although OPEC is now able to charge a price that is many times the cost of production, there is always the chance that OPEC countries will lower their prices substantially. Such a price reduction might result from a deliberate decision by producing countries to undercut U.S. energy producers, or from a breakdown of the cartel.

A decision regarding energy self-sufficiency in petroleum production is complicated by the important effect that U.S. policy may have on the price of oil imports. A U.S. policy oriented toward one price level is likely to help bring about a different price level and thus make the policy appear costly. A growing dependence on imports, however, involves a potentially higher cost than would result from expanded domestic production and also poses a threat to our national security.

Project Independence

In response to these considerations, in November 1973 the President inaugurated Project Independence, designed to ensure an expansion in domestic energy production so that the Nation would no longer be subject to economic disruption, or the threat of such disruption, from a sudden curtail-

ment of vital energy supplies. This program includes large proposed expenditures for research and development, which are described below.

The choice of policies to bring about the capability for self-sufficiency in energy production should depend primarily on economic criteria. Because domestic energy investment is now inhibited by the risk that the oil-exporting countries will disrupt the market for political or economic reasons, the policy should be oriented toward reducing that risk. It is important, however, to ensure that the incentives for efficient domestic production will continue, and that any reductions in costs are passed on to consumers. In addition, policy should be designed to permit prices of different sources of energy to reflect differences in quality (or desirability), so that resources will be used efficiently. This means that, while the Nation needs to be protected from dependence on unreliable supplies, domestic producers should not be isolated from the normal business risks arising from domestic competition. Policy should not protect against the risk of a decline in the price because of technical advances by other domestic producers; to reduce this risk would encourage inefficient production. There should be adequate incentives for development of new products, for innovation in production methods, and in general for measures that reduce the social cost of producing energy.

One way to achieve the capability for energy self-sufficiency is to provide selective incentives for the introduction of designated new sources of energy, such as shale oil or synthetic gas from coal. For example, the Government could agree to purchase a specified amount of shale oil, over a number of years, at a guaranteed price. If the market price is above the support level, there is no need for the Government to act; but if the price falls below the support level, the Government would make deficiency payments to producers. Such action would encourage the development and construction of the necessary shale oil production facilities, while market forces would determine prices to producers of other types of energy and to energy users. This proposal results in lower profits to producers of conventional energy resources, for which no price guarantee is made.

A drawback of the proposal is that different energy sources would have different prices, thereby leading to an inefficient resource use. Moreover, the Government would be required to determine which new sources of energy to support. There is also a likelihood that production from nonsupported energy sources would be discouraged and that the Government could be forced to support an ever-increasing part of the market. For these reasons many believe it would be preferable to rely on general market incentives rather than selective subsidization.

It is also important to recognize that the exercise of monopoly power by the oil-exporting countries has increased the real cost of energy to the United States. Although Project Independence will reduce energy prices below the prices currently charged for imports of petroleum and liquefied natural gas, the cost of energy is unlikely to return to the pre-1973 levels. It is therefore

important that the higher costs be reflected in the prices paid by consumers, to ensure that they economize on energy use.

Another way to achieve the capability for self-sufficiency is to give domestic energy producers assurance that import prices would not fall below certain levels. Variable tariffs could be used to ensure that prices of imported oil and natural gas do not fall below such levels. This would ensure competition among domestic producers and would encourage development of the lowest-cost domestic sources of energy. The price of all energy sources would reflect their value to consumers and would therefore encourage efficient use.

An important factor in selecting an appropriate policy is the responsiveness of domestic supply to changes in price. Restricting energy imports may appear to be an attractive option if it is believed that the long-run domestic price will be, say, \$5 per barrel of crude oil. But if the cost is expected to be triple that amount, import restrictions appear decidedly less attractive.

Role of Imports

At least until 1980 the United States will continue to depend on oil imports to supplement domestic production. As domestic energy output expands, it will be possible gradually to reduce this dependence. If imports can be obtained at a sufficiently low price, however, without posing a threat to our national security, they can continue to play a role in our long-term energy policy.

The risks associated with petroleum imports could be substantially reduced by means of a storage program. Petroleum could be stored both in salt domes and in the form of oil fields with shut-in production capacity. In the event of an unexpected curtailment of oil imports, the salt dome storage would be immediately available to offset the loss of foreign supplies; and the shut-in capacity would be available within a few months to supply petroleum until it is possible to produce from new wells. On the basis of the level of imports and an assessment of the risk of an actual or threatened reduction in foreign supplies, the Government could determine the appropriate amounts of storage and shut-in capacity.

Energy Research and Development

The principal object of a Federal energy research and development program is to develop new technologies that permit the production and use of energy at a lower cost to society, either by reducing the cost (including the environmental cost) of providing a given amount of energy or by reducing the quantity of energy needed to produce a given output of goods and services.

Until recently, most energy research and development has been conducted by the private sector. There is now a need for the Government to play a more active role, partly because of the long-term nature of many energy research and development projects and partly because of the fundamental nature of much of the research that is needed. There are other reasons. The

payoff from such projects depends critically on future Government policies with respect to environmental control, leasing of mineral rights, and import restrictions. It may therefore be unusually risky for private investors to undertake this research. Many kinds of research and development concerning energy involve benefits to society as a whole that cannot be fully captured by the investor, so that it is unprofitable for any one firm to conduct the research. Finally, the interdependence among projects provides a compelling case for the Government to provide an overview and to coordinate research and development in the energy field, though not necessarily to conduct the research itself.

There is an additional potential benefit that might result from an energy research and development program. By making a coordinated effort to develop those technologies required to ensure self-sufficiency, the United States will improve its bargaining power vis-a-vis the oil-exporting countries. In this way a federally coordinated energy research and development program may play an important role in forcing the world price of oil down to the competitive level.

A major component of Project Independence is a stepped-up program of energy research and development. The Administration has recommended an expenditure of \$10 billion over a 5-year period beginning with fiscal 1975. This program is principally addressed to the accomplishment of six tasks:

1. Improving the efficiency of energy use and of the conversion of fossil fuels to electric power.
2. Increasing the domestic production of petroleum and natural gas.
3. Expanding the use of coal.
4. Increasing the use of nuclear power.
5. Developing renewable energy sources.
6. Reducing the environmental effects associated with all stages of energy production and use.

The Administration's research and development program represents an important step in moving the economy toward an established capability of being self-sufficient in energy production. However, the program deals only with the technological aspect of energy production and use.

Energy production is limited not only by the state of current technology, but also by economic incentives. The prospect of higher energy prices will accelerate the development and application of technological advances by the private sector. If the private sector is given a larger role in Project Independence, expenditures on research and development will be more closely geared to those techniques likely to become commercially applicable, thus further assuring the success of the program.

ENERGY AND ENVIRONMENTAL POLICY

The Nation's urgent need for adequate and dependable supplies of energy has raised concerns about how efforts to fill the need will affect the goal of

improving the environment. The fundamental premise of economic policy is that the Nation's total resources must be allocated as efficiently as possible. This concept includes careful allocation of our scarce environmental resources, but it does not follow that environmental policy should be insulated from other problems and policies.

In enacting laws to protect environmental quality, Congress was responding to the strong public demand that environmental resources—clean air, water, and land—should be enjoyed as amenities rather than used as receptacles to absorb residual wastes of production and consumption. The new legislation set environmental standards that would be costly to achieve, but it did so with the presumption that the goals were worth the costs. However, the standards also assumed certain basic cost relationships among the additional resources devoted to meeting the standards; the energy crisis has disrupted these relationships by sharply raising the cost of fuels.

As the price of energy increases, environmental policy provisions that call for significant consumption of energy become more expensive, and energy-conserving provisions become cheaper. If policy adjustments are not made, unnecessary amounts of society's scarce energy resources will be used to attain any given level of environmental quality. Adjustments to avoid such waste do not represent a change in the relative importance that either the Government or the public places upon environmental quality. Instead, they are similar to the reduction in consumption that occurs if the price of any commodity increases significantly while other nonprice influences on the consumption of that commodity remain unchanged. The appropriate short-term adjustments indicated in environmental policy because of energy price increases have two requirements: First, they must accurately reflect the increased scarcity of energy expected in the near future; second, they must not interfere unnecessarily with appropriate adjustments to the somewhat less intense scarcity of energy likely to prevail in the more distant future.

Thus, provisions of environmental policy that save energy become cheaper, and as a result comprehensive efficiency criteria indicate a greater use of them. For example, to achieve the air quality standards specified in the Clean Air Act, the Environmental Protection Agency (EPA) has stated that a very substantial reduction in the number of vehicle miles traveled (VMT) by automobiles and lightweight trucks will be necessary in several large urban areas. This reduced fuel consumption would be desirable both in countering the energy crisis and in improving the environment. Since higher energy prices reduce the costs of such VMT reductions, efficiency criteria suggest faster implementation of this particular environmental policy. In accordance with this view, the Administration has acted to provide on a priority basis for substantial funding of mass transit in areas in which air quality will require large VMT reductions.

The theory of implementation in the Clean Air Act calls for the States to formulate plans to achieve the act's air quality standards. The act requires only that the more important primary or human health standards be

met in 1975, but stipulates a “reasonable period of time” for attainment of the secondary standards which are intended to protect esthetics and vegetation. However, some States required in their plans that the secondary and primary standards be reached at the same time, and this became legally binding under the Clean Air Act. Such advanced timing of the environmental goals would require much more low-sulfur coal than is now available domestically. It would also seriously constrain the ability of other States to reach the more urgent primary or health standards. Although estimates vary, the so-called clean fuels deficit is roughly equivalent to one-quarter to one-half of all coal burned in 1970. In States with advanced secondary standards and in States where the primary standards will not be met, the only legal course open to coal-burning utilities would be to switch to low-sulfur oil or natural gas. In a period of high prices and short supplies for these fuels, such substitution is inefficient.

The Administration has therefore proposed in the Emergency Energy Act to give the EPA the authority to postpone attainment of the secondary air quality standards in States where such action would reduce the clean fuels deficit. One longer-term danger of this action, however, is that it removes some of the incentive that users of high-sulfur coal would have to develop improved emission control technology. A relatively easy way to restore this incentive, and give it a more efficient form, would be congressional enactment of the Administration’s sulfur emissions tax proposal.

This example of the adjustments in environmental policy that are indicated by higher energy prices is only a postponement of an implementation schedule, not a lowering of standards or other change in the policy itself. As a short-run response to the energy crisis, postponement has two advantages over a structural policy change. It entails less risk of obstructing the realization of long-term goals of environmental policy; and it avoids adding to the uncertainty about these goals which might inhibit the investment required by both energy and environmental needs.

Efficient Environmental Policy: The Post-Crisis Challenge

Although postponing the implementation of environmental standards is preferable to revising such standards, one should not conclude that current standards are optimal and need no revision. Indeed, the standards—particularly those in the Clean Air Act—should be regarded as interim and provisional targets that reflect the urgency of the Nation’s commitment to environmental protection at the time they were adopted. These standards may become more stringent or less stringent. In any event, they do not yet embody the careful distillation of scientific knowledge that will be required for the most efficient use of our scarce environmental resources in the longer run.

For example, air quality standards permit only specified concentrations of a limited number of particular pollutants in the ambient air. But, although concentrations of some pollutants might damage health or create other costs for some individuals, regulations to limit processes that release particular

pollutants into the atmosphere will also impose costs upon others. Standards ought to be based on a careful balancing of these risks, costs, and benefits, as they would be perceived and evaluated by fully informed individuals.

Not enough is known, however, about the ways in which activities that result in the release of pollutants are linked with ambient air quality to permit such a balancing, nor is enough known about the effects of various concentrations of pollutants upon human health. Another consideration is the efficiency of the means employed to reach optimal environmental standards once they are identified. Thus far, legal and administrative regulations and directives have been the principal instruments. Administrative capacity and legal enforceability require that these regulations be uniform and relatively simple. At the same time, the activity and organizations they seek to regulate are complex and varied. If individuals and enterprises had more discretion and flexibility, specified standards could be attained at a lower cost and with fewer scarce resources. Taxes, emission charges, and user charges are mechanisms that introduce this flexibility and efficiency into environmental protection.

AGRICULTURE

The problems and policies of American agriculture since the 1930's have been predominantly related to excess productive capacity and the adjustment of resources to that condition. A related condition was an underlying instability in agricultural prices and incomes brought about by variability in food production and foreign demand, and intensified by a slow response by consumers and producers to changes in prices. Government restrictions on farm output, which were adopted to deal with the problem of excess capacity, as a by-product also tended to reduce price instability.

In 1972 circumstances began to change in agriculture. One reason was a sharp rise in the demand from abroad for U.S. farm products. By 1973 the higher level of exports had eliminated almost all excess capacity, and long-standing restrictive agricultural policies were modified to encourage all-out production. In an important sense the disappearance of chronic excess capacity should be recorded as a success. With its disappearance, however, the second problem, instability, has now taken on more significance.

Wide swings in farm and food prices contribute to instability throughout the economy. This became especially clear in 1973 when rising food prices accelerated the overall inflation rate. Although instability will at times lead to reduced farm prices, there are existing standby measures that cushion the decline in farm incomes. Comparable measures do not exist at present to moderate an acceleration in consumer food prices.

New conditions now face agriculture. They have raised a new set of issues that are discussed in this section.

AGRICULTURE: FULLY EMPLOYED

The stabilization of agricultural markets, especially for grains, was an outgrowth of two related public policies designed to support farm income. There

was an underutilization of productive capacity in the farming sector, measured in terms of available cropland, underemployed labor, and underutilized capital equipment. In recent years this underutilization was a result of Government programs that provided payments to farmers and concurrently diverted or "set aside" land from production, usually on an annual basis. Since the early 1960's about one-sixth of the Nation's cropland was recorded as being withheld from production under Government land retirement programs. In addition to withdrawing land from production, farm programs caused sizable stocks of several commodities to be accumulated by the Government. Because of the stockpile program, substantial short-term fluctuations in either production or demand were largely offset by the accumulation or release of stocks of farm commodities under the various price support programs. These policies reduced instability in farm markets over the years at considerable cost in both Government budget outlays and intervention by the Government in the agricultural sector. As experience was gained, legislative and administrative actions were taken to "fine tune" production and restrict what was viewed as excessive accumulation of commodities under Government control. By the early 1970's the programs had become very effective in controlling total crop acreage to mesh prospective production with expected demand. Actual production varied, of course, with yields per acre, which were influenced by weather conditions. Nevertheless, a clear downward trend in stocks was evident and reflected the direction of Government policy (Table 31).

TABLE 31.—U.S. grain stocks compared to grain utilization, selected periods, 1950–73

Marketing year	End of marketing year stocks as a percent of total utilization			
	Wheat	Rice	Feed grains	Soybeans
Annual average:				
1950-54.....	52.1	8.5	24.9	2.9
1955-59.....	102.7	48.1	43.0	9.6
1960-64.....	96.5	14.0	49.4	8.6
1965-69.....	44.4	11.5	28.4	15.1
1970-73 ¹	45.8	14.6	21.2	9.2
1970.....	64.2	18.3	27.1	18.7
1971.....	48.6	23.0	18.9	7.8
1972.....	58.0	12.4	25.1	6.0
1973 ¹	21.7	5.7	15.0	4.6

¹ Preliminary.

Source: Department of Agriculture.

Disappearance of "Excess Capacity"

For years it was fashionable to talk of "excess capacity" in agriculture. The measure most widely referred to was the acres of cropland that were idled each year by Government programs. That measure seemed to be an adequate approximation, because if more output and hence more land were demanded the complementary inputs—labor, machinery, fertilizer, and seeds—would also be available to expand production. Several decades

of research and rapid mechanization had resulted in an abundance of these other inputs, particularly of labor, because of a continuous flow of work-saving technology into agriculture. If more production were needed—more crops, more livestock, or both—the resources were already on the farms of the Nation or could be readily purchased. Only during World War II, when vast amounts of manpower had been drawn off the farm, was a shortage of labor apparent. After that period, agriculture experienced a long succession of years with excess land, excess labor, and abundant supplies of purchased inputs.

This situation led to a widespread view that excess capacity was endemic in U.S. agriculture and that it would be large enough to cover almost any potential shortfall in world food production. Given time to expand production, the Nation's farmers could produce more of everything—more grain and soybeans, as well as more meat, milk, and other farm commodities—without substantial increases in costs or prices.

The amount of labor employed in agriculture adjusted downward throughout the 1950's and 1960's (Table 32). Without its being generally realized, the availability of labor to produce more livestock as well as crops slowly approached a balance with normal requirements for food production. So long as productivity of manpower in agriculture was growing rapidly from the addition of new capital equipment or other technological innovations, the remaining workers could meet the requirements for larger output without interfering with the continued exodus of workers from the agricultural sector.

TABLE 32.—*Change in inputs used in farming, 1950 to 1973*

Period ¹	Percent change (annual rate)			
	Cropland	Farm labor	Machinery	Fertilizer
1950 to 1955.....	-0.8	-3.7	2.9	5.9
1955 to 1960.....	-1.2	-4.5	-.2	4.7
1960 to 1965.....	-1.3	-4.2	.7	8.2
1965 to 1970.....	.0	-3.6	1.4	6.9
1970 to 1973 ¹	2.8	-.5	.3	2.6
1969 to 1970.....	1.0	-5.3	-1.0	2.7
1970 to 1971.....	4.1	-1.1	2.0	7.1
1971 to 1972.....	-3.6	-3.4	-1.0	-.8
1972 to 1973 ¹	9.5	4.7	2.9	3.3

¹ Preliminary.

Source: Department of Agriculture.

Labor productivity and farm output were moving uniformly upward until at least the mid-1960's. Then, recent evidence suggests, some of the trends flattened out. This was especially true in livestock production, which is more labor intensive than field crop production. The annual rate of increase in livestock output declined from 1.7 percent for each year in the 1960-65 period to 1.6 percent in 1965-70, and to only 0.9 percent annually after 1970 (Table 33). The reduced availability of labor placed new restraints on expansion of livestock production. Trade-offs between more crops or more

TABLE 33.—*Production and productivity in agriculture, selected years, 1950 to 1973*

Period	Percent change (annual rate)			
	Crop output	Livestock output	Crop output per acre	Livestock output per feed unit
1950 to 1955.....	0.9	2.1	1.3	1.3
1955 to 1960.....	2.3	1.3	3.7	-1.7
1960 to 1965.....	1.0	1.7	2.0	-.3
1965 to 1970.....	2.0	1.6	1.8	.1
1970 to 1973 ¹	4.2	.9	2.4	-1.5

¹ Preliminary.

Note.—Annual rates of change are based on 3-year centered averages for years shown except for 1973 which is for a single year.

Source: Department of Agriculture.

livestock became more significant, although their existence went largely unnoticed until the burst of additional export demands for farm products after mid-1972. When market prices and Government policy encouraged stepped-up farm production, the response was less than expected. Additional acres were planted, and crop production rose. Meanwhile livestock production declined in aggregate, and the indexes of labor used in agriculture, which have been declining steadily for years, either increased or declined only marginally in 1973. These results suggest that some significant changes had occurred in the structure and excess capacity of American agriculture.

The persistent decline in the hours of labor employed on farms at least temporarily bottomed out in the past year. If the long downward labor adjustment is largely over, agriculture will have to provide higher returns to labor in the future in order to compete with the nonfarm sector for workers.

The growth in productivity of all inputs used in farm production has shown some slowing, although there is no indication of a plateau. Nor has the rate of increase in yields of crops shown a decline. But the productivity of feedstuffs used in livestock production has shown some decline, partly because until recently it was economical to substitute feedstuffs for forages in dairy and beef enterprises. Dairy products and meat are an important part of consumer food budgets and continuous improvement in the efficiency of feed conversion would help to hold down their real cost. For this reason there may be a need to review the organization and use of public funds in livestock research.

Expanding Farm Exports

Growing exports have been the immediate cause of the new pressures on agriculture's productive capacity and have contributed to the shift toward crop production, particularly since mid-1972. For years the United States has nurtured foreign markets for food and fiber with Government supported export promotion efforts. A few months before the burst of world demand for U.S. agricultural products, projections had suggested that a record \$10 billion of exports could be achieved by 1980, up from \$8.0 bil-

lion in fiscal 1972. Actually the accelerated foreign purchases since mid-1972 caused agricultural exports to reach \$12.9 billion in fiscal 1973 and \$17.5 billion in calendar 1973. About 60 percent of the increase in fiscal 1973 was caused by increased volume; the remainder came from higher prices.

Causes of export growth. An important question is whether the increased demand for exports is traceable to abnormally poor weather conditions in other countries or a longer-term rise in world demand. Both of these have contributed to export demand in the 1972-73 period. Poor crop harvests during 1972 in many countries were certainly a major factor: world grain production fell 2.7 percent below the previous year.

However, there are two reasons to believe that U.S. exports have moved to a higher plateau. First, the demand for red meat and poultry in Western Europe and Japan has been expanding as incomes improved. The sharp economic expansion of 1972-73 combined with the depreciation of the dollar to augment this basic trend in 1973. In fiscal 1973, Japan and Western Europe accounted for about one-half of the growth in export volume.

The second factor has been growing markets in the Soviet Union, the People's Republic of China, and Eastern European countries. The key here is primarily how much these countries import in total, not how much they buy from the United States. The initial U.S. sales of grains to the U.S.S.R. in mid-1972 were caused partly by very poor Soviet crops, but they also stemmed from an earlier Soviet policy decision to improve consumers' diets. Implementation of the decision will mean higher Soviet grain imports, on average, in the future. Their grain purchases in 1972-73 together with Chinese purchases accounted for about a third of the increased export volume of U.S. grain in fiscal 1973. Even if such purchases are smaller in the future, they can be significant in maintaining exports at high levels.

Domestic market complications. Isolated from domestic food markets, the record on farm exports is impressive. However, the greatly expanded exports have had significant implications for domestic food markets. When more feedstuffs are shipped abroad, the result is increased competition and higher prices for the remaining supplies. This became clear in 1973 as the production of livestock products failed to respond to sharply higher livestock prices. The very large exports of feed grains and oilseeds raised the costs of livestock production, thus reducing incentives to producers.

The problem was highlighted in 1973 when the contracted supplies of soybeans for export were thought to have exceeded the amount that would be available after domestic demands were met. This finding led to a temporary embargo and a later licensing of exports of soybeans (and related products) for the months of July through September. After harvesting of large crops began in the fall months, all restrictions on exports were removed, although a newly instituted reporting system on forward export sales was continued under new farm legislation passed in 1973.

The controls on soybean exports seemed justified by special circumstances which made domestic processors and livestock producers unable to pay world prices for the available supplies of soybean products. The ceiling prices on red meats in March, the later freeze on all food prices in June, and the rising costs of feedstuffs combined to place producers in a severe profit squeeze. As a result, they cut back their production plans and began to slaughter breeding animals, a response that could have seriously reduced food supplies for many months and even years if it had continued. However, the export controls raised serious conflicts among a variety of national objectives. Removal of meat price ceilings and the earlier termination of all special efforts to expand exports gave domestic and foreign buyers equal access to U.S. supplies of feedstuffs and food commodities, thereby reducing the necessity of export controls.

* * * * *

The recent shifts in resource use and output mix in agriculture have occurred in response to increased worldwide demands for agricultural products and tighter domestic supplies of farm resources. These changes have brought an end, at least temporarily, to the chronic excess capacity in agriculture. Exports have expanded swiftly, so much that large carryover stocks of grain commodities have been depleted. With supplies of feedstuffs for livestock extremely tight, livestock production has stopped expanding. Crop and livestock production are now competing more directly for the Nation's farm resources. Over the last year, extensive adjustments have occurred in agriculture in response to changing price relationships and sharply rising prices. Tightened markets for food have brought a new awareness of many interrelationships that could be safely ignored during periods of surpluses and have made policy decisions relating to food and agriculture more complex.

AGRICULTURAL POLICY FOR THE FUTURE

Significant progress has been made in the past decade toward less Government intervention in and control of farm production. The agricultural acts passed in 1965 and 1970 moved the Government out of mandatory control programs for major farm commodities and provided a more flexible and effective means of controlling farm output. Another significant step toward making farm legislation more market oriented was taken when Congress passed the Agriculture and Consumer Protection Act of 1973, whose principal innovation is a system of target prices for wheat, feed grains, and cotton. When market prices are above the targets, no Government "deficiency payments" are made to farmers and the Government has little involvement in agriculture. In years when market prices fall below the target prices, Government payments to farmers make up the difference between target and market prices on base production. The Government also places a floor under market prices by being ready to purchase crops from farmers at relatively low prices. Farmers are thereby assured in two ways of at least

a minimum income. Unless prices fall so low that the Government begins to accumulate inventories of commodities, however, its role is limited to making deficiency payments when they are required.

With this change in basic farm programs, market prices assume more importance in guiding resources into production. Market prices will also have greater importance in allocating U.S. agricultural products among competing buyers. The intensity of market competition is likely to be much greater in the coming year than was true under the surplus conditions of the past.

The Need for Improved Information

The 1973 act is particularly well suited to current conditions in agriculture. It permits the market to signal to farmers what priorities domestic and foreign purchasers are placing on various commodities and products. The act allows, and indeed mandates, the Government to provide market information to the private sector, so that decisions will be based upon the fullest possible knowledge about trends in market conditions. In fact, the production period for both crop and animal production is so long that current prices may be a misleading guide to the most profitable future operations. Under these conditions, advance information is especially necessary for efficient farm production.

Export demand is one important area in which a deficiency of information became apparent in 1973. The Administration has taken a number of steps to improve the flow of current economic intelligence regarding worldwide agricultural developments through consultations with other countries. Among other actions, it initiated a World Food Conference to be held in 1974 under the auspices of the United Nations. A bilateral agreement has been signed with the U.S.S.R. that will make possible more accurate forecasts of worldwide production and demand. The agreements between the United States and the Soviet Union will facilitate more prompt exchange of information on crop and livestock production. In June the Department of Commerce initiated a reporting system for forward export sales of major agricultural products. The new farm legislation later made this a permanent system under the administration of the Department of Agriculture.

Steps also have been initiated to improve domestic farm and food forecasting and planning. The Department of Agriculture has requested, and the 1975 budget will contain, increased funds to strengthen its information and analysis services to the rest of the Government and the private sector. The need and scope for such activities were less as long as agricultural reserves existed in the form of stockpiles or idle acres. Under today's conditions, it is essential to give high priority to this aspect of the Government's work.

Government Food Stockpiles

One very important issue has emerged in 1973 and remains unresolved: What policy should the Government pursue on grain stockpiles? In the past two purposes have been served by such stocks: as "operating stocks"

which the private sector needs if it is to function normally, and thus would elect to hold; and as "contingency reserves" over and above normal operating requirements to cover variations in production or demand.

As discussed above, Government policies were directed toward and succeeded in gradually reducing grain stocks in recent years. In earlier years, a substantial fraction of stocks had been held by the Government; but virtually all of these were released in 1973, and total stocks reached the lowest level since 1953. Stocks of wheat, in particular, are only adequate to provide for normal operating inventories this year; contingency reserves are non-existent both in the United States and in the world.

The unusually low grain reserves mean that the world is at present more vulnerable to poor harvests than it has been for some time. But stockpiling obviously cannot begin until world production levels have been built up. Otherwise, such a step would cause already high prices to escalate further, or necessitate a system of nonmarket allocations. Once a more normal supply-demand food balance is restored, which should begin to occur in 1974-75, stocks can be accumulated again. In the past the world has sought protection against crop failure by relying upon stocks held principally by the United States and Canada. Although this arrangement has worked, the current supply-demand conditions provide an opportunity to improve on the system. The Administration is exploring several approaches which, through cooperative action, could improve supply stability:

1. As a minimum, improved worldwide information flows are necessary to signal a tightening of supply-demand conditions as promptly as possible. Producers and consumers will then have the best opportunity to react to higher market prices.
2. Beyond that, multiyear forward sales contracts negotiated either privately or by governments could be used to provide more supply stability. Events of 1973 have encouraged importing countries and exporting firms to seek commitments looking farther into the future. These contracts can contribute to greater stability because they provide valuable information on prospective export demand to supplying countries and because production can thus be planned to meet contract sales.
3. A broader approach has been put forth by the Food and Agriculture Organization of the United Nations. It would seek to establish stockpiling guidelines that participating countries would follow in developing their national policies. The system would be voluntary; but to the extent that the guidelines were appropriately set and complied with this approach could increase supply stability.
4. A more rigorous approach would be to establish an essentially autonomous international agency having the resources to operate a buffer stock. Such schemes take various forms. They all present common problems, however, with regard to control, financing, and interference with desirable market activity.

The Administration supports the examination of multilateral approaches to the stockpile issue. It also recognizes that this country has an interest, as the world's major exporter, in maintaining necessary levels of stocks, since otherwise we could not be a reliable supplier of food for the world. It is also in this country's interest to have adequate stocks to provide a measure of domestic price stability. According to preliminary estimates a contingency reserve would not have to be large or costly in order to offset most instances of poor harvests or abnormal demand. Large costs in the past have grown out of excessively large stock build-ups under price support programs. The prospects are reasonably strong that market conditions will not again lead to excessive stock-building in the near future. Any accumulation of contingency reserves would therefore require that the Government purchase commodities in the market or have ready access to farm-held stocks under the Government loan program.

* * * * *

Agriculture has always been a cyclical industry; and the fluctuations, though relatively minor, have been around a trend of general abundance in the United States. One cannot say with certainty whether the unusually tight markets of 1973 signal a turning point toward a period in which fluctuations will be around a trend of relative scarcity, or whether 1973 represents only an abnormally large cyclical swing. This increased uncertainty implies that agriculture must be prepared to adjust to market developments as promptly and efficiently as possible. The current Government policy, with minimum restrictions on market mechanisms, is designed to make that possible.

CHAPTER 5

Distribution of Income

IMPLICITLY OR EXPLICITLY, MOST DISCUSSIONS of the performance of the American economy and the economic role of the Government are concerned with the growth of national income and the way it is distributed.

Three fundamental principles of equity concerning the distribution of income are widely accepted: those who produce the same amount should be rewarded equally (horizontal equity); those who produce more should be rewarded more (vertical equity); and no individual or household should be forced to fall below some minimum standard of consumption regardless of productive potential. Although there is fairly general agreement on these principles, the desirability of any given amount of inequality in the income distribution remains a matter of personal judgment and of social and political debate.

One of the principal social debates has been about the extent to which those having high incomes should share with those having less. Among its chief objectives, the Government seeks the proper balance between redistributing income to the disadvantaged so that they may have the basic amenities of life and allowing a reward system which gives individuals incentives to work to their fullest capacity.

OUTLINE AND SUMMARY

This chapter looks at the distribution of income among families and individuals and examines some of the government policies which have influenced it. The chapter considers the distribution of income among individuals and families and among various classifications of the population: age, sex, and race.

While the inequality of family income is quite stable over the long term, it varies over the business cycle. Inequality increases during a recession and decreases in an expansion. This is a consequence of the variation in weeks worked that occurs because of changes in the unemployment rate.

Because the concept of income used to measure inequality is essentially limited to money income before taxes, these measures need not reflect the true inequality of economic well-being. Some sources of income which are omitted would increase measured inequality and others would decrease it,

and estimates of some of these effects are given. While those omitted sources which would decrease family income inequality have been growing in importance over time, there exists no such presumption concerning the omitted sources that would increase it.

Many factors, such as schooling and on-the-job training, determine the inequality of earnings among workers. Differentials in the earnings of whites and blacks, and of males and females, are analyzed with respect to the contribution to the differential made by training and other factors that influence productivity. Past discrimination has contributed to current differences in productivity because of the once widespread barriers to equivalent schooling and on-the-job training. Because of the difficulties of measuring productivity, no conclusion could be reached about the magnitude of current labor market discrimination against blacks or women. For the same reason it is difficult to determine whether labor market discrimination has declined with time, although there is a strong presumption that it has. For men, the black-white earnings differential has narrowed, and much of the change may be due to a narrowing of educational differences. The narrowing of the differential has been much more dramatic for black women, however, and outside the South black women now receive a higher wage rate than white women. This development is largely due to black women's greater lifetime attachment to the labor force, and hence their greater level of experience and training.

The differential in hourly earnings between men and women has widened over time, and this change reflects the relative decline in education and experience of women in the labor force. With the rapid increase in the labor force participation of women, the female labor force has become increasingly composed of recent entrants with fewer years of schooling and of experience. Younger women are, however, showing less tendency to withdraw from the labor force for a prolonged period; as the age of these cohorts increases and they come to comprise a larger proportion of women in the labor force, the experience and earnings differential between men and women should decrease.

Widespread concern is felt about those whose incomes fall below a level needed to maintain an adequate living standard. There has been a marked decline in poverty, as conventionally defined, from 39 million persons in 1959 to 24 million persons in 1972, in large part because of economic growth, which increased wage rates and employment opportunities for men and women, and permitted larger social security and pension benefits. Increasingly the poor are living in families in which there is no adult worker, and increasingly the family is headed by a female.

The Federal Government has several programs—some operated on its own, others in conjunction with the States—which are intended to decrease poverty. Aid to Families with Dependent Children (AFDC) is the most important Federal-State program designed explicitly for poor families in which there is no employed male head. The 3.1 million AFDC families

in 1972 represent nearly a threefold increase in the number of AFDC families since 1965. This increase can be partly explained by the spread of knowledge about the program and the lessening of the social stigma attached to it. In addition, the faster rate of increase of benefits to AFDC families, compared to average wages, contributed to the change by making the incentives greater for an existing female family head to apply for benefits, as well as giving women an incentive to head a family.

Social Security is the largest single Federal transfer program, with 28 million recipients of old age, survivor, or disability benefits in fiscal 1973. Many of the recipients of old age and survivors' benefits were in families classified as in poverty. For many others, however, social security kept their income above the poverty level.

The Federal Government also transfers economic resources to aged and low-income families by subsidizing the price of food, medical care, and housing. The Food Stamp Program, initiated in 1961, subsidized the purchase of food for 12.6 million recipients from low-income families in fiscal 1973. The average monthly subsidy (of \$15.30 per individual recipient in July 1973) represents a substantial contribution to the economic well-being of many low-income families, although the food stamp subsidy is not counted in the measure of income used to define poverty.

A rapidly growing source of Federal transfers to the aged and the poor is medicare and medicaid, which lower the cost of medical care to the recipients. In fiscal 1973, 10.6 million people received medicare benefits, and 23.5 million received medicaid benefits.

The combined effects of the tax and transfer mechanisms of Federal, State, and local governments appear to redistribute income toward low-income families. Various studies have concluded that when accrued capital gains are included in income the tax system is roughly proportional in the income ranges in which most Americans are located, but regressive for very low incomes and progressive for very high ones. However, some government transfers have a strong effect of redistributing income to low-income families. These include public assistance programs, social security, food stamps, medicaid, and medicare.

THE CHANGE IN INEQUALITY OF FAMILY AND INDIVIDUAL INCOME

Between 1947 and 1972 median family income, adjusted for the rise in prices, doubled. This rapid increase in the overall level of income tells us much about the change in living standards, but it tells only part of the story. The extent to which the gains from economic growth have been diffused throughout the population is also important.

SECULAR CHANGES

There are various ways of illustrating the distribution of income among persons and of measuring the amount of inequality in the distribution.

Since families typically pool their incomes, the distribution of family income is a particularly useful indicator of the distribution of economic well-being. One common measure of inequality shows the percentage share of aggregate money income before taxes received by each fifth of families ranked by income. Quite remarkably, relative income shares measured in this way have hardly varied in the 25 years between 1947 and 1972 (Table 34). Thus in a relative sense the rich were not getting richer and the poor were not getting poorer. In this period the average income of each quintile increased at much the same rate. If anything, there seems to have been a slight tendency towards greater equality, since the share of measured income received by the top 5 percent declined somewhat from 1947 to 1972. The decline in the income share of the top 5 percent may be a consequence of the secular decrease in the share of national income received by the owners of nonlabor factors of production.

TABLE 34.—*Share of aggregate income before taxes received by each fifth of families, ranked by income, selected years, 1947-72*¹

[Percent]					
Income rank	1947	1950	1960	1966	1972
Total families	100.0	100.0	100.0	100.0	100.0
Lowest fifth.....	5.1	4.5	4.8	5.6	5.4
Second fifth.....	11.8	11.9	12.2	12.4	11.9
Third fifth.....	16.7	17.4	17.8	17.8	17.5
Fourth fifth.....	23.2	23.6	24.0	23.8	23.9
Highest fifth.....	43.3	42.7	41.3	40.5	41.4
Top 5 percent.....	17.5	17.3	15.9	15.6	15.9

¹ The income (before taxes) boundaries of each fifth in 1972 were: lowest fifth—under \$5,612; second fifth—\$5,612-\$9,299; third fifth—\$9,300-\$12,854; fourth fifth—\$12,855-\$17,759; highest fifth—\$17,760 and over; top 5 percent—\$27,837 and over. Income includes wages and salaries, proprietors' income, interest, rent, dividends, and money transfer payments.

Note.—Detail may not add to totals because of rounding.

Source: Department of Commerce, Bureau of the Census.

The general impression that no significant trend has developed in the relative inequality of income among families is confirmed by other measures of inequality. For example, the variance of the natural logarithm of income, a measure which takes into account dispersion throughout all ranges of income, shows no trend in the dispersion of family income throughout the post-World War II period. (See the supplement to this chapter for an explanation of this measure.)

A family's income depends on the amount of work the different family members perform, on the earnings they receive, on the monetary return from property owned by the family, and on transfers received from the government. Underlying the distribution of family income then is the distribution of individuals' incomes. For males 35 to 44 years old or those 25 to 64 there is no trend during the post-World War II period in income inequality. However, in all years inequality is greater for the 25-64 age group than for the 35-44 age group, and this reflects the change in earnings with age. Thus, measures of inequality for broad age groups merge the inequality resulting

from differences between lifetime incomes with the inequality that results because individuals do not earn the same income in successive phases of their lives.

An increase does occur over time, however, in the inequality of income for males 14 years of age and over, and in the inequality of income for all members (male and female) of the labor force. The increasing inequality for all male workers and all workers results mainly from the greater proportion of workers with part-time and part-year work schedules, rather than from an increase in the inequality of wage rates. The growth of part-time and part-year work may to some extent be attributed to a shift in industrial composition towards the service industries, where flexible hours are more common, and partly to the increasing desire among workers for flexible schedules with shorter hours. Such schedules are particularly attractive to students, semi-retired older workers, and married women. Associated with the increasing importance of these groups in the labor force has been a secular increase in the variability of annual hours worked and consequently in the variability of annual income for the labor force as a whole.

Since most families (75 percent in 1972) are husband-wife families with a working husband, the stability in the dispersion of adult male incomes has been one factor leading to stability in the distribution of family income. The increase in the proportion of wives with earned income evidently did not lead to increases in the relative inequality of family income, partly because husbands' and wives' annual earnings have not been positively correlated. In the future, if a strong positive correlation between husbands' and wives' annual earnings should develop, this correlation could be a factor in increasing the relative income inequality among families.

Stability of Income Inequality Among Adult Males

It is striking that there has been no change in the relative inequality of income among adult males. The greater opportunities for schooling among persons at all income levels and the larger subsidies for training less advantaged persons might have been expected to reduce earnings inequality in the past 20 years, but the relation between equal access to training or schooling and earnings inequality is not so straightforward.

The post-World War II period has brought a narrowing of differences in years of schooling among adult males, and this alone generally decreases the inequality of lifetime income. In the same period, however, the level of schooling has greatly increased. A recent study suggests that at higher levels of schooling the relative dispersion of wage rates tends to be greater than at lower levels, and that the effects on income inequality of the higher level and of the smaller variance in years of schooling have somewhat offset each other.

Greater equality of opportunity could also lead to increases in income inequality if investments in schooling or training became more closely related to ability. Generally, more able people receive a higher money return on an equal investment in education. In a world where financial access to schooling and training depend on family income (and assuming that family income and

ability were not perfectly correlated), extending equal financial access to such investments for all people, regardless of income, could result in those with more ability investing more. In that case inequality could increase.

Obviously many factors other than education influence earnings. However, the distribution of adult males by age, marital status, health, and union membership, and the profitability of investments in school and post-school training, have been essentially stable over the past 25 years, and this stability has undoubtedly contributed to the stability of the income distribution.

CYCLICAL CHANGES

The inequality of income among families and among individuals fluctuates with the business cycle. Inequality increases in a recession and decreases in an expansion. During a recession, wage rates tend to be sticky, and there is no substantial change in the inequality of wage rates. However, layoffs increase and there is an increase in the relative inequality of weeks of employment. The increase in the relative inequality in weeks worked during a recession shows up both within and across demographic groups (age, sex, race, and schooling).

During a recession, unemployment within a group of the same skill, age, and other characteristics is not experienced uniformly; rather, in any one year it is likely to affect some workers to a disproportionate degree. Thus, an increasing rate and duration of unemployment have a greater effect on the weeks of employment of some workers than on others and result in a greater inequality of employment within the group.

A recession also intensifies the inequality of weeks of employment among groups with different characteristics. Workers with higher levels of skill—that is, more schooling and longer labor market experience—usually work more weeks per year at all stages of the business cycle. During recessions, however, the disemployment is relatively greater for workers with less skill. For this reason, in a recession one finds a larger inequality of weeks worked between skill groups than during a business cycle peak.

OMITTED SOURCES OF REAL INCOME AND THE INEQUALITY OF WELL-BEING

Because the concept of income used in the measures of inequality just presented omits some sources of real income, it gives an imperfect description of the resources that families actually command. The omitted items can be very important. They include the imputed value of rental income received by homeowners living in their own homes, as well as capital gains. Employee fringe benefits paid by the employer are omitted, and so is the monetary value to the recipient of Government transfers in kind, such as food stamps, medical benefits, and housing allowances. Many goods and services are produced at home and are excluded from these income measures because of the difficulty of placing a value on production outside the market. Families with a working husband and wife may thus have more

measured income than some families in which the wife confines her work to caring for the home and children, although the extra expenses or loss of leisure time of the working couple could mean that they are really less well off. Finally, the data used here refer to income received in one year before payroll and income taxes.

The reason for not including these sources of income in census surveys of consumer income is that they are all extremely difficult to measure for individuals or families. Several studies have attempted to measure the magnitude and distribution of the different items, but so far the net effect on income inequality of all the items cannot be stated with complete confidence. Nor can we say how past changes in the importance of the different omitted sources may have affected the true trend in income inequality.

TABLE 35.—*Income inequality under alternative definitions of income, 1968*

Definition of income	Income inequality ¹
1. Money income.....	0.75
2. Line 1 plus rental value of owner-occupied homes.....	.74
3. Line 2 plus nonmoney wages and nonmoney farm income.....	.69
4. Line 3 plus medicare payments.....	.62
5. Line 4 plus imputed interest from banks and insurance companies.....	.61
6. Line 5 plus other imputations ² equals money income plus imputed income.....	.61
7. Line 6 less direct taxes equals disposable family personal income.....	.52

¹ Income inequality is measured by the variance in the natural log of income. (See supplement to this chapter.) The income classes used are: Under \$2,000; \$2,000-\$3,999; \$4,000-\$5,999; \$6,000-\$7,999; \$8,000-\$9,999; \$10,000-\$14,999; \$15,000-\$24,999; \$25,000-\$49,999; and \$50,000 and over.

² Other imputations include services furnished without payment by banks and insurance companies, military clothing, and miscellaneous other items.

Sources: Department of Commerce (Bureau of the Census) and Council of Economic Advisers.

Table 35 presents estimates of the effect that some of these omitted sources of income would have had on measured income inequality. For convenience the basic measure of income dispersion used in the calculation is the variance in the natural logarithm of income (see supplement to this chapter). The measure is zero when there is perfect equality of income, and it increases for greater income inequality. However, while a reduction from 0.7 to 0.6 conveys an acceptable suggestion about a decline in inequality, and a decline from 0.7 to 0.5 an acceptable suggestion about a greater decline, the statement that the second of these two declines is twice the first would not be meaningful.

The rental value of owner-occupied dwellings can be imputed by assuming that it is proportional to the value of the house. When the imputed rental value of owner-occupied dwellings is added to money income, the inequality of family income does not change significantly. Although the imputed rental value of housing rises with money income, it does not rise as a percentage of income.

Farm wages and farm income received in kind (such as food and lodging) and medicare payments are generally concentrated among the poor, and they reduce income inequality. The inclusion of imputed interest from banks and insurance companies does not significantly change inequality. When personal income taxes and payroll taxes are deducted from money income plus imputed income, the dispersion of income declines.

Because of the extreme difficulties involved, no effort was made to compute the distribution of capital gains or losses among families. Nor was an effort made to remove the effect of transitory influences on income in any one year. Capital gains and losses, however, tend to be concentrated among upper-income families, and for years of net capital gains their inclusion in the income concept would clearly increase family income inequality. Several studies suggest that if accrued capital gains are included in income a very high proportion of families earn incomes falling in ranges in which the tax system is essentially proportional.

The huge growth in Federal food, medical, and other in-kind subsidies to the poor during the past 10 years would certainly reduce inequality if they were included in the income measures. In addition, families differ in their use of government-subsidized goods and services, such as manpower training programs, public schools, national parks, and roads, but the incidence of benefits by income level is not known.

Family Composition and Work in the Labor Market

Families vary considerably in the hours they work in the labor market to produce measured money income. The difficulty of imputing a value to work done at home has already been noted. The fact that a wife does not work in the market can be taken to mean that she considers her productivity at home to be of more value than what she could earn in the market. Knowing that she does not work in the labor market is not sufficient, however, to determine the money value of the wife's work at home.

Table 36 indicates roughly how families at three levels of income differ in their composition and work in the labor market, and how this has changed. In both 1952 and 1972, families in the lowest fifth were much more likely to be headed by a woman or by a person either less than 25 years of age or older than 65 years. Partly because of these differences in age and sex, the heads of lower-income families are less likely to participate in the labor market, and so are the other family members.

Such families consequently depend more on income from sources other than earnings, such as social security, other retirement incomes, and public assistance. By contrast, upper-income families generally have many earners per family and are more likely to include a wife who works. Presumably these families have less time for work at home, and they must buy with their earnings some of the services that would otherwise be produced at home.

TABLE 36.—Selected characteristics of the lowest, middle, and highest fifths of families ranked by money income, 1952 and 1972

[Percent]

Family characteristic	Lowest fifth		Middle fifth		Highest fifth	
	1952	1972	1952	1972	1952	1972
Total families.....	100.0	100.0	100.0	100.0	100.0	100.0
Female head.....	22.0	32.0	7.1	7.1	4.8	3.2
Head under 25 years of age.....	7.1	13.2	6.0	7.5	1.3	1.6
Head 65 years of age and over.....	30.1	32.8	7.8	7.9	7.9	5.9
No earners.....	25.3	36.4	1.2	2.4	.6	.8
2 earners or more.....	22.4	20.6	36.7	57.0	66.3	74.0
Husband-wife families.....	100.0	100.0	100.0	100.0	100.0	100.0
Wife in paid labor force.....	18.9	19.9	21.2	41.3	38.1	51.6
Mean number of children.....	1.14	1.09	1.43	1.35	1.10	1.25

Source: Department of Commerce, Bureau of the Census.

These differences in the characteristics of families by income class have become more intense. They raise problems of interpretation which are important for public policy designed to influence the distribution of income. Some of these issues are discussed below in the section on poverty.

DETERMINANTS OF DIFFERENCES IN EARNINGS AMONG INDIVIDUALS

Wage rates and annual labor market earnings of individuals vary considerably. Much of this variation can be related statistically to individual differences in measurable characteristics—schooling, post-school training, region of residence, and other demographic characteristics, as well as restrictions on entry into occupations. How far such unmeasurable characteristics as innate ability, diligence, personal attractiveness, and contacts explain the remaining differences is not known. Nor can it be ascertained how important luck is in determining the distribution of income.

Other aspects of earnings are not included in earnings data. Psychic earnings from having a pleasant job or living in a pleasant locality are not measurable. Earnings received by individuals in kind, such as free lodging and fringe benefits purchased by the employer, are measurable in principle, but difficult to measure in practice.

SCHOOLING

Schooling is an important determinant of the distribution of earnings. Table 37 shows average usual weekly earnings for males 35 to 44 years of age who worked full time. Those with more schooling have substantially higher earnings; and this relation has been persistent in many different sets of data.

TABLE 37.—Average usual weekly earnings of male workers 35–44 years of age who worked full time, by years of schooling and race, 1973

Years of schooling	White	Negro and other races
0-4	\$150	\$96
5-7	173	149
8	202	165
9-11	211	165
12	231	178
13-15	265	209
16	321	241
Over 16	333	284

Note.—Data are from a survey made in May 1973.

A full-time worker is defined as one who usually works 35 hours or more per week.

Source: Department of Labor, Bureau of Labor Statistics.

One suggested reason why schooling and earnings are positively related is that schooling increases a worker's productivity. A mobile labor force and competitive markets translate the increased productivity into higher income for the worker. To test the hypothesis that schooling increases productivity and thereby increases income, one must have some measure of productivity other than income itself. Several studies have investigated the association between schooling and the productivity of self-employed farmers, as well as the association between schooling and efficiency in household activities and in interregional migration, and in scores on standardized ability tests. They indicate that, controlling for other variables, those people with more schooling are more productive.

Some say that those capable of higher productivity receive more schooling and that business firms use the amount of schooling as a means of sorting out those capable of better performance. It is therefore important to distinguish between schooling as a means of changing productivity and schooling as a means of identifying the more productive members of the population. The sorting hypothesis implies that firms regard the number of years of schooling as an index of individual qualities that the educational system can identify more efficiently than they can. The educational system, according to this theory, is effective in attracting persons possessing these qualities and discouraging the schooling of those without these qualities. Empirical tests of the sorting hypothesis have not been conclusive.

POST-SCHOOL TRAINING

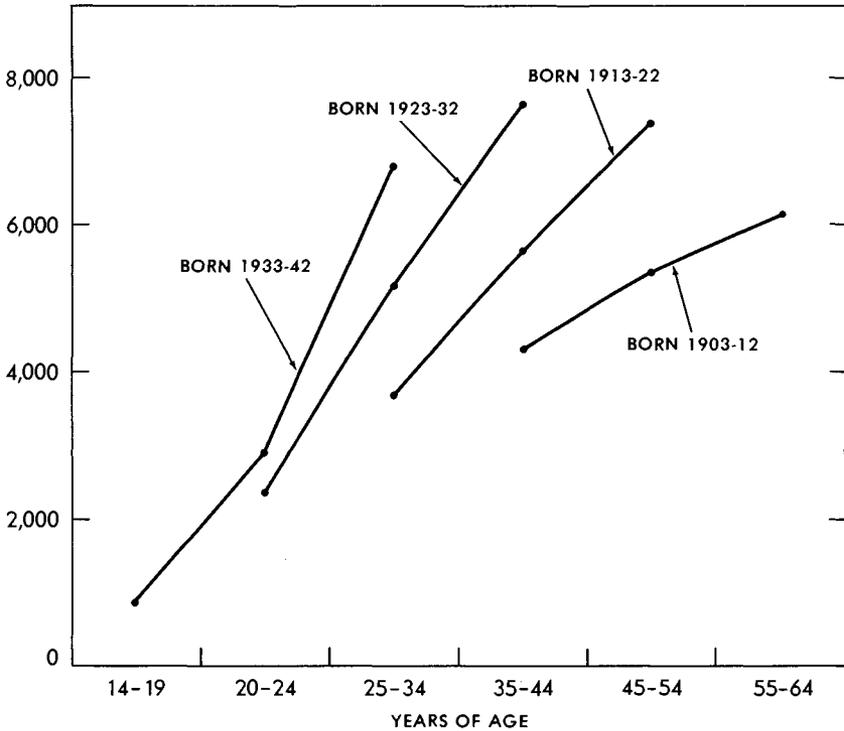
Another important aspect of training is experience acquired on the job after schooling is completed. On-the-job training can vary from formal training programs within the firm to the informal process of learning by doing. Thus, particularly at younger ages, a worker may be involved in a process of investment with returns accruing later on. For this reason earnings would rise as age increases.

Charts 8 and 9 give the results of two different procedures to find the relation between age and income for males. Chart 8 presents the age-income profiles of a group of men over time (cohort profile). For a cohort, income

Chart 8

Real Income Profiles of Cohorts of Men Born in Selected Years

REAL ANNUAL INCOME (1967 DOLLARS) \downarrow



\downarrow MEDIAN TOTAL MONEY INCOME FOR EACH AGE DEFLATED BY THE CONSUMER PRICE INDEX.

SOURCES: DEPARTMENT OF COMMERCE AND DEPARTMENT OF LABOR.

increases with age, but for adults it does so at a decreasing rate. Income increases with age because the workers are acquiring experience and because of the rising productivity of workers as technology improves and physical capital grows. The cohort profiles are higher for younger workers because they have not only more years of schooling but also the benefits that accompany a growth of technology and physical capital.

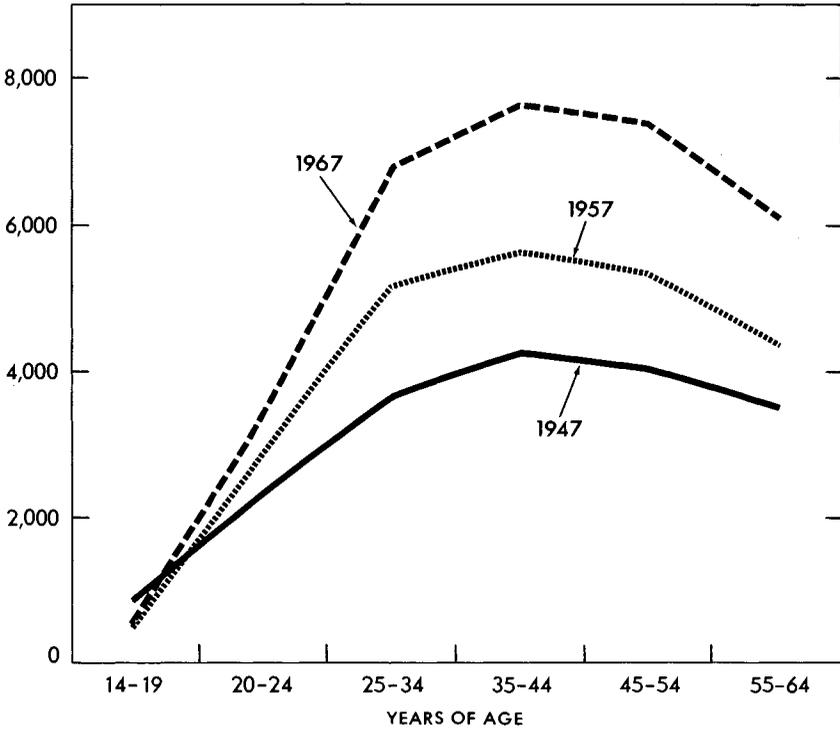
Chart 9 presents the age-income profiles obtained from plotting the income of males of different ages in the same time period (cross-sectional profile). The tipping down for the oldest age groups (45 to 54 and 55 to 64 years of age) of the cross-sectional profile for annual income reflects the lower income of retired persons and, compared to younger males, the lower level of schooling and obsolescence of knowledge of those older males still in the labor force.

There are too few comparable data to determine whether the cohort profiles are becoming steeper over time for adult males, although there are some

Chart 9

Real Incomes for Men in Different Age Groups

REAL INCOME (1967 DOLLARS) ^{1/}



^{1/}MEDIAN TOTAL MONEY INCOME FOR EACH AGE DEFLATED BY THE CONSUMER PRICE INDEX.
SOURCES: DEPARTMENT OF COMMERCE AND DEPARTMENT OF LABOR.

hints to that effect. Increased high school and college attendance has increased the slope of the age annual income profile for younger males. If better data in the future indicate a steepening over time in the slope of the age-income profile, a constant income inequality within a broad age interval would imply a narrowing of income inequality for each age in the interval.

The relation between age and usual weekly earnings in 1973 for males with 12 and 16 years of schooling is shown in Table 38. For the same level of schooling, usual weekly earnings generally increase with age. The age-earnings profiles are steeper for those with more schooling and thus suggest a positive association of schooling and on-the-job training. Because women are more likely to participate discontinuously in the labor force, entering and leaving several times during their lives, their post-school training does not necessarily rise steadily with age.

TABLE 38.—Average usual weekly earnings of males who worked full time, by age and years of schooling, 1973

Age	Years of schooling	
	12	16
20-24 years.....	\$158	\$170
25-34 years.....	201	238
35-44 years.....	226	317
45-54 years.....	227	347
55-64 years.....	227	323

Note.—Data are from a survey made in May 1973.

Source: Department of Labor, Bureau of Labor Statistics.

EMPLOYMENT

The annual labor market earnings of a worker are a function of the worker's weekly earnings and the number of weeks of employment during the year. Weeks of employment can vary because of unemployment; but they also vary because of voluntary withdrawals from the labor force.

The number of weeks worked is greater for male workers 25 to 54 years of age than for younger, older, or married female workers. Younger persons work less because of school attendance and a greater incidence of unemployment. Students (who now make up 59 percent of the teenage labor force) ordinarily work during vacations or have part-time jobs for a few months during the year. Most new entrants and reentrants to the labor force are young people or married women, and most also experience some unemployment before taking their first job. One reason for the higher unemployment rate for young workers is that they voluntarily leave jobs to acquaint themselves with the labor market and to gain experience in various jobs. In addition, the instability of their employment is increased by the fact that their productivity is very close to the legal minimum wage, and they have a smaller amount of specific job training.

Employers make investments specific to the firm for some workers. Specific investments include the component of training a worker receives that is useful only in that firm, and also hiring and placement costs. The more important specific training is, the more costly it is for both the firm and the worker if the worker is separated from the firm. Workers with more specific training are therefore less likely to be subjected to layoffs or to quit, and they will work more weeks during the year. Workers with advanced schooling ordinarily work more weeks during the year, partly because their higher wage makes absence from work more costly, and partly because they have more specific training.

Married men work more weeks per year than men who have not married, but married women work fewer weeks than those who have never married. Most married women work less if they have young children. Older workers work less because of deteriorating health and partial retirement.

The weekly wage and the number of weeks worked are related. Those who work more weeks per year tend to have a higher weekly wage, partly,

because they have acquired more experience. On the other hand, it has been suggested that the weekly wage for each week worked is higher in some seasonal occupations in which there are fewer weeks of employment during the year.

EARNINGS DIFFERENTIALS BETWEEN GROUPS

In the last quarter century there has been substantial public concern with the causes and consequences of the observed earnings differential between groups differentiated by race and sex. This discussion has focused on investments in training and current and past discrimination, as factors that may explain the differential.

DISCRIMINATION

Discrimination is said to exist when two or more groups that are differentiated on the basis of some characteristic irrelevant to an objective measure of productivity are not granted equal treatment in a particular activity. The differentiating characteristic may be race, sex, ethnic origin, marital status, age, or physical appearance. Obviously some forms of discrimination give rise to more social concern than others. Discrimination may also take several forms: the way individuals and business firms behave in the market place for jobs, housing, credit, and other goods and services; and discriminatory taxation or public expenditure policies by government. It may be so closely interwoven with the culture of a society that the stereotyping of roles is accepted by all with little or no question.

The income and employment of an individual can be influenced by past and present discrimination. Past discrimination affects the years and quality of an individual's schooling and the path to his present occupation and training. Current discrimination affects incomes when two workers are given a different wage for the same productivity and restrictions are placed on a worker's occupational mobility.

It is important to distinguish between the differences caused by discrimination and those from other causes. Observed differences between the wages or occupational distribution in two groups of individuals may be due to discrimination or to factors entirely unrelated to discrimination. Because many important variables are not measurable, one cannot fully quantify the effects of past or present discrimination on earnings and occupational choice. What can be quantified, however, is the extent of observed differences between groups that remain after making allowance for what is measurable.

RACE DIFFERENTIALS

Data on the income or occupations of white and black males and females indicate a substantial racial difference that has persisted for the last century.*

*Almost 90 percent of nonwhites are blacks, but many of the available data do not distinguish between blacks and other nonwhites.

The relative income difference widened in recessions or depressions and narrowed during periods of economic expansion, particularly during World War II. Evidence is accumulating, however, that there has been a long-run narrowing of the racial income difference. According to one recent study, for example, the median wage and salary income of black males increased at an annual rate of 3.2 percent from 1947 to 1971, compared to an annual increase of 2.6 percent for white males. For black and white females the rates were 4.9 percent and 1.7 percent respectively. In spite of this narrowing, substantial racial income differences continue, particularly for males.

Why the Differential Narrowed

There are several reasons for the narrowing of the black-white earnings differential. Important changes have occurred in the relative schooling of blacks and whites. The substantial discrimination against blacks that was evident in the public school expenditures of many States appears to have ended. For this and other reasons there has been a dramatic increase in the level of schooling for blacks. The median number of years of schooling among black males 18 years old and over in the labor force increased between 1952 and 1971 by 4.2 years, to 11.4 years. For white males the increase was 1.7 years, to a level of 12.5 years. During the same period, black females in the labor force increased their level of schooling by 4 years, to 12.1 years, compared to an increase for white females of only 0.4 year, to 12.5 years.

The substantial migration of blacks out of the South and into States in the northern and western regions may also have influenced the relative increase in the earnings of blacks. In 1940, 77 percent of the black population lived in the South; by 1970, the proportion was 53 percent. Earnings are lower in the South than in other regions for all workers, but the difference is particularly great for black workers, and in the past the difference between earnings in the South and elsewhere was even more pronounced. Thus blacks could increase their earnings by moving out of the South. Although whites have an even greater propensity than blacks to migrate between States or regions, this greater regional earnings differential for blacks, coupled with their greater concentration in the South, provided an important way for blacks to improve their earnings. Blacks are likely to have increased their earnings relative to whites through migration, despite their somewhat lower geographic mobility.

The changing occupational structure and labor force status of the population was another factor influencing the rate of growth of earnings. The labor force participation rate of married white females increased at a faster rate than that of married black females. The entry into the labor force of white females with little experience and the growth of part-time employment slowed the rate of growth of earnings among white females. The proportion of black females employed as household workers declined from 43 percent in 1949 to 18 percent in 1969.

Two important factors served as catalysts enabling these changes to take place. First, the American economy is highly competitive, and business firms

whose owners or white workers have less discriminatory attitudes toward blacks will be likely to employ more blacks. These firms prosper if blacks receive lower wages. When such firms expand, the demand for black workers increases and the discriminatory differential declines.

Competition may not be a fully effective weapon against discrimination, however, if prejudice is very widespread. The second factor, working with the first, was a change in attitudes toward discrimination against blacks. This development improved the relative income and occupational status of blacks by directly reducing labor market discrimination. It also facilitated the passage of the 1964 Civil Rights Act and other Federal and State legislation as well as court decisions prohibiting discrimination in wages and employment. Such changes in the legal system made discrimination more costly and therefore lessened it. The reduction in discrimination in housing and in public accommodations brought about increased contact between blacks and whites and presumably expanded the information sources and job opportunities for blacks.

Dead-End Jobs

There is a widespread belief that, compared to white males, black males are relegated to poorly paid, dead-end jobs—that is, jobs in which earnings are initially low and do not rise with experience. This view originated as a result of examining the relation between age and income for white and black males at a moment in time (cross-section). For example, reading down the columns of Table 39 indicates a substantial decline for older age groups in the income of black males relative to white males. The appropriate procedure for a study of life-cycle income, however, is to follow a group (cohort) as it ages, as is shown along the diagonals of Table 39. For each

TABLE 39.—*Income of Negro males as percent of income of white males, by type of income and age, 1949, 1959, and 1969*

[Percent]			
Type of income by age group	1949	1959	1969
Annual income:			
25-34 years.....	57	57	65
35-44 years.....	48	52	56
45-54 years.....	46	49	53
55-64 years.....	45	48	51
Weekly income:			
25-34 years.....	61	61	67
35-44 years.....	52	57	58
45-54 years.....	48	52	55
55-64 years.....	47	51	53

Note.—Data for 1949 and 1959 relate to Negro and races other than white and therefore are not strictly comparable with data for 1969 which relate to the Negro race only.

Sources: Department of Commerce (Bureau of the Census) and Council of Economic Advisers.

cohort, the ratio of black to white annual and weekly incomes either did not decline at all with age from 1949 to 1969, or declined at an appreciably slower rate than in the cross-section. Thus, experience appears to have a

similar relative effect on the incomes of white and black males. Although some black and some white males may be in dead-end jobs, this is not the situation of the average black or white worker.

Current Differentials

Although the earnings differential between black and white females has become quite small, the differential that still exists between the earnings of black and white males is substantial. It does narrow, however, when the comparison is restricted to the States outside the South, and when differences in years of schooling are taken into account (Table 40). A further narrowing of the differential occurs if the comparison is restricted to married men. There are large differences in marital status between blacks and whites. In March 1972, 78 percent of white males 20 years old and over were married and living with their wives, compared to 61 percent for black males. Among both white and black males, marital status is closely related to earnings, married men having higher earnings than those not currently married. How the division of labor within the family affects the earnings of married men and women is discussed at greater length in the next section.

TABLE 40.—Earnings of Negroes as a percent of earnings of whites, for persons 25–64 years of age, 1969

Type of earnings by sex and region	[Percent]			[Percent]		
	All persons			Married, spouse present		
	All levels of schooling	High school graduate	College graduate or more	All levels of schooling	High school graduate	College graduate or more
EARNINGS OF MEN						
Annual earnings:						
All regions.....	60	68	71	61	61	72
South.....	53	60	64	55	61	(²)
North and West ¹	69	74	78	70	76	79
Hourly earnings:						
All regions.....	67	73	79	68	76	81
South.....	60	64	71	60	65	(²)
North and West ¹	77	81	87	79	85	93
EARNINGS OF WOMEN						
Annual earnings:						
All regions.....	80	93	104	88	102	108
South.....	69	80	105	75	88	112
North and West ¹	94	102	111	105	112	108
Hourly earnings:						
All regions.....	89	99	119	91	107	95
South.....	82	76	128	76	79	88
North and West ¹	101	118	109	111	128	107

¹ Includes Northeast and North-central.

² Fewer than 50 persons in the sample.

Note.—Education, region, marital status and age relate to 1970.

Sources: Department of Commerce (Bureau of the Census) and Council of Economic Advisers.

Several factors can be mentioned to explain why black males still receive lower earnings than white males after adjustment for schooling, age, region, and marital status. Prior investments made in the child at home are important in determining the extent to which a student benefits from schooling. Black youths are more likely to come from poorer homes where the parents have less schooling, to have poorer diets, and to be less healthy. They are likely to start school with fewer advantages and skills than the typical white youth. Moreover, at least in the past, there was discrimination against black youths in public school expenditures. Later on, as adults, blacks have poorer health, and may have poorer information about better jobs. Some of the current wage differences may thus be a consequence of past discrimination. Many factors, such as health and information about labor markets, are difficult to measure, however, and their actual effects on earnings differences between blacks and whites have not been quantified. One cannot then reliably measure the extent of the occupational and wage rate discrimination that now exists, or the effect that current discrimination has on earnings.

SEX DIFFERENTIALS

In 1972 the median annual earnings of women 14 years old and over who did full-time, year-round work were about 58 percent of that of full-time, year-round male workers. This low ratio cannot be taken as a measure of current market discrimination, however, since the average full-time work-week is shorter for women than for men, and their life time work experience has been vastly different.

Specialization and Working Women

Although the pattern is changing rapidly, the traditional economic organization of the family has been marked by a specialization of function: women tend to specialize in the work associated with child care and keeping up the home; men tend to specialize in labor market employment. In the past, when it was typical for families to have more children than they now do, this specialization of function was undoubtedly an efficient arrangement. Whether it now reflects societal discrimination or efficiency is a matter for speculation.

In many families a lesser degree of specialization and a greater sharing of home and labor market activities have come to be the preferred form of family organization, and women's participation in the labor force has increased greatly. In 1950, 28 percent of married women 35 to 44 years of age were in the labor force; in 1972 the proportion was 49 percent. However, most married men still work nearly continuously during their prime working years; and the labor force participation rate of married men from 25 to 55 years of age is over 95 percent.

The work histories of individual women cannot be ascertained from current labor force rates; special surveys are needed to provide informa-

tion about lifetime work experience. The National Longitudinal Survey (NLS), a large data source sponsored by the Department of Labor, has recently become available and provides much more detailed information on the work histories of women than has ever been previously compiled. The survey indicates that in 1967, among married women 30 to 44 years old with children, only 3 percent had worked at least 6 months every year since leaving school. On the average, married women worked at least 6 months in 40 percent of their years after leaving school, but the work was not likely to be continuous.

One study which used the NLS showed that earnings of women do rise with experience and that continuity of experience, as opposed to intermittent participation, commands a premium. Withdrawal from the labor force for a time resulted in a decline in earnings when work resumed, since previously accumulated skills, or human capital, actually depreciate during extended periods away from work. For the married women in the sample, the hourly wage rate was about 66 percent of that of married men in the same age group (30–44 years) in the same year (1966), after controlling for differences in years of schooling. At least half of the 34 percent differential resulted from differences in their measured experience. The remaining differential is unexplained.

It is not known to what extent current discrimination, as opposed to other unmeasured factors, contributed to this differential. For example, the study could not provide direct measures of the nature of the investments made in the productivity of women and men, other than years of formal schooling. Women do not appear to obtain as much training on the job as men for the same length of time in the labor force. Thus, although women's earnings rise with experience, the study found that they do not rise as steeply as men's. This difference could result partly from a faulty measurement of a year's experience for women; as noted above, in these data a year's work could be as little as 6 months of part-time employment. However, the measured effect of experience could also be interpreted as the result of discrimination. That is, employers may deny a woman on-the-job training or a promotion because of her sex, sometimes from sheer prejudice, sometimes because they think a woman is more likely to quit for personal reasons. One can also surmise that women themselves may not choose to invest in training at a cost of either lower current earnings or additional hours of work, when the payoff might be lost because of the uncertainty of their future work patterns.

For example, women in school have a lower enrollment rate in programs oriented toward the labor market—engineering, accounting, electronics—and a higher enrollment rate in courses that may be more applicable to work or leisure in the home—child development, languages, literature. This pattern may reflect greater uncertainty among women about their future attachment to the labor force. A choice of field of study may also be influenced

by social pressures, however, which make women feel less feminine and men feel less masculine if they enroll in courses traditionally selected by the other sex.

The study also relates lifetime work history to earnings for women who never married. A year's experience has a much greater effect on single women's earnings than on those of married women. Single women work much more continuously than married women, though less so than married men. Some single women may choose not to make investments related to work because they expect to marry. But many look forward to careers and may therefore delay marriage or never marry at all. This career orientation is consistent with the relatively greater number of years of schooling completed by single women compared to those who marry. It is also consistent with their observed higher earnings. Estimates of hourly wage and salary earnings from 1970 census data show that women 45 to 54 years of age who had never married earned 20 percent more than married women, and 28 percent less than married men, but only 2 percent less than men who had never married.

There is then also a differential between the earnings of married and single men, and it may be taken as another illustration of how specialization within families may affect career patterns and earnings. Single men have somewhat lower labor force participation rates; they also work fewer hours per year than married men. In part this may result from a higher incidence of disability, which influences both marriage and work. Although they have greater work participation than married women, single women also have higher disability rates than married women.

Because of differences in life-cycle participation in the labor force by women and men, the experience of women does not bear the same relationship to age as it does for men. Many women who have entered or reentered the market at older ages are really beginners. Men's earnings are at their peak when the men reach an older age, but women's earnings will represent a mixture in which a small minority have high earnings because of their considerable experience, but the majority have earnings closer to those at the start of a career. As age increases, it is therefore not surprising that the earnings differential between women and men widens. For example, a comparison of usual weekly earnings of workers who worked 35 hours a week or more in 1973 shows that the ratio of women's earnings to men's earnings declined from 0.70 at ages 20-24 to 0.59 at ages 45-54 for high school graduates. Of course the earnings ratios at older ages reflect the work histories of different cohorts of women. If the younger women maintain a greater attachment to the labor force during their lifetime (and there is some evidence that this is the case), then the ratio of women's earnings to men's may not decline as much with age in the future.

Differences in lifetime work experience also seem to explain why the ratio of black women's earnings to those of white women exceeds the ratio of earnings of black men to those of white men (Table 40). Indeed, in the

regions outside the South, within educational levels, black women earn more than white women. The differential between whites and blacks in quality of schooling, family background, and discrimination can be assumed to be similar for women and men. Black women have a much greater life-cycle attachment to the labor force, however, than white women do, although this differential is largely confined to married women. For example, in 1972 among women 35 to 44 years of age, with 4 years of high school or more, 71 percent of the black women were in the labor force, compared to 53 percent of the white women.

The greater tendency of black married women to work, compared to white married women, may be due in part to the relatively lower earnings of their husbands. Partly because of the relatively high earnings and work participation of black wives, the ratio of annual income of black husband-wife families to that of white husband-wife families is higher than the ratio of black men's to white men's income. For families headed by males 35 to 44 years old the ratio in 1969 was 75 percent, compared to 56 percent for males alone (Tables 39 and 41).

TABLE 41.—Median income of Negro husband-wife families as percent of white husband-wife families, by region and age of husband, 1959, 1969, and 1972

[Percent]

Age of husband	1959	1969	1972		
			Total	South	North and West ¹
All families.....	57	72	76	69	86
Under 35 years.....	62	80	85	84	93
35-44 years.....	60	75	76	67	80
45-54 years.....	55	66	71	63	78
55-64 years.....	51	62	59	53	79
65 years and over.....	57	65	72	67	98

¹ Includes Northeast and North-central.

Source: Department of Commerce, Bureau of the Census.

Trends in the Earnings Differential

Much has been made of the rather puzzling observation that the ratio of earnings of all women to those of all men has declined during the past 20 years. This observation refers to annual earnings, or the earnings of full-time, year-round workers who are not necessarily representative of the total. But average hours and weeks worked during the year fell for women relative to men from 1949 to 1969. If annual wages and salaries are divided by total hours worked during the year, the result is a much modified decline in the hourly wage of women relative to the hourly wage of men (Table 42).

An additional factor which would produce a relative decline in women's earnings is the relative decline in their general educational level and their labor market experience during the period. In 1950, women in the labor force had on the average more schooling than men did; but this advantage

TABLE 42.—*Relation of wage and salary earnings and of total money earnings of women to those of men, 1949, 1959, and 1969*

Type of earnings	Earnings of women as percent of earnings of men		
	1949	1959	1969
Mean wage and salary earnings: ¹			
Annual.....	56	50	47
Hourly.....	67	66	63
Hourly adjusted for education ²	63	65	63
Mean total money earnings: ¹			
Annual.....	(3)	48	46
Hourly.....	(3)	65	62
Hourly adjusted for education ²	(3)	64	62

¹ Earnings for any year are for those in the experienced labor force the following year.

² Approximate adjustment based on differences in the educational distributions of men and women in the labor force in 1950, 1960, and 1970.

³ Not available.

Source: Council of Economic Advisers.

was eliminated by 1970. Since education has an effect on earnings—both men's and women's earnings increase with education—it is important to take these changes into account. An approximate adjustment for educational level increases the differential in 1949 and 1959, because women in the labor force then had more education than men. After the educational adjustment, the differential shows little change from 1949 to 1969.

What has not been accounted for is the experience differential between men and women. As has been explained above, this difference seems to be the most important factor causing a divergence in hourly earnings. But since the labor force participation of women, particularly married women, was increasing rapidly during the period, it is very likely that the constant flow of entrants into the labor force resulted in a decline in the average experience of women in the labor force during the 20 years.

The foregoing suggests that if we could compare women and men with a given amount of experience and education the ratio of women's hourly earnings to men's might well show an increase over the 20 years—a narrowing in the gap. This would, of course, be compatible with the fact that women have dramatically increased their participation in the labor force during the past 20 years. The rapidly increasing opportunities offered them would be one reason why they have done so.

OCCUPATIONAL DIFFERENCES

The occupational distribution of blacks differs from that of whites. In 1970, for example, 27 percent of employed white males and 9 percent of employed black males were managers or professionals, whereas 7 percent of white males and 19 percent of black males were hired farm or nonfarm laborers; and 18 percent of employed black females were domestic household workers, compared to only 2 percent of white females. There is also consid-

erable occupational segregation by sex, and some believe that the sex segregation is even greater than the racial segregation. For example, 83 percent of managers and 87 percent of farm laborers were men; but only 3 percent of nurses and 16 percent of elementary school teachers were men.

Occupational segregation by race derives partly from differences in schooling and partly from the geographical distribution of blacks, who disproportionately live in the South. Moreover, there has been substantial discrimination against blacks who entered, or tried to enter, certain occupations. This discrimination, stemming from the attitudes of white employers, employees, and consumers of services, resulted in a smaller proportion of blacks entering these occupations. In some professions—for example, medicine, law, and the ministry—blacks were generally restricted to practicing in segregated black markets. In addition, blacks were not always granted equal opportunity to move up the occupational scale—for example, from laborer or operative to foreman or manager.

Some of the differences in occupational composition by sex can be attributed to differences in physical attributes. Undoubtedly, however, jobs requiring physical strength are on the decline, and it is questionable whether this factor was ever very important. One may also argue that prejudice on the part of employers, fellow employees, and consumers operates to exclude women from some activities in the labor market and to favor them in others.

Another hypothesis stresses the difference in role identification that leads to differences between the work careers and training of women and men. That is, women who anticipate combining some work with marriage seek occupations and work situations which are most complementary to home responsibilities, such as those in which hours are shorter or correspond to the children's school hours, or those offering work close to home. Another criterion is the penalty for interruptions in work. For example, women might avoid situations with rigid seniority rules, or they might choose careers in which skills are least likely to depreciate during a period spent at home. Some of the occupations stereotyped as women's, such as elementary school teaching and nursing, are indeed those where the same skills can be utilized in the home. According to this view occupational differences arise from choice, although the choice may be induced by a pervasive societal bias which dictates that home responsibilities are the women's major work. It is quite difficult to separate empirically the effects of discrimination in the labor market from the effects of personal considerations in women's occupational choices.

One may question whether the wage rates received by blacks and women have been affected by the occupational segregation. Earnings differ from occupation to occupation. If blacks or women were clustered in occupations that were low paying for all groups, including white males, then the lower average hourly earnings of blacks and women could be attributed to dif-

ferences in their mix of occupations, rather than to earnings differences within individual occupations. To estimate the effect of occupational mix on the earnings of black males, indexes were calculated to measure what black males would earn if they had the white male occupational distribution but the earnings of black males within each occupation. Similar indexes were computed to measure what white women would earn if they had the same occupational distribution as white men, but the earnings of white women within occupations.

Preliminary results, using 1970 census data on 443 detailed occupations, indicate that black males would have hourly earnings about 18 percent higher if they had the white male mix of occupations. Since white males earned 50 percent more than black males, occupational differences would appear to "explain" 35 percent of the differential. However, those with high levels of education have a very different occupational distribution compared to those with lower levels of education. Hence it may be that in adjusting for occupation one is really adjusting for education. Indexes calculated for separate education groups indicate a much smaller explanatory power of occupation. For example, among males who completed 12 to 15 years of schooling, the earnings of black workers would be increased by only 8 percent if they were given the white occupational distribution, and this would account for 22 percent of the race differential in earnings.

Comparing white women and white men 25 to 64 years old, the preliminary results for 1970 indicate that women would increase their earnings by about 11 percent if they had the occupational mix of men, and this would account for about 21 percent of the gross earnings differential between women and men. Since women have completed roughly the same average years of schooling as men, education would not be expected to interact so strongly with occupation. Within education groups, occupational mix seems to explain less for women below the college level than for women as a whole, but relatively more at the college level.

Since occupation alone does not explain very much of the overall earnings differential between men and women, it would seem that earnings differentials within occupations, as they are now defined, must be more important than earnings differentials between occupations. In other words, if custom or overt barriers to entry have relegated women to different occupations from those of men, this factor has not been the major one in lowering their earnings.

It has already been noted that earnings differences between women and men are in large part a consequence of differences in lifetime labor market experience. Since earnings differences between occupations may also be influenced by sex differences in the extent of post-school training between occupations, it may be necessary to make a distinction between the explanatory power of occupational mix per se and the explanatory power of occupational differences in experience. This requires data not currently available.

In conclusion, it appears that the different occupational distributions of white men, compared to black men and white women, explain at most about one-fourth of the existing earnings differentials between them. Because occupational differences can also be explained by other factors that differ between the races and the sexes, such as labor market experience (post-school training), and region, the true effect of occupation may be much smaller.

THE LOW-INCOME POPULATION

The Government has assumed an ever larger role in helping to see that those in need reach an adequate standard of living; and a considerable share of the Federal budget is now devoted directly and indirectly to that end.

THE DEFINITION OF POVERTY

There is not, and probably never will be, a consensus on any one definition of poverty. Many programs require, however, that we distinguish those who fall below a minimum income standard; and, accordingly, the concept of the low-income or poverty threshold has been developed. The Government concept is defined essentially as an amount about three times the estimated cost of a nutritionally adequate diet. The standard is adjusted for differences in family size, sex of family head, number of children, and farm-nonfarm residence; and different schedules are set for each group. The standard for each group is adjusted each year for changes in the overall consumer price index. Thus, the average threshold for a nonfarm family of four increased from \$2,973 in 1959 to \$4,275 in 1972.

Because the poverty threshold is, in real dollars, an absolute standard, it cannot be used to measure changes in the relative inequality of income. Indeed, as the average real income level of the population increases, the poverty standard lags farther behind the average. Thus the poverty threshold for a family of four declined from about 55 percent of median family income in 1959 to 38 percent in 1972.

Only cash income is used in determining low-income status, although a crude implicit adjustment is made for food grown at home by farm families. It has not been feasible to take account of the tremendous growth in the number and size of transfers in kind, such as public housing, food stamps, child care, and medical care. For example, in 1972, Federal and State government expenditures per poor person on the food subsidy and medicaid programs alone, valued at cost, were equal to about 50 percent of the money income of the average person in the low-income category.

It would be extremely difficult to determine the exact incidence or value of all the benefits. The programs for the low-income population are administered by different agencies and jurisdictions, they also have different aims and are distributed to somewhat different target populations. Moreover, the income in kind cannot be considered a perfect substitute, dollar for dollar, for cash income. For example, a public expenditure of \$100 a month

for public housing may be valued by the poor family at considerably less than \$100. Nevertheless, it seems safe to conclude that some low-income families with in-kind benefits are receiving real incomes in excess of the low-income threshold and that the proportion exceeding the threshold has increased with the growth of the programs. On the other hand, some persons classified as above the low-income threshold, who receive no in-kind benefits and who have unusual expenses—for example, because of poor health—may have their real income position overstated.

THE DECREASE IN POVERTY

There has been a rapid decline in the number and proportion of persons in families with a cash income below the poverty line (Table 43). In 1972, 12 percent of all persons were classified as low income, compared to 22 percent in 1959. In all years the incidence of poverty is greater among blacks than among whites and much greater among female-headed families than among male-headed families. Since 1959 the decline in poverty has been particularly marked for both black and white male-headed families.

TABLE 43.—Persons below the low-income level and percent below the low-income level by family status, selected years, 1959–72

Family status	1959	1966	1969	1971	1972
Total persons below the low-income level (thousands).....	39, 490	28, 510	24, 147	25, 559	24, 460
Group below low-income level as percent of all persons in group:					
Total persons.....	22. 4	14. 7	12. 1	12. 5	11. 9
65 years and over.....	(¹)	28. 5	(¹)	21. 6	18. 6
Unrelated individuals.....	46. 1	38. 3	34. 0	31. 6	29. 0
Persons in families with male head:					
White.....	14. 7	8. 0	6. 0	6. 2	5. 6
Negro and other races.....	51. 0	31. 2	19. 8	19. 1	18. 5
Persons in families with female head:					
White.....	40. 2	29. 7	29. 1	30. 4	27. 4
Negro and other races.....	75. 6	64. 6	57. 8	55. 6	57. 7

¹ Not available.

Note.—Persons below the low-income level are those falling below the poverty index adopted by the Federal Interagency Committee in 1969. See text for explanation of index.

Years are not exactly comparable because of changes in definition and methodology.

Source: Department of Commerce, Bureau of the Census.

The principal factor behind the decline in poverty is economic growth. The basic forces underlying economic growth have raised the productivity of even the least skilled worker and have enabled millions of workers to rise above the low-income threshold through higher wage rates for those in the labor force. In addition, economic growth has increased the labor force participation of wives by increasing their labor market wage relative to the cost of consumer durables and other substitutes for time in the home. Thus the decline in poverty has been most pronounced for the working poor. In

1959, 14.6 percent of family heads who worked at all, and 9.4 percent of those who worked full time, year round were classified as low income; by 1972, the percentages had dropped to 6.0 and 2.9 percent respectively. Those heads of families who do not work but are no longer in poverty have benefited from increases in social security and pension income, which were made possible by economic growth.

More and more the low-income population is composed of families headed by a person who does not work because of disability, age, responsibilities in the home, or perhaps simply inability to cope with work (Table 44). Unemployment, perhaps surprisingly, does not play a major role in withdrawal from the labor force. Of those low-income family heads who did not work in 1972, 4.8 percent cited inability to find work as the reason for not working. Thus, the vast majority of the poor who do not work seem to be in a situation where work is not a feasible alternative. For some the inability to work is a permanent condition, but for others it may be temporary.

TABLE 44.—*Work experience of family heads below the low-income level by sex, 1959 and 1972*

Work experience of head	Total		Male head		Female head	
	1959	1972	1959	1972	1959	1972
Total families (thousands).....	8,320	5,075	6,404	2,917	1,916	2,158
Total families (percent).....	100.0	100.0	100.0	100.0	100.0	100.0
Worked ¹	67.5	53.5	74.9	64.9	42.9	38.1
50-52 weeks, full time.....	31.5	19.8	37.6	29.4	10.9	6.9
1-49 weeks, part time or full time.....	31.0	30.1	32.1	31.3	27.1	28.5
Worked part of year because unemployed.....	14.4	11.1	17.3	14.9	4.9	5.8
Did not work.....	30.5	45.9	22.5	34.0	57.1	61.9
Unable to find work.....	1.2	2.2	1.0	1.9	1.5	2.6
Keeping house.....	10.9	19.0	(2)	(2)	47.5	44.7
Ill, disabled, retired, and other.....	18.3	24.6	21.5	32.2	8.1	14.6
Head in Armed Forces.....	1.9	.6	2.5	1.0	(?)	(?)

¹ Includes those who worked part-time hours for 50-52 weeks, not shown separately.

² Not reported.

Note.—Persons below the low-income level are those falling below the poverty index adopted by the Federal Interagency Committee in 1969. See text for explanation of index.

Data for 1959 and 1972 are not exactly comparable because of changes in definition and methodology.

Detail may not add to totals because of rounding.

Source: Department of Commerce, Bureau of the Census.

THE CHARACTERISTICS OF THE POOR

As the population in poverty has come to include a smaller proportion of families with a working adult, the demographic characteristics of the poor have changed. Male-headed families have decreased as a proportion of all poor families—dropping from 77 percent in 1959 to 57 percent in 1972—because male family heads are more likely to work than female family heads. The proportion of low-income families headed by a female has increased sharply from 1959 to 1972, from 23 to 43 percent for all females and from

8 to 20 percent for black females. In part this trend results from an increase in the proportion of all families headed by a woman, from 10 percent in 1959 to 12 percent in 1972. However, while the incidence of poverty among female-headed families declined in this period, it did not decline nearly as fast as for families headed by a male.

The Male-Headed Family

Among male-headed families, the presence of children has a direct influence on poverty status, since for a given income the more children there are, the higher the poverty-income threshold. Children also indirectly affect the family's income, because it is more difficult for a wife to work outside the home when young children are present. In 1972, 31 percent of low-income families with a male head had three or more children, compared to 17 percent for families above the poverty line. The presence of a working wife can bring an otherwise poor family above the poverty line. Only 22 percent of the wives in low-income families headed by a male worked in 1972, compared to 48 percent of wives in families above the poverty line.

The number of children and the work experience of wives are also important variables affecting the ability of the poor to move up from poverty. One longitudinal survey which followed the poverty status of a cohort for 5 years, starting in 1967, found that about 20 percent of nonaged families headed by a male experienced steady income increases and ended the period out of poverty. This group had significantly fewer children than those who remained poor during those 5 years, and a larger proportion of wives who increased their labor market work over the period. However, a period of 5 years is too short to determine whether this group is permanently upwardly mobile or simply experiences long-term fluctuations in its income position.

Low earnings, per se, are still an important reason for poverty among male-headed families. Educational levels are very low for this group. In 1972 only 29 percent were high school graduates or better, compared to 63 percent among other male family heads. As might be expected, the poor were also much more concentrated in low-income jobs, particularly farming: 20 percent of employed men heading low-income families were farmers or farm laborers, compared to 4 percent among those not poor. In the future, as the level of education rises and as productivity change continues to increase earnings, one would expect that the incidence of poverty (under a fixed standard) may come close to disappearing for this group.

The Aged Poor

The population 65 or more years old increased as a percentage of the poor from 1959 to 1970. Since then, however, the incidence of poverty has dropped sharply for this group, from 24.6 percent in 1970 to 18.6 percent in 1972, and the aged represent a declining proportion of the poor. This rapid change is primarily due to across-the-board increases in social security

benefits of about 50 percent from 1970–72. Since 1972 there has been further expansion in social security benefits. The increase in a widow's benefits to 100 percent of her deceased husband's benefits should reduce the extent of poverty among widows.

Undoubtedly, however, cash income understates real consumption by the aged poor compared to that of the other poor. Many of the aged have income in the form of imputed rents from owner-occupied homes. Elderly people often consume out of past savings, and many widows receive life insurance benefits which are not included in income data. In addition, compared to others classified as poor, the aged poor derive a larger proportion of their measured income from sources which are not taxed, such as social security and some pension income. The aged also have fewer expenses related to employment. The aged benefit disproportionately from medicare and medicaid, which are not counted in money income statistics, although in this case obviously their need is often greater because of poorer health. Even excluding the benefits of medicare and medicaid, however, it would appear that on average a two-person aged family may have a higher level of consumption than a two-person family which has the same measured cash income but whose members are under age 65.

The Female-Headed Family

Perhaps the most important issue concerning poverty status in this country is the increasing identification of poverty with the female-headed family. Future progress in eliminating poverty will depend in large part on the extent to which poverty can be reduced for this group. If the proportion of families headed by women continues to increase, the problem may become still more difficult. Among families with a female head, 33 percent were classified as in poverty in 1972, compared to 6 percent for male-headed families. Among black female-headed families the proportion was 53 percent. The factors behind this very high incidence of poverty among families headed by women are complex.

As discussed earlier, the average married woman has not had the same labor market experience or vocationally oriented training as her husband. Since the incidence of marital breakup is greater among less educated couples, the woman who becomes a family head is more likely to have assumed during her marriage the traditional role of caring for children and the home, and she is less likely to have had work experience. Women who have children without having married tend to be young, with little work experience or formal education. Earnings for women in these circumstances tend to be much lower than for men of the same age and to be lower even than the earnings of other women, particularly those with considerable education. Moreover, the expenses of going to work are higher for a person with sole responsibility for child care. It is thus clear that if work is to be a sensible option in the single-parent family, earnings (after taxes) must be

sufficiently high to cover the additional costs of child care and other home expenses.

Not surprisingly, poverty status among women is strongly related to presence of children and to work participation. As noted above, among women in general the presence of children, particularly young children, has a strong inhibiting effect on work participation. About 70 percent of female family heads under 65 years of age have children under age 18. As one would also expect, mothers who head families are more likely to work than mothers living with their husbands. In 1972, 30 percent of the former and 17 percent of the latter worked full time, the year round. However, mothers heading families are much less likely than men to work full time, the year round. Among males heading families, the proportion was 68 percent.

Of the small proportion of female family heads with children who did have full-time, year-round jobs in 1972, 9.5 percent were in poverty, a markedly lower incidence than the 42 percent for all female family heads with children. One cannot, however, infer from this statistic that poverty would fall to that level for all women with children if they did full-time, full-year work. It is likely that those women who work extensively are relatively more productive in the labor market because of higher educational attainment, greater work experience in the past, or greater ability.

The poverty status of female-headed families is often the result of a marital breakup, and this situation is temporary for many. One longitudinal study which followed the poverty status of a cohort over a 5-year period, starting in 1967, discovered that of those persons in nonaged female-headed families who were poor at the start of the period, 27 percent experienced consistent increases in income and had moved out of poverty by the end of the period. (The comparable percentage for male-headed families was 20 percent.) Remarriage of the female family head was the primary factor associated with this upward mobility.

About 32 percent of the persons in female-headed families who started as poor in 1967 remained poor throughout the 5 years. The demographic characteristics associated with this more permanently poor group were low education, a large number of children, and residence in low-wage, rural areas with low public assistance payments. For this group, the high costs of child care and poor prospects of high earnings suggest that training and increased work in the labor market by the female family head could not be relied on as a route out of poverty.

The remaining 41 percent of persons in female-headed families who started in poverty moved in and out of poverty during the 5-year period. A large part of this change in poverty status was associated with a change in household arrangements.

Because of the lower work participation of low-income female heads of families, the major source of income for this group is public assistance. In 1972, public assistance accounted on the average for 51 percent of the income of low-income, female-headed families. Many in-kind benefits are given automatically to families receiving public assistance, specifically those in the Aid to Families with Dependent Children program, which is largely a program for female-headed families. Moreover, because public assistance income is not taxed, the real consumption of female-headed families is probably understated, compared to that of husband-wife families whose income depends more heavily on earnings.

The increase in female-headed families may, per se, be an important variable in determining the size of the poverty population in future years. There is some evidence, discussed below, that our system of welfare payments, which has been an important way of increasing income for mothers heading families, may itself have promoted some of the increase in female-headed families through the structure of incentives. This is clearly an important issue in the future design of transfer payments to the poor.

GOVERNMENT TRANSFER PROGRAMS

All expenditures by government, directly or indirectly, have implications for the distribution of income. Analyses can be made of the direct income distribution effect of public transfers. It is far more difficult to identify the income distribution effects of other government expenditures.

Some of the transfer programs were initially viewed as public insurance mechanisms. Social security was intended as a public pension plan. Unemployment compensation and workmen's compensation are government mandated insurance. Veterans' compensation and benefits were adopted as a form of deferred payment for military service. Public assistance was and is explicitly intended as a mechanism for raising the income of those families that would otherwise fall below a socially desired level of consumption.

FEDERAL TRANSFERS IN 1973

The Government gives transfers to individuals and families in the form of cash or subsidization of the price of particular goods and services. Of the two, transfers in cash are easier to administer, and they also have the advantage that the recipients presumably know better than the Government does how to allocate the transfer income so as to maximize their own well-being. Some transfers are given in kind, however, on the presumption that the goods are of such importance that the recipients should consume at least a minimum quantity. Food, medical care, and housing are examples.

Table 45 presents a summary of the Federal Government transfer expenditures in fiscal 1973. The poverty status of recipients is based on money income, including cash transfers but excluding the value of transfers in kind.

TABLE 45.—Federal Government transfer programs, fiscal year 1973

Program	Total expenditure (millions of dollars)	Number of recipients (thousands)	Monthly benefits per recipient ¹	Percent of recipients in poverty ²
Social Security:				
Old age and survivors insurance.....	42,170	25,205	\$139	16
Disability insurance.....	5,162	3,272	132	24
Public assistance:				
Aid to families with dependent children.....	3,617	10,980	(3)	76
Blind.....	56	78	(3)	62
Disabled.....	766	1,164	(3)	73
Aged.....	1,051	1,917	(3)	60
Other cash programs:				
Veterans' compensation and benefits.....	1,401	7,203	74	(4)
Unemployment insurance benefits.....	4,404	5,409	68	(4)
In kind:				
Medicare.....	9,039	10,600	71	17
Medicaid.....	4,402	23,537	(3)	70
Food stamps.....	2,136	12,639	14	92
Public housing.....	1,408	3,319	(3)	(4)
Rent supplements.....	106	373	24	(4)
Homeownership assistance (section 235).....	282	1,647	14	(4)
Rental housing assistance (section 236).....	170	513	28	(4)

¹ The number of recipients is for individuals, not families.

² Poverty is defined relative to the money income and the size of the recipient's family. Money income includes money transfer payments but excludes income received in kind. All percents are estimated.

³ Programs with Federal-State sharing of expenses.

⁴ Not available.

Source: Office of Management and Budget.

AID TO FAMILIES WITH DEPENDENT CHILDREN

Aid to Families with Dependent Children (AFDC) is now the primary cash assistance program run by the States with Federal assistance.

Eligibility

The original purpose of the program was to assist children in families where there was need for income because of the death, severe disability, or prolonged absence of the father. The financial aid was intended to enable mothers to stay at home and care for their children, rather than be compelled to work. If the mother did work, her welfare payments were generally reduced by one dollar for each dollar earned, a provision that eliminated the pecuniary incentive for her to go to work. Families with an able-bodied father present who earned little income were not eligible for any federally aided assistance.

The reasons why AFDC recipients lack the father's support have changed dramatically over time. In the 1930's, when the program began, about 75 percent of those receiving benefits from the program were children of fathers who had died or who were severely disabled. By 1971, only 14 percent of the fathers were in this category. The composition of AFDC families has thus shifted toward families with living fathers who are absent, either because of divorce or separation or because they are not married to the mother.

Attitudes have changed, and the AFDC rules have shifted toward encouraging mothers to work. Starting in 1956, appropriations were authorized

to help mothers to become self-supporting through services such as child care for dependent children and rehabilitation assistance for the mother. The 1967 amendments to the Social Security Act provided a work incentive for families by reducing the implicit tax on earnings and granting assistance in preparing for work through appropriations for services such as training, counseling, and child care (the Work Incentive Program or WIN).

The AFDC program has also been liberalized to allow limited assistance to needy families with an able-bodied father present. Since 1961 States have had the option of providing aid to families with an unemployed father, and 22 States in fact do so.

Growth of the Program

During the 1950's the proportion of all families in the AFDC program was roughly stable (Table 46). Since then, however, the proportion of families receiving aid has grown dramatically, benefits per recipient have increased, and total expenditures in the program have increased even more sharply.

TABLE 46.—AFDC benefits and families, selected years, 1950–72

Year	AFDC benefits ¹		AFDC families	
	Total annual payments to recipients (millions of dollars)	Average December payment per recipient ²	Total ³ (thousands)	Percent of all families ⁴
1950.....	556	\$21	651	1.7
1955.....	633	24	620	1.5
1960.....	1,055	27	803	1.8
1965.....	1,809	33	1,054	2.2
1967.....	2,280	40	1,297	2.6
1969.....	3,565	45	1,875	3.7
1971.....	6,203	52	2,918	5.6
1972.....	7,020	53	3,123	5.9

¹ Aid to families with dependent children (AFDC).

² Average of all States for December of each year.

³ As of December of each year.

⁴ AFDC families as of December, and total families as of March (except for April in 1955).

Source: Department of Health, Education, and Welfare (Social and Rehabilitation Service).

Several factors seem to have contributed to the rapid rise in the number of families receiving public assistance. One is the larger number of families with children and with a female as head, although this increase in turn may be partly a consequence of the large rise in benefits. From 1950 to 1960 such families increased by 829,000, while AFDC families increased by 152,000. When benefits increased dramatically from 1960 to 1972, however, female-headed families with children increased by 1.5 million, but AFDC families increased by 2.3 million. A larger proportion of female-headed families with children may have become eligible for AFDC, many eligible families may have learned for the first time that they could join, or a large number no longer hesitated to receive welfare. The publicity

given to the problems of poverty during the 1960's may have informed the poor of their legal rights.

Undoubtedly, the AFDC program became more financially attractive during the period. The basic cash benefit level per recipient increased by 85 percent from 1960 to 1970; this may be compared to the increase in median earnings (full-time, year-round) in the same years amounting to 67 percent for men and 63 percent for women. In addition, AFDC families were made automatically eligible for many in-kind benefits which were introduced or expanded in this period. According to estimates, by 1971 virtually all AFDC families were eligible for medicaid, 68 percent actually participated in the food stamp or food distribution program, 59 percent benefited from the Federal school lunch program, and 13 percent from subsidized housing. In 1972 a family in New York City consisting of three children and a mother who did not work, which received all of the benefits listed above, would have received benefits which cost the government \$5,912, of which \$3,756 was cash income. Benefits vary widely, however, and in Atlanta the value of the same package of benefits for the same family would have been \$3,606, of which \$1,788 would be cash income. These amounts do not include the value of other benefits received, such as child care and manpower training.

The recipients may not, of course, value the various in-kind benefits at their actual cost. Benefits such as food stamps are similar to cash, and other benefits may subsidize basic goods and services. The value the recipients place on some programs, such as medicaid, would be more difficult to evaluate.

As the AFDC program with its related benefits became more generous, more people may have decided that the return was worth the difficulties and possible humiliation of applying. Much more study is needed before all the factors underlying the increase in the AFDC case load are understood.

AFDC and Family Formation and Stability

Another issue of social importance is how the increase in AFDC benefits affects the formation of female-headed families. One recent study of whether higher levels of stipends in AFDC did result in a higher rate of female headship used multivariate analysis to control for the effect of male wages and other relevant causal factors. The finding for 1960 was that across metropolitan areas, holding constant the male wage, a 10 percent higher AFDC stipend in an area was associated with a nearly 4 percent higher rate of female headship. Holding constant the AFDC stipend, an increase in the male wage was associated with a decline in female headships. The analysis was duplicated for 1970 with similar findings, although the relationships were somewhat weaker. By 1970, however, in-kind benefits would have formed a much larger unmeasured addition to the stipend; results for that year may consequently be less reliable.

From 1960 to 1970 women with children became more likely to head families. The proportion increased from 6 to 8 percent for white women

and from 19 to 28 percent for black women. In this period widows declined as a proportion of all female heads of families with children, but unmarried mothers accounted for an increasing share. It is quite possible that rising AFDC payments provided one incentive for young women to forgo marriage and set up a household of their own with their children.

The majority of both black and white female heads of families with children are separated or divorced. During the period 1960 to 1970, disrupted marriages continued to play a part in the total increase in female headships. Some of this increase, however, was the result of a decline in the proportion of divorced and separated mothers who lived with other relatives and an increase in the proportion who set up their own households and would then be counted as family heads. Rising levels of AFDC benefits may have made it financially possible to do so. For this group the effect of AFDC was not to cause the separation of couples, but to induce the mother to live alone with her children.

Work Incentives

Important changes in the rules, intended to reduce welfare expenditures by providing a monetary incentive to work, were introduced during the 1960's. As noted earlier, AFDC recipients were initially subject to a dollar reduction in cash benefits for each dollar earned (an implicit marginal tax rate of 100 percent). In 1962 a modification of the tax on benefits was introduced, requiring the States to grant a deduction for work-related expenses. As a result of the 1967 amendments, AFDC recipients are allowed to retain the first \$30 of their earnings without any loss in benefits, after which cash benefits are reduced by 67 cents for each additional dollar earned.

Mothers in the AFDC program show no major change in their work in the labor market since the actual start of WIN in 1969 (Table 47). Yet this was a period when the labor force participation of women with children was increasing. The recession in 1971 may have weakened employment prospects in that year. However, the large increase in the percentage unemployed in 1973 may well be the result of the work requirement provisions imposed in June 1972, as a result of the 1971 amendments, whereby all employable welfare recipients were, as a condition of payment, required to register for work or for training in the WIN program. It should be noted, though, that the full long-term results of the program changes introduced at that time are not yet reflected in the data.

One explanation of the puzzling lack of response to the work incentives introduced in 1969 is that the rapid growth of in-kind benefits, each of which is reduced in amount as earnings increase, served to increase the actual reduction in total benefits faced by a recipient who started working. As an AFDC recipient's earnings rise, she thus pays a price not only in loss

TABLE 47.—Trends in the employment status of mothers in the AFDC program, selected years, 1961–73

Status of mother	1961	1967	1969	1971	1973
Total mothers (thousands) ¹	743.2	1,109.0	1,463.0	2,345.7	2,795.3
Total mothers (percent).....	100.0	100.0	100.0	100.0	100.0
Mothers not employed.....	84.3	85.5	85.3	85.1	83.8
Actively seeking work.....	(2)	6.5	5.9	5.7	11.5
Mothers employed.....	15.7	14.5	14.7	15.0	16.2
Full-time.....	5.6	7.0	8.3	9.0	9.9
Part-time.....	10.1	7.5	6.4	6.0	6.3

¹ Limited to mothers in the Aid to Families with Dependent Children (AFDC) program who were living at home.

² Not available.

Note.—Data refer to status in January of each year. Detail may not add to totals because of rounding.

Source: Department of Health, Education, and Welfare (Social and Rehabilitation Service).

of some of the AFDC grant but also in the loss of some food stamp, housing, and other benefits. According to this view, while the 1967 amendments alone would have given an incentive to work, their effects may well have been offset by the increasing benefits in kind, some of which would be lost for each increase in labor market earnings.

It is not clear, however, how important in practice this factor could be, since the reduction in cash benefits as earnings rise has become very small. Many States exempt large amounts of earnings before any reduction in benefits occurs, and this reduction is in addition to the \$30 a month income disregard established by the 1967 amendments. In Mississippi, for example, the State income disregard is large, and it is unlikely that the reduction in cash benefits ever exceeds 10 percent of earnings net of work expenses (the average cash benefit tax rate). Moreover, a change in 1969 in the method of entering work-related expenses into the cash benefits reduction formula further lowered the effective tax rate. One study estimated that the average net tax rate paid by the average working AFDC mother in Illinois and New Jersey (two relatively high tax States) fell from 94 percent to 42 percent between 1967 and 1971. In general, it would appear that the average tax rate on earnings must have fallen since 1969, even after accounting for the growth of in-kind benefits and their effect on the overall implicit tax rate.

An important factor discouraging work may have been the increase in the benefit level itself (including in-kind benefits), which—since many persons eligible for AFDC have low potential earnings—made it possible for many to maintain a higher living standard than could be obtained through work. Moreover, the average AFDC mother incurs substantial work expenses including child care, payroll taxes, transportation, and additional outlays for clothing and food. These expenses are likely to make up a large proportion of earnings that are not high to begin with. Thus, the actual dollar increment of earnings that could be retained, even if the benefit tax rates were zero, could well be too low to make it profitable to work.

Equity and Welfare Reform

Many problems of equity have been raised with respect to the AFDC program. There are wide variations from State to State in the level of benefits. There are wide variations from family to family in the extent to which they receive in-kind benefits. And, perhaps most important, many poor families with a working parent earn less than the total benefits to a welfare family. In designing a reform of the public assistance program it will be important to pay attention to these inequities.

It will also be important to give women fewer incentives to have children without marrying or to separate if they are married. It may therefore be necessary to extend income supplements to the poor family with a working male head. In the long run, however, such a program would provide work disincentives for husbands and wives in intact families. This could be overcome by a moderate implicit reduction in benefits as earnings rise, but such a solution could be costly. Resolving the dilemma will be one of our most challenging problems.

SOCIAL SECURITY AND SUPPLEMENTAL SECURITY INCOME

Since the 1930's the Federal Government has provided funds for the aged, blind, and disabled and for the dependents of deceased workers. The current programs for these groups are known as Social Security and Supplemental Security Income.

Social Security

The transfer program with the largest disbursement of funds and number of recipients in 1973 was Old Age and Survivors Insurance (Table 45). OASI provided \$42.2 billion in benefits to 25.2 million recipients. The recipients were either aged or the dependents of deceased workers. Approximately 16 percent of the recipients were classified as in poverty, on the basis of money income (including social security benefits). Over 3 million persons received disability benefits under social security, almost one-quarter of whom were in poverty.

Social security benefits have been rising rapidly in recent years. The minimum and maximum benefits for a worker retiring at age 65 under full benefits has increased from December 1970 to December 1973 by 54 percent and 66 percent respectively, to \$84.50 and \$266.10 per month. The consumer price index increased by 23 percent in the same period. In addition, across-the-board increases of 7 and 4 percent are scheduled for March and June 1974. Starting in 1975, social security benefits can be increased annually to reflect increases in the consumer price index.

One effect of the benefit increases is that the aged are now more likely to compose a separate family, rather than a subfamily within a larger family. Although increased social security benefits have reduced poverty in the past, most recipients at present are not in poverty. Across-the-board

benefit increases greater than the increase in the cost of living cannot be expected to reduce poverty markedly in the future.

Accompanying the increase in social security benefits has been a rise in the social security payroll tax. From 1937 to 1950 the tax rate paid by both the employer and employee was 1 percent of the worker's earnings up to \$3,000. In January 1974 the social security tax rate (for OASI, and disability and hospital insurance) was 5.85 percent of earnings up to \$13,200. There is reason to believe that part of the employer's tax is shifted to employees. Viewed solely as a tax, the social security levy is regressive. As a percentage of all Federal Government receipts, social security taxes increased from 4 percent in 1949 to 24 percent in 1973. The social security tax is unique in that there tends to be far less public opposition to raising revenue from this source than from other sources.

Supplemental Security Income

As of January 1974, Federal grants-in-aid to States for public assistance to the aged, blind, and disabled were discontinued, and a new federally administered Supplemental Security Income program (SSI), financed out of general tax revenues, was instituted. The primary purpose of this new program is to provide a nationally established minimum income for these three specific categories of adults who in general cannot be expected to earn an adequate income. Most of the recipients of public assistance benefits under the old program for the aged, blind, and disabled were in poverty in 1973 (Table 45). The benefits under SSI for those with no other money income are \$140 a month for a single person and \$210 a month for a couple. These are to be increased to \$146 and \$219 respectively in July 1974. SSI recipients cannot purchase food stamps. With the federalization of assistance, benefits have increased for the aged, blind, and disabled poor in many States, and States can provide additional income supplements to SSI recipients.

FEDERAL FOOD SUBSIDY PROGRAMS

Ever since the Great Depression of the 1930's, the subsidization of food consumption has been a major Federal Government program to aid the poor.

Food Stamps

Food stamps are a Federal program, initiated in 1961, to supplement the income of the poor in participating counties. The growth of the program has been phenomenal. In June 1965, 425,000 persons received food stamps at a cost to the Federal Government of \$33 million during fiscal 1965. By July 1973 there were 12.1 million recipients, and Federal costs in fiscal 1973 were \$2.1 billion. In June 1973 food stamps were available in 48 States and the District of Columbia, and the program will be mandated for the entire Nation in July 1974. An eligible family can buy food coupons for a price that is lower than the redemption value at the grocery store. The difference between the redemption value and the price of the coupons to the family is the subsidy.

Families on public assistance are automatically eligible for the program. Almost 40 percent of recipients in July 1973 were not on public assistance, however, although 92 percent of food stamp recipients were in the poverty population.

The average monthly subsidy per person in recipient households was \$15.30 in July 1973, or 55 percent of the redemption value of the average coupon. The maximum monthly subsidy for a family of four with no money income is \$116, and the subsidy declines for each additional dollar of income. A family of four with monthly income in excess of \$390 receives no subsidy. The income concept for eligibility is money income, including money transfers after deducting income and payroll taxes, child care expenses if needed because of work, rent payments exceeding 30 percent of money income, and other allowances.

Other Food Programs

There are two other Federal food programs. The family food distribution program provides free foodstuffs for low-income families. From a peak of 12.7 million recipients in fiscal 1939, the number has declined to 2.4 million in July 1973. Relatively few counties have both a food stamp and a food distribution program at the same time. The food stamp program has gradually replaced the family food distribution program, which will in general be terminated in July 1974.

The Federal school nutrition programs subsidize milk consumption as well as breakfast and lunch for children in participating schools, with larger subsidies for children from low-income families. In fiscal 1972, 25.4 million school children benefited from the school lunch program at a cost to the Federal Government of \$726 million.

MEDICARE AND MEDICAID

Since 1965 the Federal Government has been more directly involved in the subsidization of medical care for the aged and the poor through two new programs, medicare and medicaid.

Medicare

Medicare is a Federal Government health insurance program covering hospital care, post-hospital extended care, physicians' services, home health services, and certain other benefits for all persons aged 65 years and older. Since January 1974 medicare has been extended to those under 65 who have been entitled to benefits from social security disability insurance for at least 2 years, as well as to all those covered by social security and their dependents who require treatment for chronic kidney disease. The benefits under medicare are broad but with defined limits, and there are deductibles and cost sharing (coinsurance) that the recipient must pay.

In fiscal 1973, 10.6 million persons received medical care paid for through the medicare program. The average benefit was \$71 per month

(Table 45). Medicare is chiefly designed for the aged, many of whom are not poor. About 17 percent of the recipients of medicare benefits in fiscal 1973 were in poverty on the basis of current money income.

Medicaid

Medicaid is a Federal-State health assistance program for welfare recipients and the medically indigent. Medicaid is administered by the States on a cost-sharing basis with the Federal Government. The eligibility requirements and the benefits differ among the States.

The medically indigent are those who are not necessarily poor by the Bureau of the Census poverty standard but are judged by the States to have incomes sufficiently low or medical expenses sufficiently high to qualify for assistance. In fiscal 1973, 70 percent of the medicaid recipients were in the poverty population. Some of the 23.5 million persons receiving medicaid in fiscal 1973 were among the aged poor and were using medicaid to pay the premium, deductibles, and coinsurance required by medicare. Medicaid benefits are received by many persons, such as children on AFDC and their mothers, who are not chronically ill and hence have small annual medical expenses, but who are nevertheless in poverty.

The Growth of the Programs

Public expenditures for medicaid and medicare have been rising at an annual rate of 14 percent from 1970 to 1973. As knowledge of the programs has spread the number of recipients has increased. This source of increased expenditures is not likely to continue indefinitely. There has also been a large increase in the utilization of services per recipient, and in the prices charged per unit of service. Although part of the price increase may reflect quality improvements, some of it derives from pure increases in price.

Higher deductibles and coinsurance would reduce the growing cost of the programs due to the increase in services and prices per unit of service. At the same time, however, it would increase the out-of-pocket cost of medical care for the aged and the poor. A mechanism is needed that will provide adequate medical care for the aged and the poor and reduce the strong inflationary pressures built into medicaid and medicare, but that will do so without direct Government provision of medical care or extensive regulation of the medical care sector.

INCOME DISTRIBUTION EFFECTS OF MONEY TRANSFER PROGRAMS

The transfer programs discussed above, as well as other government transfers affect the incomes of families. Comparisons between these money transfer payments and the total money income of families show the income redistribution effects of the transfers. How participation in the labor market and family formation are affected by money transfers is an important issue, but too little is known at the present time to quantify what the distribution of family income would be if there were no transfers.

Money Transfers

As the data in Table 48 indicate, 38 percent of the families reported receiving some transfer payments in 1970. Social security and railroad retire-

TABLE 48.—*Proportion of families having transfer income from particular sources, 1970*

Income class ¹	Percent of families in each income class with transfer payments			
	Total	Social security and railroad retirement	Public assistance ²	Other ³
All families.....	38	24	7	15
Under \$1,000.....	41	27	13	3
\$1,000-\$1,999.....	77	60	24	8
\$2,000-\$2,999.....	72	55	19	17
\$3,000-\$3,999.....	60	43	12	17
\$4,000-\$4,999.....	50	35	9	17
\$5,000-\$5,999.....	42	27	5	19
\$6,000-\$6,999.....	35	21	4	16
\$7,000-\$7,999.....	30	16	3	17
\$8,000-\$9,999.....	29	14	3	17
\$10,000-\$14,999.....	26	11	2	17
\$15,000-\$24,999.....	24	11	1	16
\$25,000 and over.....	22	12	1	12

¹ Family income is family money income including transfer income in cash.

² Public assistance includes AFDC and assistance to the aged, blind, and disabled.

³ Includes unemployment compensation, workmen's compensation, government employee pensions, veterans' benefits, and unidentified transfer payments.

Source: Department of Health, Education, and Welfare (Social Security Administration).

ment benefits were the most common form of transfer and were received by 24 percent of the families. Public assistance went to 7 percent of the families; both unemployment compensation and veterans' benefits were paid to approximately 5 percent of the families. Only 7 percent of money income was derived from transfers. The average transfer per family was \$696, of which 56.6 percent was from social security, 13.1 percent from public assistance, and 30.2 percent from other sources.

The higher the income, the smaller the proportion of families receiving a transfer. The percentage of income in each group derived from government transfers was also lower for higher levels of income. For example, those with incomes between \$1,000 and \$1,999 received an average of 68 percent of their income from transfers, but only 3 percent of the income in the \$15,000 to \$24,999 range was derived from transfers. Low-income families had approximately twice the dollar value of transfers that high-income families had. Except for the lowest two income groups, however, the mean income from government transfers for those who received transfer income was largely invariant with family income after transfers. High-income families receive a small proportion of their total income from government transfers, not because of a smaller dollar transfer per recipient, but because they have more income from other sources (earnings and property income) and fewer among them receive transfer income.

Public assistance is specifically designed to provide income supplements for those who would otherwise have little income. Since public assistance is heavily concentrated in the lowest income groups and the benefits per recipient are a very large fraction of the income of the poor, public assistance has a strong income redistribution effect. Social security and railroad retirement payments are largely received by aged families and younger families headed by a widow. Although these families tend to have low current income, the benefits are larger for those who had higher earnings in the past.

The target populations for the other forms of transfer payments, that is, the unemployed, those injured on the job, retired Government employees, and veterans, are not necessarily poor. Except for the lowest and highest income groups, approximately 17 percent of the families in each group received funds in 1970 from one or more of these four sources. Again except for the extremes of the distribution, there is virtually no change in dollar benefits per recipient for higher-income groups. The higher the other income of the family, the smaller the proportion of income derived from such benefits. These transfers have a mild income redistribution effect.

Within the category of other payments, unemployment compensation is more important for middle-income families (\$4,000 to \$15,000) than for the poorest and wealthiest of families. The members of the poorest families ordinarily have too little work experience to qualify for unemployment compensation. The income earners in the highest-income families have lower rates of unemployment.

Income Inequality Before and After the Transfers

Table 49 presents a measure of income inequality, the variance in the natural logarithm of income, for family money income and family money income minus particular transfers (see supplement to this chapter). This permits a determination of the extent to which the different types of transfers reduce income inequality. Such an approach implicitly assumes that the transfers do not give rise to labor market or family formation responses by

TABLE 49.—*The effect of money transfers on family income inequality, 1970*

Type of income	Income inequality ¹
All income.....	0.74
All, excluding "other" transfers ²77
All, excluding social security.....	1.16
All, excluding public assistance ³85
All, excluding social security and public assistance ³	1.45
All, excluding all transfer income.....	1.57

¹ Income inequality is measured by the variance in the natural log of income. (See Supplement to this chapter).

² "Other" transfers include unemployment benefits, workmen's compensation, government employee pensions, and veterans benefits. The income classes used were: Under \$2,000; \$2,000-\$2,999; \$3,000-\$3,999; \$4,000-\$4,999; \$5,000-\$5,999; \$6,000-\$6,999; \$7,000-\$7,999; \$8,000-\$9,999; \$10,000-\$14,999; \$15,000-\$24,999; and \$25,000 and over.

³ Public assistance includes AFDC and assistance to the aged, blind, and disabled.

Sources: Department of Health, Education, and Welfare (Social Security Administration) and Council of Economic Advisers.

the recipients. The data suggest that social security and public assistance dramatically decreased the measured relative inequality of family income. The combined effect of the other transfers is a small decrease in income inequality.

The Tax Transfer System

The success of the Government's programs for the redistribution of income cannot be judged from any one program or from an examination of taxes or transfers separately. Primarily because of public assistance, social security, medicaid, and food stamps, the transfer system is highly progressive in redistributing income to low-income families. It was shown above (Table 35) that the net effect of personal income and payroll taxes on cash and imputed income appears to be progressive. Several studies have examined the effect of the tax system on the distribution of income when accrued capital gains and losses are included in the income concept. These studies suggest that the tax system is roughly proportional over the income intervals in which most families belong, regressive for those with very low incomes, and progressive at the upper end. However, the combined direct effects of the tax and transfer systems clearly appear to be progressive.

SUPPLEMENT

The Variance of the Natural Logarithm of Income

The "variance of the natural logarithm of income" is the measure of overall income inequality used in the analysis of the distribution of income in this chapter. It can be written as:

$$S^2(\ln Y) = \frac{\sum_{i=1}^N (\ln Y_i - \overline{\ln Y})^2}{N} \quad (1)$$

where Y_i is the income of the i th observation (individual or family), \ln designates natural logarithm, and there are N observations in the data. Larger values of S^2 mean greater inequality of income, and S^2 equals zero if there is no inequality. While a reduction of the measure from 0.7 to 0.6 conveys an acceptable suggestion about a decline in inequality, and a decline from 0.7 to 0.5 an acceptable suggestion about a greater decline, the statement that the second of these two declines is twice the first would not be meaningful.

The variance of the natural logarithm of income is a commonly used simple measure of relative inequality. A measure of relative inequality does not change in value if all of the observations have the same percentage change in income. If

$$Y^*_i = Y_i(1+k), \quad (2)$$

where k is the percentage change in income, the natural logarithm of both sides of equation (2) is

$$\ln Y^*_i = \ln Y_i + \ln(1+k). \quad (3)$$

Computing the mean of both sides of equation (3),

$$\overline{\ln Y^*} = \overline{\ln Y} + \ln(1+k). \quad (4)$$

Then, subtracting equation (4) from equation (3),

$$\ln Y_i^* - \overline{\ln Y^*} = (\ln Y_i + \ln(1+k)) - (\overline{\ln Y} + \ln(1+k)) = \ln Y_i - \overline{\ln Y}, \quad (5)$$

and
$$S^2(\ln Y^*) = S^2(\ln Y). \quad (6)$$

Thus, a proportional tax on income or a proportional cash subsidy does not change relative income inequality.

Relative inequality decreases (increases) if the income of each observation is increased (decreased) by the same dollar amount. A \$100 per year grant to a poor family constitutes a larger percentage increase in income than an equal dollar grant to a wealthy family. Such a grant reduces the relative inequality of income.

A progressive tax is one in which the higher the level of income, the larger the proportion of income paid in taxes. In a regressive tax a smaller proportion of income is paid in taxes as income increases. A progressive tax reduces, and a regressive tax increases, relative income inequality ($S^2(\ln Y)$).

CHAPTER 6

The International Economy in 1973

INTERNATIONAL TRADE AND INVESTMENT grew at a near record rate during 1973, despite the strains placed on the international economy by massive capital flows, large fluctuations in exchange rates, and strong price pressures due to crop failures, capacity limitations, and cut-backs in oil production by the major producers. The existing international monetary and trading system proved resilient enough to enable governments to cope with the difficulties they experienced in managing their economies, without having to take measures that would have seriously disrupted international trade and investment flows. While individual governments adopted different policy instruments, including external measures, in seeking to stabilize their economies, potential policy conflicts were minimized by mutual accommodation. The common effort to arrive at pragmatic solutions to joint problems undoubtedly strengthened the international economic system.

As indicated elsewhere in this report, the major problem faced by the United States as well as the other major industrial nations during 1973 was inflation. In most economies, demand at the beginning of the year was fast approaching or was already in excess of the capacity to produce more goods. Demand pressures were intensified when large speculative capital flows led to excessive increases in the money supply in a number of countries. Superimposed on this generally inflationary environment were particularly large imbalances between demand and supply in particular sectors. Capacity limitations were especially severe in the processing of raw materials, like petroleum and steel. Moreover crop failures in many parts of the world put pressures on agricultural supplies in the United States and elsewhere, and in the latter part of the year the major oil producers in the Middle East cut back the oil they were supplying to the rest of the world.

General inflation combined with particularly large increases in the prices of basic foods and processed materials to create tremendous political pressures in most countries for government actions to reduce price increases. Among the policy measures governments took in response to such pressures were price controls and export controls. The latter measure had the unfortunate side effect of shifting the inflationary pressures to other countries. Nevertheless in most cases governments recognized the limits of beggar-my-neighbor

policies, and the tensions among countries resulting from the pursuit of such policies were successfully eased by means of diplomatic efforts.

In working out cooperative approaches to the various global problems governments benefited from discussions regarding a longer-term reform of international economic arrangements. In turn, the experiences of the past year provided a new perspective on plans for reform. Progress was made in each of the three major areas of reform: the international monetary system, the international trading system, and arrangements relating to international investment.

The international monetary system. Discussions on the future of the international monetary system were held in the framework of the Committee of Twenty, which was set up by the countries belonging to the International Monetary Fund (IMF). An indication of the current state of these discussions was provided by the chairman of that committee in a report to the annual meeting of the IMF in Nairobi in September.

The international trading system. Also in September, 105 countries reached agreement in Tokyo on some general objectives and a framework for a major new round of trade negotiations. They pledged to aim simultaneously for an expansion of international trade opportunities and improvements in the rules and procedures for coordinating trade policies. Prior to this meeting the Administration sent to the Congress draft legislation to authorize U.S. participation in a new round of trade negotiations and to improve the legislative provisions dealing with Presidential management of U.S. trade policy.

International investment. Discussions were held on investment questions in the framework of the Organization for Economic Cooperation and Development (OECD). The preliminary conclusions reached on the basis of these discussions point to the desirability of some new procedures and guidelines which would assure an efficient international allocation of new capital.

WHAT HAPPENED IN 1973?

In the area of international economic relations, the year 1973 may be characterized as one of continuing adjustment to past disequilibria as well as to new developments that entered the picture during the year. Early in the year the governments of most major countries abandoned attempts to fix exchange rates at negotiated levels. While central banks continued to intervene to some extent, foreign exchange markets played the major role in determining the exchange rates that would clear the market. This process was marked at times by unusually large fluctuations of market exchange rates. Nevertheless, the market performed its intermediating function well, and neither trade nor long-term capital flows were seriously disrupted at any time during the year.

The developments in the balance of payments accounts of individual countries reflected, in part, the developments in the foreign exchange markets. The appreciation and depreciation of individual currencies, achieved

either through formal measures by the authorities or as a result of free movement of exchange rates, continued to influence the flows of international commerce and thus the deficits and surpluses of individual countries. Special developments, such as the shortages of food in certain parts of the world and, later in the year, the emerging world energy crisis, also affected the direction and magnitude of trade and capital flows among countries.

What Happened to Exchange Rates?

Developments during 1973 in the foreign exchange market can be conveniently broken into four periods, coinciding with the 4 quarters of the year. These developments are described in detail below. Briefly, in the first quarter, massive capital flows from the United States to Europe and Japan had two effects: First, foreign central banks added around \$10 billion in claims against the United States to their reserves as a result of their efforts to support the value of the dollar in terms of their own currencies. Second, when large-scale market intervention failed to restore stability to foreign exchange markets, fixed exchange rates were abandoned; consequently the dollar fell during the quarter by an average of 10 percent against the EC currencies floating jointly, and 7 percent against the currencies of 14 major industrial countries when each is weighted by that country's bilateral trade with the United States (Table 50). For the computation of the trade-weighted depreciation of the dollar see the supplement to this chapter.

In the second quarter the dollar depreciated against most continental European currencies, but remained in close relationship to the Japanese yen, the Canadian dollar, and a number of other currencies accounting for two-thirds of U.S. trade. The dollar dropped 11 percent against most EC currencies floating jointly, and around 5 percent against the group of 14 currencies. Net claims of foreign central banks on the United States during this period actually decreased by about \$0.7 billion.

In the third quarter the decline of the dollar was arrested, and its value remained roughly the same against the group of 14 currencies. In fact there was limited intervention by a number of central banks, including the United States, to prevent the dollar from rising.

TABLE 50.—*Changes in the foreign exchange value of the dollar, U.S. liabilities to official foreigners and U.S. liabilities to private foreigners, 1973*

Item	Percent change from preceding quarter			
	First quarter	Second quarter	Third quarter	Fourth quarter
Foreign exchange value of the dollar ¹	-6.9	-5.0	1.1	5.5
U.S. liabilities, official foreigners ²	15.9	-.9	-1.3	(*)
U.S. liabilities, private foreigners ⁴	-9.3	10.6	4.5	(*)

¹ Trade-weighted depreciation of the dollar against 14 major currencies; computed by Morgan Guaranty Trust Company.

² Liabilities to foreign central banks and governments.

³ Not available.

⁴ External liabilities to other banks and to other foreigners.

Sources: Morgan Guaranty Trust Company and International Monetary Fund.

In the fourth quarter the dollar rose sharply. It rose 12 percent against the German mark and around 5 percent against the group of 14 currencies. Central banks intervened substantially to slow the dollar's rise, and claims by foreign central banks on the United States declined.

The first quarter of 1973: Fixed exchange rates are abandoned. Foreign exchange markets were stable in the beginning of 1973. In most foreign exchange markets the dollar was above the level where central banks were committed to buy dollars to keep its value within the agreed margins. The stability was so fragile, however, that any disturbance had a highly unsettling effect on the market. The first such disturbance was an acceleration of the capital flight from Italy into Switzerland. Confronted with massive outflows, the Italian authorities allowed the lira to float, first for financial transactions and later for all transactions. In Switzerland, the influx of funds from abroad intensified an already high rate of inflation. To gain greater control over its monetary policy, Switzerland decided on January 22 to allow the franc to float. By terminating their purchases of foreign currencies in support of a fixed value of the franc vis-a-vis other currencies, the Swiss monetary authorities were able to avoid further involuntary increases in the Swiss money supply.

The floating of the franc by Switzerland, a country viewed by many as the epitome of financial orthodoxy, strengthened expectations that other exchange rate adjustments were inevitable, particularly for currencies of countries with large payments imbalances such as Japan and Germany. These expectations led to increasingly large speculative purchases of marks and yen for dollars. Such sales reached a peak in the first week of February, forcing the closing of foreign exchange markets on February 10. Extensive consultations among the monetary officials of major countries followed and culminated in a number of coordinated exchange rate adjustments. On February 12 the Administration announced that it would ask Congress to approve a 10 percent devaluation of the dollar in terms of Special Drawing Rights (SDR's). At the same time, the Japanese authorities announced that the Japanese yen would be allowed to float upward. The resulting exchange rate structure was endorsed by the 14 major industrial nations.

The multilateral adjustment of exchange rate patterns in February, including the devaluation of the dollar, did not, however, restore market confidence in the entire pattern of rates—in particular, the rate for the German mark. Large-scale flows of speculative funds out of dollars into marks and some other currencies continued until exchange markets were officially closed on March 2.

The exchange markets remained officially closed until March 19, although private trading of currencies continued. On March 19, five of the European Community (EC) countries—Belgium, Denmark, France, Germany, and the Netherlands—allowed their currencies to float jointly vis-a-vis the dollar and other currencies. As before, these countries decided to keep the exchange

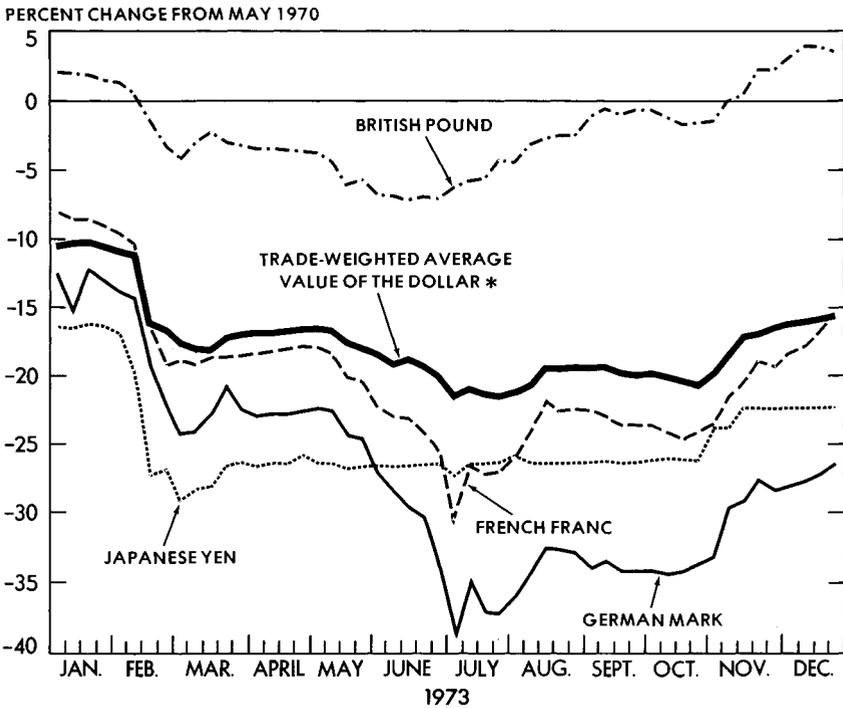
rates between any two of their currencies within 2¼ percent of an agreed relationship. In addition, Norway and Sweden subsequently decided to peg their currencies to the jointly floating EC currencies.

The second quarter of 1973: The dollar drops further. Between the end of March and the end of June the markets were characterized by a substantial depreciation of the dollar against most European currencies. At the same time, the dollar remained relatively unchanged against the currencies of Japan, Canada, and a number of other countries. The dollar declined about 11 percent in terms of most EC currencies floating jointly and 5 percent in terms of the trade-weighted average of 14 currencies. The dollar declined by as much as 15 percent vis-a-vis the German mark, which was revalued by 5½ percent relative to the other EC currencies floating jointly. (Chart 10.)

There were three sources of downward pressure on the dollar in European exchange markets during this period. First, the United States continued to have a deficit vis-a-vis Europe on basic balance transactions—

Chart 10

Change in the Value of the U.S. Dollar Relative to Selected Foreign Currencies



* RELATIVE TO 14 MAJOR CURRENCIES; COMPUTED BY MORGAN GUARANTY TRUST COMPANY.
 NOTE: FOR INDIVIDUAL CURRENCIES, FRIDAY CLOSING PRICES WERE USED.
 SOURCE: MORGAN GUARANTY TRUST COMPANY.

which include trade, grants and other unilateral transfers, and long-term investment. This meant that the public was supplying more dollars through these transactions in exchange for European currencies than were being purchased with European currencies through these transactions. Second, many non-European countries besides the United States had deficits vis-a-vis Europe in basic transactions. Since most of these countries use the dollar as a reserve currency, they tended to finance their deficits vis-a-vis Europe with dollars. Dollars from non-American sources were thus competing with dollars from the United States in European exchange markets. Third, the dollar is widely held abroad not only by central banks but also by many private individuals, banks, and corporations. With the continuing decline of the dollar during the previous 2 years, many of these private foreign holders wanted to exchange their dollars for foreign currencies.

As long as markets clear, however, there can be no "additional" dollars remaining unsold. Exchange rates will change until enough sellers have been discouraged from selling or enough buyers have been encouraged to buy. Equilibrium in the market was established during this period by private foreigners on balance increasing their dollar holdings. Figures for dollars held by private foreigners in Europe are not available, but the changes in these holdings are reflected in the \$2 billion increase of U.S. liquid liabilities to all private foreigners from the end of March to the end of June. Foreign central banks decreased their holdings of dollars over this period by \$650 million.

The rapid drop of the dollar significantly below what many considered its longer-term value created widespread uncertainty regarding future exchange market trends; for a short period during the end of June and the beginning of July the spread between buying and selling rates widened, and it became increasingly difficult for traders to obtain forward coverage. Nevertheless foreign exchange markets remained open throughout this period, and normal international trade and investment transactions continued without major disruption. Fears by many that floating exchange rates would disrupt international trade proved to be without foundation.

The third quarter of 1973: The dollar begins to rise. The decline of the dollar relative to European currencies was reversed in the third quarter as an increasing body of opinion in the market held that the dollar had become undervalued, a view that was strengthened by the emergence of a sizable surplus in U.S. trade of goods and services. In this favorable atmosphere, some further impetus to the turn in market opinion came from the announcement on July 18 of U.S. intervention in the foreign exchange market in order to maintain orderly market conditions.

This move discouraged speculation against the dollar by raising the possibility that the U.S. authorities would buy as many dollars (or sell as many foreign currencies) as would be necessary to prevent a further decline. To make large-scale intervention by U.S. authorities in the foreign exchange market a credible possibility, it was announced at the same time that bi-

lateral swap facilities had been increased by \$6¼ billion; the amount of foreign currencies that the Federal Reserve could borrow from other central banks thus rose to nearly \$18 billion. In fact, intervention by the Federal Reserve amounted to only about \$250 million during the last 3 weeks of July. During this period the dollar rose by around 4 percent against the jointly floating European currencies.

The fourth quarter of 1973: The dollar rises further. During the fourth quarter the appreciation of the dollar continued, in part because it was thought that the United States was in a relatively better position than Western European countries and Japan to deal with the cutback of oil production in the Middle East and the simultaneous increase in world oil prices. At the same time, the surpluses in U.S. trade were becoming larger, and figures published for the long-term investment account began to show a surplus. Between September 28 and December 27 the dollar rose by about 11 percent against the jointly floating European currencies. By the end of the year the dollar was thus approximately back to its February post-devaluation level. The dollar was rising so fast, in fact, that some foreign central banks found it increasingly desirable to reduce their controls on capital inflows and to sell off some of the dollars which they had accumulated in the past. Foreign exchange reserves of the Bank of Japan and the Bundesbank declined by \$1 billion each during the October to November period as a result of their dollar sales.

Increasingly in the fourth quarter the exchange markets became dominated by the energy crisis and the abrupt and massive additions to import costs of oil. Early in January 1974 both the yen and the European currencies floating jointly depreciated sharply, and in some cases reached levels lower than those prevailing immediately after the multilateral adjustment of February 1973. On January 21, the French franc was allowed to float freely, and immediately declined by 5 percent.

Over the year as a whole the functioning of the exchange market improved as traders gained experience with floating exchange rates. This can be seen, for instance, in the narrowing spread between the buying and selling rates of the major currencies traded and in the diminished day-to-day fluctuations of these currencies. In general, one has to conclude that despite the dramatic decline and the equally dramatic rise of the dollar against the major European currencies, foreign exchange markets functioned remarkably well, and only on a few days was it difficult to carry out foreign exchange transactions.

What Happened to All Those Dollars?

Over the years a large volume of dollars has been accumulated by foreigners, both governments and private individuals. To a large extent these dollars are held because the dollar is the most widely used currency for international transactions, and a stock of dollars was therefore useful for all the reasons that induce people to hold money. Dollars are thus held voluntarily by private banks, corporations, and individuals. They are also held volun-

tarily by foreign central banks, even though central banks to some extent hold these dollars not because they want to increase their dollar reserves, but because they want to avoid a rise in the value of their currencies relative to the dollar.

Dollars held by foreigners are generally held in the form of dollar balances at commercial banks. However, not all of the dollars held by foreigners are dollars which are liquid liabilities of the United States, that is, dollar balances held in U.S. commercial banks. Some dollars are liabilities of European private banks which have accepted dollar deposits. These are generally known as Eurodollars. European banks can create new dollars by lending dollars to someone who will redeposit them in a Eurodollar bank. As long as the proceeds of new loans are left as deposits in the banking system, the banking system as a whole can continue to create new money in the form of bank deposits.

A number of central banks have participated in the creation of new dollars in the Eurodollar market by depositing their reserves with European commercial banks making Eurodollar loans. By so doing, these central banks not only facilitated the expansion of Eurodollars, but in many cases they ended up by creating new official reserves. Most major central banks, however, have now agreed to refrain from depositing new reserves in the Eurodollar market.

When they are sold in the foreign exchange market, dollars owned by foreigners become indistinguishable from dollars owned by Americans. That is, when they are sold they exert a downward pressure, and when they are purchased they exert an upward pressure on the market value of the dollar. Private American holders of dollars and private foreign holders of dollars, whether these are held in U.S. or in foreign banks, have similar economic motives in selling or buying dollars in the foreign exchange market. For instance, if the dollar is expected to fall relative to foreign currencies, holders of dollars will have an incentive to sell dollars and to buy foreign currencies. If the dollar is expected to rise relative to foreign currencies, holders of foreign currencies have an incentive to buy dollars and to sell their foreign currencies. While the average foreign holder of dollars is likely to be more sensitive to such changes in the foreign exchange value of the dollar than domestic holders of dollars, the experience of the last few years has shown that Americans will exchange large amounts of dollars for foreign currencies when they find it profitable to do so.

There is some reason to believe that during the first half of 1973 expectations of a future fall in the value of the dollar may have induced some dollar holders, both in the United States and abroad, to sell their dollars, thereby depressing the market value. Thus there were occasions when the value of the dollar was declining in the market, even though the United States was experiencing a rapid improvement in its underlying balance of payments. In the second half, expectations of a future rise of the dollar may have reinforced an upward trend by inducing both Americans and foreigners to shift from foreign currencies into dollars.

It is difficult to get a precise estimate of the total amount of dollars held by foreigners, because figures on dollar deposits in foreign banks are not easily available. Recorded liquid dollar liabilities of the United States—dollars held by foreigners which are liquid liabilities of either a U.S. bank or the U.S. Government—amounted to about \$83 billion at the end of 1972; of this, \$63 billion was held by official institutions, and about \$20 billion was held by private banks and other foreigners. In addition the Bank for International Settlements (BIS) has estimated that at the end of 1972 the total liquid dollar liabilities of private banks in the EC, Sweden, and Switzerland amounted to almost \$100 billion. If interbank deposits made by these banks are taken out of this figure, and certain other adjustments are made, the BIS finds that the Eurodollar volume was about \$70 billion. The total volume of dollars held by foreigners as balances in both American and European banks was thus in the neighborhood of \$150 billion. Of this amount perhaps a little more than half was held by official institutions, and the remainder by foreign private banks, corporations, and individuals. In comparison, the domestic supply of dollars in the United States, in the form of currency and demand deposits, was about \$250 billion at the end of 1972.

During 1973 the total stock of dollars held abroad increased further. Total liquid dollar liabilities of the United States at the end of September amounted to \$92½ billion, of which \$72 billion was held by official institutions and \$20½ billion by private foreigners. Indications are that the volume of Eurodollars has expanded as well.

What Happened to Trade and Investment?

During the first 3 quarters of 1973 Americans exported \$3.0 billion more in goods and services than they imported, a large change from the first 3 quarters of 1972, when imports surpassed exports by \$3.7 billion. On a long-term basis, private foreigners invested \$1.4 billion more in the United States than Americans invested abroad during the first 3 quarters of the year; during the same period in 1972, U.S. private long-term investment abroad exceeded foreign private long-term investment in the United States by \$0.9 billion.

These developments in the balance of payments are consistent with what one might expect from the exchange rate realignments of the past 2 years. The depreciation of the dollar in terms of foreign currencies should lower the price of U.S. goods and services relative to foreign goods and services, thereby stimulating sales abroad and encouraging U.S. residents to purchase goods produced at home rather than abroad. By reducing the relative cost of production in the United States and thus adding to its profitability, the depreciation tended to encourage investment in the United States rather than abroad. Any interpretation of the effect of the depreciation on developments in trade and investment during 1973, however, is complicated by the changing business conditions in the United States and elsewhere, by crop failures abroad, by changes in the demand for and sup-

ply of oil, and by domestic price control programs, all of which also affected the U.S. balance of payments.

Trade in goods and services. The value of U.S. merchandise exports increased 41 percent from the first 3 quarters of 1972 to the first 3 quarters of 1973, while imports increased 24 percent over the same period. Higher prices resulting from intense inflationary pressures here and abroad during 1973 accounted for much of the increase in the value of U.S. trade. Adjusting for price increases, however, makes the turnabout in U.S. merchandise trade even more apparent. The volume of imports increased only 7 percent during the first 3 quarters of 1973, just over half the growth rate from 1971 to 1972, while the volume of exports increased 24 percent during the first 3 quarters of 1973, more than double the growth rate from 1971 to 1972.

The rapid growth of exports during 1973, following the realignment of exchange rates, is consistent with economic expectations. But factors other than the realignment of exchange rates also affected U.S. exports during 1973.

Shortfalls in foreign crops played a major part in increasing agricultural exports during the first 3 quarters of 1973. Drought in India and Africa, poor weather conditions in the Soviet Union, and the sharp reductions in Peruvian fishmeal production greatly reduced world production of grains and protein feeds in 1972, thus reducing supplies available for 1973. Because the United States was the largest supplier of foodstuffs with relatively open access to foreign buyers, these developments abroad had a particularly strong effect on U.S. agricultural exports. The depreciation of the dollar, however, was also an important factor in expanding agricultural exports by reducing the relative price of American crops. The value of agricultural exports in the first 3 quarters of 1973 equaled \$12.7 billion, up 88 percent from the same period in 1972. Although exports of agricultural products accounted for only one-fourth of the value of total exports, 40 percent of the increase in exports during the first 3 quarters of 1973 came from agricultural products. Prices of food exports during the third quarter were nearly 40 percent higher than a year earlier, a change which accounted for a large part of the increase in the value of these exports.

Domestic price control programs also stimulated exports during 1973, at the expense of domestic supplies. As prices of internationally traded goods rose, it became more profitable to sell abroad, where prices remained unconstrained, rather than at home, where prices were controlled.

The increase in U.S. exports, which resulted from food shortages and domestic price control programs, was offset in part by the rapid increase in imports of crude and refined petroleum products. The fact that the demand for oil in recent years has been growing more rapidly than domestic oil production has created a gap which could only be filled by imports. At the same time, the world price of oil increased dramatically during the year. Although the major Arab oil producers embargoed oil shipments to the

United States in October, this did not reduce the value of oil imports during the rest of the year. (For a more complete discussion of these developments see Chapter 4.)

The relatively slow growth of total imports during 1973, despite the rapid increase in imports of crude and refined petroleum products, is the most visible indicator of the impact of exchange rate realignment on U.S. trade. In the later stages of a cyclical expansion, imports should accelerate as domestic producers run low on domestic supplies and rely on foreign suppliers to meet their demands. The fact that the volume of imports did not grow very much faster during 1973 than it did in 1972 suggests that the dollar depreciation had a significant effect on trade.

Developments in U.S. bilateral trade provide some additional clues to the impact of exchange rate realignments. For countries whose currencies have shown a relatively large appreciation in relation to the dollar, one might expect that imports from the United States would grow more rapidly than exports to the United States. This appears to be true, both for Japan and for the EC. Japan, whose currency has risen sharply against the dollar, experienced a 73 percent increase in imports from the United States during the first 3 quarters of 1973, while Japanese exports to the United States increased only 9 percent. The EC, whose currencies also rose sharply in relation to the dollar, increased their imports from the United States by 40 percent, while their exports to the United States increased by 23 percent.

For countries whose currencies changed relatively little in relation to the dollar, the growth rates of exports to and imports from the United States should be more nearly alike. This appears to be true for Canada and the United Kingdom, whose currencies changed relatively little during 1973 in relation to the U.S. dollar. Exports by Canada to the United States and imports from the United States both increased by around 20 percent. Exports by the United Kingdom to the United States and imports from the United States both grew by around 30 percent.

U.S. trade with Communist countries in Europe, including the U.S.S.R., increased dramatically during 1973, not because of exchange rate realignments, but because of a normalization of trade relations combined with poor harvests in the Soviet Union. Exports to the Communist countries in Europe increased to \$1.4 billion for the first 3 quarters of 1973, while imports rose to \$0.4 billion. Most of the increase in exports was due to larger sales of agricultural products.

Investments. During the first 3 quarters of 1973 private foreigners made more long-term investments in the United States than Americans made abroad. The effective depreciation of the dollar encouraged foreign investment in the United States during the year because it reduced the relative cost of producing internationally traded goods in the United States rather than abroad. The relative cost of producing in the United States declined further as a result of a tendency for wages to rise more rapidly abroad than in the United States; foreign firms thus had a greater incentive to produce

in the United States. In view of the fairly large changes in relative labor costs (Table 51), the increase in foreign direct investment from none during the first 3 quarters of 1972 to \$1.5 billion during the first 3 quarters of 1973 may seem fairly small. Judging by the number and size of investment plans that have been announced by foreign companies, however, this flow can be expected to increase significantly in the next year.

TABLE 51.—*Relative labor costs in manufacturing, 1963-73*
[1967=100]

Country and year	Hourly compensation in national currency	Output per man-hour	Unit labor cost in national currency	Value of foreign currency relative to the U.S. dollar	Unit labor cost in U.S. dollars ¹	Index of U.S. unit labor cost as percent of index of foreign unit labor cost
United States:						
1968.....	107.2	104.8	102.3	-----	102.3	-----
1969.....	114.0	107.3	106.3	-----	106.3	-----
1970.....	122.2	108.0	113.2	-----	113.2	-----
1971.....	130.8	115.7	113.0	-----	113.0	-----
1972.....	139.0	121.3	114.1	-----	114.1	-----
1973.....	150.0	127.5	117.6	-----	117.6	-----
Germany:						
1968.....	105.9	107.6	98.5	99.9	98.3	104.0
1969.....	115.5	113.8	101.5	101.6	103.1	103.1
1970.....	133.0	116.7	114.0	109.3	124.6	90.9
1971.....	152.1	122.4	124.3	114.7	142.5	79.3
1972.....	169.4	131.0	129.4	125.0	161.7	70.6
1973 ²	190.5	140.5	135.5	150.5	204.0	57.6
Japan:						
1968.....	116.2	112.6	103.2	100.4	103.7	98.6
1969.....	137.3	130.0	105.8	101.1	106.9	99.4
1970.....	163.4	146.5	111.5	101.1	112.7	100.4
1971.....	189.0	151.7	124.6	104.2	129.9	87.0
1972.....	219.5	167.0	131.5	119.5	157.1	72.6
1973 ²	265.1	198.4	133.7	133.7	178.7	65.8
Canada:						
1968.....	107.3	107.3	100.0	100.1	100.2	102.1
1969.....	115.3	113.2	101.9	100.2	102.1	104.1
1970.....	124.5	115.0	108.2	103.4	111.9	101.2
1971.....	134.5	121.6	110.6	106.8	118.2	95.6
1972.....	144.5	126.9	113.8	108.9	124.0	92.0
1973 ²	157.4	133.5	117.9	107.9	127.2	92.5

¹ Indexes in national currency adjusted for changes in prevailing exchange rates.

² Based on seasonally adjusted data for first 9 months.

Note.—Data relate to all employees in manufacturing.

Sources: Department of Labor (Bureau of Labor Statistics) and Council of Economic Advisers.

Foreign purchases of U.S. securities other than U.S. Treasury securities also increased, from \$2.6 billion during the first 3 quarters of 1972 to \$3.4 billion during the first 3 quarters of 1973. Such an increase is also consistent with what one would expect from the large depreciation of the dollar, inasmuch as the depreciation should increase the relative profitability of producing in the United States. Market expectations also exerted a strong influence on the flow of security transactions over the year. Foreign purchases of U.S. securities were quite large in the first quarter, reaching a total of \$1.7 billion. During the second quarter, purchases fell to \$0.5 billion, but increased again to \$1.2 billion in the third quarter.

Direct and portfolio investments abroad by Americans amounted to \$3½ billion during the first 3 quarters of 1973, as they had during the first 3

quarters of 1972. There are two possible reasons for the absence of a decline: First, economic conditions were buoyant throughout the world. Second, most of the outflow occurred in the first quarter, before the major exchange rate adjustments of 1973, and was probably motivated by the anticipation of subsequent exchange rate adjustments.

The U.S. Balance of Payments in 1973

In a world characterized by the managed floating of exchange rates, measurement of the overall balance of payments has become less important. In a fixed exchange rate world, one of the major functions of overall measures of the balance of payments was to signal to policy makers when a given exchange rate had become untenable. To the extent that exchange rates are allowed to adjust automatically in response to payments imbalances, it is no longer necessary to communicate the desirability of an exchange rate adjustment to the policy maker. Of course, to the extent that exchange rates remain constrained by official intervention in the foreign exchange market, the balance of payments numbers will continue to indicate when such intervention may need to be relaxed.

The managed floating of exchange rates has changed in particular the analytical meaning of the official reserve transactions balance, which measures the net direction and magnitude of official intervention in the foreign exchange market over a period of time. In other words, it approximately shows the extent to which governments have bought or sold currencies to influence the exchange rate. It also includes government-to-government payments outside the foreign exchange market, but removing these transactions from the foreign exchange market has the same effect as direct intervention. As long as governments kept market exchange rates relatively fixed by buying and selling foreign exchange, the net amount of such official purchases or sales provided an estimate of the net deficit or net surplus of a given currency traded in the market. To the extent that governments no longer attempt to keep market exchange rates from falling below or rising above a fixed level, changes in the net demand or supply of a currency are reflected in a movement of the exchange rate rather than in a net loss or gain of reserves. Since exchange rates were at first fixed and then floating to varying degrees in 1973, changes in market pressures were reflected in part by changes in exchange rates and in part by net changes in international reserves, that is, by the official reserve transactions balance.

As measured by the official reserve transactions balance, the United States had a deficit of \$10½ billion in the first quarter, a surplus of \$½ billion in the second quarter, and a surplus of \$2 billion in the third quarter (Table 52). That is, in the first quarter, governments purchased roughly \$10½ billion to keep the dollar higher than it would otherwise have been; in the second quarter, governments more or less allowed the dollar to find its own level in the market; and in the third quarter, governments sold roughly \$2 billion, to keep the dollar lower than it would otherwise have been.

TABLE 52.—U.S. balances on international transactions, 1972-73

[Billions of dollars, seasonally adjusted]

Type of transaction	First 3 quarters		1972 IV	1973		
	1972	1973		I	II	III
Goods ¹	-5.2	-0.5	-1.7	-1.0	-0.2	0.7
Services.....	1.4	3.5	.9	1.1	.9	1.4
Military transactions.....	-2.7	-2.1	-.9	-.8	-.7	-.6
Investment income ²	5.6	6.7	2.2	2.3	2.1	2.3
Other.....	-1.5	-1.1	-.5	-.4	-.5	-.3
GOODS AND SERVICES.....	-3.7	3.0	-.9	.2	.7	2.1
Unilateral transfers, net ³	-2.9	-2.7	-.9	-.7	-1.0	-.9
CURRENT ACCOUNT.....	-6.6	.3	-1.8	-.6	-.4	1.2
Long-term capital.....	-1.7	.7	.2	-.4	-.2	1.3
U.S. Government ⁴	-.8	-.6	-.6	-.3	.1	-.4
Direct investment.....	-2.6	-1.7	-.6	-1.8	-.4	.5
Other private.....	1.7	3.0	1.4	1.7	.1	1.2
CURRENT ACCOUNT AND LONG-TERM CAP- ITAL.....	-8.3	1.0	-1.6	-.9	-.6	2.5
Short-term claims.....	-1.8	-4.7	-1.2	-3.8	-.6	-.3
Short-term liabilities.....	2.3	.5	2.6	-1.8	1.1	1.2
Errors and unrecorded transactions, net.....	-1.6	-4.8	-1.5	-3.9	.4	-1.4
Allocations of SDR.....	.52
TOTAL ⁵	-8.9	-8.1	-1.5	-10.5	.3	2.1

¹ Excludes transfers under military grants.² Includes direct investment fees and royalties.³ Excludes military grants of goods and services.⁴ Excludes official reserve transactions and includes transactions in some short-term U.S. Government assets.⁵ Equals official reserve transactions balance.

Note.—Detail may not add to totals because of rounding.

Sources: Department of Commerce, Bureau of Economic Analysis, and Department of the Treasury.

Another commonly used measure of the U.S. balance of payments is the current account and long-term capital balance, or the "basic" balance, as it is sometimes called. This balance is computed by adding up all the recorded transactions in the current and the long-term capital accounts, including unilateral transfers. It attempts to measure the extent to which the "long-term" or "underlying" demand for foreign exchange has exceeded the "long-term" or "underlying" supply of foreign exchange during a given period. If all such transactions were accurately recorded, this balance would also equal the changes in official reserves and the changes in short-term foreign assets of private banks, corporations, and individuals, net of changes in liabilities. Because some transactions may not be measured correctly, however, or may escape measurement altogether, a difference usually exists between recorded basic transactions above the line and recorded changes in reserves and short-term assets below the line. This difference appears as an errors-and-omissions item in the balance of payments statistics.

Deficits and surpluses in the *basic* balance need not necessarily imply any disequilibrium which requires corrective action by the government. To the extent that changes in net private holdings of short-term foreign assets are

voluntary, the existence of a surplus or deficit need not imply that it is either undesirable or unsustainable. When such changes are quite large in any one year, however, there is a strong possibility that the change is a temporary response to unusual circumstances, such as differences in interest rates. In these cases, some governments might be inclined to intervene to moderate the exchange rate fluctuations which could result from large shifts in short-term foreign assets.

The U.S. basic balance was in deficit by \$1 billion during the first and \$½ billion during the second quarter of 1973, while during the third quarter it was in surplus by about \$2½ billion. For the 3 quarters, the U.S. basic balance was in surplus by about \$1 billion. In other words, Americans in the first 3 quarters of 1973 earned \$1 billion more from current account and long-term capital transactions than they spent on similar transactions.

Table 52 also shows that during the first 3 quarters \$5 billion in net foreign currency expenditures were not recorded, while recorded short-term private claims on foreigners increased by \$4½ billion. These two items were "financed" by the \$1 billion current account surplus; a \$½ billion net increase in recorded short-term liabilities to private banks, corporations and individuals; and an \$8 billion net increase in U.S. liabilities to foreign official institutions.

The Net Foreign Asset Position

At the end of 1972 the estimated value of American assets abroad was \$200 billion, and the value of American liabilities to foreigners was \$150 billion. The \$50 billion difference between the two is the estimated net American investment position abroad. The net investment position declined by about \$20 billion from 1970 to 1972, but data for the first 3 quarters of 1973 suggest that it probably increased last year.

Changes in the U.S. net asset position are brought about in part by surpluses or deficits in the balance on current account, a balance which includes U.S. transactions in goods and services, as well as unilateral transfers (Table 52). The largest changes occurred in the balance on goods and services. When the United States has a deficit in its trade balance as in 1971 and 1972, it imports more than it pays for with exports, thus increasing American liabilities to foreigners. With a trade surplus, as in the first 3 quarters of 1973, the United States acquires imports and an increase in net assets abroad in return for its exports. One would therefore expect an improvement of the U.S. net asset position during 1973.

The U.S. net asset position is also affected by several kinds of transactions and accounting adjustments that do not appear in the balance of payments. When foreign subsidiaries reinvest their earnings, this increases the value of U.S. assets abroad; and when foreign-owned subsidiaries in the United States reinvest their earnings, this increases U.S. liabilities to foreigners. During 1973, U.S. reinvestment of earnings may have exceeded foreign reinvestment by \$4 billion or more, thus adding to the U.S. net asset position. Changes in the valuation of outstanding assets and liabilities, which

result from changes in market value or changes in exchange rates, also have a small impact on the U.S. net asset position. Because of the small surplus on current account and the large level of net reinvested earnings, the net asset position of the United States must have improved markedly during 1973.

Balance of payments figures indicate, however, that the increase in liabilities to foreigners exceeded the increase in U.S. assets abroad by about \$4½ billion for the first 3 quarters of the year. This inconsistency can be partly explained by the net acquisition of unrecorded short-term foreign assets by Americans.

U.S. assets abroad are on the whole less liquid than U.S. liabilities to foreigners. At the end of 1972 about 90 percent of the \$200 billion in assets abroad were considered nonliquid. Direct investments amounted to about \$95 billion; holdings of long-term foreign securities were about \$25 billion. The remaining nonliquid assets include \$15 billion in nonliquid short-term assets held by private Americans, \$10 billion in private long-term claims by banks and others and \$35 billion in Government-owned assets. Most of the U.S. liquid assets are in the form of official monetary reserves. On the other hand, more than half of the \$150 billion in liabilities to foreigners are considered liquid; most of these liabilities are in the form of bank deposits, short-term Treasury securities, and negotiable certificates of deposit.

HOW GOVERNMENTS BEHAVED IN THE MONETARY ARENA

During 1973 international monetary arrangements continued to evolve in response to changing needs. A major characteristic of these evolving arrangements is a considerable diversity in practices by different countries. Yet despite this diversity, countries cooperated with each other to a remarkable extent, as they had in 1972, and from their cooperation one could begin to see the development of some conventions to guide countries in their monetary relations. This process has benefited from the discussions taking place in the framework of the Committee of Twenty, a committee associated with the International Monetary Fund.

Exchange Rates and Intervention

Exchange rates became more flexible in 1973, as the governments of most major countries reduced or suspended their commitments to maintain fixed exchange rates, and other governments changed their par values more frequently. While governments have continued to intervene in the foreign exchange market in order to influence the movement of the exchange rate, it can no longer be assumed that they will finance an excess demand or absorb an excess supply of foreign currencies at given exchange rates. The situation can best be described as one of managed floating.

In managing their exchange rates, countries followed widely differing practices, as can be seen in Table 53. Some countries have allowed their currencies to float within a rather wide range, resorting to only limited

TABLE 53.—Maximum percent change in exchange rates between various foreign currencies and the dollar during 1973

Type of intervention	Maximum percent change in rate during 1973			
	No change	1-8 percent	9-20 percent	More than 20 percent
Countries maintaining a joint float, with intervention to maintain a stable relationship within the group, but minimal intervention in outside currencies.			Sweden.	Belgium Germany Denmark France Netherlands Norway
Countries floating independently with some intervention in the foreign exchange market.		Italy Canada	United Kingdom Iceland Finland Portugal	Austria Switzerland
Countries undertaking considerable intervention to maintain a stable relationship vis-a-vis the dollar (except where another currency is noted).	Turkey Argentina Bolivia Costa Rica Dominican Republic Ecuador El Salvador Guatemala Haiti Honduras Mexico Nicaragua Paraguay Peru Israel Philippines	Brazil Colombia Venezuela Republic of China Thailand Korea	Ghana India (pound) Pakistan Spain Egypt Ethiopia Iran Iraq Saudi Arabia Sri Lanka South Africa Greece Yugoslavia	Australia Uruguay Afghanistan Japan CFA Countries (French franc) Chile
Country fixing rate with respect to an average of other currencies.			Morocco	New Zealand

Note.—The procedure for computing maximum percentage changes was to find the largest end month deviation during the year from the dollar exchange rate in effect at the end of December 1972.

Sources: International Monetary Fund, and Council of Economic Advisers.

intervention in foreign exchange markets to maintain orderly market conditions. One group of countries, comprising Germany, France, Belgium, the Netherlands, Denmark, Norway, and Sweden, decided to keep their currencies relatively fixed with respect to each other. Whenever spot market exchange rates between any two currencies in the group deviate by more than 2¼ percent from an agreed relationship, the monetary authorities are obliged to intervene in terms of each other's currencies. However, in January 1974, the Government of France announced that it would sever the tie between the franc and the other EC currencies floating jointly. Some countries have decided to keep their currencies fixed to one or the other of the major currencies. A few countries have followed the practice of keeping their currencies fixed relative to an average of other currencies weighted according to their importance in bilateral trade.

Most countries, regardless of the exchange rate regime they have chosen, have continued to intervene in the foreign exchange market to varying degrees. Some countries, the United States among them, have restricted themselves to limited intervention with the object of maintaining orderly market conditions. Other countries, although they were officially floating,

TABLE 54.—Major changes in capital controls, 1973

Country	Controls on banks and other financial intermediaries	Controls on portfolio investment	Controls on direct investment
Australia.....	February—broadened coverage of restrictions on borrowing abroad. October—increase from 25 to 33½ percent in noninterest-bearing deposits required on borrowings from abroad with a maturity in excess of 2 years.		March—general ban on foreign investment in Australian real estate.
Belgium.....	March to early September—negative interest rate of ¼ percent per week on nonresident convertible franc holdings exceeding the daily average in the last quarter of 1972. Late September—negative interest rate reimposed.		
Canada.....			December—act calling for screening of new foreign direct investments in Canada passed.
France.....	March to early October—prohibition of interest payments on nonresident franc deposits of less than 180 days; increase (to 100 percent) in mandatory reserve requirements on excess of these deposits above their Jan. 4 level. March—restriction on banks' forward exchange transactions with nonresidents. April to late October—banks allowed to impose a negative interest rate of 0.75 percent per month on the increase in nonresident franc deposits above the January 4 level. September—banks prohibited from lending francs to nonresidents.	March to early October—nonresident purchases of short-term securities prohibited.	
Germany.....	February 4—prior authorization required (and as a rule not given) for contracting of foreign loans and credits in excess of DM 50,000. February 24—Government empowered to raise the cash deposit requirement against foreign borrowing from 50 to 100 percent (authority not yet invoked). July 1 to October 1—minimum reserve requirements against foreign liabilities effectively increased to 90–100 percent, as opposed to 8–20 percent on domestic liabilities.	February—new restrictions on sale of domestic securities to nonresidents.	February—authorization requirement for nonresident direct investment valued in excess of DM 500,000.
Italy.....		July—blocked noninterest bearing deposit of 50 percent (25 percent for mutual funds) required on portfolio investments abroad.	July—similar deposit required on direct investments abroad.
Japan.....	May—increase from 70 to 90 percent in allowable foreign currency financing of external operations, including direct investments overseas, purchases of real estate abroad, and prepayments for imports.	May—relaxation of controls governing acquisition of Japanese securities by foreign investors, and acquisition of foreign securities by Japanese investors.	May—continued relaxation of controls on direct foreign investment in Japan. With some exceptions, virtually all industries will be fully open to foreign ownership by the end of 1975.

TABLE 54.—Major changes in capital controls, 1973—Continued

Country	Controls on banks and other financial intermediaries	Controls on portfolio investment	Controls on direct investment
	<p>October 25—relaxed requirement that foreigners floating yen loans must immediately convert 90 percent of the proceeds into foreign currency.</p> <p>November 21—Government announced that it would make no further additions to its dollar financing of one-half of Japanese banks' import loans.</p> <p>December—marginal reserve requirement on free yen deposits by nonresidents lowered from 50 percent to 10 percent.</p>	<p>November—banned resident purchases of foreign bonds within 6 months of their maturity; ended requirement that security houses should balance foreign purchases and sales of Japanese stocks.</p> <p>December—foreigners allowed to purchase Japanese bonds without restrictions.</p>	
Netherlands.....	<p>March to May — noninterest bearing reserve requirement levied on increases in banks' net foreign guilder liabilities; special commission levied against increases in balances in convertible guilder accounts.</p>	<p>January—residents allowed to subscribe for new Euro-guilder notes issued by residents.</p>	
Switzerland.....	<p>January 29 to October 29—banks prohibited from having net liabilities in foreign currencies (spot and forward together).</p> <p>October 1—National Bank revoked the 2 percent per quarter negative interest rate on banks' franc deposit liabilities to nonresidents.</p>		
United States.....	<p>May 16—Federal Reserve Board (FRB) lowered reserve requirements against Eurodollar borrowings in excess of the reserve free base (from 20 to 8 percent), and took steps to eliminate gradually the reserve free bases.</p> <p>December 26—Federal Reserve Board announced effective Jan. 1, increased foreign lending and investment ceilings for banks and other financial institutions subject to the Voluntary Foreign Credit Restraint Program: ceilings raised on foreign loans by U.S. banks, by U.S. agencies and branches of foreign banks, and by U.S. nonbank financial institutions.</p> <p>January 1974—Controls on foreign lending by financial institutions suspended.</p>	<p>April—Interest Equalization Tax (IET) extended through June 1974.</p> <p>December 26—Treasury Department announced reduction of the IET from an annual rate of $\frac{3}{4}$ to $\frac{1}{4}$ percent per annum effective Jan. 1, 1974.</p> <p>January 1974—IET reduced to zero.</p>	<p>Continued liberalization: export credits extended by direct investors to their affiliated foreign nationals exempted from controls.</p> <p>December 26—Commerce Department announced, effective Jan. 1, increased minimum allowable direct investment abroad by U.S. firms from \$10 to \$20 million per year. In addition, various other regulations were relaxed.</p> <p>January 1974—Controls on foreign investment by U.S. corporations suspended.</p>

Sources: International Monetary Fund, and Board of Governors of the Federal Reserve System.

have intervened on a broad scale to minimize day-to-day fluctuations in their rates. Still other countries have continued to intervene in order to keep their exchange rates stable with respect to a major currency, a group of currencies, or an average of all currencies.

Despite the great variety of exchange rate practices by different countries, relations among countries have remained fairly harmonious. Although no

attempt was made to agree on a code of conduct to guide governments in formulating their exchange rate and intervention policies, extensive consultations have led to wide acceptance of some basic tenets that should influence the formulation of policies in this area. An idea repeatedly expressed in official statements is that countries should intervene in the foreign exchange market when intervention is necessary to maintain orderly market conditions. On the other hand, interventions aimed at obstructing or accelerating a basic market trend would be generally regarded as harmful. There is probably also wide recognition that a country with meager reserves may need more latitude for allowing its exchange rate to decline than a country with ample reserves; and, conversely, a country with ample reserves may need more latitude for allowing its exchange rate to adjust upward than a country with meager reserves. Similarly, when its rate is rising, a country with meager reserves should have wider latitude to intervene in the foreign exchange market than a country with ample reserves, whereas a country with ample reserves should have a wider latitude to intervene in the foreign exchange market when its rate is falling.

The conceptual basis for these conventions, if one may call them that, is similar to the ideas put forward by the United States and some other countries for reforming the international monetary system. The continuing discussion in the Committee of Twenty can be expected to give these ideas more concrete form.

Capital Controls

Another development during 1973 has been the adoption of new measures for controlling capital movements, as can be seen in Table 54. (Controls already in force at the beginning of the year are not shown in the table.) Capital controls were tightened further in the first part of 1973 by many major industrial countries, when exchange market developments put upward pressure on many of the European currencies and several countries sought to moderate this pressure by imposing restrictions on banks and other financial intermediaries. Some of the more common restrictions were discriminatory reserve requirements, and penalty rates or prohibition of interest payments on nonresident deposits. Capital controls did not, however, succeed in preventing large speculative short-term capital inflows, either prior to the revaluation of the dollar in February or from late May to early July.

Some countries, on the other hand, took steps to discourage capital outflows or encourage capital inflows. Italy required noninterest-bearing deposits against investments abroad in order to stem a continuing capital outflow. Japan relaxed controls on inward direct and portfolio investment to reduce the overall balance of payments deficit which developed in 1973.

Since the 1960's the United States has maintained three kinds of restraints on capital outflows: an interest equalization tax on purchases of foreign securities, restrictions on foreign direct investments by U.S. corporations, and limitations on foreign lending by U.S. financial institutions. These restraints were relaxed in December 1973, and removed entirely in January 1974.

Changes in International Liquidity in 1973

Total international reserves increased by \$28 billion during the first 9 months of 1973, compared to \$28 billion in 1972 and \$38 billion in 1971. From the end of 1970 to the end of September 1973, total reserves doubled, increasing from \$93 billion to \$187 billion. As in previous years, most of the increase was in foreign exchange and resulted from intervention by foreign central banks in the foreign exchange market to slow down the appreciation of their currencies vis-a-vis the dollar. After the major European countries and Japan decided to allow their currencies to float in relation to the dollar, the further accumulation of foreign exchange was reduced. As can be seen from Table 55, foreign exchange reserves increased by \$22 billion during the first 9 months of 1973. Of this amount \$14 billion occurred in the first quarter, before the major European currencies were floated. The \$22 billion increase in foreign exchange reserves consisted of an \$8 billion increase in U.S. liabilities to foreign central banks. The remainder constituted increases in dollar balances of central banks held in commercial banks outside the United States, and reserves held in currencies other than the dollar. Toward the end of the year a reversal of this trend set in, as an increasing number of foreign central banks sold dollars to slow the decline of their currencies relative to the dollar.

Despite the large increase in foreign exchange holdings in 1973, the composition of reserves did not change significantly during the year. The proportion held in gold fell from 24 to 23 percent, while that held in foreign exchange increased from 65 to 67 percent of total reserves. Most of the increase in primary reserves (gold, SDR's, and reserve positions in the Fund) resulted from the devaluation of the dollar in terms of gold and SDR's, which automatically increased by 11 percent the dollar value of the existing stock of gold, SDR's, and reserve positions in the Fund.

TABLE 55.—Composition of international reserve assets, 1970–73

Type of reserve asset	Value of reserve assets ¹ (millions of U.S. dollars)				Percent of total reserves			
	1970	1971	1972	September 1973	1970	1971	1972	September 1973
Total reserve assets.....	92.6	130.6	158.8	186.9	100	100	100	100
Gold stock.....	37.2	39.1	38.8	43.2	40	30	24	23
SDR.....	3.1	6.4	9.4	10.6	3	5	6	6
Reserve position in IMF.....	7.7	6.9	6.9	7.5	8	5	4	4
Foreign exchange.....	44.6	78.1	103.7	125.6	48	60	65	67
U.S. liabilities.....	23.8	50.7	61.5	69.8	26	39	39	37

¹ End of period.

Note.—Detail may not add to totals because of rounding.

Source: International Monetary Fund (IMF).

The official price of gold was raised from \$35 per ounce to \$38 per ounce by the Smithsonian Agreement in December 1971. It rose from \$38 to \$42.22 an ounce in conjunction with the announcement early in 1973 that the dollar would be devalued in terms of SDR's. The price of gold in the private bullion market in London increased from \$65 at the end of 1972 to \$112 at the end of 1973, having reached a peak of \$127 on June 5 and July 6. Since the market price of gold has been almost three times as high as the price at which governments have fixed the price of gold for official transactions, countries that hold gold have been reluctant to use it in international settlements. As a first step to unfreezing gold, a number of countries which had previously agreed not to buy or sell official gold in the free market decided to end that agreement in November. While IMF rules still prohibit official gold purchases from the private market when the free market price is above the official price, official sales to the private market are permitted when the free market price is above the official price. Since the market price is now nearly three times the official price, central banks would now be in a position to sell gold from the market without violating IMF rules. No country has yet announced, however, whether or when it intends to sell gold to the market.

PLANNING THE FUTURE INTERNATIONAL MONETARY SYSTEM

Discussions begun in 1972 by the Committee of Twenty on reform of the international monetary system continued during 1973. The state of these discussions at the time of the annual meeting of the International Monetary Fund in Nairobi during September was summarized in a document entitled *First Outline of Reform*. It is a report in which the chairman of the committee cites the issues on which some measure of agreement has been reached, points of disagreement, and suggestions by members of the committee about ways of dealing with outstanding issues.

The current international monetary arrangements have been evolving as countries have made pragmatic adjustments to changing realities in the international economy. In making these adjustments, governments have been influenced by the discussions in the Committee of Twenty, just as those discussions have been influenced by the experiences gained with the interim arrangements. In the discussion below, the long-term alternatives are examined within a framework that encompasses both the Bretton Woods system and the current interim arrangements.

The Exchange Rate Regime

The central function of an international monetary system is to facilitate the exchange of one currency for another in such a way that trade and investments can take place across national frontiers almost as easily as within a given country. There are various ways of organizing the exchange of one currency for another. They differ chiefly in their methods of assuring that

over time a country's payments in foreign currencies equals its receipts in foreign currencies.

At one extreme, balance between the demand for and supply of a currency is achieved at all times through a free market in which currencies are traded at whatever exchange rate will clear the market. Many monetary authorities are opposed to this degree of flexibility, however, since they fear that large exchange rate fluctuations would create difficulties for international commerce. In order to overcome some of these difficulties, most governments have made it a practice to enter the market as buyers and sellers whenever changes in the private demand or supply of their currencies would otherwise lead to large fluctuations in exchange rates.

The exchange rate at which one government would like to fix the value of its currency relative to other currencies may not coincide with the exchange rate at which other governments would like to fix *their* currencies. To avoid such potential conflicts, it is desirable to agree on some rules, which may specify when governments may or should intervene in the market, or when governments may or should allow exchange rates to change.

The rules could be very tightly written, allowing little national discretion; or they could be written with considerable room for nations to make their own judgments. The Bretton Woods system imposed a relatively strict discipline by requiring governments to intervene in the foreign exchange market whenever rates deviated by more than $\frac{3}{4}$ percent from internationally agreed rates. Exchange rates could be changed only when it could be demonstrated that the existing rates created a disequilibrium which was regarded as fundamental.

Under the current arrangements agreed to in March, governments have accepted a general obligation to intervene in the foreign exchange market to assure orderly market conditions.* In the future international monetary system, the Committee of Twenty has agreed, that exchange rate rules should be less rigid than they were under the Bretton Woods system, but that they should impose more precise obligations than exist under the present arrangements.

When Should Countries Use Demand Management Policies?

Changing the exchange rates is not the only way of removing an imbalance in international payments flows. In fact, it is theoretically possible to have a system of completely fixed exchange rates in which long-term balance between the demand for and supply of foreign currencies is achieved through changes in the level of domestic demand. Under the classical gold standard

*The communique issued on March 16, 1973, by the Group of Ten meeting in Paris stated that the participating countries "agreed in principle that official intervention in exchange markets may be useful at appropriate times to facilitate the maintenance of orderly conditions, keeping in mind also the desirability of encouraging reflows of speculative movements of funds."

system, these demand changes were assumed to take place automatically. Since exchange rates were established by the fixed price of gold in each country, payments equilibrium was assumed to be preserved by the impact of net transfers of gold on the domestic money supply and hence on the total demand for goods and services. However, since most governments today consider it their responsibility to manage domestic demand in accordance with their goals of employment and price stability, complete reliance on adjustments of domestic demand to keep the balance of payments "balanced" is therefore not considered reasonable. At the same time, any government following a rational policy will manage its domestic demand with regard to the side effects on international currency markets, since exchange rate movements have a feedback on domestic economic variables.

The methods by which a country equalizes its foreign currency payments and its foreign currency receipts affects not only its own economy but foreign economies as well, and hence there needs to be agreement on mutually acceptable conduct. The Bretton Woods Agreement, for instance, established a strong presumption that countries would use domestic demand management policies for balance of payments adjustment whenever that would not be inconsistent with domestic price stabilization and employment objectives.

Under present arrangements countries are free to decide on their own the extent to which demand management policies should contribute to a correction of payments imbalance. Nevertheless, in the course of international discussions related to current balance of payments developments, the impact of alternative adjustment measures on other countries is explored, and where conflicts are identified, mutually satisfactory solutions can usually be worked out.

In the future international monetary system, it is generally assumed, countries will continue to have considerable flexibility in choosing among alternative adjustment measures, and they will also continue to take into account the effect of their policies on other countries. It is expected that the adjustment policies of countries will be reviewed by a new committee that will be established in the International Monetary Fund to be composed of policy-making officials from national capitals.

When Should Countries Use Controls?

It would also be theoretically possible to have a system in which balance of payments equilibrium is maintained by government controls over international transactions. The Communist countries, in fact, have adopted such a system. In most non-Communist countries an adjustment system based exclusively on the use of controls would be unacceptable because it would entail unwarranted government interference with private decisions and because it would lead to inefficient production and consumption patterns. In some circumstances, however, governments have found it desirable to use controls to adjust the balance of payments.

The Bretton Woods Agreement permitted the use of controls to regulate international capital movements, but generally ruled out any restrictions on payments for transactions in the current account. The General Agreement on Tariffs and Trade (GATT), which spells out what restrictions countries may place on trade directly, as distinct from restrictions on payments for trade, provides that governments may temporarily impose quotas but may not impose or increase tariffs, in order to deal with a serious balance of payments deficit. In practice, tariff surcharges have been imposed but have remained in effect only for short periods, because other countries have exerted strong pressures to remove them promptly. Nothing has happened to change these rules during the time the present arrangements have been in effect. The *First Outline of Reform* indicates international agreement on a continued "strong presumption against the use of controls on current account transactions or payments for balance of payments purposes." It also rules out the use of controls over capital transactions "for the purpose of maintaining inappropriate exchange rates or, more generally, of avoiding appropriate adjustment action." There has also been wide agreement that, in choosing among different forms of adjustment actions, countries should take into account repercussions on other countries as well as domestic considerations.

When Should Countries Correct Payments Imbalances?

Another area of international concern is the timing of policy measures by countries to remove payments imbalances. This is of international concern because one country's surplus is another country's deficit, and vice versa. When one country fails to deal with a growing payments imbalance, it becomes more difficult for another country to deal with its payments imbalance. Under the Bretton Woods system the main provisions dealing with the timing of adjustment actions were focused on deficit countries. A country wanting to borrow from the International Monetary Fund had to satisfy the Fund that it was taking appropriate actions to reduce its deficit. The more such a country wanted to borrow, the tighter the discipline that the Fund imposed. The IMF Articles of Agreement also provided for pressures to be exerted on countries with persistently large surpluses, though this provision was never applied in practice. Under the current arrangements these provisions remain in effect, although they have become largely inoperative. According to the Chairman of the Committee of Twenty there is agreement that countries should "take such prompt and adequate adjustment action, domestic or external, as may be needed to avoid protracted payments imbalances." There is also agreement that a judgment of what constitutes "adequate adjustment action" should be based on both objective indicators, such as a country's level of international reserves, and an evaluation by an international body such as the IMF. The manner in which these elements might be best combined remains unsettled.

What Pressures Should Be Exerted on Countries?

Once an obligation is established for countries to act in a timely fashion to remove payments imbalances, the question arises what, if any, pressures ought to be exerted on countries that fail to carry out their obligations. The Bretton Woods Agreement provided mainly for pressures on deficit countries, insofar as the credit facilities of the Fund were made contingent on a finding by the Executive Directors of the IMF that a country was taking adequate steps to remove the deficit in its balance of payments. Under current arrangements the strongest pressures are those exerted by the foreign exchange market. Attempts by a government to prevent an adjustment of the exchange rate in the face of a persistent surplus or deficit tend to trigger large speculative movements, and these in turn exert strong automatic pressure that countries have found difficult to ignore. The Chairman of the Committee of Twenty has indicated that a reformed system will provide for graduated pressures to be applied by the international community on both surplus and deficit countries in cases of large and persistent imbalance. It has not been agreed in the Committee of Twenty, however, what those pressures ought to be and how they ought to be activated.

The Convertibility Issue

Another issue under discussion is the convertibility of national currencies into primary reserve assets such as SDR's and gold. This particular use of the term has to be distinguished from the exchange of one currency into another in the foreign exchange market. The issue of convertibility into primary reserve assets arises primarily in the context of an agreement to limit fluctuations of exchange rates by government intervention in the foreign exchange market. If a surplus country is obligated to buy the currency of a deficit country to forestall a decline of that currency in the foreign exchange market, the question arises to what extent the deficit country ought to buy back its currency with primary reserve assets. One argument in favor of such a requirement is that it limits the extent to which a surplus country is obligated to finance another country's deficit. Another argument is that it puts some pressure on the deficit country to accept "financial discipline" insofar as its deficit is due to excessively loose domestic policies.

Under the Bretton Woods system all countries except the United States intervened in the foreign exchange market to carry out an obligation to keep their exchange rates within internationally agreed margins. Since the currency used for such intervention was generally the U.S. dollar, the dollar itself was kept fixed in foreign exchange markets by the intervention of other central banks. The United States, in turn, accepted an obligation to convert dollars into gold or other reserve assets upon demand. The United States finally suspended this convertibility of the dollar into primary reserves on August 15, 1971, though the dollar remained convertible into other currencies in the foreign exchange market. Inconvertibility came after an extended period during which the American gold stock was very small

in relation to the country's liquid dollar obligations and the major central banks had abstained from converting large amounts of dollars into gold, despite the fact that they were continuing to accumulate a large number of dollars. The Committee of Twenty has agreed that in the context of long-term monetary reform it would be desirable to establish the convertibility of (the dollar as well as other) currencies into primary reserve assets insofar as it is decided to stabilize currencies within agreed margins. But whether such an obligation to convert should be mandatory or at the option of the country acquiring the currency is still at issue.

The Level, Distribution, and Composition of Reserves

To support the value of their currencies in the foreign exchange market, most countries maintain an inventory of foreign currencies. In addition, countries accumulate international assets, such as SDR's or gold, which can be used to buy foreign currencies from the governments issuing them. Finally, countries maintain lines of credit with each other and with the International Monetary Fund so that they can borrow additional amounts of foreign currency when the need arises. Some might argue that the reserves a country keeps are its own affair. It is widely believed, however, that the reserves which countries keep are of interest to the whole world community because they affect the behavior of governments and in doing so also affect everyone else. There are three separate, though interrelated, aspects of the so-called liquidity issue: the level of world reserves; their distribution among countries; and their composition in terms of the types of assets held and the kind of borrowing facilities that are readily available.

The *level* of world reserves is important because if the level is not "right," countries on balance may be induced to adopt policy measures that have a disruptive effect on other countries. For instance, some fear that if reserves are inadequate, countries may not prevent changes in exchange rates considered excessive by the international community; or they may not gear domestic demand management policies to appropriate employment objectives, or they may impose controls on imports or capital outflows. On the other hand, it is feared that if reserves are excessive countries in payments deficit may keep their exchange rates at a fixed level long after an adjustment would have been desirable; or they may escape financial discipline and thus create an inflationary problem for themselves as well as for others; or they may impose controls on exports or capital inflows.

The *distribution* of reserves among countries becomes an issue once the decision is made to manage the global level of reserves. Judgment about the adequacy of world reserves from the point of view of any one country must be based on the relative distribution of those reserves among countries. Thus, while some countries might consider world reserves to be "excessive," they might not be willing to give up any of their own reserves. From the point of view of countries with inadequate reserves, global reserves can be excessive only to the extent that other countries are willing to give up "excess" reserves.

The *composition* of reserves among different assets becomes an issue because each asset (or borrowing facility) has its particular characteristics which determine its desirability and its most appropriate role relative to other types of assets. Moreover, one can affect the total volume of reserves only by affecting the volume of individual components.

The Bretton Woods Agreement sanctioned the use of both gold and foreign currencies as international reserves, but it did not make any provisions for international control of the level of those reserves. In practice the growth of the monetary gold stock was the result of the difference between newly mined gold and the private demand for gold. The growth of currency reserves (mostly dollars) was the result of the difference between the net amount of foreign currency acquired through intervention in the foreign exchange market and the conversion of such currency balances into gold or other assets. The Bretton Woods Agreement did provide one managed source of borrowed reserves in the form of controlled access to a stock of foreign currencies managed by the International Monetary Fund.

In the late 1960's two developments occurred which established some limited international influence over reserve creation. First, as a result of an arrangement made among a number of central banks, it was agreed to stabilize the stock of monetary gold. Second, the member countries of the International Monetary Fund decided to create a new reserve asset, called the SDR, which can be created and distributed on the basis of international consent. At the same time there was an increasing desire to limit the accumulation of currencies, but there was no effective means of doing so. The Committee of Twenty has agreed that in a reformed international monetary system, "countries will cooperate in the management of their currency reserves." No agreement has been reached, however, on how this is to be accomplished.

The Issue of the Numeraire

The numeraire of the international monetary system is the common unit of account in terms of which the relative values of all currencies are measured. While it is of course possible to express the value of a currency in terms of any other currency, it is usually convenient to adopt a single reference point. In addition to being a convenient measuring stick, the numeraire is usually also the unit value in terms of which the obligations of countries to the international monetary system and the claims of countries on the system are expressed.

Under the Bretton Woods system, gold served as the formal numeraire, though the dollar became the *de facto* numeraire. The use of the dollar as the most commonly used unit of account was made legitimate by the official tie to gold. It was convenient because the dollar increasingly became the most important official as well as private international reserve asset.

When the convertibility of the dollar into gold was suspended in August 1971, the tie between the dollar and gold was broken. It was thus no longer possible to assume that international obligations of countries to the

International Monetary Fund, which in legal terms continued to be denominated in gold, would bear a fixed relationship to the dollar. It was also no longer possible to establish a firm relationship between the value of the SDR, the internationally created reserve asset, and individual currencies. It has thus been difficult for countries to discharge their obligations to the International Monetary Fund, and countries have been reluctant to use SDR's in settlement of their obligations to each other.

There is wide agreement that the SDR should become the formal numeraire of the future international monetary system. In order to make the SDR the numeraire not only formally but also in practice, it will be necessary, however, to establish an agreed procedure for calculating the value of the SDR in terms of individual currencies. Since the SDR is not traded in the market against currencies, there is no one relationship which suggests itself more strongly than another. The most widely suggested idea is that the SDR should be valued in terms of an average of the major currencies.

HOW GOVERNMENTS BEHAVED IN THE TRADE ARENA

During the first half of 1973 the economies of most industrialized countries grew rapidly, and prices rose sharply. Real GNP in the United States grew at an annual rate of about 5.5 percent during the first half of the year, an annual rate well above the long-term average; but growth rates in many foreign economies were also high in relation to long-term growth. The worldwide boom was accompanied by inflation rates exceeding 6 percent in Canada, France, Italy, Japan and the United States. This rapid growth of demand, together with poor harvests and cutbacks in world oil production, created particularly strong upward pressures on the prices of food and some key raw materials. A number of national governments attempted to contain inflation by controlling prices, but by doing so they created widespread shortages and other economic distortions.

Shortages and soaring prices induced governments to add a new dimension to their trade policies. In addition to their traditional concerns about access for their products to foreign markets, they showed increasing concern about access to foreign sources of supply for key materials. Similarly, while governments continued across-the-board efforts to promote exports, they also showed an increasing tendency to limit the export of commodities in short supply.

What Countries Did to Encourage Imports

On July 18 the Australian Government announced that it was unilaterally reducing all its tariffs by 25 percent. In an accompanying statement, the Government explained that "this reduction . . . is designed to restrain price increases by increased competition and by stimulating in the short run a sufficiently large inflow of additional imports to help meet pressing demand." It was estimated that "the tariff changes will have a direct impact on import

prices of approximately the same order of magnitude as a revaluation [of the Australian dollar] of slightly less than 6 percent." While this was certainly the most dramatic example of the new economic incentives prevailing in 1973, similar evidence was provided by the actions of many other countries.

In the United States large increases in the prices of foodstuffs became a particularly important public issue, and efforts to contain these prices became a prominent objective of domestic economic policy, as explained elsewhere in this report. This overall policy led to a review of the quotas on imported food products, which have long been part of U.S. agricultural programs designed to protect farm income at home. Since the problem in 1973 was soaring farm prices rather than falling farm income, the Administration decided to enlarge or suspend many of these quotas while supplies remained scarce. Quotas on meat imports were suspended for 1973; quotas on cheese, butter, and nonfat dry milk were all increased temporarily.

Many other countries took similar actions. Japan, for instance, reduced tariffs on about 5 percent of her import categories and expanded or eliminated some of the remaining quotas on imports of manufactured and agricultural products. Canada lowered tariffs on certain consumer goods and agricultural products. The European Community reduced, and in some cases suspended, tariffs on various industrial products, primarily chemicals. In addition, the variable levies which the EC imposes on food imports as part of its Common Agricultural Policy automatically fell to zero, as world prices exceeded the support price level in the Community.

What Countries Did to Reduce Exports

With the booming worldwide demand for foodstuffs and raw materials, prices of such commodities rose to record heights. This increase in domestic prices as a result of foreign demand pressure caused considerable resentment in many producing countries and led to public demands that domestic supplies be protected. The situation was further aggravated when some governments imposed price controls in an effort to contain the inflationary pressures. Since export prices remained uncontrolled, domestic producers had an increased incentive to export their goods, with the result that the domestic shortages created by the initial imposition of the price controls were aggravated by increased exports. To alleviate the domestic shortages, a number of governments imposed controls on exports.

The pressures of foreign demand for agricultural goods in 1973 had a particularly strong impact in the United States. In most of the other major countries exporting agricultural products, the government acts as the middleman between the domestic producer and the foreign buyer, and it can thus regulate the level of sales. In contrast, the United States has traditionally permitted foreign buyers to purchase freely in the U.S. market. Partly for this reason, and partly because the United States had the largest stocks, foreign buyers converged on the U.S. market, increasing U.S. agricultural exports by

88 percent. Since U.S. food prices had been significantly lower in the past than food prices in more protected markets, the resulting rise of food prices in the United States was larger than in most other countries. When ceilings were imposed on the prices of foodstuffs to contain the inflationary pressures, the export pressures increased even more.

The problems created by rapid increases in foreign demand became particularly pronounced with soybeans and related products. When it appeared that export contracts would exceed available supplies until new crops were harvested, temporary controls were imposed on exports of these commodities in early July. The export licensing provisions allowed each exporter to ship a fixed percentage of the exports he had contracted before June 14. Later the controls were extended to cover other high-protein feeds. All these controls were terminated by October 1. Despite the controls, exports of these products were substantially larger in 1973 than in 1972. The soybean crop harvested in late 1972 had been a record crop, and almost the entire increase in production was added to exports in 1973. The United States increased soybean exports by 18 percent and increased exports of soybean meal by 25 percent over the previous harvesting season.

Export pressures combined with controls on domestic prices also led to domestic supply shortages for a number of nonagricultural commodities, including steel scrap and logs. To alleviate shortages, the Government imposed temporary controls on the export of steel scrap in July. These controls were supplemented by a Japanese decision to reduce imports of ferrous scrap by 1 million tons during the remainder of 1973. Japan also agreed voluntarily to cut back her imports of U.S. logs.

A large number of countries besides the United States imposed export controls to protect domestic supplies of food and to ease inflationary pressures. Brazil, the world's other major exporter of soybeans, limited the export of soybeans and soybean products shortly after the United States imposed controls. Canada instituted an export licensing program for protein feed supplements, edible oils, animal fats, and livestock protein feed; export controls were also imposed on live cattle and hogs and on fresh, chilled, and frozen beef and pork. Australia tightened export controls on a similar list of feed products. Both the Canadian and Australian controls were lifted later in the year. The Common Market countries suspended export subsidies for several dairy products in July and in August banned the export of wheat and wheat products. The export bans were later replaced by export levies on wheat, as well as corn and barley.

Export controls of a more serious kind were imposed by some of the oil-producing countries in the Middle East, after renewed fighting broke out between Israel and some Arab states. In order to pressure third countries to support their cause, most Arab states cut back oil production and exports and imposed an embargo on shipments to the United States, the Netherlands, and several other countries. These controls on oil, as discussed earlier, severely threaten the economic prospects of all industrial nations. If sus-

tained, they would probably be felt most intensely in Japan and Western Europe because of their relatively high dependence on imported energy sources.

Lessons for the Future

The world was caught unprepared when the shortages during 1973 caused a shift from a buyer's to a seller's market for certain products. Because a buyer's market had existed in varying degrees for several decades, most international trading rules focused on trade policy devices, such as tariffs and quotas, that protected producers in their domestic markets. The existing patterns of thought as well as existing trade rules were not well geared to dealing with trade policy measures aimed at restricting exports and preserving domestic sources of supply.

As the year wore on, countries began to seek practical accommodations on the new issues that arose; and in the future it will become desirable to focus greater attention on the possibility of new kinds of commitments by exporting countries on foreign access to their supplies when world demand is strong. Such issues will be explored in the forthcoming world conference on food, in the coming meeting of oil-consuming and oil-producing nations, and possibly at similar conferences in the future. At the same time the formulation of a more general code of good conduct for exporting countries, and the adoption of more systematic procedures for the resolution of disputes over the access to supplies, should be addressed in the context of the forthcoming multilateral trade negotiations.

PLANNING THE FUTURE INTERNATIONAL TRADING SYSTEM

The United States reaffirmed its commitment to a continued expansion of world trade by joining 104 other countries in opening a new round of comprehensive trade negotiations in Tokyo during September. In a statement issued at the end of the meeting the participating countries expressed their willingness to pursue negotiations aimed at "the progressive dismantling of obstacles to trade and the improvement of the international framework for the conduct of world trade."

A new initiative in the trade area is timely for a number of reasons. First, the reductions in trade barriers negotiated during the Kennedy Round have been fully implemented, and this makes desirable the negotiation of new commitments. Second, with the lowering of tariffs as a result of past negotiations, nontariff barriers have become relatively more important as a source of distortion in international trade and have taken on greater importance in international economic relations. Third, expansion of the European Community to include the United Kingdom, Denmark, and Ireland, as well as the substantial elimination of trade barriers between the expanded European Community and most of the other European countries have created the possibility of a significant decrease of trade opportunities between Europe and the rest of the world, including the United States.

A reduction of trade barriers on a global basis would reduce the resulting diversion of trade, just as the Kennedy Round cushioned the diversion of trade after the EC was formed. Fourth, the ongoing reform of the international monetary system will require mutually supportive improvements of the monetary and trading systems, in particular to ensure that efforts in one field are not frustrated in the other. Finally, recent years have seen an increase of political friction related to trade issues, both within the United States and between the United States and its major trading partners. While some friction is inevitable, given the large degree of economic interdependence among countries, the heightening of these tensions reflects in part a failure of the international institutions designed to resolve economic disputes before they spill over into the political arena.

An improvement in the functioning of the international trading system may be the most important outcome of the new round of trade negotiations, inasmuch as such improvement may be essential for alleviating the tensions which might otherwise lead to new obstacles to trade. A better international framework for resolving trade problems is required in five areas: nontariff barriers related to domestic economic and social policies; agricultural trade barriers related to domestic agricultural programs; safeguard measures to facilitate an orderly adjustment to new market conditions by producers in *importing* countries; subsidies and other government assistance to industries; and finally new understandings on the access of consuming countries to sources of supply, which might include safeguard arrangements to facilitate orderly adjustments to new market conditions by consumers in *exporting* countries.

Quite appropriately, however, the primary focus of the new round of negotiations will not be on maintenance of the status quo but on a continued dismantling of trade barriers. It should thus be possible to avoid confusing the end—the expansion of profitable trading opportunities—with the means—the negotiation of rules governing trade. Countries have benefited greatly from the rapid expansion of trade in the past quarter century; and should this trend cease or be reversed because of a failure of international cooperation, the economic welfare of all countries, including the United States, would be likely to suffer.

As in the past, a major focus of the negotiations will be on a reduction of tariffs. While past trade negotiations have reduced the relative importance of tariffs, they remain the most visible obstacle to trade.

Approximately 60 percent of all trade in industrial products remains subject to tariffs in the major industrial countries, and the average rate of such tariffs is about 10 percent. Moreover, while in the aggregate, tariffs have been substantially reduced, some very high tariffs remain on a few important consumer goods. Of all trade, 4 percent is still subject to tariffs of 20 percent or more. It is hoped that the negotiations will result in a substantial expansion of the duty-free category as well as a substantial reduction in the average tariff on the remaining dutiable items.

Reducing Nontariff Barriers

In order to make possible the more effective management of the trading system, new understandings need to be negotiated with respect to a wide variety of nontariff barriers (NTB's), such as import quotas, preferential government procurement regulations, discriminatory standards, and unreasonable customs procedures. Some NTB's are imposed for the same reasons that tariffs are imposed, to protect a particular domestic economic activity. In negotiating reductions in NTB's the goal is the same as in negotiating reductions in tariffs: to remove or reduce the obstacles to free exchange of goods. Other NTB's, however, are merely the unintended by-product of programs designed to achieve various domestic social or economic objectives. The negotiating objective in such cases is to bring about modifications in the design or implementation of policies related to such an objective in order to avoid unnecessary distortion of trade. It may also be desirable to subject such policies to periodic review to make sure that the level of protection offered is the minimum necessary to achieve legitimate domestic goals.

There is a natural tension between the free market principle on which the GATT is based and the practical reality of extensive government intervention in the economy in most countries. The challenge for these negotiations is to devise arrangements that will give governments considerable leeway in forming and pursuing their own policies, while encouraging them to adopt policy measures that will minimize the disruption of the economic interests of other nations. Such arrangements in themselves will not eliminate potential policy conflicts among governments, but they can provide some guidelines for resolving such conflicts to everyone's satisfaction. The absence of such arrangements creates the danger that governments will try to protect themselves against the disruptive influence of actions by foreign governments in sensitive sectors by imposing new measures that distort trade.

Reforming Agricultural Trade

Trade barriers and domestic social objectives are perhaps most intertwined in the agricultural sector, where domestic programs to support farm income and to guarantee the availability of food supplies from domestic sources have been sheltered by comprehensive tariff and nontariff barriers. The challenge facing the negotiators is to work out some arrangements that would permit governments to honor their commitments to both farmers and consumers at lower levels of protection. A reduction of the level of protection would not only benefit consumers by reducing real food prices, but encourage producers to use their resources in a manner more consistent with comparative advantage. It is also true, of course, that the necessary shifts in production patterns would be difficult for some producers, and provisions to ease the adjustment costs would be needed in many countries. For some countries this will mean new measures to transfer income to those farmers who suffer income losses in the short run from lower levels of protection.

In working out an approach to the negotiated reduction of agricultural trade barriers, one must distinguish between cyclical and structural reasons for agricultural protection. Cyclical problems arise when market prices rise above accepted norms or farm incomes drop below accepted norms. Structural problems arise if the norms for prices and incomes differ between one country and another.

Cyclical problems. Most farm programs are designed to put a floor under farm incomes when production increases sharply. During periods of peak production, therefore, governments tend to raise farm incomes either directly by making up any shortfalls with direct payments, or indirectly by keeping farm prices above the level that would prevail in a free market. Governments can use either domestic or international trade measures to keep prices high. Farm prices can be raised by reducing supply through cutbacks in the production or restrictions on imports, or by increasing demand through financing the build-up of domestic stocks or subsidizing exports.

Governments may also attempt to restrain price increases when export markets expand or production declines sharply. During such periods, governments try as far as possible to increase domestic supplies and reduce domestic prices of food by drawing down domestic stocks, increasing domestic production, reducing exports, and increasing imports. Of course if all countries simultaneously have a problem of inadequate production, attempts by one country to increase imports or reduce exports, or both, will make the problem worse for other countries. The more a country depends on exports or imports, the greater its exposure.

Some countries, the United States among them, permit agricultural prices to vary over a wider range than is true in other countries, for example, the members of the European Community. This difference has permitted countries with narrower margins for price fluctuation to increase the stability of their own supplies and prices through trade at the expense of countries with wider margins for price fluctuation. The reason is that, long before the country with wider margins takes such action, the country with the narrower margin tends to limit imports and to increase export incentives when prices are falling and to limit exports when prices are rising. As a result, surpluses and shortages are exaggerated for the latter when price pressures develop in either direction.

Two conclusions can be drawn from all this. First, unless governments can develop some understandings on the use of trade measures during a period of excess or inadequate food production throughout the world, tensions will be inevitable. Second, governments will be reluctant to increase their dependence on foreign trade as long as they cannot receive adequate assurances that other governments will not pursue policies which seek to shift the costs of moderating swings in farm incomes and food prices to their neighbors.

Structural problems. Agreements on a set of rules regarding cyclically related trade measures can be separated from negotiations designed to reduce agricultural trade barriers arising from structural differences between the farm sector in one country and another. While most governments are committed to preventing agricultural prices from falling below or rising above accepted levels, these levels differ between one country and another. Under conditions of free trade, however, market prices in different countries will generally not vary by more than the cost of transportation. To the extent therefore that one country wishes to support a market price that is either lower or higher than in other countries, it has to impose some limitation on trade flows. If agricultural trade barriers are to be reduced, countries will need to find some means to reduce the differences in market support prices.

An approach to agricultural negotiations. International negotiations on agricultural trade are timely because many foreign governments are in the process of reassessing their agricultural policies in response to considerable public dissatisfaction with the results of current agricultural programs. During normal times, changes in existing programs would be difficult to negotiate even if no economic interest were seriously affected. At a time when change has become inevitable, it is far easier to work out a greater harmonization of national approaches to agricultural problems.

These negotiations need to be approached in a fairly pragmatic manner. It would be impractical, as some have suggested, to negotiate tight international agreements regulating prices, production, inventories, and trade controls on individual commodities. On the other hand, governments will be reluctant to increase the dependence of their consumers on imports and the dependence of their producers on exports, without some agreement on the availability of such imports when food is in relatively short supply and the accessibility of such exports to foreign markets when food is in relatively excess supply. Undoubtedly some degree of international understanding on the use of trade controls relative to domestic measures will be required. As part of such an international understanding, it may be desirable to achieve a better coordination of those internal policies which are undertaken to moderate extreme fluctuations in food supplies and prices.

Better international understandings on improved access to supplies as well as access to markets should persuade countries on their own to undertake more of the long-term changes in their agricultural programs that would result in more efficient patterns of worldwide production. Important in such long-term reforms would be the adjustment of relative prices among farm products. Another element could be a greater shift toward more direct methods of supporting farm incomes while allowing prices more room to decline during bumper crop years.

Negotiating a New International Safeguard System

New international agreements would also be useful with respect to the rules and procedures adopted by countries to deal with problems of import disruption. Most nations at one time or another find it desirable to limit the growth of imports for a transitional period so that domestic industry can have time to adjust. Since the current international rules and procedures have proved largely unworkable in practice, governments have generally worked out informal arrangements with each other. It would be desirable to bring these arrangements within an accepted international framework in which the interests of third parties could be better protected. The adoption of certain internationally accepted principles could also reduce some of the political friction which has tended to be associated with the negotiation of such arrangements. It would moderate the effects of adjustment, while giving the international community some better assurance that restrictive measures will not be any broader or continue any longer than necessary for domestic adjustment to take place.

Subsidies and Countervailing Duties

Better international understanding is also needed on the use of subsidies and the imposition of countervailing duties designed to offset foreign subsidies. Governments commonly employ subsidies to achieve specific economic and social goals. When such subsidies are used to favor industries competing with export or import industries, they affect not only domestic economic activity but foreign economic activity as well. Foreign governments can try to neutralize the effect of the subsidy on their own trade by imposing an equivalent duty on imports or an equivalent subsidy on exports. Given the widespread use of subsidies by most governments, trade would become increasingly subject to new tariffs if governments actually countervailed against every form of foreign subsidy. Conversely, the competitive position of unsubsidized businesses in some countries could be increasingly affected by subsidized production in other countries. What is needed therefore is international agreement on the types of subsidies that are not internationally acceptable, and consequently subject to countervailing duties, and general agreement on the types of subsidies that are acceptable.

Access to Foreign Supplies

The events of the past year have demonstrated that access to supplies can be as much of a problem as access to markets, and that international guidelines on access to supplies can be as valuable as international agreements about access to markets. The possibility has thus arisen of a new type of reciprocity in international trading relations: commitments by producing countries to consuming countries on access to supplies, and commitments by consuming countries to producing countries on access to markets. Similarly, safeguard arrangements which are designed to protect producers in consuming countries when excessively large increases in imports threaten to disrupt domestic production could be matched by safeguard

arrangements which are designed to protect consumers in producing countries when excessively large exports threaten to disrupt domestic markets in producing countries.

Pending Trade Legislation

In order for the United States Government to be able to make such far-reaching international commitments on trade practices and policies, it is necessary to obtain public backing and the appropriate legislative mandate. Two approaches were considered early last year. One approach would be first to negotiate preliminary agreements with other countries, and then on the basis of such agreements to seek the necessary legislation. The other approach would be first to seek a broad enough legislative mandate to cover negotiating outcomes that could be foreseen and a procedure for congressional participation where negotiating outcomes could not be foreseen, and then to negotiate an agreement within the context of that legislative framework. The second alternative was chosen both because other governments could not be expected to put forward their maximum concessions if U.S. offers did not have the explicit support of the Congress, and because it would make possible more active participation of the Congress in an area where congressional prerogatives have traditionally been strong.

Accordingly, last April the President sent draft legislation to the Congress. After extensive hearings, the House of Representatives approved a bill that would provide the necessary authorities to negotiate both a comprehensive reform of the international trading system and increased access to foreign markets and supplies. It would also significantly improve the management of U.S. trade policy on a day-to-day basis. In the coming months the Senate is scheduled to consider this legislation.

Congressional passage of trade legislation has become more important than ever because of the strains that the massive increase in international oil prices is likely to place on the international trading system in the coming year. All countries will be under pressure to reduce their imports and to expand their exports to pay for the increased cost of oil, even though all *oil-consuming* countries together will not be able to improve their trade balance by more than the *oil-producing* countries are prepared to increase their imports. Given the large increases in oil revenues and the small populations of most oil-producing countries, only a fraction of such revenues is likely to be spent on goods in the short run. At the same time, a number of key products could be in short supply at current price relationships, and this could induce new international competition for such supplies. In order to negotiate effectively with other countries on the resolution of some of these problems and in order to protect U.S. economic interests in the absence of such agreements, a new legislative mandate is urgently needed.

The draft bill before the Congress would improve the President's ability to manage U.S. trade policies in several respects. It would give the President limited authority to impose a temporary import surcharge or other import

limitations, either to deal with a serious balance of payments deficit or to cooperate in correcting a balance of payments disequilibrium. He could also reduce or suspend import restrictions in order to reduce either a persistent balance of payments surplus or excessive inflationary pressures in specific commodity areas. Other permanent authority would permit the President full exercise of U.S. rights and obligations under trade agreements, and still another provision would revise and expand the President's authority to take action against foreign countries which maintain unjustifiable or unreasonable import restrictions or other policies which seriously injure U.S. trade. The legislation would also liberalize the criteria for granting adjustment assistance to firms and workers displaced by import competition and would temporarily limit the growth of imports when such growth might seriously injure a domestic industry.

* * * * *

In the context of the postwar period, developments in the international economy during the past year appear rather turbulent. Massive capital flows led to fluctuations in exchange rates that were far in excess of any that attracted attention in the recent past. Inflation accelerated throughout much of the world, as demand for goods outgrew the productive capacity of the world economy. Shortfalls in farm output and cutbacks in oil production, combined with selective embargoes on oil exports, created intense international competition for food and energy. In all these different ways, the world received an effective demonstration of the extent to which economic interdependence has become a reality.

Despite the economic difficulties, most nations were able to record significant economic gains; and despite some stresses and strains in international economic relations, the postwar framework for economic cooperation among nations remained intact. This ability of the world economy to adjust to the new realities was in large part due to the willingness of most governments to accept greater flexibility in their economic relationships, while continuing to recognize the need for self-discipline in the pursuit of individual national goals. Certainly the introduction of more flexible exchange rate relationships facilitated the adjustment of economic relations among individual national economies experiencing widely different domestic circumstances. Equally important was the willingness of governments to negotiate pragmatic accommodations to politically difficult international monetary and trade issues.

In the coming year, the new arrangements for international cooperation that were evolving in the past year will be put to a strenuous test. The continuing constraints imposed on the production and export of oil by a number of countries in the Middle East will intensify the competition for energy supplies and chemicals. In addition, the recent large increase in world oil prices will require major adjustments in relative incomes both within and among nations, in relative prices of both domestic and internationally traded goods, in world patterns of production and trade, and in the worldwide flow of

capital and the means of putting this capital to its most productive uses. These adjustments are likely to pose severe hardships for some countries, and some domestic economic difficulties for all nations. The pressures to take unilateral measures at the expense of one's neighbors could become quite intense in such an environment. Were just one nation, and then others, to pursue such a course, however, the resulting disruption of international trade would be likely to cause even more serious losses of economic welfare for everyone. International conferences such as the recently concluded meeting of finance ministers in Rome, and the coming conferences on the world oil and the world food situation, will be useful in the search for cooperative solutions. At the same time, the international monetary discussions and the multilateral trade negotiations will be indispensable to a broader effort to strengthen the international framework for managing the increasing number of economic problems that are of global significance.

SUPPLEMENT

Measurement of Effective Changes in Exchange Rates

Exchange rates between the United States and her trading partners have changed frequently over the past 3 years. Since such changes vary from currency to currency, it is useful to combine them into a single index number representing the effective change in the value of the U.S. dollar. Several methods of computing such a number have been developed, but the different methods produce different results. This supplement discusses the rationale behind some of the indexes that have been developed and examines the differences in results.

Each method of computing the effective change in the value of the dollar combines individual changes in exchange rates into a weighted average. The most commonly used weights are based on bilateral trade shares. The appreciation of the German mark, for example, would receive a greater weight than the appreciation of the French franc because Germany accounts for a larger share of overall U.S. trade.

The weights may be computed on the basis of export, import, or total trade shares, depending on the use of the index. The three sets of weights vary because the proportion of U.S. exports that goes to each trading partner will seldom equal the proportion of U.S. imports accounted for by that country. For instance, in 1972 Japan provided 16 percent of U.S. imports but purchased only 10 percent of our exports. The appreciation of the yen would therefore receive a larger weight in an import index than it would in an export index. A composite import-export index of the depreciation of the dollar might use weights equal to the sum of bilateral exports and imports as a fraction of total U.S. foreign trade.

Changes in exchange rates may be expressed in two ways: either as the increase in the value of a foreign currency in terms of dollars or as the decrease in the value of the dollar in relation to a foreign currency. The magnitude of the percentage change in each case differs. If the value of the mark expressed in dollars rises by 33 percent, for example, then the value of the dollar expressed in marks falls by only 25 percent. This is true for the same reason that 100 is 33 percent more than 75, but 75 is 25 percent less than 100. This confusing arithmetic fact has important implications for the calculation of these indexes, because the magnitude of the effective change in the value of the dollar will depend on how the changes in exchange rates are expressed.

An import-weighted index of exchange rate change is normally expressed in terms of the change in the dollar price of foreign currencies. If one assumes that foreign

exporters do not alter their prices, expressed in their own currency, then changes in the dollar value of foreign currencies accurately reflect the changes in dollar prices to American importers. Likewise, an export-weighted index is usually based on changes in the foreign currency prices of dollars, because changes in the value of the dollar reflect changes in prices to foreign purchasers if American exporters hold their dollar prices constant.

Selection of the countries to be included in the computation can markedly affect the value of the index. For completeness one might wish to include as many countries as possible in the sample, but because some countries account for only a small share of overall U.S. trade, limiting the sample to major U.S. trading partners should not significantly affect the value of the index. If a major trading partner were to be eliminated from the sample, however, the resulting index might not accurately reflect the effective depreciation of the dollar.

Bilateral trade shares of the United States have been shifting in the last 3 years in response to changes in exchange rates, further relaxation of trade barriers, and crop failures abroad. An index of the effective depreciation of the dollar could therefore be sensitive to the choice of the year for which bilateral trade shares are computed. In some cases, however, it is difficult to predict how these changes will affect trade shares. For instance, the depreciation of the dollar in relation to the currency of a trading partner should stimulate U.S. exports to that country but reduce U.S. imports from that country. Because these two results tend to offset each other, the net effect on total trade shares is uncertain.

Changes in exchange rates are computed in relation to the exchange rates in effect on some base date. Commonly used base dates include these: May 1970, the last month in which all major U.S. trading partners observed fixed exchange rate policies for their currencies; December 18, 1971, the day of the Smithsonian Agreement; and March 19, 1973, the first day of the float against the dollar for a number of foreign currencies. Because the value of the dollar generally declined from May 1970 to July 1973, indexes of effective depreciation of the dollar using an earlier base date for exchange rates will generally show a greater depreciation of the dollar than those based on a more recent date. Typical spot rates used are the daily noon spot rates quoted in New York or London.

The Change in the Value of the Dollar: A Comparison of Several Indexes

Two widely used indexes are the Morgan Guaranty index of effective exchange rate changes, published by the Morgan Guaranty Trust Company, and the Reuters Currency Index, computed by Reuters, Limited, the London-based international news agency. Both are composite indexes, combining bilateral export and import trade shares in one index, but different techniques are used to compute them.

The Morgan Guaranty index uses a sample of 14 countries other than the United States, which together accounted for about two-thirds of total U.S. trade in 1972.* Using separate export and import trade shares computed from 1972 trade data (before September 1973, trade data for 1971 were used), Morgan Guaranty first computes separate export and import indexes and then averages the two results according to the relative weights of exports to and imports from the other 14 countries in the sample. The export-weighted changes in the values of foreign currencies are expressed in foreign currency units per dollar; the import-weighted changes are expressed in dollars per foreign currency unit. Spot exchange rates are the daily noon dollar bid rates quoted in New York.

The Reuters Currency Index, which is followed closely by foreign central banks and foreign exchange markets, uses a sample comprising nine countries, eliminating

*The countries are: Canada, Japan, the United Kingdom, West Germany, France, Italy, Belgium-Luxembourg, the Netherlands, Switzerland, Austria, Denmark, Norway, Sweden, and Australia.

Canada and four smaller countries used in the Morgan Guaranty sample. Each currency change is weighted by the sum of exports plus imports as a fraction of total U.S. trade. Trade weights are computed on the basis of average trade shares in 1970-71. Reuters uses noon spot rates in London for all currencies except the yen; for this they use the closing rate in Tokyo, because the yen market in London is thin and the quotations are not necessarily representative of world market conditions. All changes in exchange rates are expressed as changes in foreign currencies vis-a-vis the dollar. A comparison of these two indexes, plus three others that will be discussed below, is contained in Table 56.

TABLE 56.—A comparison of several measures of the effective depreciation of the dollar from May 1970, 1971-73

[Percent change]					
Year and month	Morgan Guaranty index	Reuters currency index ¹	Treasury index	Multilateral index	Trade model index
1971:					
June.....	(?)	(?)	-2.3	-1.85	-1.84
July.....	(?)	(?)	-2.5	-2.11	-2.04
Aug.....	(?)	(?)	-4.6	-3.39	-2.72
Sept.....	-6.31	(?)	-5.5	-4.69	-4.01
Oct.....	-6.93	(?)	-6.0	-4.78	-4.31
Nov.....	-7.20	(?)	-6.3	-5.20	-4.57
Dec.....	-9.05	-1.69	-8.2	-6.99	-5.91
1972:					
Jan.....	-9.95	-1.15	-9.0	-7.89	-6.43
Feb.....	-10.73	.95	-9.7	-8.25	-7.08
Mar.....	-10.94	1.15	-10.1	-8.63	-7.24
April.....	-10.98	.92	-10.0	-8.50	-7.26
May.....	-11.54	1.09	-10.6	-8.80	-7.57
June.....	-11.26	.86	-10.4	-8.58	-7.29
July.....	-11.16	.69	-10.4	-8.48	-7.26
Aug.....	-11.10	.51	-10.3	-8.34	-7.19
Sept.....	-10.80	.18	-9.6	-7.97	-6.99
Oct.....	-10.57	-.39	-9.3	-7.70	-6.74
Nov.....	-10.25	-.21	-9.1	-7.76	-6.53
Dec.....	-10.29	-.37	-9.5	-7.76	-6.45
1973:					
Jan.....	-10.64	.49	-9.7	-8.52	-6.73
Feb.....	-17.23	10.37	-16.0	-14.34	-11.51
Mar.....	-16.52	10.22	-15.8	-13.74	-11.21
April.....	-16.34	10.01	-15.5	-13.37	-10.83
May.....	-18.34	13.14	-17.4	-15.76	-12.61
June.....	-20.72	17.45	-19.6	-18.67	-14.95
July.....	-21.18	18.32	-19.9	-19.39	-16.12
Aug.....	-19.25	15.58	-18.3	-17.23	-13.63
Sept.....	-19.88	16.65	-18.9	-17.97	-14.03
Oct.....	-19.90	16.07	-19.0	-17.82	-13.93
Nov.....	-16.34	9.72	-15.6	-15.12	-11.82
Dec.....	-15.49	7.85	-14.7	-13.22	(?)

¹ Measures the appreciation from December 1971 of a group of foreign currencies in relation to the dollar.

² Not available.

Note.—Data are for the last business day of each month. Base rates used are central rates in effect at the end of May 1970.

Sources: Morgan Guaranty Trust Company; Reuters, Limited; Department of the Treasury; Central Intelligence Agency, Office of Economic Research; and Council of Economic Advisers.

On Friday, July 6, 1973, the Morgan Guaranty index registered the largest depreciation of the dollar during 1973: 22.45 percent from the central rates in effect at the end of May 1970. On the same day the Reuters Currency Index indicated that a group of nine foreign currencies had appreciated 20.90 percent against the dollar from the central rates established by the Smithsonian Agreement in December 1971. When the Reuters index is recomputed to show the change in the dollar since May 1970, thus permitting the two indexes to be compared, the Reuters index indicates a

foreign currency appreciation of 36.39 percent. This number must be reconciled with the 22.45 percent depreciation of the dollar shown by the Morgan Guaranty index. The techniques used to compute these two indexes differ widely, and some of these differences in approach affect the computations more than others. By successively modifying the approach used by Reuters until the two procedures are equivalent, one can identify the effect each difference in method has on the calculations.

Morgan Guaranty uses the depreciation of the dollar in relation to foreign currencies when calculating export-weighted changes in the dollar, and it uses the appreciation of foreign currencies vis-a-vis the dollar when calculating import-weighted changes. Reuters uses only the appreciation of foreign currencies vis-a-vis the dollar. Recalculating the Reuters index to conform to the Morgan Guaranty weighting procedure lowers the Reuters index 5.49 percentage points, to 30.90 percent, still a larger measure of the depreciation of the dollar than is yielded by the Morgan Guaranty index.

Noon spot rates in New York on July 6 differed significantly from the noon spot rates in London. Because the dollar generally declined during the day, noon rates in New York, taken 5 hours after the noon rates in London, show a greater depreciation of the dollar than the London rates. Recomputing the modified Reuters index using New York instead of London spot rates increases the measured depreciation of the dollar about half a percentage point, from 30.90 percent to 31.46 percent.

The use of trade weights based on U.S. bilateral trade in 1971, instead of an average of bilateral trade during 1970 and 1971, increases the modified Reuters index from 31.46 to 31.91.

With these adjustments the Reuters index has been modified so that the computation technique is identical to that used by Morgan Guaranty; only the sample of countries differs. Adding Canada to the Reuters sample of nine countries lowers the Reuters measure almost 10 percentage points, from 31.91 percent to 22.26 percent. The relatively small depreciation of the U.S. dollar against the Canadian dollar is given a large weight in the calculation because of the importance of Canadian trade to the United States. Adding the four remaining countries to the Reuters sample plus Canada raises the index of the depreciation of the dollar to 22.45 percent, the number published by Morgan Guaranty on July 6, 1973.

Three observations are suggested by the results. First, the calculation is affected to only a minor degree by some of the differences in approach—for instance, the choice of spot rates, the selection of a year from which to compute trade shares, and the decision to include several countries with relatively small shares of U.S. trade. Second, excluding a major trading partner like Canada can have a great impact on the measure of effective exchange rate change. Third, the choice of whether to express changes in exchange rates in terms of the appreciation of foreign currencies or the depreciation of the dollar is also important, especially if the changes in exchange rates are large for some important trading partners in the sample.

An index used internally by the Treasury Department is computed by a method similar to that used by Morgan Guaranty, except that it covers all OECD countries (22 other than the United States) and the weights used are derived from 1972 bilateral trade data. Changes in the dollar cost of foreign exchange are weighted by bilateral import shares. Changes in the foreign exchange cost of dollars are weighted by bilateral export shares. The resulting import- and export-weighted indexes are then weighted by the relative importance of imports and exports in U.S. total trade with the 22-country group and finally averaged to produce a single index of the effective depreciation of the dollar.

On July 6, 1973, the Treasury Department index showed that the dollar had depreciated 20.8 percent since May 1970 in relation to the currencies of the other OECD countries, 1.65 percentage points less than the Morgan Guaranty figure. Some of the difference derives from the addition to the sample of eight countries whose

currencies have appreciated relatively little in relation to the dollar. Any remaining difference is due to the use of trade shares based on bilateral trade in 1972 rather than 1971.

Other Methods for Computing Weights

One problem associated with the use of these indexes is that the weights take into account only bilateral trade with the United States, when, in fact, changes in any one exchange rate affect trade of other countries as well. When the mark and the yen appreciate, for example, U.S. exports to Japan and Germany increase and imports from those two countries decline. In addition, third countries now find German and Japanese imports relatively more expensive than imports from the United States. For this reason, U.S. exports to third countries should also increase.

One solution is to weight changes in each country's exchange rate by that country's importance in total world trade. The multilateral index presented in Table 56 is one such measure. For each of the countries in the Morgan Guaranty sample, the depreciation of the dollar against each foreign currency is weighted by the sum of each country's exports to and imports from the other 14 countries (including the United States), divided by 1972 total trade among the 15 countries. The spot rates used were daily closing rates in New York.

An additional revision of weights based on past trade shares might incorporate the use of price effects to anticipate the importance of changes in the value of each country's currency to U.S. trade. A country whose trade is more responsive to price changes should receive a greater weight because changes in its exchange rate would have a larger impact on the U.S. trade balance than its relative trade share alone would indicate. A multilateral trade model may be used to compute a set of weights proportional to the effects of bilateral exchange rate changes on the U.S. trade balance.

To construct a trade model index of the depreciation of the dollar, weights were calculated with the use of a preliminary version of a trade flow model developed by the Office of Economic Research of the Central Intelligence Agency. The model assumes that prices have a significant effect on trade among the 17 countries and groups of countries that are included. In the preliminary form of the model, producers of any one good which is traded internationally are assumed to react similarly to a change in the price of their product, no matter which country they live in. The U.S. supply of chemicals on the international market, for example, is no more sensitive to changes in the domestic currency price of chemicals than is the supply from any other country. Similarly, importers of any one good also react to price changes in the same fashion, no matter where they live. As a result of these assumptions, the response of any two countries to a similar change in their exchange rates differs primarily because the product mix of their trade differs.

For July 6, 1973, the multilateral index showed an effective depreciation of the dollar equal to 20.54 percent, about 2 percentage points less than the Morgan Guaranty index. For the same day the trade model index showed that the dollar had depreciated 16.81 percent from May 1970, if the change in each currency is weighted by its relative contribution to the change in the U.S. trade balance. One reason why both these indexes show a smaller change in the value of the dollar than the Morgan Guaranty index is that in both cases changes in exchange rates are expressed in terms of the depreciation of the dollar in relation to each foreign currency. The Morgan Guaranty index, on the other hand, uses the appreciation of foreign currencies in relation to the dollar for part of its calculation, and the magnitude of changes expressed in this manner is greater.

Another reason both these indexes may differ from the Morgan Guaranty index is that the weights are calculated differently. While no simple pattern emerges from a comparison of the trade model weights with the bilateral weights, there is a clear pattern suggested by a comparison of the multilateral weights with the bilateral

TABLE 57.—Changes in exchange rates from May 1970, 1970–73

[Percent change]

Year and month	German mark		Japanese yen		French franc		British pound	
	Dollar rate	Effective rate	Dollar rate	Effective rate	Dollar rate	Effective rate	Dollar rate	Effective rate
1970:								
June.....	0.75	0.51	0.31	-0.12	0.59	0.24	-0.10	-0.64
July.....	.79	.46	.17	-.38	.64	.24	-.39	-1.15
Aug.....	.79	.37	.49	.13	.58	.15	-.51	-1.21
Sept.....	.79	.34	.57	.08	.60	.07	-.61	-1.39
Oct.....	.76	.31	.61	.15	.55	.01	-.52	-1.25
Nov.....	.81	.27	.64	.14	.64	.06	-.40	-1.21
Dec.....	.42	-.06	.65	.14	.57	.14	-.39	-1.17
1971:								
Jan.....	.64	.04	.56	-.15	.64	.03	.24	-.69
Feb.....	.99	.33	.69	-.15	.65	-.12	.74	-.28
Mar.....	.79	.13	.70	-.15	.69	-.01	.78	-.26
Apr.....	.71	.06	.70	-.13	.68	.00	.75	-.27
May.....	3.01	1.81	.72	-.31	.50	-1.22	.78	-.76
June.....	4.21	3.87	.72	-.37	.49	-1.79	.78	-1.04
July.....	5.14	3.73	.73	-.38	.73	-1.60	.77	-1.12
Aug.....	7.15	4.86	1.21	-.34	.70	-2.85	1.44	-1.29
Sept.....	9.05	5.37	6.50	4.26	.60	-4.55	2.89	-1.07
Oct.....	10.04	5.57	8.73	5.99	.38	-5.72	3.77	-.92
Nov.....	9.82	5.07	9.50	6.68	.51	-5.73	3.89	-.98
Dec.....	11.97	5.28	12.50	8.78	3.02	-4.94	5.27	-1.13
1972:								
Jan.....	13.30	4.71	15.12	10.75	7.36	-2.23	7.12	-.63
Feb.....	14.89	5.01	17.97	12.70	9.14	-1.71	8.49	-.25
Mar.....	15.45	5.10	18.99	13.54	10.17	-.99	9.09	-.02
Apr.....	15.17	5.09	18.59	13.26	10.26	-.60	8.76	-.14
May.....	15.12	4.88	18.27	12.93	10.77	-.24	8.85	-.22
June.....	15.51	5.01	19.05	13.40	10.73	-.37	7.05	-2.02
July.....	15.78	5.28	19.59	14.20	11.03	-.04	1.86	-7.54
Aug.....	14.86	4.69	19.53	14.24	11.01	.25	2.09	-7.06
Sept.....	14.62	4.67	19.55	14.35	10.96	.43	1.71	-7.27
Oct.....	14.13	4.57	19.60	14.55	10.56	.51	-.22	-8.81
Nov.....	14.25	4.84	19.61	14.70	10.19	.26	-2.06	-10.97
Dec.....	14.42	5.13	19.51	14.47	9.18	-.82	-2.30	-11.16
1973:								
Jan.....	14.51	5.03	19.29	13.73	9.26	-.79	-1.83	-11.01
Feb.....	21.78	6.77	29.75	21.88	16.57	1.35	1.15	-12.90
Mar.....	30.11	9.29	37.48	25.16	23.25	2.18	3.02	-14.47
Apr.....	29.02	9.93	35.60	23.89	21.96	2.66	3.49	-12.92
May.....	31.18	10.38	36.03	23.75	24.09	3.11	5.44	-12.10
June.....	41.96	15.11	36.11	22.73	30.37	4.11	7.34	-13.78
July.....	56.72	21.36	36.08	21.52	36.94	3.82	5.73	-19.20
Aug.....	50.86	19.98	35.73	22.10	30.67	1.58	3.15	-19.76
Sept.....	50.96	19.63	35.60	21.75	30.33	.90	.76	-22.39
Oct.....	51.63	18.99	35.17	20.80	31.73	1.46	1.22	-22.73
Nov.....	41.88	16.24	29.39	17.35	26.01	1.69	-.54	-20.71
Dec.....	37.72	16.54	28.49	17.52	20.84	.37	-3.44	-21.54

Note.—Monthly figures are averages of daily figures.
Morgan Guaranty Trust Company computes the effective change in the value of foreign currencies by applying the same techniques used to compute the effective depreciation of the dollar.

Sources: Federal Reserve Bank of New York and Morgan Guaranty Trust Company.

weights. First, multilateral trade within the European Economic Community accounts for a large share of total trade among the 15 countries in the multilateral index sample, and hence the relatively large depreciation of the dollar in relation to most European currencies is given a relatively large weight in the multilateral index. Second, because Canada accounts for only 9 percent of total trade among the 15 countries, the small depreciation of the U.S. dollar in relation to the Canadian dollar receives a much smaller weight in the multilateral index than in an index based on bilateral trade shares. These two effects would tend to raise the level of the multilateral index and bring it closer to the Morgan Guaranty figure.

Effective Changes in Other Currencies

Although the discussion in this supplement is directed specifically toward measuring the effective depreciation of the dollar, the same techniques are used to compute the effective change in the value of other currencies as well. An index of the effective changes in a foreign currency is useful because changes in the dollar rate alone can be deceptive. The sharp appreciation of the German mark in terms of dollars, for example, is a misleading indicator of the overall increase in the value of the mark, just as the depreciation of the dollar against any single currency may give a misleading impression of the decline in the value of the dollar. Changes in the dollar exchange rates and effective changes in the exchange rates for several foreign currencies are presented in Table 57 for comparison.