CHAPTER 4

Inflation During The Past Decade

THE PAST 10 YEARS HAVE BEEN CHARACTERIZED by an average growth rate of aggregate expenditures that is very high by historical standards and that has substantially outstripped the sustainable growth of supply of real goods and services. Contributing significantly to the growth in aggregate demand were rapidly increasing Government expenditures along with monetary policies that were appreciably more expansionary than those in earlier post-World War II periods. In addition, a sharp rise has occurred in foreign expenditures on American goods in recent years. Supply reductions also contributed to imbalances between aggregate supply and demand, particularly in the past few years: crop failures and reduced oil supplies are the most notable examples. Without neglecting specific features, the U.S. inflation since the mid-1960's can nevertheless be analyzed in terms of a general conception of the inflationary process that emphasizes the role of monetary and fiscal policies, and the decision-making process that leads to these policies. A brief outline of this conception will be useful.

Governments can achieve certain short-term objectives by following policies that allow the aggregate demand for goods and services to rise faster than the supply can rise in view of the available resources. One such objective is to keep the rate of resource utilization very high and to postpone the temporary underutilization that occurs in some phases of the business cycle. Another objective is to embark on spending programs without making the burden explicit to the public by correspondingly higher taxation, and thus without raising the question of the distribution of this burden. At high rates of resource utilization, however, such policies will provide a stimulus only so long as the public expects less inflation than will actually be developing, and so long as the public therefore acts as if more real income were available than will in fact be earned. Concerning the recent inflationary period, opinion surveys as well as actual trends in real wage rates and real profits suggest a substantial underestimate of the future inflation rate and a corresponding overestimate of prospective real incomes by the public. Since people learn from their experience, efforts to continue providing such stimulus require generating an inflationary process that will show a strong tendency to accelerate. At some stage it becomes imperative to put an end to such a process.

When the inflationary phase has lasted so long that expectations of further inflation are firmly embedded in the cost trend, a shift to policies of restraint

first exerts an adverse influence on output and the desired price deceleration effect materializes only with a lag. Any convincing interpretation of the events during 1970 and 1973–74 must stress this difficulty.

During 1973 and 1974 this difficulty was magnified by a steep increase in raw material prices and by the price effects of specific capacity shortages in a number of industries. Even when major specific cost increases occur, monetary and fiscal restraint can prevent a lasting acceleration of the general price trend; yet such policies will not be able to prevent a temporary steepening of the rate of general price increase, especially in an environment influenced by inflationary expectations. The explanation here also is that the adverse effect of policies of restraint on output will precede their desired effect on prices. Policies of restraint could keep even permanently tighter supplies, resulting from "natural" or from "institutional" factors, from touching off continuing inflation, though when changes of this sort occur no policy may be capable of preventing a lasting adverse effect on output.

Lags of price response behind output response are among the characteristics of adjustment periods which may bring substantial discomfort, even if methods are now available for greatly reducing the hardships suffered in such phases of development. During these phases political pressures become strong to adopt stimulative policies prematurely on a scale that would rule out any appreciable decline of the rate of inflation. Since it is impossible to live indefinitely with an explosive inflationary process, the resumption of expansionary policies is in turn apt to evoke strong pressures to adopt comprehensive wage and price controls. These controls would allegedly enable us to follow the desired expansionary policies under circumstances in which prices and wages are directly regulated according to acceptable norms. However, if after much unsuccessful experimentation that approach were to be followed through with the consistency needed to make it effective, it would lead to an economic and political system the basic characteristics of which are very different from those under which we now live. Rigorously controlled systems cause a loss of basic freedoms, and they have proved seriously deficient on grounds of economic efficiency as it reflects itself in the living standards of the population. Which way history will move in this regard remains an open question, and it is the most dramatic question posed by the present difficulties.

The possibility remains of trying to attain a steadily rising general price trend to which the other economic variables adjust. Not to allow such a trend to steepen would require the same effort—the same resistance to temptation—as would have been required for keeping to the near-zero inflation path of the 1952–65 period. It could be argued that once we are in the two-digit range a greater effort is needed for gradually reducing inflation to negligible size than for achieving a much less ambitious long-run objective, such as that of a significant but nonaccelerating inflation rate. Yet this would be an unconvincing argument because no policy directed at a steady price trend can be successful unless it is credible to the

public, and the more policy makers adjust their initial objectives to the upward deviations that have occurred in the past the less credible they become in their promise not to accommodate accelerating inflation in the future.

PERIODS OF PRICE INSTABILITY

Since 1929 the United States has experienced several periods of substantial price instability as measured by such general price measures as the gross national product (GNP) price deflator or the consumer price index (CPI). During the Great Depression of the early 1930's prices fell sharply, declining by more than 20 percent from 1929 to 1933 (Table 37). Price increases of a similar magnitude occurred following the outbreak of World War II in Europe, before wartime price controls took effect. Prices rose even faster on the average in 1946, 1947, and 1948, after these controls had been lifted. The outbreak of the Korean war in 1950 also brought a brief but significant price spurt. The largest year-to-year price increase since 1947 occurred in 1974, when the GNP deflator rose 10.2 percent over its 1973 level and the CPI rose 11.0 percent. This happened after inflationary antecedents that started developing about 1965.

TABLE 37.—*Changes in the GNP implicit price deflator and the consumer price index, 1930–74*

Year	Percent change from preceding year		Year	Percent change from preceding year	
	GNP implicit price deflator	Consumer price index		GNP implicit price deflator	Consumer price index
1930	−2.7	−2.5	1955	1.4	−.4
1931	−9.1	−8.8	1956	3.4	1.5
1932	−10.1	−10.3	1957	3.7	3.6
1933	−2.4	−5.1	1958	2.5	2.7
1934	7.3	3.4	1959	1.7	.8
1935	1.1	2.5	1960	1.6	1.6
1936	.3	1.0	1961	1.3	1.0
1937	4.1	3.6	1962	1.1	1.1
1938	−1.4	−1.0	1963	1.3	1.2
1939	−1.5	−1.4	1964	1.6	1.3
1940	1.5	1.0	1965	1.8	1.7
1941	7.7	5.0	1966	2.8	2.9
1942	12.3	10.7	1967	3.2	2.9
1943	7.2	6.1	1968	4.0	4.2
1944	2.3	1.7	1969	4.8	5.4
1945	2.6	2.3	1970	5.5	5.9
1946	11.8	8.5	1971	4.5	4.3
1947	11.9	14.4	1972	3.4	3.3
1948	6.6	7.8	1973	5.6	6.2
1949	−.6	−1.0	1974	10.2	11.0
1950	1.3	1.0			
1951	6.8	7.9			
1952	2.1	2.2			
1953	1.0	.8			
1954	1.5	.5			

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

The 1965–74 inflation, taken as a whole, also reflects the consequences of too rapid an expansion of aggregate demand. However, at least two further considerations are relevant to the explanation of why inflation continued in

years like 1970 and 1974 after policy restraint had been applied. One is that such interludes clearly demonstrate the difficulty which policy makers encounter in trying to reduce the rate of inflation after the preceding inflationary trend and its expected continuation have entered into cost trends. But the experience of 1974 also shows something else that had already been observed in 1973. If forces operating from the supply side significantly raise the prices of specific raw materials and of products of industries with capacity shortages, then even if policies of restraint are applied to prevent a permanent steepening of the general price trend, the specific price increases will show nevertheless for a while in the behavior of the general price level.

These difficulties become greater the longer the preceding inflationary development has lasted and the more the public suspects that the same political considerations which induced governments to engage in inflationary practices in the past will lead them in the future to retreat from a policy of restraint prematurely.

EXCESSIVE GROWTH IN AGGREGATE DEMAND, 1965–74

Economic theory suggests that many factors, domestic and foreign, private and governmental, can affect aggregate demand. The two that receive most attention, however, are monetary and fiscal policy actions. Fiscal policy can stimulate consumption and investment demand through tax cuts and by increases in government expenditures. Even if the growth rate of the money supply remained at a level which would be consistent with noninflationary growth at given fiscal receipts and expenditures, an increased fiscal deficit could bring about price inflation. Interest rates would be raised and the cost of holding currency and demand deposits would be increased. For this reason the public would wish to decrease its average money holdings in relation to its expenditures, and total expenditures could increase beyond the noninflationary rate.

Yet price inflation caused by deficits with unchanging money supply would be of limited significance. Rapid and sustained inflation requires a continual inflationary increase of the supply of money. The main reason why expansionary fiscal operations are among the factors generating sustained inflation is that when fiscal deficits are large the monetary authorities, in an attempt to offset the interest rate and credit availability effects of large increases in government debt, tend rapidly to increase their security holdings and hence to inject new money into the economy. Thus expansionary fiscal policies are often accompanied by expansionary monetary policies, with a correspondingly rapid growth of aggregate demand even at high levels of resource utilization.

Of course, rapid increases in aggregate demand are not always inflationary. When aggregate demand increases by the same amount as real aggregate supply, markets can clear at the current price level. Although many individual prices may move up or down, these changes tend to balance out, leaving the general price level unchanged. Sometimes, however, aggregate demand and

supply do not mesh, and if they are not brought into balance at given prices, then the price level will move. The maximum feasible growth of the supply of goods and services over any period is limited by the existing quantity of labor, capital, and natural resources, and by the rate at which new physical and human capital and new knowledge can be acquired. The increase in demand depends on demand management policies and is subject to no such limits. Over the past 10 years the effect of technological progress and the growth in the quality and size of the labor force and of the capital stock have been such as to raise potential output on the average by 4 percent a year in constant dollars. Hence whenever at high levels of resource utilization aggregate demand grows by more than an annual rate of 4 percent, the faster growth of demand must be reconciled with the slower growth of real supply through the process of inflation.

During the period from 1965 to 1973, for example, real output grew by 36 percent, or at a compound annual rate of about 4 percent. Largely as the result of expansionary policies, however, aggregate demand in money terms grew by 89 percent, or at a compound annual rate of 8 percent. Hence prices had to rise by about 4 percent a year on the average to make the 8 percent growth in aggregate expenditures consistent with the 4 percent growth in real output. By 1973 the rate of increase in the price level had become much larger than the average during the 8 years, and in 1974 inflation had moved into the two-digit range, as special factors reinforced a strong underlying trend.

Any explanation of inflation must therefore come to grips with the questions of why, about 1965, aggregate demand started to grow so much faster in nominal terms than real output, and why it has continued to grow at a faster rate subsequently.

The observed steep rise of aggregate expenditures could not have taken place had monetary aggregates not grown very rapidly after 1965. While there are no hard and fast rules to define excessive versus noninflationary growth rates in monetary aggregates, recent experience does provide some guidelines. The periods of rapidly rising prices have been periods in which M_1 (currency plus demand deposits) and M_2 (M_1 plus time deposits except large certificates of deposit) grew at high average yearly rates.

Over a limited period, which until now has lasted about 12 years, aggregate demand as measured by the money GNP has tended to grow in the same proportion as M_2, although short-run deviations from this relationship have occasionally been very large. This suggests that a rate of growth in M_2 of about 5 to 6 percent over the 1965–74 period would have been consistent with a rate of growth in aggregate demand of about the same magnitude. Further, if real supply over the 1965–74 period had grown at its long-run annual average of about 4 percent, then the price level would have risen very little. In fact, from 1965 to 1970, M_2 increased at an average yearly rate of more than 7 percent, and from 1970 to 1974 it increased at a rate of about 10 percent. Given our economy's inability to sustain a real

growth rate of more than about 4 percent, the rapid rates of growth of the money aggregates since 1965 were not consistent with reasonably stable prices.

Other countries have also experienced a recent acceleration in money and in prices, as shown in Table 38. However, the rates of monetary expansion that are consistent with the mild price increases of the 1960's and with the much more rapid inflation of the 1970's will vary from country to country. One reason for this is that the money supply is not defined the same way in the various countries. Another reason is that the countries differ in the types and quantities of other liquid assets which the public holds along with its stock of money. Also, trends in velocity differ across countries. But what probably matters most is that in rapidly growing economies, such as those of Japan or Germany, a relatively large proportion of a given increase in aggregate demand has been satisfied by increases in real goods and services. The same rate of growth in money and expenditures in less rapidly growing countries, such as the United Kingdom or the United States, would lead to higher rates of inflation. Generally the range of money growth rates that is consistent with stable prices will be different in each country. The central conclusion remains, however, that when money growth rates proceed at a rate far exceeding that with which output could keep pace, the price level too will rise sharply.

Considering that our monetary authority, the Federal Reserve System, creates the quantity of reserves which is a basic determinant of how much money can be created in addition to hand-to-hand currency, one is led to ask why the regulation of the money supply has not prevented these undesirable price trends.

We may begin by recognizing that the rate of monetary expansion is influenced by several factors which result in a rather flexible relation

TABLE 38.—*Growth rates of consumer prices and money stock for the United States and five other developed countries, 1965–74*

[Percent change; annual rate]

Country	Consumer prices		Money stock [1]			
	1965 to 1970	1970 to 1974 [2]	1965 to 1970 [3]		1970 to 1974 [3]	
			M_1	M_2	M_1	M_2
United States	4.2	6.0	5.2	7.1	5.9	9.8
Canada	3.8	6.4	8.1	10.6	19.7	16.8
France	4.4	8.0	5.3	10.8	[4] 12.1	[4] 17.1
Germany	2.4	6.2	6.4	12.7	9.2	14.4
Italy	3.0	9.5	15.8	13.7	21.9	21.5
Japan	5.4	11.0	[5] 16.2	[5] 16.5	24.4	22.2

[1] M_1 = "Money" and M_2 = "Money" plus "Quasi-Money" as they appear for each foreign country in International Financial Statistics, International Monetary Fund. These data are roughly equivalent in all countries.

[2] Change from June 1970 to June 1974.

[3] Based on average of end-of-month figures; average of first 6 months for 1974 and 12-month average for other years (except for the United States, which are based on averages of daily figures for December 1965 and 1970 and June 1974).

[4] Change from 1970 to 1973.

[5] Change from 1966 to 1970.

Sources: Department of Labor (Bureau of Labor Statistics), Board of Governors of the Federal Reserve System, and International Monetary Fund (International Financial Statistics).

between the variables under the control of the Federal Reserve and the money aggregates themselves. This is so, quite aside from the fact that approximately 25 percent of total demand and time deposits are held in banks that are not members of the Federal Reserve System. For example, the public may decide to hold less currency relative to total deposits, as has been the case during most of the period with which we are concerned, or it may move in the opposite direction as it has since December 1973. When people exchange currency for deposits at their banks, the banks gain reserves, and the converse is true in the contrary case. Increased reserves can be and usually are used to expand loans and investments and hence deposits, thus generating increases in M_1 and M_2.

Another factor is that banks need to hold reserves also for purposes other than incurring those types of deposit liability which economists have found most useful to include in the concept of money. The public's increasing preference for interest-bearing assets led to a very rapid increase of the volume of large-denomination certificates of deposit which are not defined as "money" but are nevertheless subject to reserve requirements. In addition, the deposits held by the Treasury are also subject to reserve requirements, though they are not "money." Moreover a given quantity of reserves supports more money in the sense of M_2 if that aggregate consists to an increasing extent of time deposits, as has been the case in recent years, because reserve requirements are smaller for time deposits than for demand deposits. Finally, given the legally required minimum reserve ratios, banks find it convenient to hold more reserves per dollar of deposits during some periods than in others. For these and other reasons a given amount of total reserves will correspond to a different amount of total deposits in different periods of time. The money supply corresponding to any particular amount of reserve creation by the Federal Reserve is not precisely predictable.

Nevertheless, the long-run growth in monetary aggregates is determined largely by the rate at which the monetary authority injects "high-powered money," defined as the sum of total reserves and currency, into the system. The Federal Reserve can inject high-powered money into the banking system by acquiring Treasury securities from banks or from other businesses or individuals, or by making advances to banks, or by discounting eligible securities, although other factors too can affect the growth rates in this policy-controlled aggregate.

High-powered money grew at a 3.9 percent annual rate from 1960 to 1965, at 5.0 from 1965 to 1970, and at a 7.7 percent rate from 1970 to 1974. This acceleration reflects itself in those of M_1 and M_2, although M_2 has grown faster than M_1.

The question therefore remains why the Federal Reserve System did not prevent this sustained period of steepening inflation.

A reason mentioned earlier is the relationship between monetary and fiscal policies. Large fiscal deficits express themselves in large fiscal borrowing, and they are apt to squeeze out a good deal of private borrowing

unless the actions of the monetary authority speed the growth of the money supply. Yet if the supply of resources is not sufficiently elastic, such accommodation by the monetary authority will lead subsequently to the inflationary difficulties discussed in this chapter.

In most years since 1965 Federal Government borrowings have been substantial. Government expenditures rose steeply after 1965 as a result of the costs of the Vietnam war and of greatly expanded social welfare programs. In the 4 fiscal years from 1965 to 1969, defense outlays increased by $31.6 billion (64 percent) and nondefense outlays by $34.5 billion (50 percent), while money GNP increased $243.4 billion (37 percent). In the following 5 fiscal years, from 1969 to 1974, money GNP rose by 50 percent and Government outlays by 45 percent, with defense outlays remaining unchanged but nondefense outlays, prominently including transfer payments, rising by about 84 percent. Resources were fully, if not "overfully," used in the 1965–69 period, during which the large increase in Government spending was already associated with a substantial increase in Government debt. The unified budget deficit, which is the deficit concept that comes closest to showing the net financing needs of the Treasury, reached $25 billion in fiscal 1968 and $23 billion in fiscal 1971 and 1972; it was also of appreciable size in other years since 1965. Much of the resulting debt was financed by the Federal Reserve so that monetary policy was expansionary enough not to force a reduction of other money expenditures to offset increased Government spending. The results were overrapid expansion in total expenditures and a significant rise in the general price level.

Deficits, however, represent only part of the total borrowing operations involving the Federal Government. In recent years, the rapid growth in the borrowings of federally sponsored credit agencies greatly added to the Government-induced financing pressures on credit markets, even though a large part of the funds thus raised was lent again to borrowers whose demand for credit would otherwise have been satisfied by private lenders. Outstanding agency borrowing increased by $3.5 billion in calendar 1968, when total funds raised by nonfinancial sectors amounted to $95.9 billion, but this net borrowing jumped to $19.6 billion in 1973 when the budget deficit was $8 billion and total funds raised by nonfinancial sectors amounted to $187.4 billion. Partly to avoid a tightening of the market to other borrowers, the Federal Reserve System bought Government securities and thereby monetized Federal debt in response to Federal financing pressures. Given the inflationary consequences of such a policy, it could bring only temporary relief because the steepening of inflationary expectations tightened the markets again by increasing the demand for credit relative to the supply.

Another important reason for the high average rates of monetary expansion during the past 10 years was the effort of policy makers to play safe against recessions or at least to postpone them and to promote a very rapid rate of cyclical expansion in the advanced stages of the recovery after the

recession of 1970. In an attempt to achieve these objectives, money growth rates were allowed to climb farther and farther above their noninflationary ranges.

These growth rates, however, did not increase steadily. On three occasions policy actions contributed to substantial slowdowns in money expansion. Each such action attempted to deal with the worsening inflation, first and most briefly in 1966–67, then in 1969–70, and most recently in 1973–74. The first two periods of tightening were soon followed, however, by reversals in policy that led to substantially higher rates of money growth than those preceding the slowdowns and hence carried us even further above noninflationary growth rates in money aggregates. The pressures on the monetary authority to return to policies of rapid expansion were strong in 1966 and in the recession of 1970, and they became increasingly strong again recently. These are pressures to "validate" the already observable rate of inflation by a policy that would lead to the expectation that on the next occasion an even higher inflation rate will be validated.

Yet, showing substantially increased resistance against these pressures, Federal Reserve policy has moderated monetary growth in 1974. From December 1973 to December 1974 the increase in the narrowly defined money supply, M_1, was kept to about 4.5 percent, and the increase in the broadly defined money supply, M_2, to about 7.3 percent, that is, to 1.6 percentage points less than the year before for both, and to 4.2 and 3.8 percentage points less than during 1972. Indeed, the steeper price trend of 1974 has turned the 1974 increase in the nominal money supply into a decline in real balances. Even though the prospective money growth rates of the near future are somewhat higher, this policy reflects determination to accommodate growth of output only as the inflation rate declines. As for fiscal policy, even the actual budget deficit remained small for the fiscal year 1974, though it was larger for calendar 1974; in view of the rise of the unemployment rate from about 5 percent to over 7 percent during the calendar year, the same fiscal policy would have produced a large surplus at high levels of employment (see Chapter 2).

THE UNSTABLE TRADEOFF

By the time the inflation problem became acute in most Western countries, the conviction had spread both within and outside the Government that a tradeoff between inflation and unemployment—the so-called Phillips tradeoff—was of considerable importance. A stable downward-sloping "Phillips curve" with rates of price or wage inflation plotted against the unemployment rate was often used to illustrate this thinking. Policy makers were supposed to have a choice as to how much inflation they would accept for achieving low unemployment rates. As discussed in Chapter 3, the shortcomings of such simple presentations were soon recognized. For instance, it was pointed out that, in view of changes in the composition of the labor

force, more refined measures than the official unemployment rate are needed for measuring the tightness of the labor market. It was suggested also that allowances need to be made for the role of further variables and of lags. The analysis would then show that a given increase in appropriately defined labor market tightness, if maintained, will gradually lead to a stable, though higher inflation rate to which the other economic variables could adjust. However, the ideas underlying the work of researchers who have suggested this conclusion are not easily reconciled with each other.

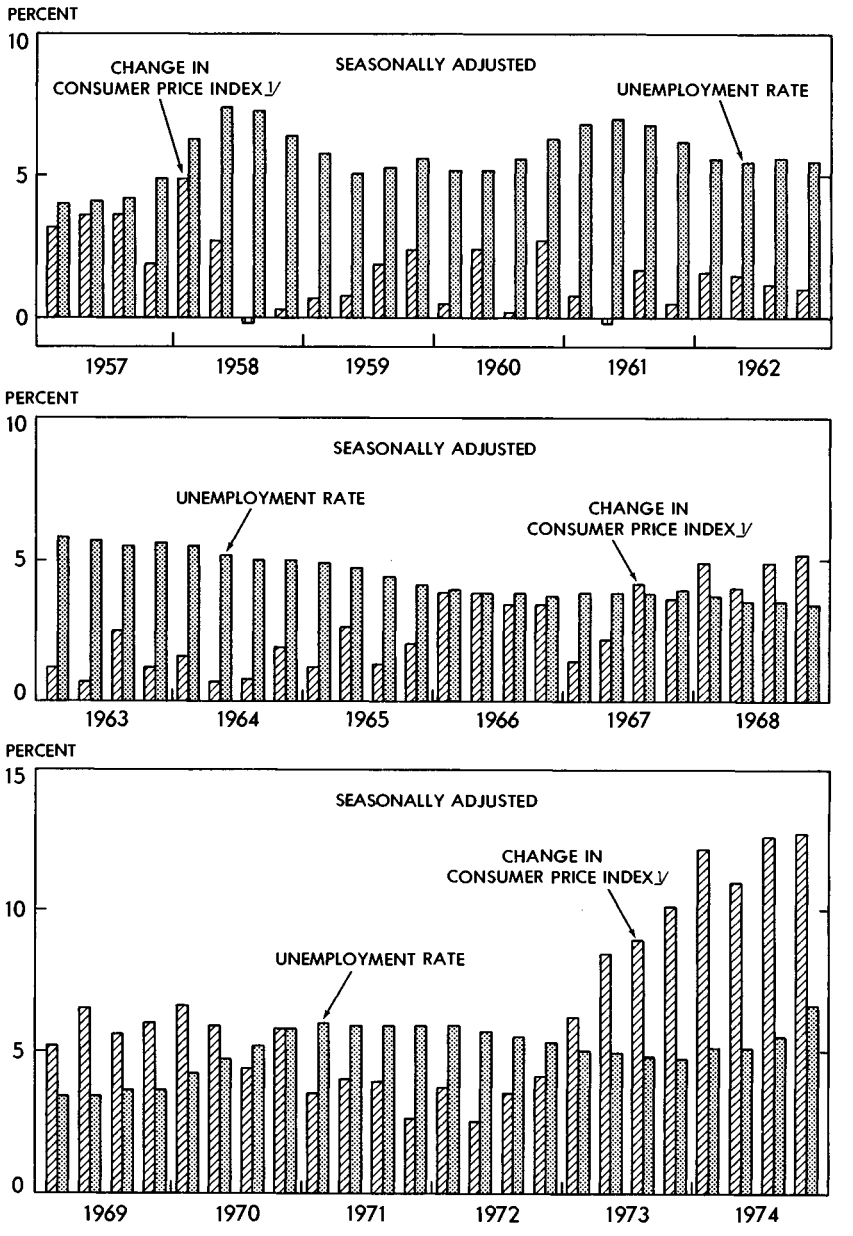
While econometric work on this question has yielded valuable by-products, the results remain far too inconclusive to serve as a basis for policy. There comes a point at which there is reason to return to the direct observation of simple facts, and what these show is that in the period following 1965 the relation between inflation and unemployment has been distinctly unstable. As can be seen from Chart 8, when similar unemployment rates recur, they tend to be accompanied by appreciably higher inflation rates.

When statistical testing of econometric models leads to inconclusive results, there is all the more reason to reexamine the basic logical underpinnings of the hypotheses. No convincing case can be made for the hypothesis that if inflation were fully anticipated, a higher anticipated rate of inflation to which all variables have adjusted would stimulate a higher level of activity and thus more employment than a lower rate. Inflationary policies can drive the actual rate of price increase temporarily above the expected rate so that greater real income gains are anticipated than will in fact be forthcoming. It is this unrealistic expectation of higher real incomes that results in an increased level of activity, thus giving rise to a Phillips tradeoff between inflation and unemployment in the short run. But such a tradeoff will be unstable when the expected rate of inflation is rising, so that a stimulative policy can be maintained only by allowing the actual rate of inflation to increase further. If the process were allowed to proceed far enough, price acceleration might even become associated with rising unemployment. This could happen because by then inflationary expectations would be rising even more rapidly than actual inflation, or because the uncertainties surrounding the decision-making processes in markets would reduce economic activity.

Since the tradeoff between unemployment and inflation lacks stability, trying to base policy on it compels one eventually to face the fact that the true choices or tradeoffs are of a different kind. In the first place, before the resulting process of accelerating inflation approaches its limits in a state of so-called hyperinflation, there is always a choice between accepting the difficulties of adjustments "now" or moving toward even greater future difficulties. Secondly, after an extended inflationary span there is a choice between facing the lag between output and price response or engineering a transition into a "controlled" system, the deficiencies of which are very severe even if the symptoms are different.

Chart 8

Inflation and the Unemployment Rate



1/ CHANGE FROM PRECEDING QUARTER AT AN ANNUAL RATE.

SOURCE: DEPARTMENT OF LABOR.

SPECIAL FACTORS AND THE LAGGED PRICE RESPONSE

There are a number of possible explanations for the unusual degree of the acceleration of price inflation during 1973, when after the first quarter the rate of increase of output was declining significantly, and during 1974 when output itself was declining. The termination of wage and price controls on April 30, 1974, needs to be mentioned even though opinions differ concerning the significance of decontrol for price acceleration. Controls had been imposed on a wide range of wages and prices in August 1971; they gradually came to operate against the increasing pressure of market forces, and they caused an increasing amount of distortion before being phased out. Wages and prices bulged to some extent in the month immediately after controls ended. The controls and their removal had an effect on the timing of price increases.

By the spring of 1973 another type of price fixing—the fixing of exchange rates in the currency markets—had been abandoned as most of the major trading countries had switched from fixed exchange rates to managed floating. This led to the depreciation of the dollar against most major currencies, continuing with some interruptions until July 1973. As American goods and services became more competitive in the world markets, the net exports of the United States increased by almost $10 billion from 1972 to 1973. From the first of these years to the second, net exports turned from significantly negative to significantly positive, and remained very high through the first quarter of 1974, after which the consequences of the oil price increase started to show. While an increase in net exports tends to raise real GNP when resources are underutilized, it lowers the domestic availability of goods when resources are already approximately fully utilized, as they were through much of 1973, or if there exist shortages in specific areas of the economy, as was the case through part of 1974. For this reason, an increase in net exports has contributed to inflation.

Important special factors in the recent inflation were the unanticipated decision of the Arab countries to place an embargo on crude oil exports to the United States and the decision of the Organization of Petroleum Exporting Countries (OPEC) steeply to increase the price of oil. The precipitous increase of foreign crude oil prices during the year, similar price movement of "new," "released," and "stripper" domestic crude oil (which by October 1974 jointly accounted for 34 percent of U.S. domestic production), and the concurrent increase in the prices of other energy materials had a substantial cost-raising impact in 1974. Until the spring, crude material prices other than crude foodstuffs and feeds also continued to rise steeply. Large price increases in a number of important intermediate products continued even longer as capacity shortages persisted until midyear and inventory demand remained strong. Such industries as primary metals, chemicals, stone, clay and glass, and paper provide prominent illustrations of these specific shortages.

After increasing sharply in 1973, farm product prices behaved erratically during 1974. On the whole, however, the price-raising effect of shortages originating in specific sectors played a role in 1974 as well as in the preceding year. This statement must be understood in the context of the lag problem more generally discussed before. Even if a monetary and fiscal policy does not provide for a permanent speeding up of the general price trend, it will not prevent a temporary rise in general price indexes when raw material prices rise sharply.

The problem of lags has become more troublesome than it had been in earlier periods. The available data suggest that, particularly since 1965, prices and wages have responded less quickly to declining demand in the product and labor markets. For instance, Table 39 points in this direction by showing various rates of change, including changes in compensation per man-hour and in the private nonfarm deflator, for 4-quarter periods before and after cyclical peaks. Both compensation and the deflator show more resistance to moderating cyclical forces after the downturn in recent cycles than in earlier ones. Admittedly this statement is based on a rigid definition

TABLE 39.—*Comparisons of behavior of selected variables before and after cyclical peaks, 1947–74*

Period	Cyclical peak [1]	Percent change to or from peak					Civilian unemployment rate [3] (percent)
		Private nonfarm economy [2]		GNP implicit price deflator		Real GNP	
		Output per man-hour	Compensation per man-hour	Private nonfarm	Farm		
Four-quarter change:							
Before peak	1948 IV	2.8	8.0	5.8	−16.8	4.5	3.8
After peak		3.1	.4	−1.2	−13.8	−1.6	7.0
Difference [4]		.3	−7.6	−7.0	3.0	−6.1	3.2
Before peak	1953 II	3.5	6.0	2.3	−14.4	6.9	2.6
After peak		1.5	3.3	1.8	−3.5	−3.4	5.8
Difference		−2.0	−2.7	−.5	10.9	−10.3	3.2
Before peak	1957 III	2.8	5.4	3.5	2.3	2.4	4.2
After peak		3.0	3.8	1.4	6.2	−1.0	7.3
Difference		.2	−1.6	−2.1	3.9	−3.4	3.1
Before peak	1960 II	.7	4.3	1.6	−1.7	2.0	5.2
After peak		2.7	3.0	1.0	−1.3	.6	7.0
Difference		2.0	−1.3	−.6	.4	−1.4	1.8
Before peak	1969 IV	−1.1	6.7	4.8	10.4	1.2	3.6
After peak [5]		2.5	7.4	5.8	−7.8	.4	6.0
Difference		3.6	.7	1.0	−18.2	−.8	2.4
Before peak	1973 IV [6]	.4	8.0	5.9	54.8	3.9	4.7
After peak [7]		−3.6	9.7	13.7	−11.1	−5.0	6.6
Difference [7]		−4.0	1.7	7.8	−65.9	−8.9	1.9

[1] Quarter designated as cyclical peak by National Bureau of Economic Research (NBER), except as noted.
[2] All persons.
[3] Rate for peak quarter and 4 quarters after peak.
[4] All differences in this table are changes 4 quarters after peak minus changes 4 quarters before peak.
[5] Change from 1969 IV to average of 1970 IV and 1971 I to smooth effect of auto strike.
[6] Peak quarter of real GNP used as NBER has not yet designated this quarter as a cyclical peak.
[7] Preliminary.

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

of the time periods used for comparison and is so aggregative as to preclude consideration of special developments in various sectors of the economy. Nor does it take into account economic developments subsequent to the year following a peak or preceding the year leading up to the peak. Still this and other evidence points to less prompt deceleration of prices and wages in recent downturns.

As mentioned before, some of the increasing downward rigidities of the wage and price trends have resulted from the firming up of inflationary expectations. Past developments as well as observable political pressures may have made it more difficult even for the most determined policy makers to establish the credibility of their anti-inflationary policies.

By late 1974 various components of the wholesale price index started to signal impending general price deceleration, and so did some other measures of general price change, such as the fixed-weight GNP deflator. Even the present money wage trend is compatible with a reduction of the current rate of general price increase, though not to a level that could be considered acceptable. On the other hand, in the weakened commodity and labor markets of the near future, with the unemployment rate expected to rise to above 7.5 percent, price deceleration is very likely in time to result in wage deceleration with a feedback on prices. Still, after an unusually protracted period of inflation, the lags between the effect of restrictive policies on output and the desired effect on prices will prove to be long.

INDEXATION AND THE TAX STRUCTURE

The length of these lags has awakened interest in suitable mechanisms that can take into account the inevitable gradualness of the unwinding process, without preventing or even markedly slowing the process of unwinding the inflation. Opinions differ on whether "indexing" the commitments involving future payments of fixed dollar amounts meets these requirements. When such commitments are indexed, they are expressed in constant rather than in current dollars; that is, the amounts paid at a later date are adjusted for changes in a general price index.

Recently the question of formal indexation in this sense has attracted considerable attention. There is wide agreement that truly comprehensive indexing is not feasible immediately. A major obstacle is that many current-dollar payment obligations have been incurred in past periods. Furthermore, individuals can hardly be forced to index their future contracts if, instead of relying on some index number formula, they wish to make other allowances for the price movements they expect. But one has good reason to believe that during the phase of unwinding an inflation the automatic response of indexed wages to price deceleration, and the feedback of that response on prices, would indeed be helpful, since there would be no need to anticipate the future course of inflation to obtain the desired real wage bargain. On the other hand, the view has been expressed that in past phases of accelerating inflation such automatic responses would have further steep-

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ened the inflation rate and that they also might be damaging in future phases of inflationary processes.

The expectation of rising prices can be reflected in allowances made in current-dollar contracts as well as through formal indexation of contracts. At present, however, a spreading of the practice of formal indexation is evident. In spite of the significant shortcomings of all available index numbers that may be selected for indexing payments, many parties to wage and other contracts rely on indexing instead of merely on current-dollar allowances for presumptive price movements. Various payment obligations of the Government, such as social security benefits and food stamps, are also indexed. Furthermore, automatic adjustments over the term of a contract are sometimes tied not to a price index but to some economic variable tending to move in the same direction as price expectations. For loan contracts the Treasury bill rate or the prime rates of banks have been used as such variables. These rates are influenced by inflation not because of indexation but because inflation expectations are among the factors determining their levels.

However, given present regulations, not all interest rates are allowed to move freely, nor can some interest rates be tied to other rates which would reflect market forces. This is illustrated by regulations applying to savings accounts. Thrift institutions characteristically lend long, mainly by acquiring mortgages at fixed interest rates, and they borrow short, mainly from small savers. The average mortgage in the portfolio of these institutions is several years old and was originated at a time when the rate of inflation, and hence money rates of interest, were lower. As interest rates rose in the free market, interest rate ceilings were maintained on the deposits of the thrift institutions, and also on the conventional time deposits of commercial banks, in an attempt to prevent a sharp squeeze on the thrift institutions, resulting from higher borrowing than lending rates.

One of the highly undesirable consequences of these regulations is that the small saver, to whom other outlets are rarely available, earns interest at an artificially reduced rate that is far below the current rate of inflation, and is grossly unrealistic by the standards of the markets for short-term instruments in general. When securities are issued in the money market on conditions attractive to small savers and at interest that would adjust to future rates of inflation, the thrift institutions and homebuilders feel threatened. Policy makers are strongly influenced by this resistance. The Administration's proposals for financial reform would gradually change (essentially diversify) the type of operations in which the thrift institutions are engaged and would gradually eliminate the interest rate ceilings on deposits. Until interest rate ceilings are removed, the present regulations remain disadvantageous to small savers.

Not even those savers and managers of funds who are able to make use of the facilities of major financial markets have been receiving interest at a rate which compensates for inflation and yields the kind of real rate of interest

that obtained in the past. However, for short rates this reflects either an underestimate of inflation or the low and uncertain real return on investment corresponding to the present business outlook, or some combination of these. For long rates it may also reflect the expectation that inflation will decrease in the future. The rates at which business borrows from banks are now often made to vary with the prime rate over the term of the loan. While, as was noted, this does not change the loan into one made in "constant dollars"—it is not indexation in the proper sense—the objectives which such arrangements attempt to achieve are similar to those of indexation.

Tax payments to the Government do not adjust for inflation under current tax laws. If during an inflationary period the definition of taxable income is unchanged in nominal terms, individuals move from tax exempt into taxable brackets, and from lower into higher tax brackets, merely because their money incomes are rising, though their real incomes are rising much less or may even be declining. In addition, capital gains computed in terms of money enter into the tax base, even though such nominal gains can represent very much smaller real gains, or possibly real losses. Such distortions call for adjustments, only a few of which have so far been undertaken, and even these are likely to become inadequate before inflation can be reduced to a negligible size.

The effect of inflation on the real Federal tax and nontax receipts from persons, predominantly Federal income taxes, can be shown as follows. From 1973 to 1974 personal income minus transfer payments rose by 8 percent, 3 percent less than the rise in the personal consumption expenditures deflator. Total real adjusted gross income reported on tax returns probably declined as well. Nevertheless Federal personal tax and nontax receipts rose by 15 percent, suggesting that the elasticity of Federal receipts from persons with respect to inflation is at least 1.6 in the aggregate. For individual returns it may in fact be even larger, considering that as more returns are filed, income reported per return rises less than total adjusted gross income. In any event, inflation raises personal taxes by a much larger percentage than nominal incomes, causing the average tax rate to rise and tax payments to increase in real terms.

While itemized deductions claimed on tax returns reflect price increases, individual exemptions and the low-income allowance and standard deduction limits have not been raised in nominal terms since 1972. Thus the tax-raising effect is strongest for low- and moderate-income taxpayers not itemizing deductions, as shown by the following example. Assume that consumer prices and a family's adjusted gross income both rise by 30 percent from 1972 to 1975, leaving their real income unchanged, and further assume that this is a family of four filing a joint return for an income that in 1972 was $10,000. In 1972 this family would have paid Federal income taxes of $905, while at current tax rates it would pay $1,391 on $13,000 of income in 1975. Its average tax rate would rise from 9.1 to 10.7 percent of adjusted

gross income because 30 percent inflation would cause tax liabilities to jump by 54 percent in this illustration. Stated differently, while the real before-tax income of this hypothetical family remains unchanged, its real after-tax income declines by almost 2 percent in 3 years. Thus, the effect of inflation on individual income taxes under existing tax schedules is to increase average tax rates or to increase the Government's share of personal income.

Similar problems have developed in the corporate sector. Here two types of inflationary tax-raising effects had reached considerable magnitudes by 1973. Both arise from standard accounting methods for computing business costs and profits. These accounting procedures understate costs, and hence overstate profits, except if we include in the concept of profits an inflationary period's capital gains, computed in terms of money, which are locked in for going enterprises as these need to replace their inventories and fixed capital at higher prices. Such capital revaluations *are* included in the concept of taxable profits, unless they are reflected in higher taxable interest payments to creditors.

Consider first the method of accounting for the value of inventories in the cost of goods sold. As was explained in Chapter 2, FIFO, the first in, first out method, includes in the tax base the kind of locked-in capital gain which was described in the preceding paragraph and is reflected in the rising valuation of the inventories held by the enterprise. Another accounting procedure, LIFO, or last in, first out, values an item taken from inventory at the price of the last unit added to the inventory, thus more accurately reflecting the prices at which replacement takes place.

While firms have a choice between using FIFO and LIFO and many are switching to LIFO, they are required to value their plant and equipment for tax purposes on the basis of the historical cost of acquisition rather than at replacement cost. In inflationary periods this has consequences of the same kind as the FIFO method of valuing inventories, assuming the service-life guidelines and depreciation rules currently used are correct. If straight-line depreciation is arbitrarily taken to reflect the actual depreciation processes, then accelerated depreciation gives firms tax advantages. However, Table 40

TABLE 40.—*Profits of nonfinancial corporations,*[1] *selected periods, 1965–73*

[Billions of dollars]

Item	1965	1965–69 average	1973
After reported depreciation charges based on historical costs:			
1. Profits before taxes, before inventory valuation adjustment (IVA)	65.3	68.1	95.1
2. Profits before taxes and after IVA	63.6	65.5	77.5
After straight line replacement-cost depreciation involving 85 percent of Bulletin F service lives and "current price (2)" valuation:[2]			
3. Profits before taxes and after IVA	65.8	66.8	73.4
4. Profits after taxes[3]	38.4	36.3	32.9

[1] Excludes profits originating in rest of world and profits on residential properties owned by nonfinancial corporations
[2] Eliminates the difference between "current price (2)" replacement-cost and historical-cost depreciation.
[3] Profits before taxes and after IVA minus tax liabilities.

Source: Department of Commerce, Bureau of Economic Analysis.

suggests that this advantage has by now been significantly outweighed by the disadvantages of having to compute depreciation allowances on the basis of historical costs, and thus of prices at which plant and equipment cannot be replaced.

Aggregate taxable book profits as well as aggregate profits adjusted for the two inflationary effects mentioned above are presented in Table 40. After eliminating the understatements of replacement costs that result from inflation, the before-tax profit trend (row 3) is, of course, very different from the unadjusted book-profit trend (row 1), and this for a capital stock that rose substantially from 1965 to 1973. This contributes a good deal to the understanding of the rising indebtedness of the corporate sector, the accounts of which include in net corporate savings large amounts that are unavailable for investment in any sense other than that of replacing inventories and fixed capital at inflated prices. The point to be mainly stressed in the present context is, however, that once the adjustments are made for inflated replacement prices (as they are both in row 3 and row 4) a comparison of the trend in before-tax profits (row 3) with the trend in after-tax profits (row 4) shows the consequences of allowing the difference between past prices and the prices at which replacement takes place to boost taxable profits. Taxes are levied on the unadjusted book profits, and these have risen much faster than the adjusted profits. As we move forward in time, the figures in row 4 are becoming considerably smaller in relation to the figures in row 3. Preliminary data for 1974 suggest that this trend has continued to the present.

Thus, individuals and corporations alike are now exposed to substantial and haphazard tax-raising effects produced by inflation, even during a period of falling real incomes. One manifestation of this is that while in earlier recessions the temporary reduction of tax revenues in relation to Government expenditures provided a cyclical cushioning effect even without changes in tax schedules, this effect now is forcefully counteracted by the disproportionate tax-raising effect of inflation. In this regard and in others, adjustments in tax laws will be called for during the gradual process of price deceleration toward which we are heading.

Along these lines a strong case can be made for adopting statutory tax reductions during the present recession. Yet in view of the recently increased dependence of business and also of households on borrowed funds, the financing of large recession deficits might after a while create more tension in the credit markets than it had created in the past. Given the size of the output stimulus provided by some combination of expansionary monetary and fiscal policies, interest rates decline less to private borrowers during a recession if more of the stimulus results from fiscal policies involving a large increase in the quantity of government securities. This implies greater tightness of the credit markets in the subsequent recovery. Pressures may then be exerted on the monetary authority to try to reduce this tightness and to promote rapid expansion without sufficient regard to price-trend objectives.

The success of our anti-inflationary efforts would in this event depend essentially on the determination to resist these pressures, even if the recovery should proceed less rapidly than would otherwise be desirable.