

## *The 1990–91 Recession in Historical Perspective*

**T**he recession that began in mid 1990 has become perhaps the most noteworthy macroeconomic event of recent years. It coincided with, and was influenced by, several unusual events—the Persian Gulf War, the “credit crunch,” and the “restructuring” phenomenon. Many contemporary observers regard the 1990–91 recession as wholly unique, suggesting “We are sailing in uncharted waters.”

History never repeats itself exactly, so every recession is, of course, unique. But for the term “unique” to take on meaning, one needs to have some conception of what “normal times” are and what a “normal recession” might be. Nearly a decade has passed since the last U.S. recession ended, and memories of prior recessionary experiences may now have grown dim. The objective of this article is twofold: to provide a concise review of post-World War II recessions, with an eye to identifying their most distinctive features as well as their common elements; and to investigate the extent to which knowledge of a recessionary period provides insight into the subsequent expansion.

The article’s conclusions are necessarily tentative as the date the recession ended was not officially designated at the time of its writing. Even though the 1990–91 recession was characterized by several distinctive and still puzzling features, this is not uncommon for recessions. Virtually all recessions have occurred around the time of some highly distinctive, not purely economic event such as a war, a massive change in the price of imported oil, a major strike, or wage, price, and credit controls. Recessions almost always come as a surprise even though they seem easy to “explain” after the fact. This article finds that, contrary to common assertion, the severity of a recession provides little guidance to the course of the subsequent expansion.

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Table 1  
*A Brief History of Post-World War II Recessions*

Recession	Duration	Diffusion	Depth	
	(Months) (1)	Industries with Declining Employment (Maximum %) (2)	Real GNP (% Change) (1982\$) (3)	Real GNP (% Change) (Current Weights <sup>a</sup> ) (4)
Nov. 1948–Oct. 1949	11	90	-2.0	-1.6
July 1953–May 1954	10	87	-3.0	-3.4
Aug. 1957–Apr. 1958	8	88	-3.5	-3.9
Apr. 1960–Feb. 1961	10	80	-1.0	-1.6
Dec. 1969–Nov. 1970	11	80	-1.1	-1.0
Nov. 1973–Mar. 1975	16	88	-4.3	-4.9
Jan. 1980–July 1980	6	63	-2.4	-2.4
July 1981–Nov. 1982	16	72	-3.4	-3.4
Average of Eight Prior Recessions	11	81	-2.6	-2.8
Standard Deviation	3.5	9	1.2	1.3
Current Recession (July 1990–April 1991(?))	9	73	-1.2	-1.3

<sup>a</sup>The 1948, 1953, 1957 and 1960 recession declines are in 1958 dollars; the 1969 and 1973 recessions are in 1972 dollars; the 1980 and 1981 recessions are in 1982 dollars; the 1990 recession is in 1987 dollars.

### *I. A Brief Overview of Post-World War II Recessions*

Table 1 presents some of the salient features of the recessions since World War II. (Data for earlier recessions are sparse and less reliable.) The information is grouped according to what Geoffrey Moore has called the three Ds, the three major criteria used to define a recession: duration, diffusion, and depth. Column (1) shows that postwar recessions have lasted as little as six months and as long as 16 months and have had an average duration of 11 months. Column (2) shows that the percent of industries experiencing employment declines has ranged from 90 in the 1948–49 recession to a low of 63 in the brief 1980 recession. Columns (3) through (9) illustrate two aspects of the depth of a recession: columns (3) through (7) show the maximum declines in several measures of economic activity, whereas columns (8) and (9) provide proxies for the maximum difference or gap between the actual and the “potential” or “normal” level of economic activity.

The distinction between these two aspects can be illustrated by considering which was the most severe recession in the postwar period. Based on the maximum decline in real GNP, final sales, or the index of coincident indicators, or on the increase in

the unemployment rate, the answer is clearly the 1973–75 recession. However, because the major 1981–82 recession came only a year after the 1980 recession, the capacity utilization rate in manufacturing fell to a postwar low (70 percent) and the unemployment rate rose to a postwar high (10.8 percent), well above its 1975 peak. Thus, even though economic activity clearly declined more in 1973–75, one could easily argue that a maximum proportion of productive resources was idled in 1982, because the 1981–82 recession started from a much lower level of utilization.

Consider next the question of choosing the mildest recession in the postwar period. The 1980 recession is probably the most logical choice. It was the shortest since the records start in 1854, was the mildest in terms of duration, the decline in coincident indicators, and the diffusion and magnitude of employment declines. One could also make a case for either the 1953–54 or the 1969–70 recession. The 1953–54 recession was the mildest by the gap measures—the rates of manufacturing capacity utilization and unemployment—because it started from abnormally high rates of resource utilization during the Korean War. The declines in real GNP, employment, and coincident indicators in 1969–70 were among the smallest despite their reflecting a major strike.<sup>1</sup>

Table 1 *continued*  
*A Brief History of Post-World War II Recessions*

Depth (continued)				
Coincident Indicators (% Change)	Payroll Employment (% Change)	Unemployment Rate (Maximum Change)	Unemployment Rate (Maximum)	Capacity Utilization Rate, Manufacturing (Minimum)
(5)	(6)	(7)	(8)	(9)
-11.9	-5.2	4.4	7.9	71.7
-9.5	-3.5	3.6	6.1	78.8
-12.7	-4.3	3.8	7.5	71.3
-7.1	-2.2	2.3	7.1	73.5
-6.7	-1.5	2.7	6.1	75.8
-14.1	-2.9	4.4	9.0	70.8
-6.6	-1.4	2.2	7.8	76.9
-10.6	-3.1	3.6	10.8	70.0
-9.9	-3.0	3.4	7.8	73.6
2.9	1.3	.9	1.5	3.2
-6.9	-1.5	1.9	7.1	77.2

Source: Board of Governors of the Federal Reserve System; Moore (1983); National Bureau of Economic Research; U.S. Bureau of Economic Analysis; U.S. Bureau of Labor Statistics.

Assuming that the 1990 recession ended in the second quarter of 1991 (alternative assumptions are discussed in section V below), it was clearly milder than the postwar average. The declines in real GNP and employment were about half as large as the average declines in prior postwar recessions. The rise in the unemployment rate was smaller than in any of the eight prior recessions, although it reached a higher maximum level than in the 1953 and 1969–70 recessions.

<sup>1</sup> It is a mistake to attribute much significance to small differences in economic series drawn from very different time periods, as the data are not strictly comparable. For example, to combine all goods and services to arrive at an aggregate measure of GNP, one must adopt a set of fixed weights, typically the composition of output in a given base year. But the economic relevance of real GNP in 1953 measured with weights based on the composition of output in 1987 is far from clear. Many 1987 products did not even exist in 1953. To minimize this problem, this article uses weights from the base year closest to each recession (Table 1, column 4), even though this makes strict statistical comparisons impossible. Similarly, one cannot measure the gap between actual and potential resource utilization by the level of the unemployment rate or the capacity utilization rate, if their "full utilization" rates vary significantly over time. For example, a 6.1 percent unemployment rate in 1970, when the labor force had grown rapidly with an influx of young and inexperienced workers, probably represents less slack than the same rate in 1954, when the labor force was more experienced and had grown more slowly.

## II. A Thumbnail Chronology of Postwar Recessions

This section attempts to place each recession in its broader historical context by providing more information on the composition of real GNP, inflation and interest rates, and macroeconomic policy.

### *The 1948–49 Recession: Postwar Investment Adjustment*

The 1948–49 recession was entirely an inventory recession—final sales increased 1.7 percent despite a sharp decline in business fixed investment. Personal consumption expenditures, consumer durable goods, residential investment, and state and local government purchases all rose more strongly than in any subsequent recession (Table 2).

Following the removal of wartime wage (in 1945) and price (in 1946) controls, the rate of inflation rose sharply, peaking at 20 percent in the year ending in March 1947 (Figure 1). After decelerating steadily over the next year and a half, the level of the CPI peaked near the peak of the business cycle and declined more than 4 percent thereafter.

Since the war, monetary policy had been devoted primarily to supporting the price of govern-

Table 2

*Components of Real GNP during Recessions: Percentage Changes from Reference Peak to Trough*

Component	49:4 48:4 (58\$)	54:2 53:2 (58\$)	58:2 57:3 (58\$)	61:1 60:2 (58\$)	70:4 69:4 (72\$)	75:1 73:4 (72\$)	80:3 80:1 (82\$)	82:4 81:3 (82\$)	Average of Eight Prior Recessions	91:2 90:3 (87\$)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
GNP	-1.6	-3.4	-3.4	-1.4	-.1	-4.9	-2.3	-3.2	-2.6	-1.3
Change in Business Inventories	-3.3	-1.7	-1.7	-1.4	-.5	-3.0	-1.0	-2.9	-2.0	-1.0
Final Sales	1.7	-1.7	-1.7	0	.4	-1.9	-1.3	-.3	-.6	-.3
Personal Consumption Expenditures	3.2	.7	-.6	-.5	1.5	-.4	-1.0	2.3	.7	-.9
Durable Goods	16.4	-1.1	-9.8	-8.6	-7.1	-9.1	-6.9	2.5	-3.0	-7.1
Nondurable Goods	1.5	-.7	-.9	.1	2.9	-1.0	-1.0	1.8	.3	-.7
Services	1.3	3.3	3.2	1.9	2.9	3.1	.7	2.6	2.4	.6
Residential Fixed Investment	17.9	6.0	-1.0	-5.0	9.9	-31.4	-18.1	-5.3	-3.4	-9.9
Business Fixed Investment	-15.1	-2.2	-14.0	-5.7	-6.0	-14.2	-6.9	-12.5	-9.6	-7.3
Equipment	-17.1	-4.7	-17.4	-10.5	-6.9	-11.5	-8.0	-14.3	-11.3	-5.2
Structures	-11.7	2.0	-8.2	2.3	-4.6	-19.4	-4.8	-9.6	-6.8	-11.7
Total Government Purchases	6.1	-11.1	5.1	3.1	-1.6	2.6	.5	4.7	1.2	1.8
Federal Government	-.7	-19.2	4.1	2.4	-9.7	.5	2.0	10.2	-1.3	3.8
State and Local Government	14.6	8.6	6.1	3.9	5.5	3.8	-.4	.8	5.4	.5
Net Exports	-.5	.5	-.7	.5	.2	1.0	1.0	-.9	.1	1.1
Exports	-9.8	8.4	-10.8	2.9	3.1	1.6	-3.8	-14.1	-2.8	3.0
Imports	-.8	-4.1	3.0	-7.2	.5	-11.5	-12.9	-7.1	-5.0	-5.2
Auto Production	13.7	-6.4	-35.0	-32.4	-42.7	-32.1	-12.1	-14.5	-20.2	-23.1

Note: The change in business inventories is the difference between the change in real GNP and the change in final sales.

Source: U.S. Bureau of Economic Analysis: 1966, *The National Income and Product Accounts of the United States, 1929-1965: Statistical Tables*, Tables 1.2, 1.5, and 1.16; 1981, *The National Income and Product Accounts of the United States, 1929-76: Statistical Tables*, Tables 1.2, 1.4, and 1.15; 1986, *The National Income and Product Accounts of the United States, 1929-82: Statistical Tables*, Tables 1.2, 1.4, and 1.18; 1991, *Survey of Current Business*, December 1991; and author's calculations.

ment securities. Nevertheless, in 1948 reserve requirements were increased three times and the discount rate raised from 1 percent to 1.5 percent. These policy actions were greatly magnified by the sharp reversal from inflation to deflation. Real rates of interest swung quickly from large negative to large positive values.

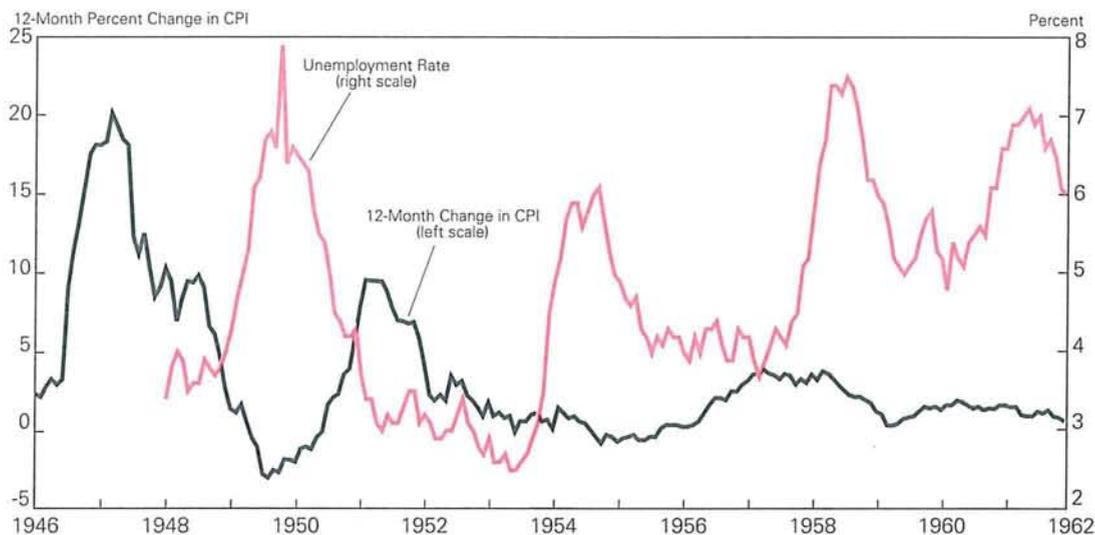
Romer and Romer (1989) have identified October 1947 as one of six times that monetary policy sought to reduce economic activity to curb inflation. Monetary restraint undoubtedly contributed to an inevitable winding down of pent-up demand from World War II. The fact that the declines were confined solely to business fixed and inventory investment suggests the slowdown in sales was propagated by a multiplier-accelerator interaction of the type that had already been described (Samuelson 1939; Metzler 1941; Hicks 1937).

### *The 1953-54 Recession: The End of the Korean War*

The 1953-54 recession was characterized by a sharp cutback in government spending, associated primarily with the end of the Korean War. Federal government purchases had nearly tripled between the outbreak of the war in June 1950 and the signing of an armistice in July 1953. Government spending had slowed and defense orders had slowed even earlier, as the prospect of an end to the war became clearer. The drop of nearly 20 percent in federal purchases, along with the decline in inventory investment, exceeded the decline in real GNP during the recession. State and local government purchases and exports rose briskly during the recession, and both residential investment and personal consumption expenditures increased. If any postwar recession can be attributed to reduced government spending, it would be this post-Korean War experience.

Figure 1

### *Inflation and Unemployment Rates, 1946 to 1961*



Source: U.S. Bureau of Labor Statistics.

It is of some current interest to note that the early recovery from the 1953–54 recession is the slowest on record. Ordinarily, at a cyclical trough, economic activity not only stops declining but immediately starts to rise faster than its trend. This normal sequence was delayed in 1954 when, for example, payroll employment declined for three months after the May trough and did not exceed the May level until November. This is the only precedent for the extremely weak early recovery, or “L-shaped” recession, in 1991.

#### *The 1957–58 Recession: Accelerating Inflation and Policy Restraint*

The 1957–58 recession was preceded by an acceleration of the inflation rate from 0 in early 1956 to nearly 4 percent in early 1957 (Figure 1). The unemployment rate had been below 4 1/2 percent since mid 1955 and below 4 percent in early 1957, just prior to the peak. Over the course of the expansion, short-term interest rates rose slowly but steadily from less than 1 percent to 3 1/2 percent at the peak, while M1 growth steadily decelerated from a peak of 4 1/2 percent to about 0 (Figure 2).

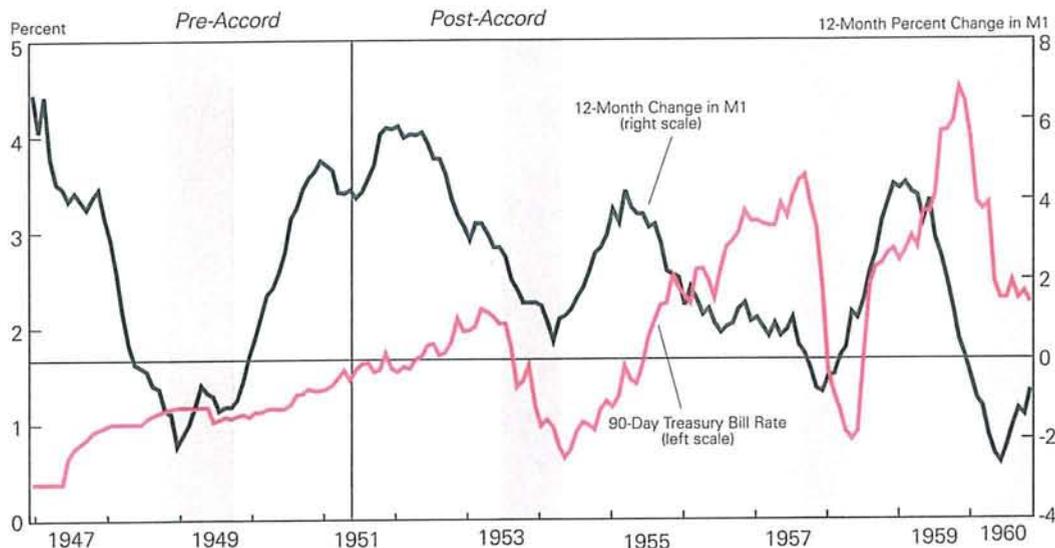
The size of the decline in real GNP and final sales was about the same as in the prior recession but the composition differed greatly. Whereas the 1953–54 recession was dominated by a drop in federal spending, government spending increased strongly in the 1957–58 recession. Whereas capital spending hardly declined in 1953–54, it collapsed in 1957–58. Producers’ durable equipment declined less in 1953–54 (less than 5 percent) than in any postwar recession but declined more in 1957–58 (17.4 percent) than in any postwar recession. Consumer durables, nearly flat in the previous recession, dropped nearly 10 percent in 1957–58. Except for the initial stability of residential investment, which had declined more or less continually from 1954 to 1957, the 1957–58 recession exhibits the signs of credit restraints.

#### *The 1960–61 Recession: False Expectations?*

In contrast to most other recessions, no one dominant factor characterizes the relatively mild 1960–61 recession. It is perhaps best viewed as the net result of a combination of several factors, their only common thread a mistaken reading of the strength of the real economy and the threat of inflation. Indeed,

Figure 2

*Measures of Monetary Policy, 1947 to 1960*



Source: Board of Governors of the Federal Reserve System and Friedman (1963).

the 1960–61 recession may be the first and perhaps clearest postwar example of a recession due to a forecast error.

For this and earlier recessions, the record of explicit forecasts is rather sparse and not particularly helpful, because most forecasts were in nominal rather than real units and at annual rather than quarterly or monthly frequencies (Zarnowitz 1967). The impression that the state of the economy was misconstrued comes rather from qualitative, more contemporary accounts (Friedman and Schwartz 1963; Lewis 1962).

Note first that the 1958 recession had been relatively deep and that the recovery had not progressed far—for example, producers' durable equipment did not regain its earlier peaks during the 1950s. Throughout 1959, the unemployment rate held above 5 percent, a relatively high level for that time.

The underlying strength of the economy was obscured by the effects of the steel strike from July 15 to November 7, 1959, including the anticipatory buildup to it as well as the subsequent rebound from it. "It was widely believed that the drop [in activity attributable to the strike] was purely temporary and

that, once the strike was settled, economic activity would continue at something like the vigorous pace it had displayed in 1958 and 1959." (Friedman and Schwartz 1963, p. 618) Thus, "Private forecasts at the end of 1959 and in early 1960 consistently pictured rising levels of economic activity during 1960." (Lewis 1962, p. 241) Even after it had begun, "The recession received little public discussion during the summer and fall of 1960. It was conspicuously ignored in public statements by presidential candidates of both parties, until late in the campaign, as well as by the incumbent administration . . ." (Lewis 1962, p. 243)

In view of this inability to recognize, let alone anticipate, the 1960–61 recession, it is not surprising that the focus of macroeconomic policy was inflation. Yet, in stark contrast to the acceleration of inflation that preceded the 1957–58 recession, the inflation rate held fairly steady throughout the brief 1958–60 expansion. The 12-month change in the CPI did increase from 0.1 percent in April 1959 to 1.9 percent in April 1960, but the corresponding rate excluding food and energy held constant at about 2 percent throughout that period. Nevertheless, despite the relatively

stable inflation rate, both fiscal and monetary policy switched from highly expansionary in 1958 to restrictive in 1959.

Lewis describes in detail the "sharp tightening of budget policy in fiscal 1960," consisting of both expenditure cuts and tax increases (1962, pp. 240–241). In 1959, short-term rates rose to their highest levels since 1929. Friedman and Schwartz attribute this "sharp reversal" of monetary policy to three factors: first, the brevity of the 1957–58 recession and the vigor of the early recovery; second, concerns about the outflow of gold in 1958; and "third, retrospective examination of its earlier policy persuaded the [Federal] Reserve System that it had erred during the 1954–57 expansion by continuing 'ease' for too long; that, while an easy-money policy was justified in 1954 and perhaps early 1955, the System should have taken severely restrictive measures in mid 1955 at the latest. It was determined not to repeat the error." (1963, pp. 617–618) Thus, an acceleration of inflation in the mid '50s may have been the source of two recessions, the 1957–58 recession born of the necessity to roll back an actual acceleration in inflation, and the 1960–61 recession born out of fear of having to repeat that experience.

### *The 1970 Recession: Guns, Butter, and a Strike*

The late 1960s present a classic example of an excess demand inflation. Prior to the 1970 recession, the unemployment rate had been below 4 percent for four years and below 3.5 percent from September 1968 through May 1969. This rate was lower than any serious estimate of "full" employment, particularly in light of the rapid influx of young and inexperienced workers. With aggregate demand overtaking the economy's productive capacity, the inflation rate (as measured by the 12-month change in the CPI excluding food and energy) accelerated slowly but steadily from 1.2 percent in 1965 to 6.0 percent at the December 1969 cyclical peak.

The 1968 income tax surcharge and suspension of the investment tax credit had not succeeded in arresting the acceleration of inflation. The federal funds rate, below 4 percent in 1967, was gradually increased to its peak level of 9.2 percent in August 1969.

The 1970 recession unfolded in two fairly distinct phases—an initial, fairly mild downturn in activity until September and a second leg associated with the 68-day strike at General Motors from September 15 to November 23, 1970. Owing to the strike, the cycle

reached a clear trough in November, but it is virtually impossible to guess exactly when the trough would have been if no strike had occurred.

The unusual 1970 recession illustrates clearly why real GNP is not a sufficient statistic for measuring recessions and expansions. One issue is the distinction between business cycle turning points (the reference cycle) and the high and low values of an individual economic time series (its specific cycle). The high and low of real GNP (or any other series) are not necessarily the cycle peak and trough. In addition, both the magnitude and the timing of changes in real GNP in the 1970 recession depend greatly on which version of the data is used (or more precisely, which benchmarking or base year's weights are used).

Both these points are illustrated in Table 3. All versions of the data show real GNP reached a local maximum in 1969:III (the quarter before the business cycle peak in December 1969). The contemporaneous data, with 1958-base weights, show real GNP declining in 1969:IV and 1970:I, rising in 1970:II and III, and falling in 1970:IV, a decline attributable entirely to the strike. These data suggest a 1.4 percent decline in real GNP, followed by an expansion starting in the spring of 1970, interrupted by an auto strike. When the GNP accounts were rebenchmarked using 1972-base weights, the recession appears far milder, a 1 percent decline from 1969:III to 1970:I and only a 0.1 percent decline over the business cycle. The next rebenchmarking, using 1982 weights, was the first to show a decline in 1970:II; this version of the data also shows a small (1.1 percent) decline from 1969:IV to 1970:II and a trivial (0.4 percent) decline between the cyclical peak and trough quarters. Using the official NBER turning point dates, the 1970 recession would appear to be solely a reflection of the GM strike. But all versions of the data confirm a minor (1 to 1.4) percent decline in real GNP from 1969:III to some time in the first half of 1970, an increase in real GNP in 1970:III, and a strike-induced decline in 1970:IV and rebound in 1971:I.

In light of the difficulty in measuring even retrospectively what actually happened in 1970, it is hardly surprising that economic forecasters had difficulty predicting the 1970 recession. Before the peak, none of the median forecasts of real GNP from the ASA/NBER survey showed any declines in real GNP. The forecasts released in December 1969 and February 1970 showed small declines in 1969:IV but an increase in 1970:I, certainly not a recession call. It was not until the May 1970 survey that the median fore-

Table 3  
*The 1970 Recession, Using Various Base Year Weights*

	Real GNP (1958 Weights)	Real GNP (1972 Weights)	Real GNP (1982 Weights)	Real GNP (1987 Weights)
High	1969:III	1969:III	1969:III	1969:III
Low	1970:IV	1970:I	1970:II	1970:II
Specific Cycle (% Change, High to Low)	-1.4	-1.0	-1.1	-.9
Business Cycle (% Change, 1969:IV to 1970:IV)	-.8	-.1	-.4	-.2
Change from Previous Quarter (% Change, Annual Rate)				
1969:IV	-2.2	-2.3	-1.6	-1.0
1970:I	-2.1	-1.5	-2.4	-1.1
1970:II	.5	.6	-.4	-1.7
1970:III	2.9	3.9	5.0	5.2
1970:IV	-4.3	-3.1	-3.6	-3.1

Source: Data in 1958\$ were taken from the U.S. Bureau of Economic Analysis, 1973, *Survey of Current Business*, July; data in 1972\$ were taken from U.S. Bureau of Economic Analysis, 1981, *The National Income and Product Accounts of the United States, 1929-76: Statistical Tables*, September; data in 1982\$ were taken from U.S. Bureau of Economic Analysis, 1986, *The National Income and Product Accounts of the United States, 1929-82: Statistical Tables*, September; 1987\$, U.S. Bureau of Economic Analysis.

cast anticipated two small quarterly declines in real GNP.

These forecasts were much more successful, however, in anticipating the increase in the unemployment rate. Since the first survey in late 1968, the median forecast had anticipated small increases in unemployment. In the December 1969 survey, the median forecast foresaw sizable increases in the unemployment rate in the first half of 1970. All postwar cyclical turning points have occurred in the quarter prior to "sizable" changes in the unemployment rate (McNees 1987, Table 1, p. 33). Based on this criterion for predicting a recession, the median forecast released in December 1969 correctly anticipated the 1970 recession just as it began.

#### *The 1973-75 Recession: Decontrol and Oil Inflation*

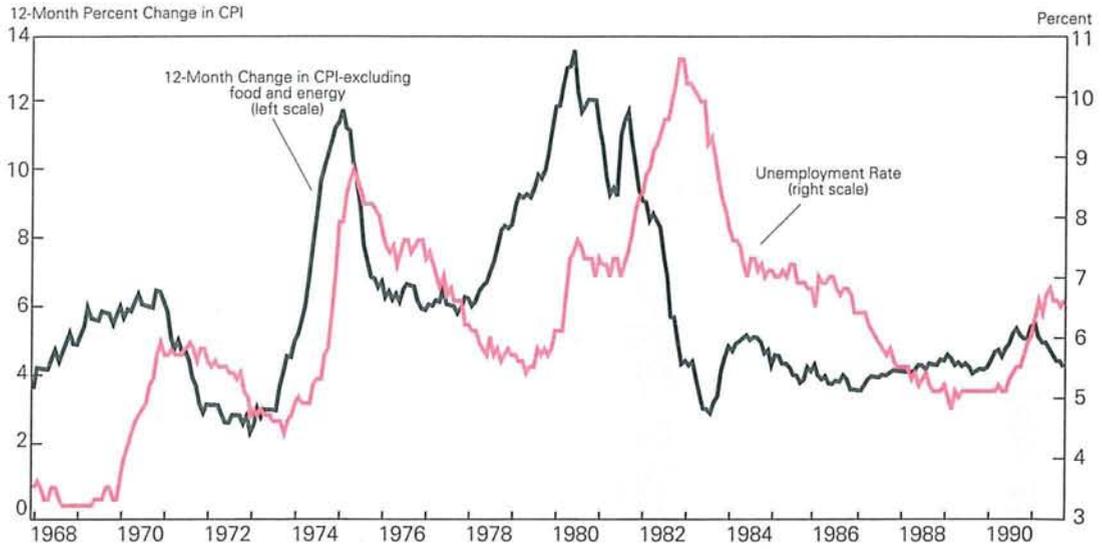
As noted earlier, the 1973-75 recession produced the largest decline in economic activity in the postwar period. The recession was preceded by a sharp increase in inflation in 1973 (Figure 3). The year opened with a phased dismantling of the wage and price controls that had been in effect since August 1971. In addition, most industrialized countries were experi-

encing a synchronous boom which, along with a large sale of U.S. grain to the Soviet Union, generated a worldwide explosion in commodities prices (Bosworth and Lawrence 1982). The inflation rate, as measured by the 12-month change in the overall CPI, rose from 3.4 percent in 1972 to 7.4 percent in September 1973. Over the same period, the federal funds rate increased even more sharply, from less than 5 percent to 10.8 percent (Figure 4). The outbreak of the Yom Kippur War on October 6, 1973 resulted in an embargo on oil shipments from the Middle East and a quadrupling of the price of imported oil. Analysts at the time understood this as an aggregate supply shift that would raise the price level and lower the pace of economic activity, but were uncertain of the magnitude and timing of these changes.

Like the previous recession, the 1973-75 recession can be divided into two fairly distinct phases: the first phase, the 10-month period from the peak until September 1974, during which employment continued to grow, industrial production declined only slightly, and the unemployment rate remained below 6 percent, was at the time dubbed an "energy spasm." The phrase was used to dismiss the idea that

Figure 3

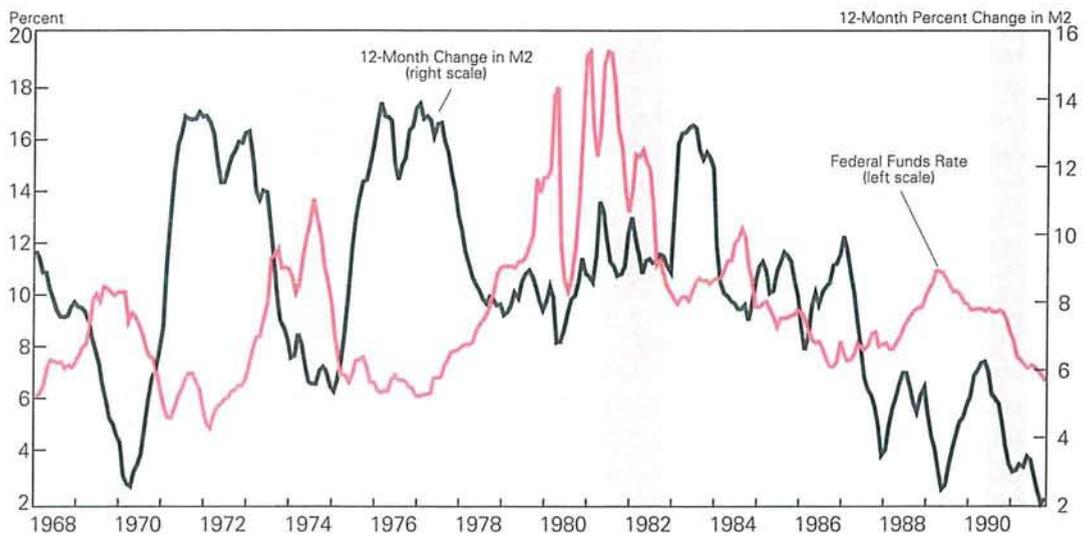
*"Core" Inflation and Unemployment Rates, 1968 to 1991*



Source: U.S. Bureau of Labor Statistics.

Figure 4

*Short-Term Interest Rates and Money Growth, 1968 to 1991*



Source: Board of Governors of the Federal Reserve System.

this episode was a genuine recession and call attention to the double-digit rate of inflation. The acceptance of this interpretation fostered a further increase in short-term interest rates and culminated in the Whip Inflation Now (WIN) conference in September 1974.

The second phase of the recession started in September 1974 and lasted six months. In these six months, employment dropped 2.7 percent, the unemployment rate rose 2.7 percentage points, and industrial production dropped 13 percent. Notwithstanding this virtual collapse in economic activity, inflation continued to rise. Thanks to a leveling-off in energy prices, the CPI peaked at 12.2 percent in November 1974 but the CPI excluding food and energy did not peak until February 1975, one month prior to the low point of the recession.

#### *The 1980 Recession: Credit Controls*

The 1980 recession was unusual in several regards. First, it was the shortest (six months) recession on record and in several respects the mildest of the postwar period. It was preceded by the longest peacetime expansion on record at that time, another sharp increase in the price of imported oil following the Iranian revolution, and a dramatic change in the Federal Reserve's operating procedures on October 6, 1979. Consequently, a recession had been widely expected for at least a year before it actually began. Despite its having been widely predicted, the recession was exacerbated by restrictive macroeconomic policies, most notably the imposition of credit controls on March 14, 1980.

The short, mild recession slowed inflation only temporarily. It was followed by the shortest expansion since 1919–20. This episode is thus the only postwar example of a double-dip recession or "W-shaped" business cycle. It is even plausible to view the 1980 and 1981–82 recessions as a single episode of subpar growth.

The inflation rate had accelerated steadily but fairly slowly from 1976 to mid 1978. The revolution in Iran led to cutbacks in oil production which, along with the phased decontrol of domestic oil prices, more than doubled the world price of oil. Rising energy prices added directly about 2 1/4 percentage points to the overall rate of consumer price inflation in 1979, considerably more than they added during the previous oil shock in 1974. By the fall of 1979, consumer prices, excluding food and energy, were again rising at double-digit rates and the foreign exchange value of the dollar was plummeting.

During the acceleration of inflation, the federal funds rate had risen gradually from 4.6 percent in early 1977 to 11.4 percent in September 1979. In early October, the Federal Reserve changed its operating procedures in order to put more emphasis on the monetary aggregates and permit greater changes in the short-term money market conditions. The federal

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*The 1980 and 1981–82 recessions provide the only postwar example of a double-dip recession, and can even be viewed as a single episode.*

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funds rate rose to 14 percent in October, where it stayed until March 1980.

Predictions of a mild recession were heard as early as late 1978. When gas lines appeared and it became clear that real GNP would decline over the first half of 1979, the recession call became unanimous. All prior half-year declines in real GNP had been associated with cyclical peaks. Nevertheless, real GNP rose in the third quarter and inflation continued to rise.

Virtually all forecasters continued to expect a recession. In January 1980, the President's Council of Economic Advisers pointed to

a number of reasons for expecting a mild recession in the first half of this year. . . . In most past periods of economic recession both fiscal and monetary policy have been eased significantly. At the present time, however, recession is still only a forecast; it has not appeared in overall measures of economic performance. Moreover the economy has recently withstood recessionary pressures far better than most analysts expected. These facts, together with the seriousness of our inflation problem, argue against an easing of policy at this time (*Economic Report of the President*, 1980, p. 66).

Indeed, the original budget proposal was quickly replaced by a more restrictive budget, the federal funds rate rose to 17.6 percent, and on March 14, 1980 credit controls were imposed.

The public reaction to credit controls was far stronger than most contemporary analysts expected based on a literal reading of the regulations. Perhaps people thought use of credit was illegal or unpatri-

otic, but for whatever reason, personal consumption expenditures and final sales declined more rapidly in 1980:II than in any other quarter in the postwar period. In response, the federal funds rate fell from nearly 20 percent in late March and early April to under 9 percent in early July, when the credit controls program was terminated.

### *The 1981–82 Recession: Stubborn Inflation and the Double-Dip*

The 1981–82 recession can be interpreted as a consequence of the continuing effort to reduce inflation that started in 1979. Its severity also reflected poor forecasts, which overestimated the short-term efficacy of tax cuts and failed to foresee the collapse in the income velocity of money.

The short 1980 recession only temporarily arrested the acceleration of inflation. In the last four months of 1980, consumer prices excluding food and energy were again rising at double-digit rates. Accordingly, the federal funds rate rose from 9 percent at the July 1980 trough to more than 19 percent, six months into the recovery.

In 1981, monthly increases in consumer prices temporarily receded but by summer, double-digit annual rates had returned. About the same time, several forecasters started to predict a short, mild recession. They were relatively quick to recognize that a recession had begun but far too optimistic about its ultimate severity.

The 1981–82 recession lasted 16 months, the same length as the 1973–75 recession. Unlike the 1973–74 experience, the decline was fairly steady: payroll employment, industrial production, and the coincident indicator index fell every month (except February 1982) and the unemployment rate rose every month (except August 1982) for nearly a year and a half. The declines were concentrated in the investment and export sectors, as personal consumption and government purchases increased fairly rapidly (Table 2).

Short-term interest rates fell in the second half of 1981 and monetary growth accelerated sharply. This easing of monetary policy, along with the recently enacted tax cuts that became effective in October, reinforced the expectation that the recession would be mild. One of the four basic elements in the Reagan Administration's economic recovery program had been a gradual but steady reduction in monetary growth. Large increases in December 1981 and January 1982 had brought M1 well above the top of its

target range. "Consequently, the Federal Reserve slowed the growth of nonborrowed reserves during the first half of the year, with a view to gradually bringing M1 and M2 back to their target ranges. By June, M1 was within its target range, while M2 remained somewhat above the top of its range." (*Economic Report of the President*, 1983, p. 139) Unfortunately, this deceleration of money growth coincided with the largest decline in the income velocity of money on record under the current definition. The sharp deceleration in nominal GNP exceeded the median contemporaneous forecast by a huge 6 percentage points. After mid year, both the inflation rate and the federal funds rate declined sharply and money growth soared, thanks in part to the introduction of interest-bearing NOW and MMDA accounts.

### *III. A Brief Overview of Post-World War II Expansions*

Table 4 provides a brief description of the postwar economic expansions. In contrast to recessions, whose durations have been fairly uniform with a standard deviation of only 3.5 months, the duration of expansions (column 1) has ranged from 12 months to 106 months with a standard deviation of 33 months. It is not surprising, then, that the cumulative change in real GNP over the course of expansions has also varied widely—from a low of 3.3 percent in the 1980–81 expansion to an increase of more than 50 percent during the longest expansion in U.S. history, which took place throughout most of the 1960s (column 5).

Despite the variety in their overall dimensions, postwar expansions have been roughly similar in the pace of economic growth, especially in their early stages. The 1949:IV to 1953:II expansion, which included the Korean War, was by far the fastest expansion in the postwar period, even though it was fairly normal in duration and cumulative change. Clearly the weakest was the one-year expansion between the 1980 and the 1981–82 recessions, the only postwar example of a double-dip recession or "W-shaped" business cycle. Excluding these extreme cases, whose abnormality is easy to understand, the average rate of growth over the first two years of the remaining six postwar expansions has been extremely uniform (column 3), ranging only from a low of 5.3 in 1954–57 to a high of 5.9 in 1961–69. Slow growth in the first year (such as in 1971) was followed by a pickup in the second year of the expansion; rapid first-year growth

Table 4  
*Business Cycle Expansions, 1949 to 1990*

Expansion		(1)	(2)	(3)	(4)	(5)
Trough Quarter	Peak Quarter	Duration in months	Real GNP Growth, Annual Percent Rate			Cumulative % $\Delta$ To Peak
			First Year	First Two Years	To Peak	
1949:IV	1953:II	45	14.5	9.6	7.5	28.8
1954:II	1957:III	39	8.3	5.3	3.9	13.2
1958:II	1960:II	24	9.2	5.6	5.6	11.4
1961:I	1969:IV	106	7.6	5.9	4.8	50.2
1970:IV	1973:IV	36	4.7	5.8	5.3	16.7
1975:I	1980:I	58	6.7	5.5	4.4	24.3
1980:III	1981:III	12	3.3	n.a.	3.3	3.3
1982:IV	1990:III	92	6.5	5.8	3.6	32.0
Average		52	7.6	6.2	4.8	22.5
Standard Deviation		33	3.4	1.5	1.4	14.7

Note: 1949, 1954, 1958 and 1961 expansions are in constant 1958 dollars.

1970 and 1975 expansions are in constant 1972 dollars.

1980 and 1982 expansions are in constant 1982 dollars.

n.a. = not applicable

Source: U.S. Bureau of Economic Analysis: 1966, *The National Income and Product Accounts of the United States 1929-65*, Table 1.2; 1981, *The National Income and Product Accounts of the United States, 1929-76*, Table 1.2; 1986, *The National Income and Product Accounts of the United States, 1929-82*, Table 1.2; 1991, *Survey of Current Business*, August; and author's calculations.

Table 5  
*Correlations of Recessions and Recoveries*

	Recession Measure	Expansion Measure	Simple Correlation	Rank Correlation	Standard Error
Real GNP	GNP	GNP1	.03	.24	.40
	GNP	GNP2	-.34	-.75**	.30
	GNP	GNPT	-.16	-.31	.39
Duration	DUR	GNP1	.07	-.02	.42
	DUR	GNP2	-.08	.06	.46
	DUR	GNPT	.46	.65**	.32
Employment	E	GNP1	.92	.83*	.23
	E	GNP2	.66	.21	.44
	E	GNPT	.16	.24	.40
	E	E1	.90	.95*	.12
	E	E2	.81	.82**	.26
	E	ET	.11	.12	.41

Note: GNP is the percent change in real GNP from reference peak to trough; GNP1 from the trough to the first year of the expansion; GNP2 from the trough to the second year of the expansion; GNPT from the trough to the next cyclical peak. DUR is the duration of the decline from reference peak to trough in months. E is the percent change in payroll employment from reference peak to trough; E1 from the trough to the first year of the expansion; E2 from the trough to the second year of the expansion; ET from the trough to the next cyclical peak.

The 12-month 1980-81 expansion is excluded from GNP2 and E2.

\*Significant at the .01 level.

\*\*Significant at the .05 level.

Source: Author's calculations.

(such as occurred in the 1950s) has been followed by a tapering down in the second year. The 1949–53 and 1980–81 experiences clearly illustrate, however, that this uniform pattern is simply a regularity and not an inevitability. An extraordinary source of demand (such as was associated with the outbreak of the Korean War) or an extraordinarily restrictive policy (such as the successful attempt to combat double-digit inflation in 1980–81) can alter the “normal” tendency for economic expansions to proceed at a 5½ to 6 percent annual rate during their first two years.

#### IV. Do Recessions Contain the Seeds of Recoveries?

It has literally become a cliché to say that the recovery from the 1990–91 recession will be weak because the preceding recession itself was mild. Table 5 shows that the history of postwar recessions and recoveries provides little support for that alleged relationship. Both the simple (numerical) and rank (ordering) correlations show little relationship between the severity of recessions and the strength of the first year, of the first two years, and of the total length of the following expansion.

The top panel uses the percent decline in real GNP as the measure of a recession’s severity; this measure shows no correlation with the increase in real GNP in the first year of the expansion, a small

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*History provides little support for the cliché that a recovery will be weak if the preceding recession was mild.*

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negative relationship with the increase over the first two years, and a negative, insignificant relationship with the total increase in real GNP. (See also the left half of Figure 5.)

The second panel of the table measures the severity of the recession by its duration. The duration of recession is also not associated with the subsequent expansion.

The next two panels measure the severity of recessions by the peak to trough decline in payroll employment. The conventional view, that weak recessions spawn weak expansions, receives partial support only when the recession is proxied by employment declines. Employment declines during a recession have been positively associated with real growth during the first year, but not the first two years, and not the total duration of the following economic expansion. Employment declines are also associated with employment growth during the first year and first two years of the following expansion. (See the right half of Figure 5.)

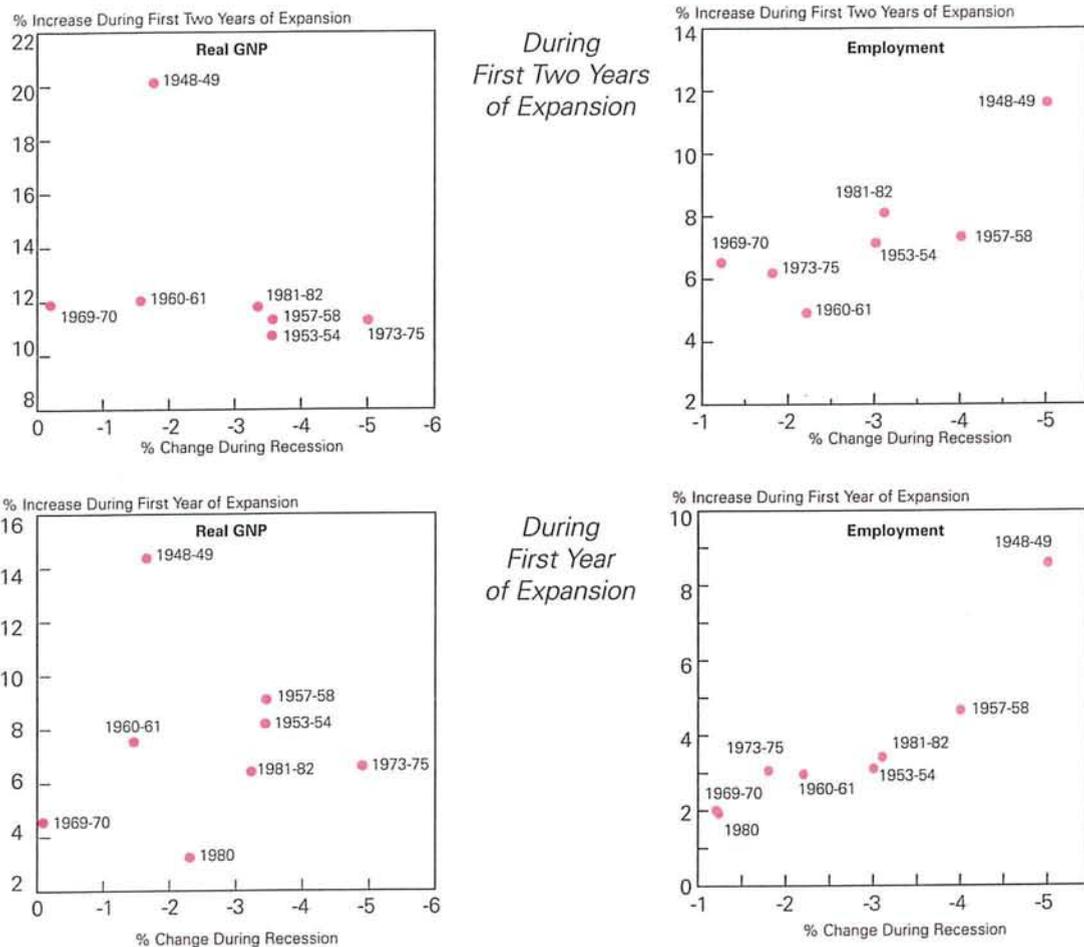
#### V. The 1990–91 Recession to Date

This section examines the recession that began in 1990. Because the trough date has not been designated, this description must be less a definitive history than a tentative forecast. Most of the economic series that measure economic activity reached at least local low points in the first half of 1991. Because a recession is defined as a period of declining economic activity, it is difficult to resist declaring that the recession has ended. Yet, most postwar recessions have been interrupted by one quarter of positive growth, although none by two consecutive quarters. The changes in economic activity to date have been so small—and so unlike the early stage of previous expansions—that they probably would not qualify as an economic expansion *if* economic activity were now to start to decline. In that event, a description of what would be the longest recession in the postwar period must await the evolution of its second phase. Any attempt to categorize this recession this early must necessarily assume that it has ended. This account is, therefore, subject to future revision.

Based on the assumption that economic activity continues to rise, the 1990–91 recession was clearly one of the mildest, though probably not the mildest, in the postwar era. Owing to slower growth in the working-age population and declines in the participation rate, the increase in the unemployment rate has been smaller than in any previous postwar recession. This relative mildness of the recession seems to run counter to fears that have been raised about the fragility of the financial system, the massive debt overhang, the wave of restructuring, and the record collapse in consumer confidence. These issues may yet emerge during the recovery or in the next recession.

Figure 5

### *Real GNP and Payroll Employment during Recessions and Expansions*



Source: Author's calculations.

One reason that the current state of the economy is perceived to be worse than it appears when compared to previous recessions may be that the 1990-91 recession was preceded by a long period of slow growth. The Center for International Business Cycle Research at Columbia University has designated February 1989 as the start of a period of "below-trend" increases in economic activity—the onset of a "growth recession" (Table 6 and Moore 1983, Ch. 5, pp. 61-64). This designation is consistent with the fact that nonfarm business productivity peaked at the end of 1988. Thus, the mild recession was preceded by 17 months of substandard growth, the longest of any postwar recession.

The first concerns about the longevity of the economic expansion that began in November 1982 arose after the 30 percent drop in stock prices on October 19, 1987. Such precipitous declines had often preceded periods of slower economic growth, if not actual recessions (Peek and Rosengren 1988). Despite those concerns, most analysts correctly anticipated that economic growth would remain strong in 1988. (Real GNP did slow down from its rapid 5.4 percent rate in 1987 but the decline was in large part due to the serious drought in 1988, which was presumably unrelated to the collapse of equity prices.) During 1988, nonfarm production grew 3.3 percent and the unemployment rate declined from 6 percent in Octo-

Table 6  
*Business Cycle Expansions and Contractions and High- and Low-Growth Phases, 1948 to 1990*

Business Cycle Reference Dates		Duration in Months		Growth Cycle Reference Dates		Duration in Months	
Trough (T) (1)	Peak (P) (2)	Contraction (T from Previous P) (3)	Expansion (T to P) (4)	Upturn (U) (5)	Downturn (D) (6)	Low-Growth Phase (U from Previous D) (7)	High-Growth Phase (U to Next D) (8)
	Nov. 1948				July 1948		
Oct. 1949		11		Oct. 1949	Mar. 1951	15	17
	July 1953		45	July 1952	Mar. 1953	16	8
May 1954	Aug. 1957	10	39	Aug. 1954	Feb. 1957	17	30
Apr. 1958	Apr. 1960	8	24	Apr. 1958	Feb. 1960	14	22
Feb. 1961		10		Feb. 1961	May 1962	12	15
				Oct. 1964	Jun. 1966	29	20
	Dec. 1969		106	Oct. 1967	Mar. 1969	16	17
Nov. 1970	Nov. 1973	11	36	Nov. 1970	Mar. 1973	20	28
Mar. 1975	Jan. 1980	16	58	Mar. 1975	Dec. 1978	24	45
July 1980	July 1981	6	12				
Nov. 1982		16		Dec. 1982	Jun. 1984	48	18
	July 1990		92	Jan. 1987	Feb. 1989	31	25
Average		11	52			22	22
Standard deviation		3.5	32.5			10.6	9.8

Source: National Bureau of Economic Research, Inc. and the Center for International Business Cycle Research.

ber 1987 to 5.3 percent a year later. The economy was clearly running close to, if not beyond, its full productive capacity.

Slower real growth did materialize in 1989 along with fears that the slowdown would turn into a "hard landing" (that is, a recession). Despite an evident deceleration, real economic activity did increase fast enough to hold the unemployment rate below 5.5 percent until the cyclical peak in July 1990. This combination of small but positive real growth and steady unemployment was heralded as the achievement of a "soft landing."

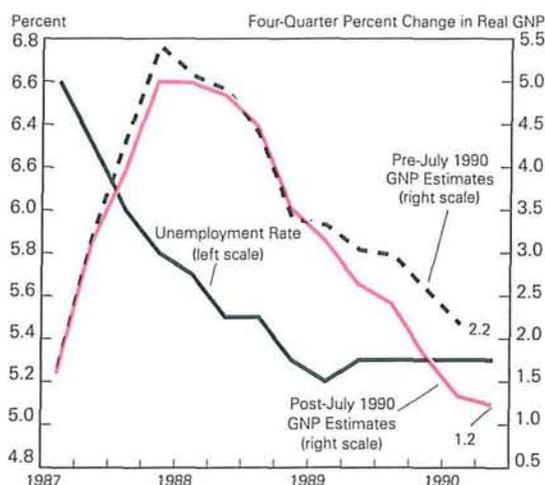
The term "soft landing," however, had taken on the connotation not only of sustainable, positive growth but also of a deceleration of inflation. Unfortunately, starting in late 1989, the "core" rate of inflation started to accelerate: the 12-month change rose fairly steadily from the 4 to 4 1/2 percent range, where it had stayed through much of the 1980s, to 5.1 percent in the year ending in July 1990, while the more volatile three-month rate rose sharply from 3.8

percent in September 1989 to 6.5 percent in March 1990.

Recent recessions have generally been preceded by a sharp acceleration of inflation and followed by a sharp deceleration (Figure 3). This pattern is not as universal as is commonly thought, as is clear from Figure 1. The rate of inflation was clearly decelerating in the year before the 1948-49 and the 1953-54 recessions and fairly stable prior to the 1960-61 recession. The 1957-58 recession was the only early postwar recession immediately preceded by accelerating inflation. The 1990-91 recession falls roughly in the middle, relative to prior postwar experience: the acceleration of inflation prior to the cyclical peak was not nearly so pronounced as before the peaks in 1957, 1973, and 1980, though obviously much different from the decelerations in the year before the 1948 and the 1953 peaks. The experience mirrored the gradual yet distinct increases in the inflation rate that preceded the relatively mild recessions of 1960-61 and 1969-70 (Table 7).

Figure 6

*Changes in Real GNP Before and After July '90 Data Revision, and the Unemployment Rate*



Source: U.S. Bureau of Labor Statistics and U.S. Bureau of Economic Analysis.

In late July 1990, the other leg of the “soft landing” scenario was also called into question. Instead of expanding at a 2.2 percent annual rate, enough to hold the unemployment rate steady, revised data showed that real GNP had grown only 1 percent at an annual rate in the second quarter and had been growing at 1 1/2 percent or less for five consecutive quarters. These downward revisions cast the “soft landing” and its sustainability in an entirely new light. Instead of converging toward roughly the growth of productive capacity, the deceleration of economic growth had been sharper (Figure 6). Some new source of strength would have to emerge to break the deceleration momentum.

Rising inflation, weakening real growth, and the threat of war in the Persian Gulf combined to generate a precipitous drop in consumer sentiment—the University of Michigan’s index dropped an unprecedented 32 percent from its April peak to its October low. This drop, along with sharp increases in gasoline prices, brought about sharp declines in auto production. From 1990:III to 1991:I, the production of autos and light trucks dropped 28 percent, or nearly \$50 billion in 1982 dollars, nearly as much as the decline in real GNP over the entire 1990–91 recession.

Table 7  
*Inflation and Changes in Inflation Rate Near Cyclical Peaks*

Peak Date	CPI, 12-Month % Change	Change in 12-Month Rate from Year Earlier	CPI, 3-Month % Change	Change in 3-Mo. Rate from 3 Months Earlier	Change in 3-Mo. Rate from 12 Months Earlier
Nov. 1948	4.8	-3.7	-4.3	-11.5	-16.7
July 1953	.4	-2.6	1.5	.8	-1.9
Aug. 1957	3.5	1.3	4.1	1.2	-.2
Apr. 1960	2.0	.3	1.3	0	0
Dec. 1969	5.9	.8	5.2	-1.2	-.3
Nov. 1973	4.7	1.9	7.2	3.6	6.3
Jan. 1980	12.0	3.4	15.4	3.2	7.4
July 1981	11.1	-1.2	13.5	5.8	6.8
July 1990	5.1	.6	5.2	-1.0	.7
Average of Nine Recessions	5.5	.1	5.5	.1	.2
Standard Deviation	3.8	2.2	6.1	4.9	7.3

Note: CPI prior to 1960; CPI excluding food and energy thereafter. Source: U.S. Bureau of Labor Statistics.

Although the record drop in consumer sentiment did not portend a severe recession by postwar standards, it was associated with a disproportionate decline in personal consumption expenditures. As noted in Table 2, consumption expenditures had increased 0.7 percent on average in previous postwar recessions. The largest previous drop had been the 1.0 percent decline in 1980, which was also associated with a large deterioration in measures of consumer sentiment. Relative to the decline in real GNP during the 1990–91 recession, the 0.9 percent decline in total consumption expenditures was disproportionately large. This abnormally large decline in consumption was offset by stronger than normal performances in exports, federal purchases, and producers' durable equipment. The 0.3 percent decline in final sales from 1990:III to 1991:II was close to the average of postwar recessions. The 1990–91 recession was milder than average, mainly because the inventory cycle was more muted than in most previous postwar recessions.

## VI. Forecasting the Timing and Severity of the 1990–91 Recession

At the time of the July 1990 peak, few of the normal signs of a recession were visible. A substantial increase in the May index of leading indicators had been announced in late June; the first decline in the index for the month of August was not reported until late September. Similarly, stock prices reached new highs in mid July and did not decline precipitously until after Iraq's invasion of Kuwait (Table 8). Thus, it is not surprising that, in an early July *Wall Street Journal* roundup, only two of 40 forecasters anticipated a decline in real GNP: one predicted a very mild, "borderline" recession at worst, a 0.7 percent decline in the second half of 1990 followed by a 1.0 percent increase in the first half of 1991. The only clear recession call was made by a forecaster who had been expecting a recession ever since the 1987 stock market crash.

A primary reason for the belated recognition of the 1990–91 recession was the unusual behavior of financial variables. Watson (1991) attributes the failure of NBER's Experimental Recession Index to anticipate the recession to the perverse behavior of the financial variables in the Index, arguing that real indicators "behaved qualitatively as they had in earlier recessions." (pp. 21–22) The same observation can be made about the behavior of short-term interest

Table 8  
*Precursors of Peaks*

Peak Date	Lead Time (months)			
	Down- turn	Peak in Short Rate <sup>a</sup>	Index of Leading Indicators	S&P500
Nov. 1948	-4	+2	-5	-5
July 1953	-4	-3	-5	-6
Aug. 1957	-6	+2	-20	-13
Apr. 1960	-2	-4	-10	-9
Dec. 1969	-9	-4	-8	-12
Nov. 1973	-8	+8	-8	-10
Jan. 1980	-13	+3	-15	NST
July 1981	n.a.	-1	-8	-8
Mean of Eight Prior Recessions	-7	.4	-10	-9
Standard Deviation	4	4	5	3
Current Recession July 1990	-17	-16	0	-1
Mean of Nine Prior Recessions	-8	-1	-9	-8
Standard Deviation	5	7	6	4

<sup>a</sup>The short rate is defined as the rate on 90-Day Treasury bills through 1961 and the effective rate on federal funds thereafter.

NST = no specific turning point.

n.a. = not applicable.

Source: Board of Governors of the Federal Reserve System; Standard & Poor's Corporation; U.S. Bureau of Economic Analysis.

rates. Short-term interest rates are considered a roughly coincident indicator—they generally rise, often sharply, prior to cyclical peaks and typically fall once the recession has begun. Two clear exceptions—the increases in short-term rates during the 1973–75 and 1981–82 recessions—occurred in the midst of the longest, most severe recessions in the postwar period (Figure 4).

The period leading up to the 1990–91 recession was a clear exception to previous postwar experience. Whereas the average lead time had been only one month and the *longest* prior lead time only four months (in 1960 and 1969), short-term interest rates peaked in the spring of 1989, 16 months before the business cycle peak. Prior to the 1990–91 recession, analysts could have correctly reasoned that no postwar recession had ever occurred after an extended period of declining short-term interest rates. It would seem a mistake to attribute the 1990–91 recession to rising interest rates; the proximate cause seems more likely to

lie elsewhere. Even though a sharper decline in rates might have offset that unidentified "causal" factor, it is difficult to imagine that a much larger decline would have been feasible at the time, in the environment of low unemployment and rising inflation.

A follow-up survey of 34 of these same forecasters was conducted in August 1990, after the downward revision of the path of real GNP, the release of the actual data for 1990:II, and the invasion of Kuwait. Although the August forecasts were distinctly more pessimistic than those one month earlier—the average forecast for the second half of 1990 was revised down 1.3 percentage points to 0.3 percent and that for the first half of 1991 down 0.8 percentage points to 1.0 percent—two-thirds of the forecasters still expected real GNP to rise in both periods. Four did expect a brief, mild recession in 1990 but a resumption of growth in 1991; four others expected small but positive growth in the second half of 1990 followed by a decline in the first half of 1991; three expected negative growth in both periods. Of the nine forecasters who expected negative growth during the next year, all but one expected the decline in real GNP to be less than the actual decline of 0.9 percent (in 1982 dollars). It was not until their October forecasts that a clear majority of the eight prominent forecasters surveyed monthly in the Conference Board's *Economic Times* anticipated the correct contours of the 1990–91 recession.

Although forecasters took longer to recognize that a recession had begun than in 1973 or 1981, and far longer than in 1980, they were much more accurate in gauging its severity and duration, if this recession did end in the spring of 1991, as has been assumed here. With the possible exception of the 1980 recession, forecasts made near the peak tend to underestimate its severity. The underestimation of the 1990–91 recession was trivial, however, especially when compared to forecasts of the severe recessions in 1973–75 and 1981–82.

## VII. Summary and Conclusions

The recession that began in mid 1990 and apparently ended in the spring of 1991 was milder than the average recession since World War II. The declines in production and employment were only about half as large as "normal"; the increase in the unemployment rate was the smallest in any postwar recession. The relatively small decline was due to a damped inventory cycle, as final sales fell by roughly an average

amount. The declines were disproportionately concentrated in consumption of nondurable goods, the production of automobiles and light trucks, and the construction sector.

Perhaps the most unusual feature of the 1990–91 recession is the periods of slow growth both before and after the recession itself. A slowdown began a year and a half before the recession began. Real growth in the year prior to any postwar recession has

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*Perhaps the most unusual feature of the 1990–91 recession is the periods of slow growth both before and after the recession itself.*

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never been lower than the 1.3 percent prior to the 1990–91 recession (Table 9). At the time, the slowdown was disguised by continuing employment growth—the level of nonfarm productivity had peaked in late 1988—and by the preliminary GNP data, which understated the degree of slowdown eventually revealed in the July 1990 revisions. This period of slow growth may have been attributable in part to the economy's operating at, or beyond, its productive capacity; the unemployment rate held below most estimates of "full employment" and the rate of inflation was slowly but steadily accelerating.

During this period, the index of leading indicators and stock prices were rising and short-term interest rates were generally declining. These were all highly unusual precursors for a recession. Consequently, even after Iraq had invaded Kuwait in early August, the majority of economic forecasters did not expect a recession. By the fall, after the record drop in consumer sentiment, most forecasters expected a mild recession, one of roughly the order of magnitude that did occur.

It is still too soon to write the history of the 1990 recession, let alone of even the early stages of the subsequent expansion. If the recession ended in the spring of 1991, the early recovery has been far weaker than previous recoveries. In other recoveries, economic activity has started to increase rapidly at about the same time that the recession ended (except for the expansion that began in 1954, when the lag was only a few months). In contrast, most of the monthly

Table 9

*Real GNP and Its Components: Percentage Change from One Year Prior to Peaks*

	48:4	53:2	57:3	60:2	69:4	73:4	80:1	81:3	Average of	90:3
	47:4	52:2	56:3	59:2	68:4	72:4	79:1	80:3	Eight Prior	89:3
	(58\$)	(58\$)	(58\$)	(58\$)	(72\$)	(72\$)	(82\$)	(82\$)	Recessions	(87\$)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
GNP	4.5	6.9	2.4	2.0	1.3	4.2	1.6	3.3	3.3	1.3
Change in Business Inventories	.7	1.6	-.3	-1.2	-.1	1.1	-.7	2.0	.4	-.1
Final Sales	3.8	5.3	2.7	3.2	1.4	3.1	2.3	1.3	2.9	1.4
Personal Consumption Expenditures	2.7	5.6	3.0	3.5	3.0	1.3	.9	1.8	2.7	1.2
Durable Goods	0	15.0	2.0	2.9	1.0	-.3	-3.1	5.3	2.8	-3.1
Nondurable Goods	1.7	4.0	3.1	2.9	2.0	-.3	.2	.6	1.8	.2
Services	4.9	4.7	3.3	4.5	4.6	3.5	2.5	1.8	3.7	3.0
Residential Fixed Investment	-8.7	5.3	-9.1	-13.4	-8.0	-12.6	-11.3	-3.5	-7.7	-9.9
Business Fixed Investment	5.5	2.0	0	7.4	4.5	10.6	3.6	8.7	5.3	2.0
Equipment	3.2	-2.3	2.1	8.5	4.8	13.2	-1.3	5.4	4.2	2.5
Structures	12.3	9.6	-3.2	6.2	4.1	6.0	14.3	14.6	8.0	.9
Total Government Purchases	25.8	8.9	5.7	-.4	-2.3	1.7	1.8	1.5	5.3	2.2
Federal Government	45.2	12.0	5.3	-3.0	-5.8	-1.8	2.9	5.8	7.6	-.7
State and Local Government	8.4	1.7	6.2	2.8	1.0	4.0	1.1	-1.4	3.0	4.3
Net Exports	-1.6	-.8	.1	1.0	.1	1.5	1.5	-1.1	.1	.4
Exports	-15.1	-2.2	3.6	19.6	9.6	24.1	17.2	2.0	7.3	4.5
Imports	11.1	18.1	1.5	-.4	8.8	2.0	3.0	12.7	7.1	1.4
Auto Production	10.7	41.7	25.9	2.9	-10.3	-6.3	-21.3	16.9	7.5	6.1

Note: The change in business inventories is the difference between the change in real GNP and the change in final sales.

n.a. = not available.

Source: See Table 2.

measures of economic activity, such as payroll employment, have increased very little since their decline ended in the spring of 1991. The composite indexes of both leading and coincident indicators have increased far less at this stage of the cycle than

in all earlier expansions. The most unusual feature of the 1990-91 recession may well be that it was both preceded and followed by periods of subpar growth, so that the "growth recession" that began in early 1989 has persisted for nearly three years.

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