Industry employment and the 1990–91 recession

During the most recent economic downturn, job losses were less severe overall, but were more widespread than in prior recessions; the ensuing recovery proved less than vigorous

Christopher J. Singleton

The Nation's longest peacetime expansion officially ended in July 1990 as the economy entered its first downturn since the 1981–82 period. Nonfarm employment had peaked a month earlier, in June 1990, and then fell for 10 consecutive months. Nearly 1.5 million jobs—1-1/2 percent of the work force—were lost through April 1991.[1] The labor market subsequently improved in relative terms during mid-1991, as the job losses became smaller and less persistent. Employment finally reached a low point in February 1992, but the job recovery remained fairly modest through the remainder of the year.

Although generally milder than the typical postwar recession, the 1990–91 downturn was exacerbated by several external factors such as the Persian Gulf crisis, the savings and loan collapse, and continued job cutbacks as a result of lower defense spending. Furthermore, a renewed emphasis on efficiency and cost containment prompted firms, particularly large firms, to restructure their work forces. Reflecting the increased competitive environment confronting many companies, this phenomenon has tempered the recovery of lost jobs . Also, healthy growth in labor productivity, to some extent, has mitigated against the need to rapidly expand industry work forces.

This article details the job performance of nonfarm industries during the 1990–91 recession, both as officially delineated and over specific cycles corresponding to their employment downturns and subsequent recoveries. The experiences of industries during the recession also are compared with those of prior recessions. In addition, the effect of the recession on several of the economy's key markets is examined.

Christopher J. Singleton is an economist in the Office of Employment and Unemployment Statistics, Bureau of Labor Statistics.

Overview

Total nonfarm employment fell by 1.1 million during the July 1990–March 1991 span, the economy's official recessionary period.[2] (See table 1.) Total losses amounted to 1.5 million jobs, as the employment downturn lasted 20 months (June 1990–February 1992). Leading up to the 1990–91 recession and during the actual downturn, the trend in nonfarm employment corresponded closely to the changes in gross domestic product, with growth slowing in 1988 and 1989 before declining during the 1990–91 period. (See chart 1.) However, while the Nation's output rose after the first quarter of 1991, employment failed to grow accordingly. The job losses were not completely recovered until February 1993, 12 months after the low point and 23 months after the official end of the recession.

The 1990–91 recession extended to every major industry group except services and government, with goods-producing industries accounting for 90 percent of the job losses. Manufacturing and construction, as in past recessions, again demonstrated the most weakness, losing 1.0 million jobs between them. (See chart 2.) Within the private service-producing sector, the majority of the cut-

Table 1. **Change in employment during the 1990–91 recession and the industry-specific downturns, by major industry group**

[In thousands]

Industry	Employment change during—	
	1990–91 recession	Industry-specific downturns
Total nonfarm	−1,143	−1,493
Total private	−1,272	−1,835
Goods-producing	−1,006	−2,372
Mining	−5	−102
Construction	−382	−865
Manufacturing	−619	−1,577
Durable goods	−490	−1,370
Nondurable goods	−129	−227
Service-producing	−137	−196
Private service-producing	−266	−458
Transportation and public utilities	−31	−119
Wholesale trade	−86	−173
Retail trade	−286	−448
Finance, insurance, and real estate	−22	−170
Services	159	—
Government	129	—

NOTE: Losses for cycles for goods-producing, mining, manufacturing, durable goods and nondurable goods are as of December 1992; downturns had not reached low points as of this date.

Official dates of the 1990–91 recession were determined by the National Bureau of Economic Research, Cambridge, MA.

Dashes indicate no downturns for period or none which closely correspond.

backs stemmed from wholesale and retail trade, which together lost 400,000 jobs.

Comparison with prior recessions

The 1990–91 recession was shorter than most of the previous postwar recessions and characterized by proportionately fewer job losses. Officially, this recession lasted 8 months, in contrast to an average duration of 11 months for previous recessions, and employment fell 1.0 percent, significantly less than the average drop of 2.5 percent. (See table 2.) Although the actual downturn in nonfarm payrolls proved more lengthy, amounting to a decline of 1.4 percent, this compares favorably with an average recession-related drop of 2.8 percent for prior downturns.

However, despite the fact that the downturn of the early 1990's was the mildest postwar recession in terms of the percentage of jobs lost, the job market appears to have been much more sluggish, in retrospect, when the periods immediately prior to, and immediately after, the downturn are also considered. For instance, during the 12 months preceding the nonfarm employment peak of June 1990, payrolls grew a very modest 1.6 percent, the second weakest 12-month period before a downturn; for the other postwar recessions, employment growth averaged 2.5 percent during comparable time spans. Indeed, the Center for International Business Cycle Research (at Columbia University) determined that the period beginning February 1989 marked the start of a "growth recession"—a period of modest overall growth, below the trend.[3] In fact, the duration of the "growth recession" that preceded the 1990–91 recession was longer than that corresponding to any other postwar recession.

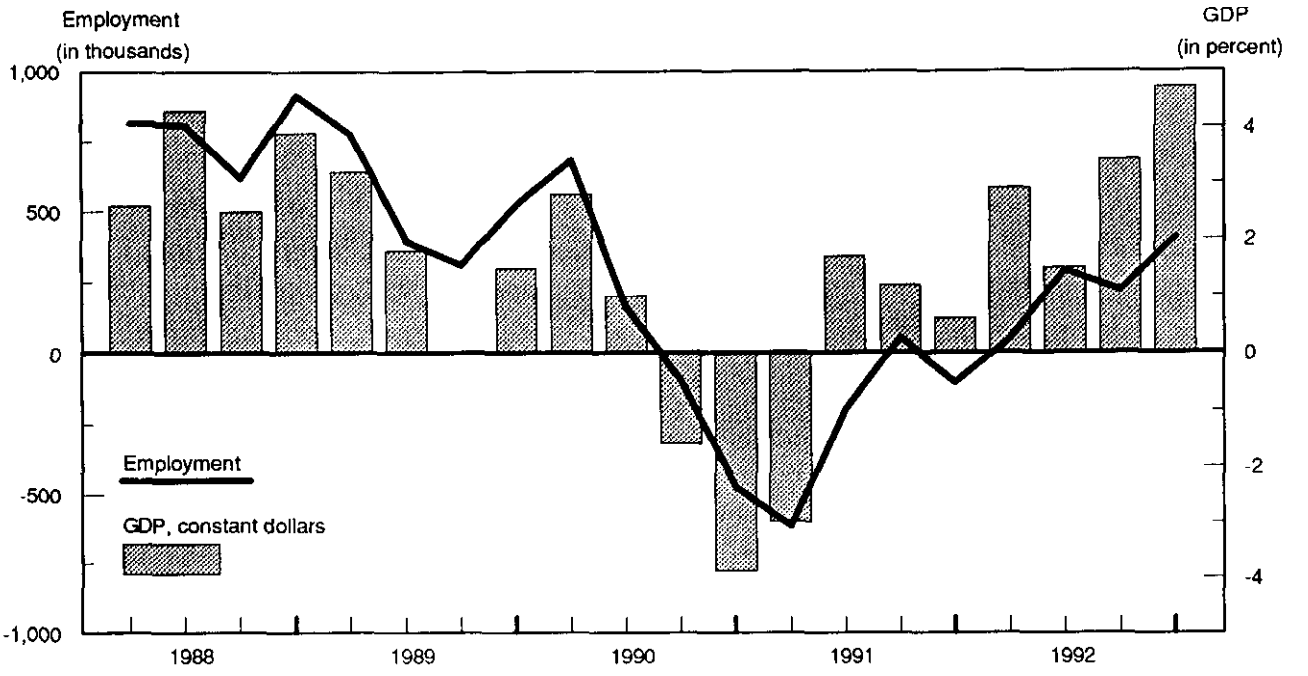
Moreover, the subsequent recovery has proven unusually anemic as well. Employment typically begins rebounding the same month the overall economy does. In the latest recession, however, nonfarm payrolls did not begin a sustained—albeit very modest—upturn until 12 months after its official end. The modest job losses were finally recovered 1 year later, but the rebound was much weaker than that of prior recoveries. In short, while the officially designated recession was fairly mild by historical standards and the overall job losses were lighter, the reality of the job market was an extended period of sluggishness.

Gross domestic product. The Nation's gross domestic product (GDP), the sum of all goods and services produced by the economy, fell 1.8 percent, in constant dollars, from the third quarter of 1990 to the first quarter of 1991.[4] (See table 3.) This drop in aggregate output was slightly less than the average decline in postwar recessions (2.1 percent), but significantly lower than those of the preceding three recessions.

Three of the four major components of GDP performed relatively well during the 1990–91 recession, compared with prior downturns. Net exports, the difference between the economy's exports and imports, grew an average of $5 billion during the prior 8 recessions. In contrast, they improved by $41 billion during the last recession, as exports grew by $7 billion and imports dropped by $34 billion. Secondly, gross private domestic investment fared somewhat better during the 1990–91 recession. Typically severely depressed during economic downturns, investment spending fell by 13.1 percent, a noticeable improvement over its average decline of 17.2 percent. A relatively smaller decline in nonresidential investment was largely responsible for this improvement. Lastly, government purchases rose 2.2 percent during the 1990–91 recession, about 2–1/2 times their typical increase; Federal Government purchases accounted for this disparity.

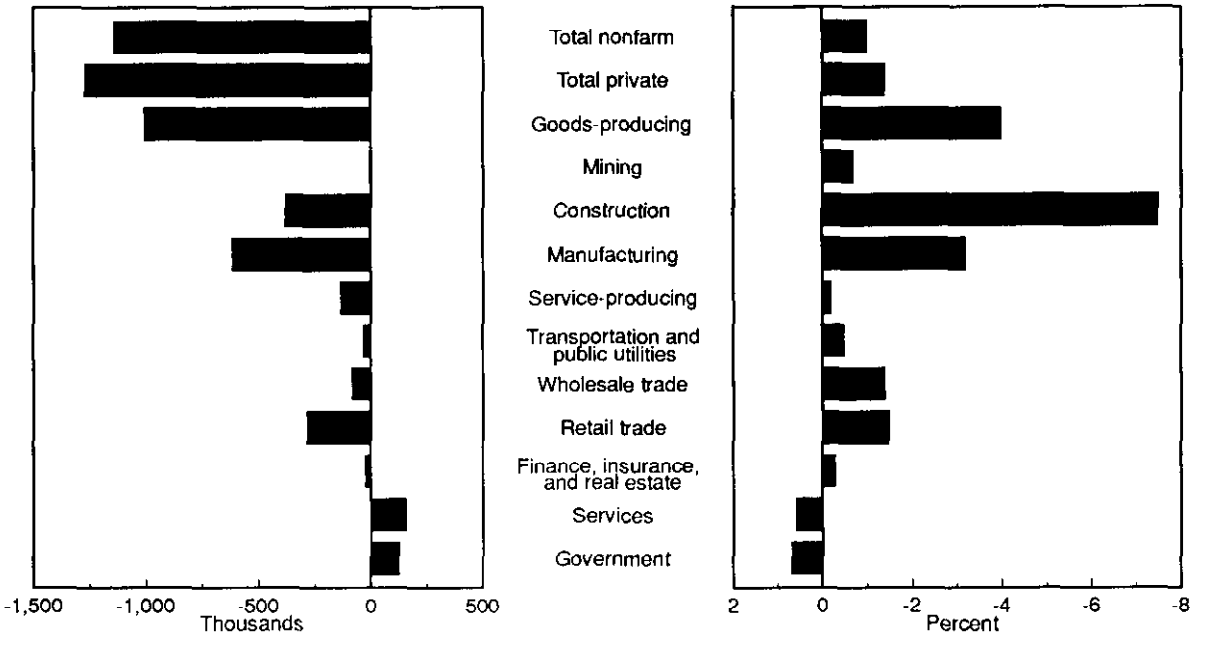
In contrast, personal consumption expenditures experienced an unusually large decline during the

Chart 1. **Quarterly changes in nonfarm employment and gross domestic product, seasonally adjusted, 1988–92**



SOURCE: Bureau of Labor Statistics; Bureau of Economic Analysis.

Chart 2. **Employment changes by major industry groupings during the 1990–91 recession, *seasonally adjusted***



NOTE: Changes are for the July 1990–March 1991 period, the official end points of the recession, as designated by the National Bureau of Economic Research.

latest recession. Accounting for two-thirds of GDP, this segment fell 1.5 percent, well short of its average recessionary growth rate of 0.6 percent. Because they determine such a large share of the Nation's output, consumption expenditures offset much of the relative improvement in the other areas of the economy. All three categories—durable goods, nondurable goods, and services—were weaker, with the largest impact resulting from services. Personal consumption expenditures for services have become increasingly large during the postwar period; such spending now accounts for more than one-third of GDP. While expenditures on services fell modestly during the 1990–91 recession—by one-half of one percent—this contrasts sharply with average growth of 2.4 percent during earlier recessions. Had services expenditures grown at their average rate, the drop in GDP of $85 billion would have been narrowed to $35 billion.

Industry employment mix. Besides being milder in terms of total industry employment losses, the 1990–91 recession also differed from previous ones in the distribution of those declines. While the goods-producing sector accounted for the bulk of the total nonfarm losses, these drops were not partially offset by net growth in the service-producing sector, as they frequently had been in the past. Indeed, rather than growing at the average rate of 0.5 percent, employment in the service-producing industries fell by 0.2 percent. This decline translated into 140,000 job losses, in sharp contrast to *growth* of 425,000 that would have occurred had the recession been "typical."

Five of the six major industry groupings within the service-producing sector were significantly weaker during the 1990–91 downturn. Both wholesale and retail trade lost about 1–1/2 percent of their respective work forces; twice the rate of their average declines. Meanwhile, finance, insurance, and real estate, which had added jobs during each of the preceding recessions, lost 0.3 percent of its employment. Government, which had expanded employment by an average of almost 2 percent during prior recessions, grew by less than half that amount.

The largest disparity, however, stemmed from the services industry. Typically very recession-resistant, services had grown, on average, by 2.4 percent during the preceding eight recessions; growth of at least 2 percent was consistently achieved during the prior five, ranging from 2.3 to 4.8 percent. Nevertheless, during the 1990–91 downturn, services grew at only one-quarter of its average recessionary pace. Had normal growth been achieved, employment in services would have risen by 675,000 jobs, rather than by only 160,000. Among the services components, business services lost the greatest number of jobs—115,000—despite having grown by about 30,000 during 4 of the prior 5 recessions. Hotels, auto repair services, and miscellaneous repair services each declined by about 40,000, in contrast to stable employment in prior recessions. And while the legal services component was stable during the 1990–91 downturn, this marked a sharp departure from average recessionary growth of 30,000.[5]

While the service-producing sector was noticeably weaker during the latest recession, the goods-producing sector lost a smaller percentage of its work force than it typically had. Specifically, goods-producing industries reduced employment by 4 percent in contrast to an average decline of 8.1 percent. Most of this improvement is attributable to manufacturing, although mining fared better as well. Manufacturing industries lost 3.2 percent of their jobs which compares quite favorably with an average drop of 8.4 percent. Construction, on the other hand, proved weaker than normal, falling by 7.5 percent, 1–1/2 percentage points more than average.

Because downturns in goods-producing industries are generally more lengthy than those of other industries, it is appropriate to compare their employment losses for entire contractions rather than merely for the official recessionary periods.

Table 2. **Change in employment during official recessions, compared with industry-specific downturns, by major industry grouping**

[In percent]

Industry	Official reference points		Industry-specific downturns	
	Average recession	1990–91 recession	Average recession	1990–91 recession
Total nonfarm	-2.5	-1.0	-2.8	-1.4
Total private	-3.3	-1.4	-3.6	-2.0
Goods-producing	-8.1	-4.0	-9.1	-9.4
Mining	-10.0	-.7	—	-14.3
Construction	-6.2	-7.5	-11.2	-16.3
Manufacturing	-8.4	-3.2	-9.4	-8.1
Durable goods	-11.2	-4.4	-12.8	-11.9
Nondurable goods	-4.5	-1.6	-5.5	-2.8
Service-producing	.5	-.2	—	-.2
Private service-producing	.1	-.4	—	-.7
Transportation and public utilities	-3.7	-.5	-6.7	-2.0
Wholesale trade	-.7	-1.4	-2.0	-2.8
Retail trade	-.8	-1.5	-2.1	-2.3
Finance, insurance, and real estate	1.7	-.3	—	-2.5
Services	2.4	.6	—	—
Government	1.6	.7	—	—

NOTE: Losses for cycles for goods-producing, mining, manufacturing, durable goods and nondurable goods are as of December 1992; downturns had not reached low points as of this date.

Official reference points were determined by the National Bureau of Economic Research, Cambridge, MA.

Dashes indicate no downturns for period or none which closely correspond.

Table 3. **Percent change in major components of gross domestic product, for the average postwar recession and the 1990–91 recession, seasonally adjusted constant dollars**

[Annualized rates]

Component	Percent change	
	Average recession	1990–91 recession
Gross domestic product	−2.1	−1.8
Personal consumption expenditures	.6	−1.5
Durable goods	−4.9	−5.9
Nondurable goods	−.1	−1.5
Services	2.4	−.5
Gross private domestic investment	−17.2	−13.1
Nonresidential	−8.4	−6.6
Residential	−8.3	−13.2
Net exports		
Exports	−2.4	1.5
Imports	−5.2	−6.0
Government purchases	.9	2.2
Federal	−1.8	4.2
State and local	3.5	.8

NOTE: The 1990–91 recession officially began during the third quarter of 1990 and lasted until the first quarter of 1991.

SOURCE: Bureau of Economic Analysis.

Goods-producing employment began falling in 1989, attributable to losses by manufacturing industries. Through the end of 1992, this sector had reduced employment by 9.4 percent, in contrast to average losses of 9.1 percent in prior contractions. Manufacturers still fared better during the latest downturn than they had in the past—losses of 8.1 percent versus 9.4 percent—despite the long duration of the contraction in factory employment. Much of this relative improvement reflects the significant industry restructuring that had occurred during the mid-1980's. Companies, in general, are much leaner and more competitive than they were in the past; this has reduced the need for layoffs of prior proportions. Conversely, the construction industry's downturn was much deeper than normal, with job losses of 16.3 percent. This weakness stemmed from the severely depressed building market, particularly the commercial segment, of the late 1980's and early 1990's.

Industry details

Mining. Mining industries lost 5,000 jobs, or 1 percent of their work force, during the July 1990–March 1991 period. Coal mining, which had slowly declining employment for quite some time, accounted for most of the drops during the recession. Oil and gas extraction, the dominant mining industry, actually added several thousand jobs during the recession, in part as a reaction to expectations of an oil shortage and the resulting sharp increases in prices, following Iraq's invasion of Kuwait.

While the overall economy subsequently improved, mining losses became more pronounced and continued through 1992. Indeed, between March 1991, the economy's low point, and the end to 1992, nearly 100,000 mining jobs were eliminated. The bulk of the cutbacks were in oil and gas extraction, reflecting lower oil prices from increased OPEC production. This industry's job growth during the recession thus proved fleeting. After rising in late 1990, the U.S. rig count, an indicator of domestic drilling activity, fell by one-third during the 1991–92 period.[6] The exploration for and extraction of oil in the United States has dropped dramatically as available reserves have fallen. Given the prevailing low price of oil, drilling prospects have been dim.

Construction. Construction employment fell by almost 400,000 during the 1990–91 recession, representing 7-1/2 percent of payrolls. Of the three primary construction industries, general building contractors was the first to begin a period of employment cutbacks, peaking more than 2 years prior to the start of the recession. This industry lost 200,000 jobs during the April 1988–March 1991 period, or 14 percent of its work force. Employment in heavy construction fell by 35,000 (5 percent) and by 265,000 (9 percent) in special trade contractors between May 1990 and March 1991.[7] While losses in the first two industries continued through 1992, employment in special trade contractors reached a low point in February 1992 and began growing slightly.

The housing market typically foreshadows weakness in the general economy and the latest recession upheld this tendency. New home sales peaked in mid-1989 and subsequently fell 25 percent through July 1990.[8] Meanwhile, sales of existing homes fell by 16 percent—or half a million units—in the 12 months after January 1990.[9] Reflecting the lower sales volume, housing starts plummeted in 1990.[10]

Activity in the commercial market also fell sharply, following vigorous growth during much of the 1980's. Many builders failed to fully anticipate the economy's impending recession, and this contributed to an overabundance of office space. Builders' woes may have been exacerbated by tighter access to credit, induced partially by the savings and loan crisis. The value of new nonresidential construction reached a high point in July

1990 and dropped by more than one-third through 1992, in constant dollars.[11]

Spurred by low interest rates, sales of new and existing homes began rising in early 1991. Housing starts also began rebounding from their severely depressed levels, although virtually all of the growth was attributable to single-family homes which require less labor than multi-family units. Employers were apparently able to cope with the enhanced residential activity without significant job increases. Meanwhile, the commercial market remained stagnant, with nonresidential construction expenditures continuing downward through 1992. Although construction employment edged up in the spring of 1992, attributable largely to growth among special trade contractors, there were further losses later in the year.

Manufacturing. Employment in manufacturing dropped sharply during the recession, with losses of more than 600,000 jobs (3 percent). This industry's declines preceded the official start of the recession: Employment reached a high point in January 1989, 17 months earlier than nonfarm industries in general. Employment in the factory work force fell by 1 million through March 1991 and the cyclically sensitive durable goods group accounted for more than 85 percent of the drop. Manufacturing layoffs continued through 1992, with losses totaling 1.6 million from the 1989 peak level.

Employment in durable goods industries fell by half a million during the recession, and by a total of 1.4 million in the 3 years after manufacturing's downturn began in early 1989. Because they represent major consumer purchases or business investment, sales of durable goods products are heavily dependent on the general state of the economy. New orders for durable goods had reached a high point in December 1988, at $135 billion.[12] They had dropped 20 percent over the following 2 years, reaching a low point in the same month the recession had ended. While new orders trended upward thereafter, the backlog of unfilled orders—those not yet produced and shipped to customers—dropped throughout the 1991–92 period. Because new orders remained below the level of shipments, employment had to be reduced during this time span.

Although nine of the ten major durable goods industries reduced payrolls by 50,000 jobs or more during manufacturing's downturn, four industries accounted for 60 percent of the overall decline in the factory work force. (See table 4.) Employment in transportation equipment was particularly vulnerable, losing 300,000 jobs during the 1989–92 period. Within the transportation equipment industry, the motor vehicles segment contributed 70,000 of this drop, after falling sales forced automakers to idle capacity and reduce output. The two aerospace segments, aircraft and guided missiles, together lost 190,000 jobs, as lower defense spending compounded lower private-sector demand. Meanwhile, employment in electronic equipment fell, attributable largely to the electronic components segment, which has become increasingly competitive. Industrial machinery employment also declined substantially during the 1989–92 period, reflecting reduced capital investment. The computer and office equipment portion accounted for almost half of this industry's drop. Lastly, fabricated metal product's work force experienced large losses. This industry primarily produces a variety of intermediate products for other manufacturers and for the construction industry.

In contrast to the situation in durable goods, employment in nondurable goods industries did not begin a downward trend until mid-1990, as demand remained firmer a while longer. Losses by nondurable goods manufacturing ceased temporarily in the middle of 1991, but soon resumed, continuing through 1992. Between January 1990 and December 1992, 225,000 jobs were lost. Although new orders for nondurable goods were essentially static in 1989, they rose in the following year, reaching a high point in October 1990. The subsequent employment losses proved far smaller than those by durable goods industries because the downturn in orders was of shorter duration and smaller magnitude—only 7 percent from high to low point. Nevertheless, a healthy increase in demand for nondurable goods in 1992 was not reflected by corresponding employment growth, as manufacturers remained wary of the resilience of the economic recovery.

Several nondurable goods industries were in the midst of long-term structural declines when the economy became recessionary. Textiles, apparel, and leather had all been reducing payrolls for years, with the downward trend interrupted only by partial business-cycle rebounds.

The bulk of the cyclical declines in nondurable goods employment stemmed from printing and publishing and rubber and miscellaneous plastics. Much of the weakness in printing stemmed from falling demand faced by commercial printing which had previously benefited from the large number of business formations and increased advertising associated with the economic expansion of the 1980's. Meanwhile, employment in rubber and miscellaneous plastics reflected the weakness in the construction, automobile, and packaging markets, the industry's chief customers.

Transportation and public utilities. Employment in transportation and public utilities industries dropped by 30,000 (0.5 percent) during the

recession—attributable largely to cutbacks in the trucking industry—and 100,000 through mid-1992. Trucking's loss was consistent with declines in industrial production. Manufacturers began increasing output in April 1991, and trucking employment started to rebound 2 months later. Air transportation also contributed to the cutbacks in transportation and public utilities, although the industry did not undergo job losses until after December 1990. Continued industry consolidation as well as less discretionary flying caused air transportation to lose 40,000 jobs between December 1990 and 1991. The communications industry represented another sluggish segment, losing 55,000 during the 1990–92 period. Virtually all of this drop stemmed from telephone communications which has been restructuring its work force.

Wholesale trade. Employment in the Nation's wholesalers reached a high point in March 1989, 2 months after manufacturing employment did. Reflecting the situation in manufacturing, the bulk of the ensuing job losses was concentrated in durable goods distribution. Wholesale trade employment fell by 85,000 (1–1/2 percent) during the recession, but by 175,000 between its 1989 peak and the third quarter of 1992; durable goods accounted for all of the declines during the extended downturn.

Specifically, the durables group fell by 215,000 and the losses were especially notable in machinery, lumber and other construction materials, and electrical goods. Not coincidentally, the corresponding manufacturing industries were also among the weakest in that segment. Job cutbacks in the durables group reflected a 6-percent decline in sales during the recession.[13]

Nondurable goods wholesalers reduced payrolls by 25,000 during the recession, but began rebounding 2 months after it ended. The industry added twice as many jobs in 1992 than it had previously lost.

Retail trade. Employment in this industry grouping fell by 285,000 during the July 1990-March 1991 period, a drop similar in proportion (1–1/2 percent) to that experienced in wholesale trade. Employment in retail trade reached a high point in January 1990, almost a year after wholesalers did, but 6 months prior to the official start of the recession. Retail sales also peaked in January 1990, at $125 billion, before falling 6 percent through January 1991; sales subsequently improved, but remained well below the long-term trend.[14] During the industry's entire downturn, which lasted through the fourth quarter of 1991, 450,000 jobs were lost. Half of these drops were recovered in 1992.

Table 4. **Change in employment by major manufacturing industries during the overall factory downturn, seasonally adjusted**

[Numbers in thousands]

SIC	Industry	Level, December 1992	Change, January 1989–December 1992	
			Number	Percent
	Durable goods			
37	Transportation equipment	1,784	−300	−14.4
36	Electronic and other electrical equipment	1,514	−260	−14.7
35	Industrial machinery and equipment	1,909	−214	−10.1
34	Fabricated metals	1,310	−150	−10.3
38	Instruments and related products	903	−127	−12.3
33	Primary metals	683	−96	−12.3
24	Lumber and wood products	683	−90	−11.6
32	Stone, clay, and glass products	511	−61	−10.7
25	Furniture and fixtures	477	−51	−9.7
39	Miscellaneous manufacturing	362	−21	−5.5
	Nondurable goods			
23	Apparel and other textile products	992	−85	−7.9
22	Textile mill products	670	−57	−7.8
27	Printing and publishing	1,501	−53	−3.4
31	Leather and leather products	118	−21	−15.1
30	Rubber and miscellaneous plastics	876	−10	−1.1
26	Paper and allied products	686	−8	−1.2
21	Tobacco products	48	−4	−7.7
29	Petroleum and coal products	156	−1	−.6
28	Chemicals and allied products	1,080	13	1.2
20	Food and kindred products	1,650	19	1.2

Building materials stores, furniture stores, and automotive dealers were the first retail segments to experience sustained job losses, all beginning in the first half of 1989. This weakness coincided with the sluggish construction and automobile markets that foreshadowed the recession.

Apparel stores also reflected weakening demand early, with employment reaching a high point in late 1989, and dropping through most of 1992. These cutbacks corresponded to declining apparel sales of 1 percent in 1990 and 3 percent the following year, in real terms.[15] Sales growth of 5 percent in 1992 was not sufficient to stem the job losses.

General merchandise stores, the weakest segment of retail trade, experienced declines beginning in early 1990. This industry lost over 150,000 jobs through 1991, accounting for one-third of the cutbacks during the overall downturn in retail trade. These losses were disproportionately large, as the industry only represented 13 percent of total retail trade employment.

Both food stores and eating and drinking places began cutbacks after the start of the recession. Food stores lost jobs through January 1992 and remained sluggish throughout the year. However, in percentage terms, the drop in food stores was the lightest of any retail trade segment. Employment in eating and drinking places only fell through the third quarter of 1991 and reversed all of its losses over the subsequent 8 months.

Finance, insurance, and real estate. This broad industry grouping lost 20,000 jobs during the recession and 170,000 during its downturn of August 1990–92. Most of the weakness was concentrated in finance which had reached a high point in February 1990 and then reduced payrolls by 145,000 jobs over the succeeding 2 years. Real estate lost 10,000 jobs during the recession and continued to edge down through mid-1992. Meanwhile, the insurance industry actually added 40,000 jobs during the July 1990–March 1991 period. By April 1991, however, this segment began to experience sustained cutbacks, losing 60,000 jobs through the following year.

Within the finance industry, savings institutions accounted for a disproportionately large share of job losses. Its problems can be traced largely to the relaxed lending practices during the real estate boom of the prior decade, and the subsequent insolvency of many commercial developers. Employment in the industry stopped growing in October 1987, falling by 155,000 jobs over the following 4 years. This 30-percent decline reflected the collapse of hundreds of savings and loan institutions.

Commercial banks also contributed to the weakness in finance, losing 90,000 jobs between early 1990 and late 1992. Increasingly, banks have been forced to compete with other sources of capital, such as pension and mutual funds, to meet customers' credit needs. Moreover, numerous mergers took place during this period, as banks sought to consolidate market power and realize cost efficiencies. There were 500 announced bank mergers in 1991, with many leading to job cutbacks as the new institutions eliminated duplicated tasks.[16]

Offsetting some of the cutbacks in finance and real estate, insurance carriers, primarily life and medical and health, added 35,000 jobs during the recession. Medical and health insurance, in particular, is not a very cyclical industry.

Services. Employment in this grouping rose by 160,000 (1/2 percent) during the recession, as cutbacks in certain consumer- and business-oriented services industries were offset by hiring in industries which provide less discretionary services. (See table 5.) After three sluggish quarters, services began to add jobs more steadily, beginning in May 1991. Employment subsequently grew by 1.4 million jobs through the end of 1992.

Among the services industries with job losses during the recession period, business services experienced the largest, declining by 115,000. More than three-fourths of these cutbacks were in personnel supply services, as the demand for temporary contract workers fell along with the fortunes of the contracting companies.

Several services industries proved recession-resistant, compensating for the cutbacks in the more cyclically sensitive industries. In particular, health services employment continued to grow vigorously throughout the 1990–92 period; and the industry added almost a quarter of a million jobs while the general economy contracted.[17] In fact, this industry created 30,000 jobs per month in both 1990 and 1991, little changed from its growth of the preceding 2 years. Although health services' job gains slowed in the first quarter of 1992, the industry still managed to add 350,000 jobs during the year. Social services (which includes residential care and child day care) proved recession-resistant as well, with growth slowing only slightly. Educational services also continued to grow during the recession, with two-thirds of the increase coming from colleges and universities. Educational services continued adding jobs through early 1991, but experienced some losses over the following year. Similarly, membership organizations continued their job growth through the recession, but like educational services, began losing jobs after it had ended.

Government. Public sector employment rose during the recession, despite increasingly tight fiscal environments at the Federal, State, and local levels. Budget constraints were nonetheless evident, as growth was substantially slower than that in prior years. Excluding the effect of temporary decennial census workers hired and dismissed in 1990,[18] 130,000 government jobs were added during the recession, growth of less than 1 percent.

Federal Government employment fell by 20,000, with most of the weakness occurring in late 1990. The Department of Defense was the chief source of job losses, reflecting the cancellation of defense projects prompted by a reassessment of U.S. security needs. Federal Government employment grew during most of 1991 before falling again the following year.

Meanwhile, both State and local government continued to add jobs during the recession, primarily in the education segments, although the rates of growth did slow. State government increased payrolls by 45,000, with 25,000 attributable to education. Local government employment jumped by 105,000; 80,000 in local education. The latter is especially noteworthy, as it represents growth of more than 10 percent.

Key markets

Three segments of the economy which have had a substantial impact, both directly and indirectly, on the Nation's employment levels are the defense, construction, and automobile markets. These segments were responsible for a sizable portion of the

employment weakness during the recession, although for varying reasons. While the downturn in defense industries should be viewed as structural in nature, the construction losses were primarily cyclical, and those of the automobile market stemmed from both cyclical and secular forces. This section examines the impact of these three markets on groups of related industries.

Defense-related industries. Employment cutbacks by defense firms exacerbated the impact of the sluggish economy. Government defense expenditures had actually begun declining in the fourth quarter of 1987, following a rapid buildup during the first portion of the decade.[19] Industries' backlog of unfilled orders for defense capital goods flattened during the 1986–89 period, after sharp growth; it fell dramatically after mid-1990, dropping 20 percent through 1992, thus reducing many industries' work force needs. In contrast, unfilled orders for all durable goods continued rising until mid-1991. Further, while the backlog of defense capital goods had accounted for more than 40 percent of the unfilled orders for all durable goods earlier in the decade, by 1992, its share had dropped below 30 percent.

Employment in defense-related industries fell significantly during the 1990–92 period, with losses totaling almost 300,000 jobs. (Defense-related industries are defined here as those for which a majority of employment was devoted to the production of defense goods in 1987, the high point for real defense spending.[20]) These industries manufacture such products as aircraft, missiles, and tanks. Employment trends in defense-related industries have closely mirrored changes in the level of pending orders: sustained increases ended in 1986, followed by a fairly stable period, until mid-1990; thereafter, large drops ensued. (See chart 3, panel 1.) Since 1990, almost one of four manufacturing job losses has come from this group of industries. Aircraft and parts represented the weakest industry component, losing 55,000 jobs in 1991 and 70,000, in 1992. Guided missiles (45,000) and search and navigation equipment (60,000) also experienced large drops during the 1991–92 period. Most of the defense-induced cutbacks were structural in nature, reflecting the permanence of lower defense spending. Affected workers, therefore, could not expect to be recalled to their jobs because the lower demand did not stem from cyclical factors.

It is important to note that not all of the jobs in these industries are attributable to defense spending; many of the workers produce commercial goods. Similarly, there are defense jobs in other industries which did not meet the selection criteria used here. The series, thus, can by no means be regarded as a complete count of defense jobs but, rather, as a proxy to monitor general employment trends.

Construction-related industries. While the construction industry itself directly accounted for almost 400,000 job losses during the recession, the downturn in the building trades affected many other industries throughout the economy, from mining and manufacturing, to trade and services. Indeed, few activities have the ripple effect that construction does. Employment in construction-related industries—defined here as nonconstruction industries for which a majority of employment is dependent on construction activity[21]—reached a high point in January 1989, a year before the construction industry itself did. (See chart 3, panel 2.) These related industries together lost 185,000 jobs during the recession, and 295,000 between the high point and the February 1992 low point. These losses follow the vigorous growth of the 1983–89 period: while builders themselves added 1.5 million jobs during this time-span—surpassing the pre-1980 recession peak by three-quarters of a million—construction-related industries contributed another 700,000 jobs.

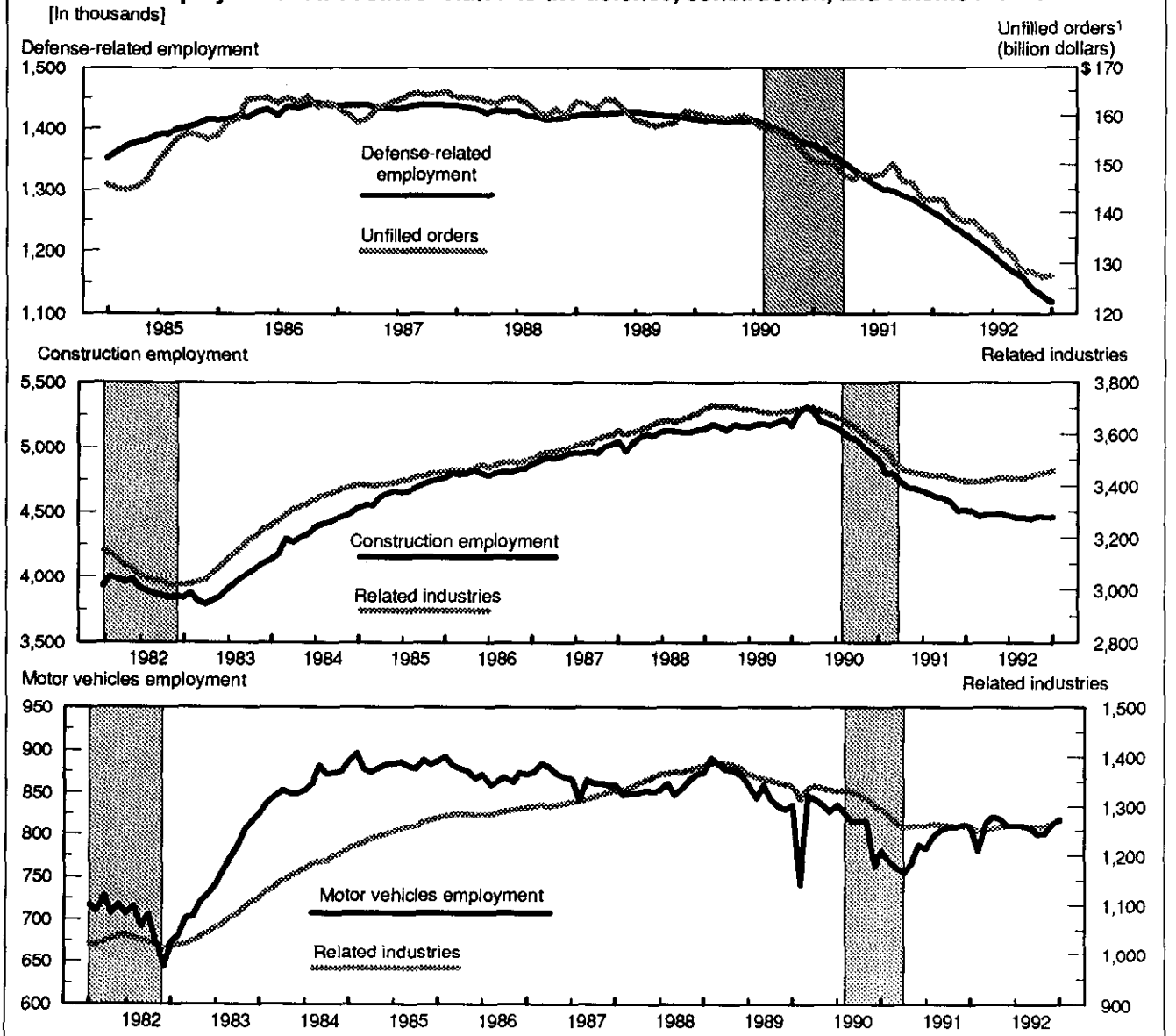
Employment in construction and related industries grew slightly between late 1991 and 1992. Building activity did begin increasing in early 1991, but it remained at depressed levels. Furthermore, the improvement was confined to the resi-

Table 5. **Change in employment during the 1990–91 recession by major services industries, seasonally adjusted**

[Numbers in thousands]

SIC	Industry	Level, March 1991	Change, 1990–91 recession	
			Number	Percent
—	Total services	28,167	159	0.6
	Job losers			
73	Business services	5,048	−114	−2.2
87	Engineering and management services	2,434	−50	−2.0
70	Hotels and other lodging places	1,597	−38	−2.3
76	Miscellaneous repair services	337	−37	−9.9
75	Auto repair services	881	−36	−3.9
	Job gainers			
80	Health services	8,075	243	3.1
83	Social services	1,812	76	4.4
82	Educational services	1,715	47	2.8
86	Membership organizations	1,999	45	2.3
79	Amusement and recreation services	1,108	38	3.6
	Little change			
07	Agricultural services	489	−3	−.6
81	Legal services	911	−1	−.1
78	Motion pictures	413	1	.2
84	Museums and botanical gardens	69	3	4.5
72	*Personal services*	1,111	7	.6

Chart 3. Employment in industries related to the defense, construction, and automobile markets
[In thousands]



[1] Data for unfilled orders are from the Bureau of the Census.
NOTE: Related industries are those for which a majority of employment is devoted to the production of goods or services for the designated indusry. Data are seasonally adjusted.

dential area, as commercial activity continued to fall. The overall construction segment, therefore, was not induced to expand its work force significantly.

Auto-related industries. The automobile market was one of the first segments of the economy to demonstrate weakness, with new vehicle sales beginning to recede after reaching a high point in 1988—well before the official onset of the recession.[22] Employment in motor vehicle manufacturing began falling in February 1989, dropping by 135,000 through March 1991, for a reduction of 15 percent. These losses corresponded to a 3-percent drop in motor vehicle production in 1989 and a further 10-percent drop in 1990.[23]

Meanwhile, other industries associated with the automobile market became sluggish as well. Manufacturing industries producing inputs, such as glass and body stampings, together with trade industries distributing and selling the vehicles themselves, have thousands of jobs tied to the automobile market. Employment in these auto-related industries closely followed that of motor vehicle manufacturing.[24] (See chart 3, panel 3.) Their aggregate employment began falling 1 month after

auto manufacturing did, in March 1989. These related industries lost 140,000 jobs through January 1992; a 10-percent drop. Beginning in April 1991, auto manufacturers began recovering from the recession, adding 65,000 through 1992. Auto-related industries finally began rebounding in early 1992, adding 15,000 jobs through the end of the year. However, these job gains still left the auto segment below prior employment levels.

THE 1990–91 RECESSION marked a shift from prior downturns. The magnitude of the actual job losses was relatively small, especially given the 7-1/2-year employment expansion that preceded the recession. Nevertheless, the job recovery has proven extremely sluggish as noncyclical factors ranging from increased global competition to protracted defense cutbacks force industries to maintain lean payrolls. □

Footnotes

[1] Employment data are from the Current Employment Statistics survey and appear in *Employment, Hours and Earnings, 1981-93, March 1992 Benchmark Revisions and Historical Corrections* (Bureau of Labor Statistics, forthcoming). The temporary Census Bureau workers hired and dismissed in 1990 are excluded from all data.

[2] The timing of recessions is officially determined by the National Bureau of Economic Research, Cambridge, MA.

[3] Stephen K. McNees, "The 1990–91 Recession in Historical Perspective," *New England Economic Review* (Boston, Federal Reserve Bank of Boston, January/February 1992), p. 16.

[4] *Survey of Current Business* (U.S. Department of Commerce, Bureau of Economic Analysis, December 1992), pp. 30–32. All gross domestic product data cited are in billions of constant 1987 dollars, seasonally adjusted, and are expressed at annual rates.

[5] Comparisons for Hotels, Auto repair services, and Miscellaneous repair services are based on the 1973–75 1980, and 1981-82 recessions. Employment estimates for these industries are not available for earlier recessions.

[6] Baker Hughes Incorporated, Hughes Christensen Rig Information Network, Houston, TX.

[7] Although, on the surface, February 1990 seems to be a high point for construction in general, as well as for heavy construction and special trade contractors, data for the first part of that year were affected by unusual weather patterns. Unusually large employment increases in January and February were largely reversed the following 2 months. From an analytical standpoint, May 1990 is a more appropriate reference point.

[8] *New One-Family Homes Sold, Current Construction Reports*, Series C-25 (Bureau of the Census, various issues).

[9] National Association of Realtors.

[10] *Housing Starts, Current Construction Reports*, Series C-20 (Bureau of the Census, various issues)

[11] *Value of New Construction Put In Place, Current Construction Reports*, Series C-30 (Bureau of the Census, various issues).

[12] *Manufacturers' Shipments, Inventories, and Orders: 1982–1991* (Bureau of the Census, 1992), p. 37. Data for 1992 are from various monthly releases. All industry orders data cited are from these sources.

[13] *Combined Annual and Revised Monthly Wholesale Trade Report, Current Business Reports* (Bureau of the Census, April 1993).

[14] *Combined Annual and Revised Monthly Retail Trade Report, Current Business Reports* (Bureau of the Census, April 1993).

[15] *Survey of Current Business* (U.S. Department of Commerce, Bureau of Economic Analysis, January 1991, December 1992, and January 1993). Retail sales deflated by CPI-U for apparel and upkeep.

[16] Leah N. Spiro and Michele Galen, "Are Fewer Banks Better?," *Business Week*, Aug. 17, 1992, pp. 92–93.

[17] See David Hiles, "Health services: the real jobs machine" in the *Monthly Labor Review*, November 1992, pp. 3–16.

[18] For details on the effect of temporary census workers, see *Employment and Earnings* (Bureau of Labor Statistics, February 1991), p. 7.

[19] *Survey of Current Business* (U.S. Department of Commerce, Bureau of Economic Analysis, various issues).

[20] The series was derived from the Bureau's input-output model. Industries with a majority of employment involved in the production of defense goods were included, based on 1987 employment requirements.

[21] Derived from the Bureau's input-output model. Industries with a majority of employment dependent on the construction market were included, in addition to some trade industries which distribute construction supplies.

[22] *MVMA Motor Vehicle Facts & Figures 1992* (Detroit, Motor Vehicles Manufacturers Association, 1992), p. 13.

[23] *Ibid*, p. 3.

[24] Derived from the Bureau's input-output model. Industries with a majority of employment dependent on automobile production were included, in addition to some trade industries which distribute automobiles.