

The nature of employment growth, 1989-95

The largest gains in job growth occurred in the highest-paying occupations; increases also were posted in relatively low-earnings job categories and employment fell among the job categories in the middle

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Although considerable job growth has occurred over the past few years, many labor market analysts have raised concerns about the quality of the employment gains. Data from the Current Population Survey clearly indicate that the increase in employment, though somewhat concentrated in relatively low-wage industries, has taken place in both relatively higher-paying and lower-paying occupations. And, while downsizing and restructuring have led to the displacement of many managers and professionals, considerable growth still has occurred within these occupations. In fact, three-quarters of the net job growth between 1989 and 1995 occurred in the managerial and professional specialty occupations (36 and 39 percent, respectively).

This article examines the quality of employment growth, using earnings as the measure of job quality, for a group of 90 major industries and occupations. Unlike previous studies that have focused on changes in employment between two points in time, this analysis adds the dimension of a monthly time series. The findings reinforce the conclusion drawn from previous BLS research that employment growth has been greater for occupation-industry cells at the top and bottom of the earnings distribution than for those in the middle.¹

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Industry and occupation

Employment matrix. Occupational and industrial classifications often are used as proxies for job quality. Occupations or industries with high average earnings offer "good jobs" under one simplified scheme, while those with low earnings offer "bad jobs."

Assessments that have relied only upon industry or upon occupational data to portray the change in job growth over time can paint a limited, and perhaps distorted, picture. From an industry viewpoint, all of the net growth between 1989 and 1995 could be attributed to the employment change in services and retail trade—presumably low-paying industries.² (See table 1.) In contrast, from an occupational perspective, growth in the managerial and professional specialty groups (high-paying occupations) accounted for 75 percent of the employment change. This growth represents a vastly disproportionate increase, because managerial and professional specialty occupations made up only 26 percent of employment in 1989. Previous research indicates that occupational data crossed by industry offers a clearer understanding of the nature of job growth than do occupational or industry data alone.³

From 1989 to 1995, total employment in-

creased by 6.7 million, to 124.9 million. About four-fifths of that increase was in occupation-industry cells for which the median weekly earnings of wage and salary workers were above the median for all such workers (\$394). Just where this growth occurred can be determined by examining the occupation-industry cells in detail. Table 2 presents the employment growth or decline for all occupation-industry cells.

Because month-to-month changes in 90 series would be hard to track separately, they were ordered into a more manageable format. Individual data cells of this matrix were ranked in descending order by the median weekly earnings of all wage and salary workers in 1993.⁴ The occupation-industry cells were then grouped into three categories—highest-, middle-, and lowest-earnings—that each accounted for approximately one-third of total employment in 1988.⁵ An employment time series for each occupation-industry cell from January 1989 to December 1995 was developed and these were sorted into the appropriate earnings group.

Time series analysis. Further information on employment growth in the three groups is obtained from the time series presented in chart 1. The data show the percent change in employment (on a 12-month moving average basis) for each of the three earnings groups, using the annual average for 1989 as the base.⁶ As clearly indicated, job growth increased far more for those occupational groups at the top than for those at the bottom of the earnings distribution (12.7 and 6.7 percent, respectively) during the entire period. Those in the middle even experienced a slight decline in employment. As chart 1 shows, for much of the period, growth in the highest- and lowest-earnings groups was quite similar. With the onset of the labor market recovery in 1992, however, growth in the highest-earnings group accelerated. (In the chart, this appeared to occur after 1993, because the data are on a 12-month moving average basis.) Between 1993 and 1995 employment increased far more in the highest-earnings group than in either of the other two groups, as shown in the following tabulation (annual averages in thousands):

	1993	1995	Percent change
Total employment	120,259	124,900	3.9
Highest-earnings group	42,506	45,685	7.5
Middle-earnings group	36,504	37,026	1.4
Lowest-earnings group	41,249	42,189	2.3

To determine whether the trends shown in chart 1 for 1989-95 differ from those for earlier years, estimates were developed for 1983-89, a period of more rapid growth.⁷ The relative order of job growth for all earnings groups for 1983-89 was the same as that over the 1989-95 period. However, unlike the pattern in the recent period, the employment increases in the highest-earnings group throughout the earlier period were consistently greater than those for the lowest-earnings group. In addition, gains made by the middle-earnings groups over the 1983-89 period were in contrast to the losses registered since 1989.

Highest-earnings group. Employment in this group, which consists primarily of managerial and professional specialty occupations in a variety of industries, grew by 5.1 million (12.7 percent) over the 1989-95 period. Managers and pro-

Table 1. Employment change, 1989-95, and 1993 median usual weekly earnings by major industry and occupation

[Numbers in thousands]			
Industry and occupation	Change in total employment, 1989-95		Median weekly earnings, ¹ 1993
	Number	Percent of total	
Industry			
Total	6,679	100.0	\$394
Services	5,532	82.8	371
Retail trade	1,121	16.8	225
Transportation and public utilities	580	8.7	546
Public administration	388	5.8	555
Wholesale trade	357	5.3	446
Agriculture	207	3.1	252
Finance, insurance, and real estate	-22	-3	448
Construction	-65	-1.0	454
Mining	-88	-1.3	637
Manufacturing	-1,332	-19.9	452
Occupation			
Total	6,679	100.0	394
Professional specialty	2,599	38.9	617
Executive, administrative, and managerial	2,389	35.8	635
Service occupations	1,101	16.5	215
Sales occupations	975	14.6	314
Technicians and related support	240	3.6	495
Farming, forestry, and fishing	180	2.7	234
Administrative support, including clerical	-143	-2.1	349
Operators, fabricators, and laborers	-278	-4.2	328
Precision production, craft, and repair	-384	-5.7	490

¹ Data refer to all wage and salary workers.
 Note: Employment growth was calculated using annual averages for 1989-95. To achieve better comparability with data for 1990 forward, data for 1989 were adjusted to incorporate 1990 census-based population controls. (See text footnote 3.)

Table 2. Employment levels in 1989 and 1995, change in employment, 1989-95, and 1993 median usual weekly earnings by major occupation and industry

[Numbers in thousands]

Occupation	Industry	Employment		Change in total employment, 1989-95 ¹		Median weekly earnings, ² 1993
		1989	1995	Number	Percent	
Highest-earnings group						
Total		40,539	45,685	5,146	12.7	(³)
Professional specialty	Mining	63	60	-2	-4.0	\$1,083
Executive, administrative, and managerial	Mining	104	100	-4	-3.8	942
Sales occupations	Mining	9	4	-5	-52.5	(⁴)
Professional specialty	Construction	145	145	-1	-5	875
Professional specialty	Manufacturing	1,805	1,787	-18	-1.0	819
Executive, administrative, and managerial	Manufacturing	2,560	2,804	244	9.5	804
Professional specialty	Finance, insurance, and real estate	206	268	63	30.6	786
Professional specialty	Transportation and public utilities	479	510	31	6.4	779
Executive, administrative, and managerial	Transportation and public utilities	929	1,124	194	20.9	764
Technicians and related support ..	Mining	30	22	-9	-28.5	(⁴)
Professional specialty	Public administration	782	981	199	25.4	722
Executive, administrative, and managerial	Construction	1,016	1,117	101	9.9	699
Technicians and related support ..	Transportation and public utilities	278	310	32	11.6	682
Professional specialty	Wholesale trade	89	108	19	21.9	675
Executive, administrative, and managerial	Public administration	1,223	1,356	133	10.9	669
Professional specialty	Agriculture	71	92	21	29.5	649
Precision production, craft, and repair	Mining	233	228	-5	-1.9	644
Precision production, craft, and repair	Transportation and public utilities	1,263	1,223	-40	-3.1	624
Executive, administrative, and managerial	Finance, insurance, and real estate	2,108	2,258	149	7.1	620
Sales occupations	Finance, insurance, and real estate	1,851	1,985	134	7.2	604
Technicians and related support ..	Public administration	252	230	-23	-9.0	602
Technicians and related support ..	Finance, insurance, and real estate	141	148	7	4.7	599
Executive, administrative, and managerial	Services	4,726	6,029	1,302	27.6	598
Executive, administrative, and managerial	Wholesale trade	510	554	44	8.6	598
Technicians and related support ..	Manufacturing	744	615	-130	-17.4	596
Sales occupations	Transportation and public utilities	349	259	-90	-25.7	595
Sales occupations	Wholesale trade	1,835	1,979	144	7.8	591
Executive, administrative, and managerial	Agriculture	78	105	26	33.6	(⁴)
Precision production, craft, and repair	Public administration	239	229	-10	-4.2	582
Professional specialty	Services	11,542	13,755	2,214	19.2	578
Sales occupations	Manufacturing	754	756	1	.2	578
Service occupations	Mining	8	5	-3	-40.8	(⁴)
Service occupations	Public administration	1,363	1,577	214	15.7	558
Technicians and related support ..	Wholesale trade	40	48	8	20.2	(⁴)
Operators, fabricators, and laborers	Mining	188	154	-35	-18.4	518
Professional specialty	Retail trade	351	425	74	21.0	515
Administrative support, including clerical	Transportation and public utilities	2,173	2,337	164	7.5	502
Middle-earnings group						
Total		38,141	37,026	-1,115	-2.9	(³)
Precision production, craft, and repair	Manufacturing	4,135	3,837	-298	-7.2	502
Sales occupations	Construction	66	63	-3	-4.2	502
Sales occupations	Public administration	24	24	1	2.3	(⁴)
Precision production, craft, and repair	Construction	4,443	4,362	-81	-1.8	468
Technicians and related support ..	Construction	54	43	-11	-20.8	(⁴)

Table 2. Continued—Employment levels in 1989 and 1995, change in employment, 1989-95, and 1993 median usual weekly earnings by major occupation and industry

[Numbers in thousands]

Occupation	Industry	Employment		Change in total employment, 1989-95 ¹		Median weekly earnings, ² 1993
		1989	1995	Number	Percent	
Precision production, craft, and repair	Wholesale trade	322	308	-14	-4.5	466
Operators, fabricators, and laborers	Transportation and public utilities	2,372	2,687	315	13.3	463
Administrative support, including clerical	Mining	81	53	-28	-34.8	454
Operators, fabricators, and laborers	Public administration	151	119	-32	-21.5	448
Technicians and related support ..	Services	2,019	2,307	288	14.3	436
Executive, administrative, and managerial	Retail trade	1,543	1,740	197	12.8	424
Precision production, craft, and repair	Services	1,848	2,008	160	8.6	415
Administrative support, including clerical	Public administration	1,480	1,417	-63	-4.3	414
Service occupations	Transportation and public utilities	273	247	-26	-9.5	414
Precision production, craft, and repair	Finance, insurance, and real estate	144	183	39	27.3	413
Precision production, craft, and repair	Retail trade	1,237	1,111	-126	-10.1	410
Precision production, craft, and repair	Agriculture	46	35	-10	-22.6	(*)
Administrative support, including clerical	Manufacturing	2,404	2,108	-296	-12.3	394
Operators, fabricators, and laborers	Construction	1,513	1,456	-56	-3.7	379
Service occupations	Agriculture	18	16	-2	-13.0	(*)
Service occupations	Manufacturing	350	294	-56	-16.0	346
Operators, fabricators, and laborers	Manufacturing	8,980	8,181	-799	-8.9	345
Operators, fabricators, and laborers	Wholesale trade	970	1,098	129	13.3	343
Technicians and related support ..	Retail trade	80	141	62	77.4	343
Administrative support, including clerical	Finance, insurance, and real estate	3,149	2,757	-392	-12.4	342
Administrative support, including clerical	Construction	442	431	-11	-2.4	342
Lowest-earnings group						
Total ⁵		39,543	42,189	2,646	6.7	(*)
Administrative support, including clerical	Wholesale trade	803	792	-11	-1.4	341
Technicians and related support ..	Agriculture	29	45	16	54.5	(*)
Farming, forestry, and fishing	Manufacturing	92	111	19	20.7	333
Farming, forestry, and fishing	Transportation and public utilities	12	12	-1	-4.5	(*)
Farming, forestry, and fishing	Public administration	55	25	-30	-55.4	(*)
Administrative support, including clerical	Services	6,286	6,848	563	9.0	305
Operators, fabricators, and laborers	Agriculture	86	81	-4	-5.0	304
Service occupations	Construction	36	33	-3	-9.4	(*)
Operators, fabricators, and laborers	Finance, insurance, and real estate	62	47	-15	-23.8	(*)
Farming, forestry, and fishing	Construction	17	18	1	3.1	(*)
Administrative support, including clerical	Retail trade	1,801	1,501	-100	-6.2	273
Administrative support, including clerical	Agriculture	114	145	31	27.0	265
Service occupations	Finance, insurance, and real estate	279	269	-10	-3.6	255
Sales occupations	Services	902	1,086	184	20.4	250
Operators, fabricators, and laborers	Services	1,807	1,906	98	5.4	234
Farming, forestry, and fishing	Services	410	405	-5	-1.3	234
Farming, forestry, and fishing	Agriculture	2,771	2,907	136	4.9	230

Table 2. Continued—Employment levels in 1989 and 1995, change in employment, 1989–95, and 1993 median usual weekly earnings by major occupation and industry

[Numbers in thousands]

Occupation	Industry	Employment		Change in total employment, 1989–95 ¹		Median weekly earnings, ² 1993
		1989	1995	Number	Percent	
Farming, forestry, and fishing	Finance, insurance, and real estate	66	68	2	3.4	229
Sales occupations	Retail trade	8,334	8,949	615	7.4	225
Service occupations	Wholesale trade	45	37	-8	-17.1	(*)
Farming, forestry, and fishing	Wholesale trade	15	62	47	311.0	(*)
Service occupations	Services	8,881	9,610	728	8.2	216
Sales occupations	Agriculture	21	15	-7	-30.9	(*)
Operators, fabricators, and laborers	Retail trade	2,219	2,340	121	5.5	209
Farming, forestry, and fishing	Retail trade	23	34	10	45.2	(*)
Service occupations	Retail trade	4,576	4,844	267	5.8	167

¹ Change (number and percent) was calculated from unrounded estimates, not from the rounded estimates shown in the total employment columns.

² Data refer to all wage and salary workers.

³ Data not available.

⁴ Data not shown where the 1993 employment base was less than 50,000.

⁵ Includes farming, forestry, and fishing workers in mining, not shown separately.

Note: Detail may not sum to totals due to rounding. Employment growth was calculated using annual averages for 1989–95. To achieve better comparability with data for 1990 forward, data for 1989 were adjusted to incorporate 1990 census-based population controls. (See text footnote 3.)

professionals in the services industry accounted for a large proportion of this growth, more than 3.5 million (68 percent). However, there were significant gains in the same occupations in other industries. Chart 2 shows the cumulative percent change in employment from 1989 to 1995 for some of the managerial occupations in the highest-earnings group. Surprisingly, managerial employment in manufacturing—an industry with declining employment overall—grew by about a quarter of a million over the period.⁸ Growth in the highest-earnings group was so heavily concentrated among the managerial and professional specialty occupations that, on net, they contributed 93 percent of the group's employment change. Only a few of the managerial and professional specialty occupations in the highest-earnings group showed little change or declined.

The earnings distribution in the highest-earnings group varied by \$581 (from \$502 to \$1,083) while that for the other two groups combined had a range of \$335 (from \$167 to \$502). Median earnings in occupation-industry cells at the lower end of the highest-earnings group more closely resemble those of the middle-earnings group than they do those at the top of the highest-earnings group. In an effort to assess whether growth was concentrated in the lower or upper end of the highest-earnings group, the group was halved. The overall job growth proved to be about equally split between the two groups, with the top half of the group growing by 12.4 percent and the bottom by 13.0 percent.

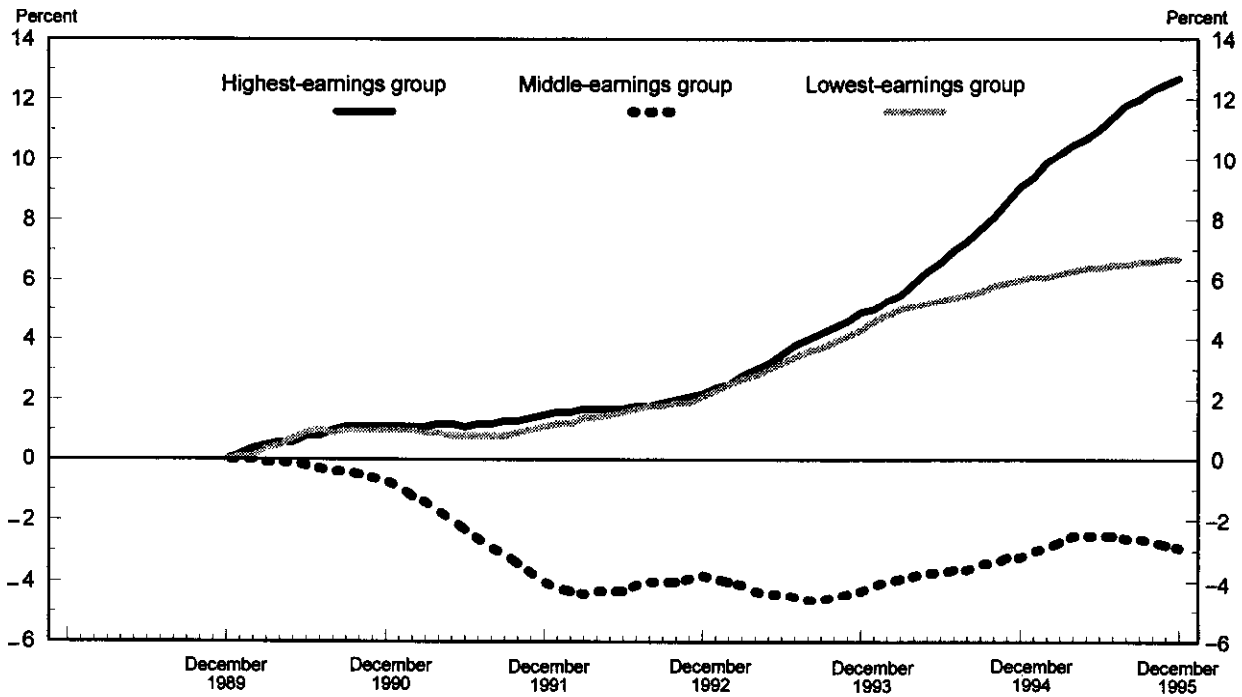
Middle-earnings group. Declining employment perhaps best characterizes the overall trend in the middle-earnings group. Led by a variety of occupations in manufactur-

ing with very similar downward-sloping trends, employment in this group declined by 1.1 million from 1989 to 1995. Chart 3 shows modest job growth in selected occupations within the transportation and public utilities, services, and retail trade industries but across-the-board losses in occupations within manufacturing. When the middle-earnings group was halved, employment in the top portion rose by 440,000, while employment in the lower portion declined by 1.6 million.

Lowest-earnings group. Employment growth in the lowest-earnings group was concentrated in the sales and service occupations in the retail trade industry and the administrative support and service occupations in the services industry. These four occupation-industry cells, which are dispersed across the earnings distribution of the group, accounted for about four-fifths of the net change in job growth within the lowest-earnings group. (See chart 4, page 36.) Chart 4 also in part explains the divergence beginning in 1994 between the employment growth rate of the highest-earnings group and that of the lowest-earnings group as shown in chart 1. Some of the major occupations (administrative support and the service occupations in the services industry and service occupations in retail trade) that had been acting as “drivers” of the overall job growth in the lowest-earnings group had simply become “passengers” by 1994.

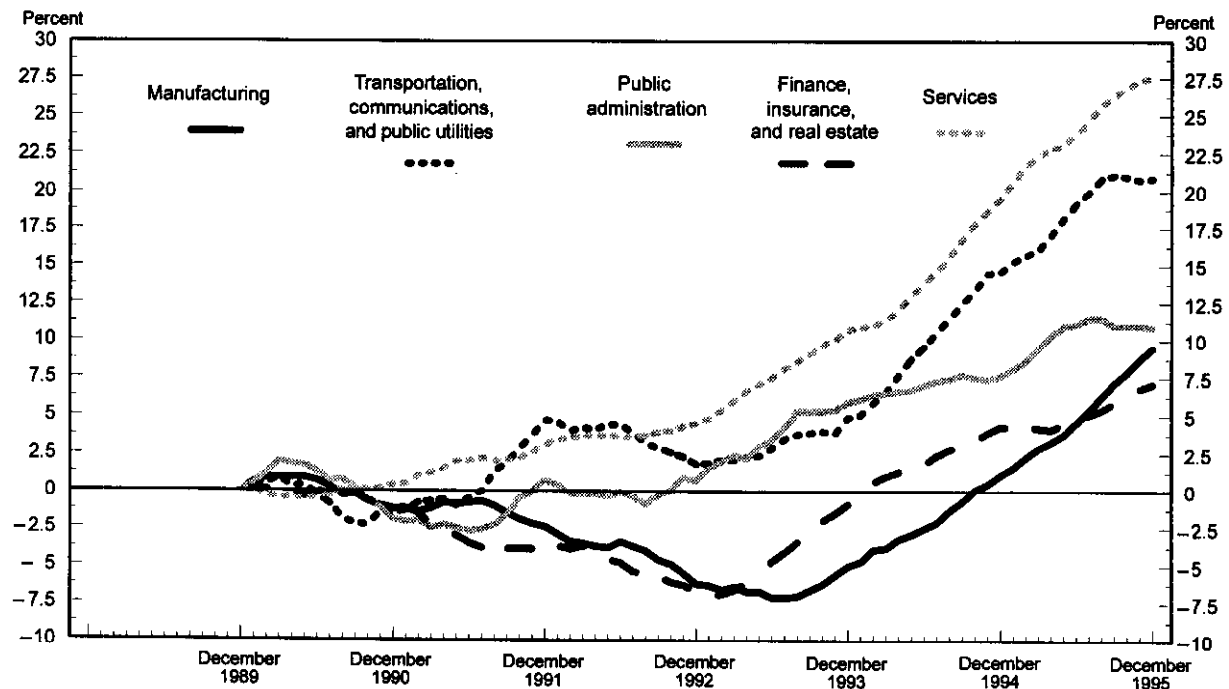
Limitations of the analysis. This analysis provides a method for examining the nature of employment growth using time series data, but it also has limitations. First, earnings data are based solely on cash payments; other aspects of the quality of employment, such as fringe benefits, working conditions, and

Chart 1. Employment growth or decline by earnings group, 1989-95



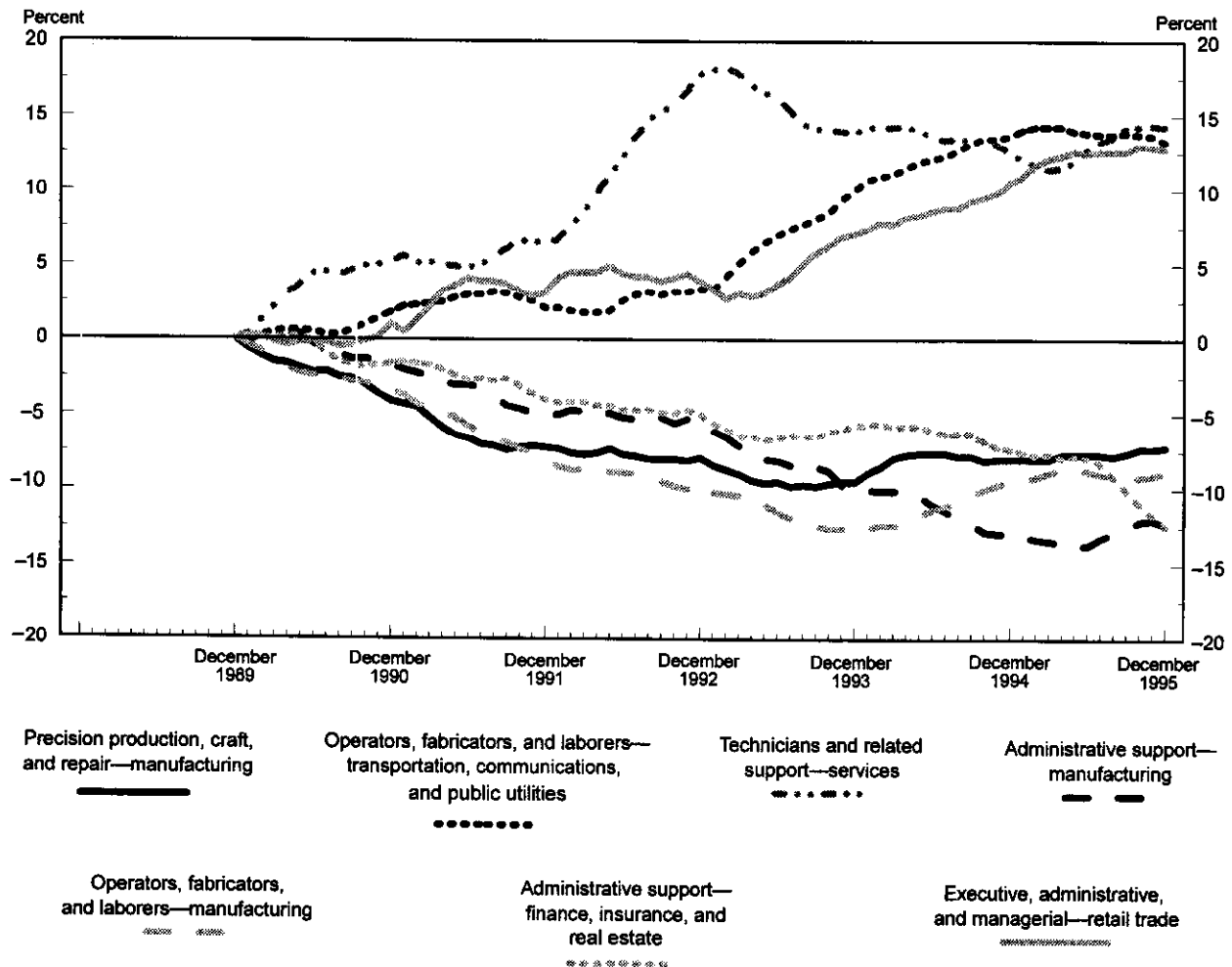
NOTE: The percent change shown represents the percent growth (decline) in average employment between the 12 months ending in the month indicated and the average employment level in 1989.

Chart 2. Employment growth or decline of managerial workers in the highest-earnings group by industry, 1989-95



NOTE: The percent change shown represents the percent growth (decline) in average employment between the 12 months ending in the month indicated and the average employment level in 1989.

Chart 3. Employment growth or decline of selected occupation–industry cells in the middle-earnings group, 1989–95



NOTE: The percent change shown represents the percent growth (decline) in average employment between the 12 months ending in the month indicated and the average employment level in 1989.

job security, are not considered. Second, earnings data are based on the 1993 median earnings for all wage and salary workers in the occupation–industry cells, and, as such, may differ from the earnings of the total employed or those of the “newly employed” alone. Additionally, this study only analyzes the net change in employment and, therefore, does not account for job openings stemming from replacement needs.

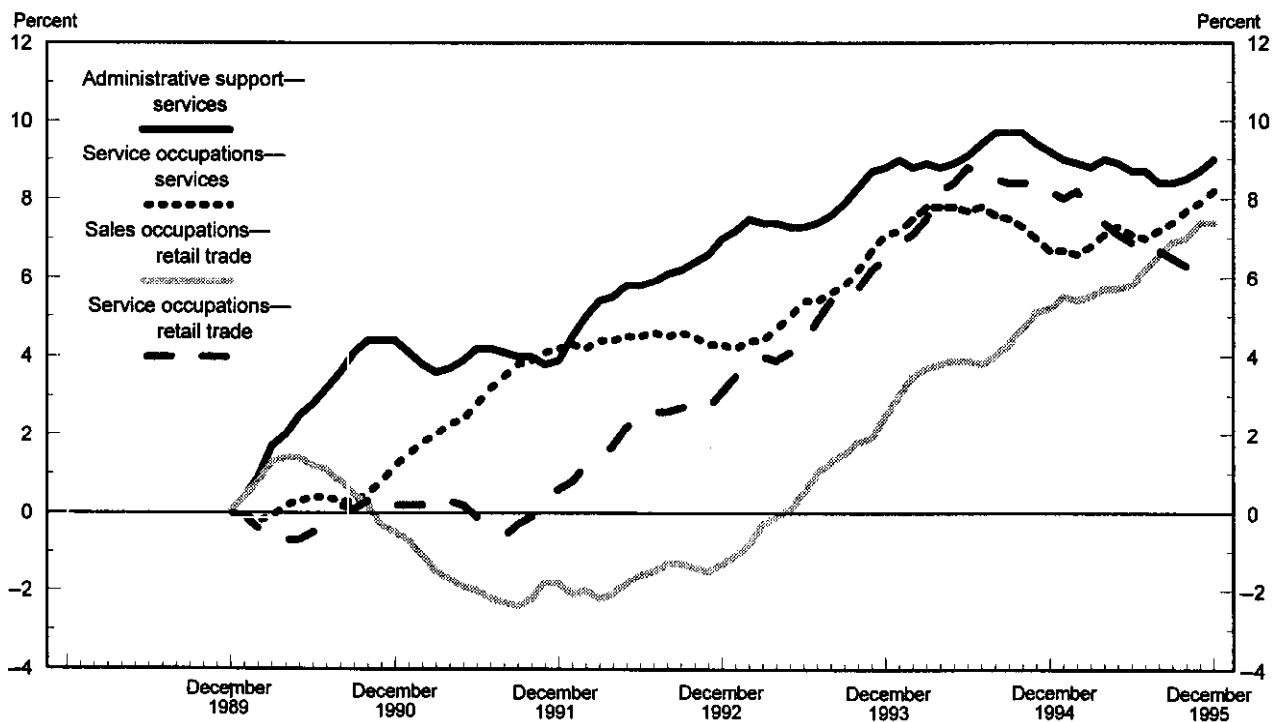
IN SUMMARY, the change in employment from 1989 to 1995 resulted in a greater share of job growth in relatively higher-earning and lower-earning occupations, although the gains were larger in the former by a 2-to-1 margin. Job growth also was concentrated among two high-paying occupations and two low-paying industries—the managerial and professional specialty occupations and the services and retail trade industries.

Footnotes

¹ See Thomas Nardone, “Nature of employment growth examined by BLS,” *Employment in Perspective: Earnings and Job Growth*, USDL 94-410, Report 877 (Bureau of Labor Statistics, August 1994); and Neal H. Rosenthal, “The nature of occupational employment growth: 1983–93,” *Monthly Labor Review*, June 1995, pp. 45–54.

² The source of employment and earnings data used in this article is the Current Population Survey (CPS), a monthly survey of about 50,000 households, conducted by the Bureau of Census for the Bureau of Labor Statistics. The employment estimates for the period under study have been affected by a number of factors. Official data for 1990 and later years incorporate 1990 census-based population controls, adjusted for the estimated undercount, whereas 1989 data are based on 1980 census population controls, for which no such adjustment has been made. In an effort to make the 1989 estimates more comparable to the other years analyzed, they were adjusted on the basis of the relationship, or ratios, between the 1990–93 monthly estimates prior to and after the incorporation of 1990 census population controls. The

Chart 4. Employment growth or decline of selected occupation-industry cells in the lowest-earnings group, 1989-95



NOTE: The percent change shown represents the percent growth (decline) in average employment between the 12 months ending in the month indicated and the average employment level in 1989.

pre- to post-1990 census adjustment ratio for each occupation-industry cell for each month over the 4 years from 1990-93 were averaged and applied to the 1989 unadjusted estimates.

In addition, data for January 1994 and forward are not strictly comparable with data for earlier years because of the introduction of a major redesign of the CPS (household survey) questionnaire and collection methodology. For additional information on the redesign, see "Revisions in the Current Population Survey Effective January 1994" in the February 1994 issue of *Employment and Earnings*. At the aggregate employment levels used in this analysis, however, no one data series showed an obvious break between 1993 and 1994.

³ See Nardone, "Nature of employment growth"; and Rosenthal, "The nature of occupational employment growth."

⁴ The Current Population Survey routinely gathers data on the median usual weekly earnings of wage and salary workers. It does not, however, have such a measure for total employed persons, because earnings data are not collected for the self-employed. Therefore, the median usual weekly earnings of all wage and salary workers are used here as a proxy for the earnings of all employed persons. This analysis would be less relevant if the number of workers who were self-employed were growing at a faster pace than the number of wage and salary workers, because the earnings for wage and salary workers in an occupation would not necessarily apply to the self-employed. Examination of the data suggests, however, that the proportion of the total employed who were wage and salary workers was relatively unchanged over the period.

⁵ The groups do not necessarily contain exactly a third of total employment because an occupation-industry cell that fell on the dividing line between groups was not split, but rather included in the group in which most of its employment fell. Several alternatives for dividing the data were examined and, admittedly, there are arguments for other methods. By and large, however, the data do not lend themselves well to finer division such as

quartiles and quintiles, because major occupation-industry cells tend to fall on the dividing line. For example, when data are divided into quartiles, the boundary between the upper two quartiles falls in the middle of a very large occupation-industry cell (professional specialty in services, with an employment base of more than 11 million in 1988). Dividing into quintiles results in a very unequal employment distribution in several groups because occupation-industry cells with large 1988 employment levels fall on the dividing line. No attempt should be made to equate the middle-earnings group with the "middle class."

⁶ Because the data used were not seasonally adjusted, they were averaged over a 12-month moving period to smooth seasonal variations. The annual (12-month) average employment for 1989 is the base employment level, shown as the zero value for December 1989. All other values are the average employment level for the 12 months ending with a specific month divided by the 12-month average for 1989, converted to a percent change.

⁷ For purposes of comparison, data for 1983-89 were analyzed using the same methodology as that applied to the 1989-95 data, and the analysis thus has certain limitations. Occupation-industry cells were ranked according to the 1993 median usual weekly earnings of all workers and grouped into earnings categories by 1988 total employment. Had the 1983-89 period been the focus of this article, earlier years would have been chosen for the earnings and employment bases, which would have been more representative of that period.

⁸ This growth is corroborated by data (1983-93) from another industry-occupation matrix developed by the Bureau's Office of Employment Projections. In that matrix, the primary source of data on the occupational structure of industries is the Occupational Employment Statistics survey. Information in that survey is obtained from employers, rather than individual workers as is the case in the Current Population Survey. See Rosenthal, "The nature of occupational employment growth."