

## The services industry in the ‘good’ versus ‘bad’ jobs debate

*Because average wages are higher in manufacturing than in services, some observers view employment shifts to services as shifts from ‘good’ to ‘bad’ jobs; however, a deeper assessment reveals that within each industry, especially in services, there is a range of job quality*

Joseph R.  
Meisenheimer II

One of the most notable transformations in the U.S. labor market since World War II has been the rising share of employment in the services industry and the declining share in manufacturing. In 1945, at the conclusion of the war, the services industry accounted for 10 percent of nonfarm employment, compared with 38 percent for manufacturing. (See chart 1.) In 1982, services surpassed manufacturing as the largest employer among major industry groups. By 1996, the services industry accounted for 29 percent of nonfarm employment, and manufacturing, at 15 percent, was actually somewhat smaller than retail trade.

In industrial classification systems currently used in the United States, there is a broader grouping of industries that are called service-producing industries. These industries include: transportation and public utilities; wholesale trade; retail trade; finance, insurance, and real estate; and services. Rather than examining all service-producing industries in detail, this article focuses on the services industry, which has the largest share of employees in the service-producing group. The services industry includes a broad variety of activities, such as health care, advertising, computer and data processing services, personnel supply, private education, social services, legal services, management and public relations, engineering and architectural services, accounting, and recreation. The article also includes comparisons between these industries and other industries outside of services, such as retail trade, mining, and construction. Demand for services has grown tremendously as a result of demographic shifts, changes in consumer preferences, technological advancements, and increases in competitive pressures. Some of these same forces have contributed to the decline in both

the level and share of manufacturing jobs. Table 1 shows employment trends in manufacturing and the other major industry groups, as well as services and its detailed components.

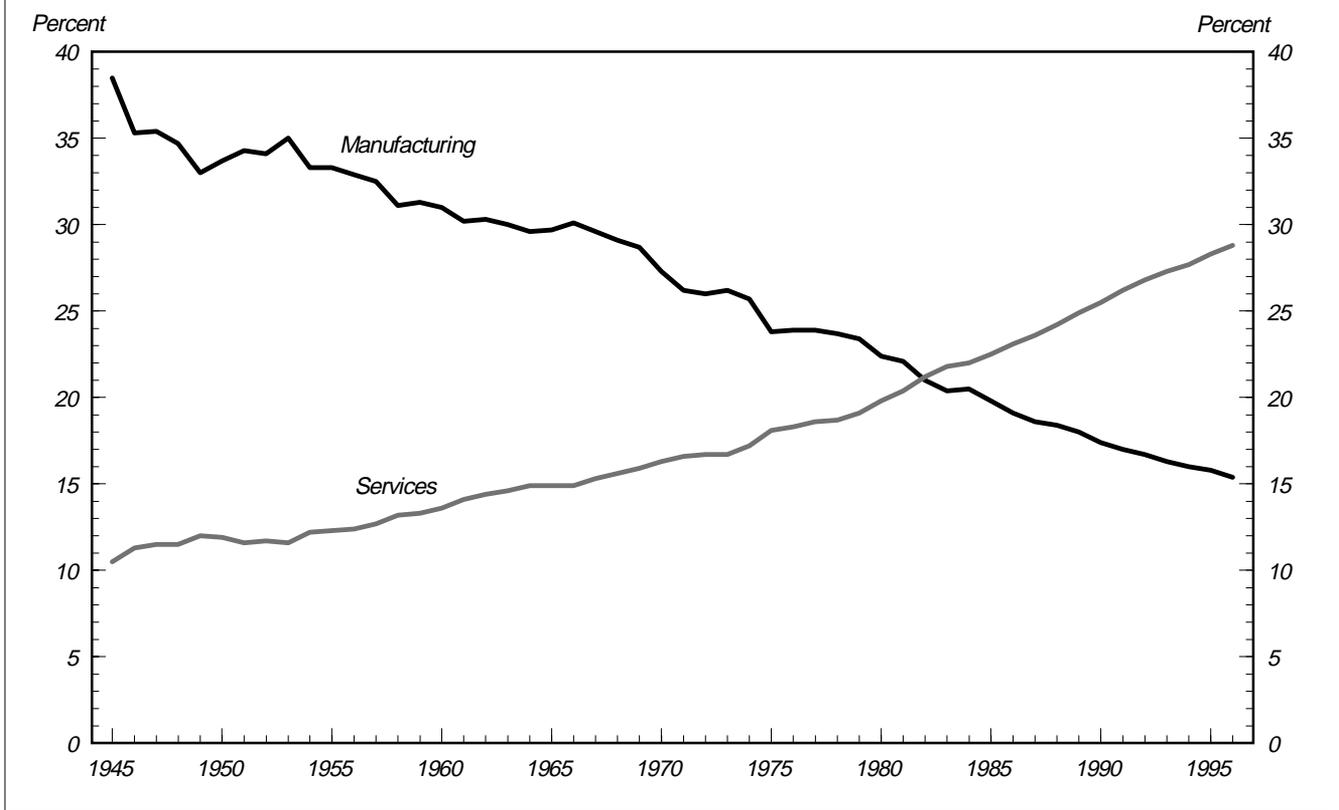
### Nature of the debate

The services industry accounts for a growing proportion of the output of goods and services produced in the United States, as measured by the gross domestic product (GDP). Just after World War II, the services industry accounted for 9 percent of GDP; by 1994, its share had risen to more than 19 percent. Over the same period, the contribution of manufacturing to total U.S. output fell from about 30 percent to 17 percent.<sup>1</sup>

The shift of employment and output away from manufacturing and toward services has caused considerable consternation among some labor market observers, policymakers, business leaders, and workers. One reason for this concern is that the production of goods—in factories, farms, and mines—often has been regarded as the source of a nation’s economic strength. Indeed, Adam Smith espoused such a view in *The Wealth of Nations*. In that influential 1776 treatise, Smith referred to the labor of manufacturers as “productive” and the labor of those who provide services as “unproductive.”<sup>2</sup> In Smith’s view, manufacturers added value to the raw materials with which they worked, and this value was stored in whatever commodity the manufacturer produced. Servants, as Smith called them, did not produce value that lasted beyond the moment the service was performed. Smith felt that service providers—physicians, lawyers, clergy, household servants, actors, mu-

Joseph R.  
Meisenheimer II  
is an economist in the  
Division of Labor Force  
Statistics, Bureau of  
Labor Statistics.

**Chart 1. Share of nonfarm employment in manufacturing and services industries, annual averages, 1945–96**



**In 1982, services surpassed manufacturing as the largest employer among major industry groups**

sicians, soldiers, and so forth—were necessary and even respected members of society. Nevertheless, Smith wrote, “A man grows rich by employing a multitude of manufacturers: he grows poor by maintaining a multitude of menial servants.”<sup>3</sup> A similar sentiment often is heard today in the rhetoric of some political and business leaders.

The purpose of this article is not to determine whether the shift from manufacturing to services harms or helps national economic strength. Rather, this article focuses on another concern that often is expressed about the shift from manufacturing to services. Namely, how does this shift affect the quality of employment in the United States? Because average wages are higher in manufacturing than in services, some observers view the employment shifts as generally representing a shift from “good” to “bad” jobs.<sup>4</sup>

Beyond comparisons of average pay, there are many other elements of job quality. A comprehensive assessment of these elements reveals that the services industry is very diverse in terms of job quality, and many jobs in the industry compare favorably with those in manufacturing and other industries. While workers in services generally are less likely than those in manufacturing to receive employer-provided health, retire-

ment, and disability benefits, in several large segments of services—especially hospitals and private education—workers have high rates of benefit coverage. Moreover, workers in the services industry are much less likely to lose their jobs than are those in manufacturing, and work-related injuries, illnesses, and deaths are far less common in services than in other industries. This article takes a comprehensive approach in assessing job quality. In addition to pay, four other characteristics of jobs—employee benefits, job security, occupational structure, and occupational safety—are examined to assess the quality of private-sector jobs in services, manufacturing, and other industries.

### Elements of job quality

Every job has a number of characteristics that could be considered when evaluating the job’s quality or desirability. For example, what does the job pay? What benefits are provided? How secure is the job? What kind of work does it entail? What is the risk of injury or death on the job? Are there opportunities for advancement? Does the job require a lot of travel? What are the supervisors and coworkers like? These

are just some of the questions that a worker would ask when deciding whether to choose a particular job. Researchers might ask many of these same questions when assessing the quality of groups of jobs, but finding the answers is somewhat more complicated.

Economic theory has long suggested that there is a tradeoff in which workers who have jobs with undesirable characteristics receive higher pay for enduring those characteristics. Researchers have had only limited success in testing this theory of compensating pay differentials.<sup>5</sup> One reason for this difficulty is that numerous characteristics of jobs and workers can affect pay levels, and not all of these characteristics are measurable with survey data.<sup>6</sup> For example, if a jobseeker prefers work that provides considerable creative freedom and little supervisory oversight, those characteristics are fairly easy to learn for an individual job. For groups of jobs, however,

no survey data exist that provide a direct measure of creative freedom or supervisory oversight. Even when data on a job characteristic are available, their interpretation is often ambiguous, particularly when the rating of the characteristic depends upon individual preference. This article focuses on elements of job quality for which unambiguous survey data are available.

## Wages and salaries

To put it simply, a worker would always prefer high earnings to low earnings, assuming all other elements of job quality remain constant. Arguably, wages and salaries are the single most important element of job quality in the view of most workers and, there is a wealth of data sources available to provide information on earnings. In fact, the Bureau of La-

**Table 1. Employees on nonfarm payrolls by industry, annual averages, selected years, 1972–96**

[Numbers in thousands]

Industry	1972	1988	1996	Annual percent change	
				1972–88	1988–96
Total nonfarm employment .....	73,675	105,209	119,523	2.3	1.6
Private industries .....	60,341	87,823	100,076	2.4	1.6
Services .....	12,276	25,504	34,377	4.7	3.8
Agricultural services .....	—	447	625	—	4.3
Hotels and other lodging places .....	813	1,540	1,716	4.1	1.4
Personal services .....	828	1,056	1,184	1.5	1.4
Laundry, cleaning, and garment services .....	444	414	434	–4	.6
Photographic studios, portrait .....	—	60	75	—	3.0
Beauty shops .....	263	363	400	2.0	1.2
Funeral services and crematories .....	64	79	95	1.3	2.3
Miscellaneous personal services .....	—	116	163	—	4.4
Business services .....	1,491	4,638	7,254	7.4	5.7
Advertising .....	122	229	242	4.0	.7
Credit reporting and collection .....	76	93	127	1.3	4.0
Mailing, reproduction, and stenographic services .....	82	208	297	6.0	4.6
Services to buildings .....	336	780	897	5.4	1.8
Disinfecting and pest control services .....	—	66	85	—	3.3
Other building maintenance services .....	—	714	812	—	1.6
Miscellaneous equipment rental and leasing .....	—	180	238	—	3.6
Medical equipment rental .....	—	20	38	—	8.6
Heavy construction equipment rental .....	—	42	43	—	.4
Other equipment rental and leasing .....	—	118	157	—	3.6
Personnel supply services .....	214	1,350	2,646	12.2	8.8
Employment agencies .....	—	225	305	—	3.9
Help supply services .....	—	1,126	2,341	—	9.6
Computer and data processing services .....	107	673	1,208	12.2	7.6
Computer programming services .....	—	125	272	—	10.3
Prepackaged software .....	—	86	199	—	11.0
Computer integrated systems design .....	—	92	142	—	5.6
Data processing and preparation .....	—	191	231	—	2.4
Information retrieval services .....	—	39	68	—	7.2
Computer maintenance and repair .....	—	31	53	—	6.8
Miscellaneous business services .....	—	1,125	1,600	—	4.5
Detective and armored car services .....	—	425	545	—	3.2
Security systems services .....	—	37	52	—	4.4
Photofinishing laboratories .....	—	83	74	—	–1.4
Auto repair, services, and parking .....	399	834	1,084	4.7	3.3
Automotive rentals, without drivers .....	—	161	193	—	2.3
Automobile parking .....	38	54	68	2.2	2.9

**Table 1. Continued—Employees on nonfarm payrolls by industry, annual averages, selected years, 1972–96**

[Numbers in thousands]

Industry	1972	1988	1996	Annual percent change	
				1972–88	1988–96
Automotive repair shops .....	235	483	602	4.6	2.8
Automotive services, except repair .....	58	135	220	5.4	6.3
Miscellaneous repair services .....	199	350	375	3.6	.9
Motion pictures .....	–	341	522	–	5.5
Amusement and recreation services .....	–	977	1,466	–	5.2
Health services .....	3,412	7,105	9,469	4.7	3.7
Offices and clinics of medical doctors .....	467	1,200	1,679	6.1	4.3
Offices and clinics of dentists .....	–	484	609	–	2.9
Offices and clinics of other health practitioners .....	45	221	414	10.5	8.2
Nursing and personal care facilities .....	591	1,311	1,732	5.1	3.5
Hospitals .....	1,980	3,294	3,814	3.2	1.8
Medical and dental laboratories .....	–	146	196	–	3.7
Home health care services .....	–	216	665	–	15.1
Legal services .....	271	845	930	7.4	1.2
Educational services .....	958	1,567	2,020	3.1	3.2
Elementary and secondary schools .....	235	407	595	3.5	4.9
Colleges and universities .....	637	972	1,182	2.7	2.5
Vocational schools .....	–	88	80	–	–1.3
Social services .....	553	1,552	2,403	6.7	5.6
Individual and family services .....	–	407	649	–	6.0
Job training and related services .....	–	241	315	–	3.4
Child day care services .....	146	356	569	5.8	6.0
Residential care .....	–	389	672	–	7.1
Other social services .....	–	158	198	–	2.9
Museums and botanical and zoological gardens .....	–	58	85	–	4.8
Membership organizations .....	1,403	1,740	2,185	1.4	2.9
Business associations .....	–	99	108	–	1.1
Professional organizations .....	25	47	58	4.1	2.9
Labor organizations .....	–	133	143	–	1.0
Civic and social associations .....	–	382	436	–	1.7
Engineering and management services .....	–	2,230	2,846	–	3.1
Engineering and architectural services .....	339	730	839	4.9	1.7
Engineering services .....	–	557	647	–	1.9
Architectural services .....	–	122	137	–	1.5
Surveying services .....	–	51	55	–	.9
Accounting, auditing, and bookkeeping .....	204	500	566	5.7	1.6
Research and testing services .....	–	492	569	–	1.8
Commercial physical research .....	–	213	217	–	.2
Commercial nonphysical research .....	–	87	123	–	4.4
Noncommercial research organizations .....	–	133	139	–	.5
Management and public relations .....	–	508	873	–	7.0
Management services .....	–	225	304	–	3.8
Management consulting services .....	–	150	303	–	9.2
Public relations services .....	–	31	36	–	1.8
Other services .....	–	32	47	–	4.9
Mining .....	628	713	574	.8	–2.7
Construction .....	3,889	5,098	5,400	1.7	.7
Manufacturing .....	19,151	19,314	18,457	.1	–.6
Durable goods .....	11,022	11,363	10,766	.2	–.7
Nondurable goods .....	8,129	7,951	7,691	–.1	–.4
Transportation and public utilities .....	4,541	5,512	6,261	1.2	1.6
Wholesale trade .....	4,127	6,030	6,483	2.4	.9
Retail trade .....	11,822	19,023	21,625	3.0	1.6
Finance, insurance, and real estate .....	3,908	6,630	6,899	3.4	.5
Government .....	13,334	17,386	19,447	1.7	1.4

NOTE: Dash indicates data are not available.

**Table 2. Employment and average hourly earnings of nonsupervisory workers in private services industries, 1996 annual averages**

Industry	Employment (in thousands)	Average hourly earnings	Industry	Employment (in thousands)	Average hourly earnings
Services .....	30,073	\$11.79	Motion pictures .....	438	\$13.88
Agricultural services .....	526	9.20	Motion picture production and services .....	188	19.63
Veterinary services .....	145	9.13	Video tape rental .....	126	6.03
Landscape and horticultural services .....	341	9.31	Amusement and recreation services .....	1,282	8.82
Hotels and other lodging places:			Bowling centers .....	73	7.00
Hotels and motels .....	1,459	8.15	Miscellaneous amusement and recreation services .....	950	8.30
Personal services:			Physical fitness facilities .....	140	8.12
Laundry, cleaning, and garment services .....	382	7.75	Membership sports and recreation clubs ..	281	8.63
Beauty shops .....	357	8.84	Health services .....	8,396	12.85
Miscellaneous personal services .....	139	8.28	Offices and clinics of medical doctors .....	1,377	13.17
Business services .....	6,451	11.21	Offices and clinics of dentists .....	534	12.89
Advertising .....	177	16.40	Offices and clinics of other health practitioners .....	343	11.94
Mailing, reproduction, and stenographic services:			Nursing and personal care facilities .....	1,560	9.01
Photocopying and duplicating services .....	62	10.63	Hospitals .....	3,491	14.69
Services to buildings .....	805	7.63	Home health care services .....	616	11.18
Disinfecting and pest control services .....	68	9.94	Legal services .....	742	16.60
Other building maintenance services .....	737	7.34	Social services .....	2,086	8.55
Miscellaneous equipment rental and leasing .....	192	11.52	Individual and family services .....	564	9.07
Medical equipment rental .....	30	10.66	Job training and related services .....	271	8.26
Heavy construction equipment rental .....	37	15.18	Child day care services .....	503	7.32
Other equipment rental and leasing .....	125	10.61	Residential care .....	583	8.69
Personnel supply services:			Other social services .....	166	10.24
Help supply services .....	2,276	9.21	Membership organizations:		
Computer and data processing services .....	965	18.72	Professional organizations .....	42	16.57
Computer programming services .....	227	21.53	Engineering and management services .....	2,185	16.36
Computer integrated systems design .....	102	19.54	Engineering and architectural services .....	690	17.95
Information retrieval services .....	51	14.74	Engineering services .....	538	18.67
Computer maintenance and repair .....	40	14.10	Architectural services .....	107	16.32
Miscellaneous business services .....	1,397	9.50	Surveying services .....	45	12.99
Detective and armored car services .....	507	7.40	Accounting, auditing, and bookkeeping .....	406	14.18
Security systems services .....	44	11.70	Research and testing services .....	437	17.23
Auto repair, services, and parking .....	893	10.20	Commercial physical research .....	154	19.50
Automotive rentals, without drivers .....	159	9.74	Commercial nonphysical research .....	102	13.21
Automobile parking .....	60	7.37	Noncommercial research organizations ..	108	19.89
Automotive repair shops .....	486	11.43	Management and public relations .....	652	15.30
Automotive services, except repair .....	188	7.70	Management services .....	221	13.73
Miscellaneous repair services .....	306	12.12	Management consulting services .....	228	17.46
			Public relations services .....	23	14.33
			Other services .....	37	16.12

bor Statistics conducts more than a half dozen surveys that obtain data on earnings.<sup>7</sup> A number of other government agencies and private organizations also collect and disseminate earnings data. Earnings data from two BLS surveys are used in this analysis. One important feature of earnings data is that they are comparatively straightforward to understand. Probably the most widely used source of data on earnings levels in each industry is the BLS Current Employment Statistics survey (often referred to as the CES), the monthly survey of nonfarm establishments that provides information on employment, hours, and earnings. This survey provides two earnings series for production or nonsupervisory workers in each industry: average hourly earnings and average weekly earnings.

The survey does not distinguish between full- and part-time workers, although it does provide information on aver-

age weekly hours. As shown in the following tabulation, average weekly hours vary considerably by industry, with mining and manufacturing having the longest workweek in 1996 and retail trade and services the shortest:

Total private nonfarm .....	34.4
Services .....	32.4
Mining .....	45.3
Construction .....	39.0
Manufacturing .....	41.6
Durable goods .....	42.4
Nondurable goods .....	40.5
Transportation and public utilities .....	39.6
Wholesale trade .....	38.3
Retail trade .....	28.8
Finance, insurance, and real estate .....	35.9

This variation in the length of the workweek can cause industry comparisons of average weekly earnings to be somewhat misleading. Thus, the focus here is on trends in average hourly earnings.

In 1996, average hourly earnings in the private nonfarm sector were \$11.81. The averages varied considerably by industry, as shown below:

Total private nonfarm .....	\$11.81
Services .....	11.79
Mining .....	15.61
Construction .....	15.46
Manufacturing .....	12.78
Durable goods .....	13.34
Nondurable goods .....	11.97
Transportation and public utilities .....	14.44
Wholesale trade .....	12.87
Retail trade .....	7.99
Finance, insurance, and real estate .....	12.79

The average for services, \$11.79, was about the same as the overall average and was 92 percent of the average for manufacturing. The wage gap between services and manufacturing has narrowed considerably since 1964, the earliest year for which earnings data are available for the services industry. In that year, average hourly earnings in services were 77 percent of the average in manufacturing.

Within services, there was a wide range of average hourly earnings in each specific industry. As table 2 shows, some services industries had average earnings in 1996 that were below the average for retail trade, the lowest paying major industry group. Among the low-wage services industries are: video tape rental; child day care services; detective and armored car services; automotive services, except repair (such as car washes); services to buildings; and laundry, cleaning, and garment services.

Other services industries had average hourly earnings that were above the average for mining, the highest paying major industry. In computer and data processing services, for example, nonsupervisory workers earned an average of \$18.72 per hour in 1996. The average for legal services was \$16.60, and in engineering and management services, the average was \$16.36.

Most services industries, of course, pay somewhere between the extremes. Workers in health services, the largest services industry, earn about a dollar more per hour than the average for all services, while workers in automotive repair shops earn 36 cents less than the overall average.

Although these figures add insight to the analysis of job quality, earnings data from the Current Employment Statistics survey have three significant shortcomings. First, the figures exclude the earnings of managerial and supervisory employees. In the private nonfarm sector, production or nonsupervisory workers account for 82 percent of total em-

ployment. In manufacturing, production workers account for 69 percent of total employment, while nonsupervisory workers in services make up 87 percent of the total. Clearly, the Current Employment Statistics survey excludes the earnings of a large, and often highly paid, segment of the nonfarm work force.<sup>8</sup>

Second, the Current Employment Statistics survey does not provide earnings data for workers in some industries. In the services industry, for example, there are no earnings figures for private educational services.

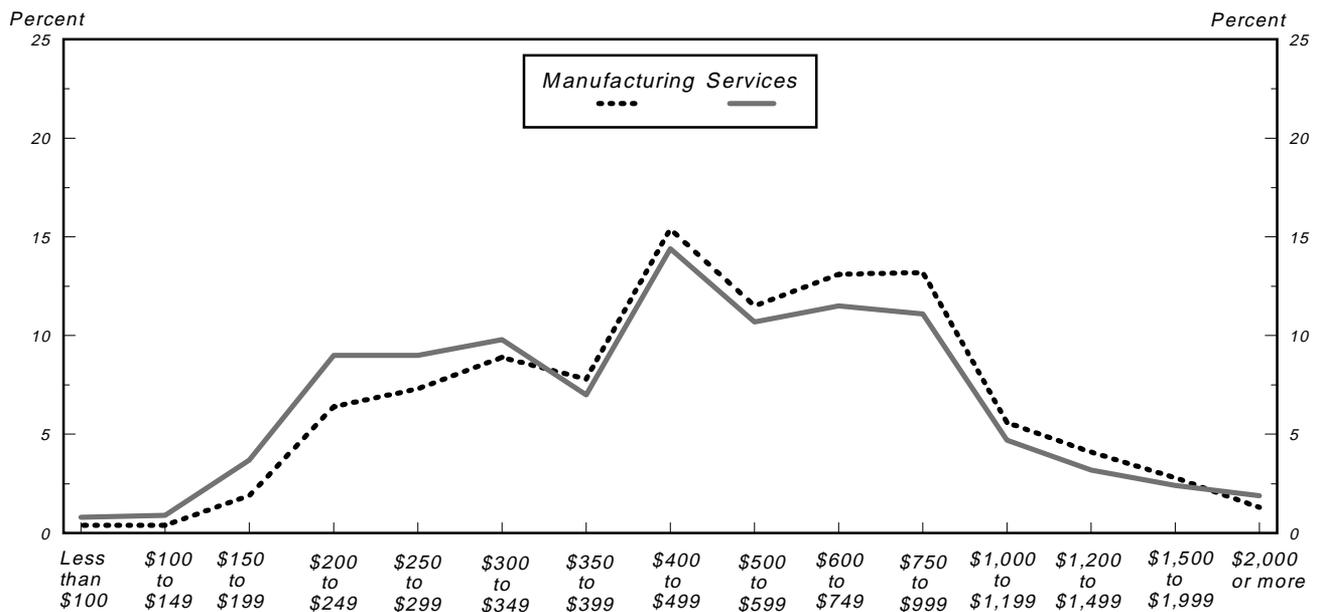
And third, the survey only provides information on average earnings; it reveals nothing about the distribution around that average.<sup>9</sup> The Current Population Survey (CPS), the monthly household survey that provides information on employment, unemployment, earnings, and other labor market indicators, does not have these same shortcomings.<sup>10</sup> The CPS provides information on the usual weekly earnings of wage and salary workers in all occupations and industries (self-employed workers are excluded). Tabulations can be made on mean and median earnings, other earnings quantiles such as deciles, and the distribution of earnings. The CPS also provides information on the weekly hours of individual workers, enabling researchers to distinguish between full- and part-time workers. This analysis focuses on the earnings of full-time workers—those who work 35 hours or more per week.

In 1996, the median weekly earnings of all full-time wage and salary workers were \$490. The median for services (excluding private households) was \$463 per week, 91 percent of the median for manufacturing (\$507). Also, as shown in chart 2, the *distribution* of earnings is very similar for the two industries, suggesting that the notion is overly simplistic that services is a “low-wage” industry and manufacturing a “high-wage” industry.

Another way to compare pay levels in each industry is to divide workers into earnings deciles—that is, earnings ranges that encompass 10 percent of workers in a particular industry. For example, table 3 shows that, among all full-time wage and salary workers in 1996, the upper limit of the first earnings decile was \$233 per week. This means that the lowest paid 10 percent of workers earned no more than \$233 per week. Table 3 also shows that the upper limit of the fifth decile—the median—was \$490 per week, which means that 50 percent of full-time wage and salary workers earned that amount or less per week. Finally, the upper limit of the ninth decile was \$1,059 per week. This means that the highest paid 10 percent of workers earned at least \$1,059, and 90 percent of full-time workers earned that amount or less.

In services (excluding private households), the top 10 percent of workers earned at least \$1,059 per week in 1996, identical to the pay of the overall top earners among full-time wage and salary workers. The top decile for services was 94 percent that of manufacturing, meaning that the highest paid work-

**Chart 2. Distribution of usual weekly earnings for full-time wage and salary workers in manufacturing and services industries, annual averages, 1996**



NOTE: Data for the services industry exclude workers in private households.

**The distribution of earnings is similar for services and manufacturing, suggesting that the notion is overly simplistic that services is “low wage” and manufacturing is “high wage”**

ers in services and manufacturing earned nearly the same amount. Construction had a relatively low upper limit of its ninth decile, \$986 per week, even though the median for construction was slightly above the overall median. In fact, among the major industry groups, only agriculture and retail trade had lower top deciles than construction. Mining had the highest top decile, followed closely by finance, insurance, and real estate.

Within services, the top-paid workers in some industries received extremely high earnings. For example, the upper 10 percent of workers in legal services earned at least \$1,852 per week. Management and public relations also had a high top decile, \$1,720 per week. Other services industries with top deciles above \$1,400 include: advertising; computer and data processing; theaters and motion pictures; offices and clinics of physicians; engineering, architectural, and surveying services; and research, development, and testing services. Outside of services, the only industries with top deciles above \$1,400 were security, commodity brokerage, and investment companies in the finance industry and petroleum and coal products in manufacturing. Thus, the best paid workers in some services industries earned considerably more than the best paid workers in other industries.

It is also true, however, that the lowest paid workers in some services industries earned less than the lowest paid workers in industries outside of services. For example, the lowest paid 10 percent of workers in personal services (including hotels and other lodging places, beauty shops, and laundry, cleaning, and garment services) earned \$184 per week or less. A number of other services industries had bottom deciles of \$200 or less, including services to buildings; personnel supply services; detective and protective services; automobile parking and car washes; miscellaneous entertainment and recreation services; nursing and personal care facilities; and social services. Outside of services, industries with bottom deciles below \$200 per week were agriculture, retail trade, and apparel manufacturing.

### Benefits

Another component of compensation that has gained importance as an element of job quality is employee benefits. Some of the most common benefits that firms provide their workers are health insurance, retirement plans, life insurance, income protection for short- and long-term disabilities, and paid vacations and holidays. In addition, firms are legally required

**Table 3. Selected deciles of usual weekly earnings of full-time wage and salary workers by industry, 1996 annual averages**

Industry	Number of workers (in thousands)	Upper limit of—				
		First decile	Third decile	Fifth decile (median)	Seventh decile	Ninth decile
Total, 16 years and over .....	90,918	\$233	\$351	\$490	\$675	\$1,059
Agriculture .....	1,336	179	243	306	401	609
Nonagricultural industries .....	89,581	235	355	494	679	1,065
Private industries .....	74,188	229	339	475	657	1,053
Services .....	22,001	217	322	456	640	1,050
Private households .....	428	89	176	218	297	416
Services, except private households .....	21,574	223	327	463	647	1,059
Business, automobile, and repair services <sup>1</sup> .....	5,102	221	315	442	630	1,056
Advertising .....	194	289	413	574	833	1,430
Services to buildings .....	424	187	249	307	412	624
Personnel supply services .....	636	300	281	340	464	785
Computer and data processing services .....	1,026	337	573	789	1,046	1,473
Detective and protective services .....	412	199	270	337	481	767
Other business services .....	1,029	217	316	421	607	917
Auto rental and leasing, without drivers .....	131	263	382	488	619	913
Automobile parking and car washes .....	119	171	220	268	353	607
Automotive repair and services .....	716	229	319	417	552	779
Electrical repair shops .....	82	238	329	491	637	773
Miscellaneous repair services .....	332	251	334	450	585	821
Personal services <sup>1</sup> .....	1,868	184	249	317	424	667
Hotels and motels .....	1,041	188	255	323	438	671
Laundry, cleaning, and garment services .....	274	188	241	293	381	639
Beauty shops .....	299	167	223	297	383	546
Entertainment and recreation services <sup>1</sup> .....	1,037	197	292	404	592	1,020
Theaters and motion pictures .....	290	221	393	596	832	1,543
Miscellaneous entertainment and recreation services ..	678	194	278	375	510	852
Professional and related services <sup>1</sup> .....	13,543	239	357	498	687	1,117
Hospitals .....	3,364	275	393	534	705	1,010
Health services, except hospitals <sup>1</sup> .....	3,656	221	310	410	570	944
Offices and clinics of physicians .....	903	276	369	474	621	1,463
Offices and clinics of dentists .....	260	249	340	423	509	756
Nursing and personal care facilities .....	1,221	192	251	311	413	667
Educational services <sup>1</sup> .....	1,622	258	391	537	717	1,120
Elementary and secondary schools .....	772	247	376	505	654	965
Colleges and universities .....	747	271	415	591	779	1,289
Social services <sup>1</sup> .....	1,328	186	259	337	460	757
Job training and vocational rehabilitation .....	88	157	249	313	421	764
Child day care services .....	427	175	213	263	333	485
Residential care facilities, without nursing .....	295	202	283	352	468	770
Legal services .....	790	312	487	644	911	1,852
Religious organizations .....	575	177	333	459	642	962
Membership organizations .....	251	245	361	511	672	1,140
Engineering, architectural, and surveying services .....	605	373	575	755	984	1,409
Accounting, auditing, and bookkeeping services .....	409	299	424	582	766	1,368
Research, development, and testing services .....	394	315	500	665	922	1,422
Management and public relations services .....	409	348	572	731	1,016	1,720
Mining .....	524	343	529	693	864	1,250
Construction .....	4,910	263	381	504	677	986
Manufacturing .....	18,712	256	375	507	703	1,127
Durable goods .....	11,242	277	399	533	731	1,153
Lumber and wood products .....	663	241	318	408	521	780
Furniture and fixtures .....	585	245	320	394	501	757
Stone, clay, glass, and concrete products .....	541	266	379	494	640	968
Primary metal industries .....	743	284	418	531	688	993
Fabricated metal industries .....	1,190	264	373	485	637	963
Machinery and computing equipment .....	2,278	300	434	577	763	1,230
Electrical machinery, equipment, and supplies .....	1,807	267	399	527	757	1,251
Transportation equipment <sup>1</sup> .....	2,202	316	491	687	874	1,262
Motor vehicles and equipment .....	1,265	308	462	650	816	1,217
Aircraft and parts .....	384	369	584	760	964	1,330
Professional and photographic equipment and watches ...	709	299	438	603	847	1,336
Toys, amusements, and sporting goods .....	123	210	296	406	574	1,133
Miscellaneous durable goods manufacturing .....	401	225	315	412	593	909

**Table 3. Continued—Selected deciles of usual weekly earnings of full-time wage and salary workers by industry, 1996 annual averages**

Industry	Number of workers (in thousands)	Upper limit of—				
		First decile	Third decile	Fifth decile (median)	Seventh decile	Ninth decile
Nondurable goods <sup>1</sup> .....	7,470	\$231	\$337	\$466	\$654	\$1,050
Food and kindred products .....	1,567	231	319	429	581	891
Textile mill products .....	591	231	316	373	467	760
Apparel and other textile products .....	829	176	221	274	344	636
Paper and allied products .....	655	284	405	525	706	1,011
Printing and publishing .....	1,433	265	383	513	691	1,047
Chemicals and allied products .....	1,249	310	502	675	904	1,362
Petroleum and coal products .....	156	386	551	753	1,054	1,680
Rubber and miscellaneous plastics products .....	826	245	339	440	605	960
Leather and leather products .....	115	208	287	353	465	886
Transportation and public utilities .....	5,928	288	435	596	776	1,137
Transportation .....	3,441	274	398	527	691	1,002
Communications .....	1,478	305	496	666	889	1,254
Utilities and sanitary services .....	533	384	611	803	971	1,247
Wholesale trade .....	3,979	255	378	503	694	1,132
Durable goods .....	2,108	276	394	515	726	1,163
Nondurable goods .....	1,871	241	356	490	660	1,044
Retail trade <sup>1</sup> .....	12,171	191	263	343	481	774
Department stores .....	1,407	191	252	313	418	667
Grocery stores .....	1,721	191	262	345	477	741
Motor vehicle dealers .....	1,023	255	375	520	709	1,089
Eating and drinking places .....	3,172	172	221	281	372	603
Finance, insurance, and real estate .....	5,962	275	392	521	722	1,240
Banking .....	1,537	276	363	473	646	1,153
Savings institutions, including credit unions .....	213	278	364	476	576	957
Other credit agencies .....	483	308	420	525	707	1,131
Security, commodity brokerage, and investment companies .....	601	342	527	694	1,064	1,920
Insurance .....	1,945	287	416	564	755	1,216
Real estate, including real estate-insurance offices .....	1,183	225	344	482	652	1,127
Government .....	15,394	283	443	592	757	1,105

<sup>1</sup> Includes other industries not shown separately.

to bear some or all of the cost for public benefit plans such as Social Security, medicare, workers' compensation, and unemployment insurance.

In many cases, firms may be indifferent between providing benefits or additional cash compensation to workers, although some firms may find it advantageous to provide benefits.<sup>11</sup> From the standpoint of workers, there often are clear advantages to receiving benefits in lieu of cash compensation. For example, workers could receive health insurance from their employer, or they could receive additional cash compensation to purchase health insurance on their own. One advantage of receiving employer-provided coverage is that the group insurance premiums available to employers are considerably less expensive than the premiums individuals would have to pay on their own. In addition, employer-provided health coverage is not counted as part of an individual's taxable income, so receiving insurance instead of additional cash compensation reduces the employee's income tax burden.<sup>12</sup>

Reflecting the prominence that employee benefits have

gained in recent years, several BLS surveys provide information on benefits.<sup>13</sup> One of these surveys shows that benefits account for 27.5 percent of the cost of employee compensation among private-sector employers.<sup>14</sup> Clearly, any analysis of job quality that does not include employee benefits is incomplete. This analysis examines employee benefits data from supplemental questions that were included as part of the April 1993 CPS. The April 1993 CPS obtained information about health insurance coverage, retirement plans, and income protection during short- and long-term disabilities.

*Health insurance.* In April 1993, about half the workers in private services industries participated in a health plan that was at least partially paid by their employer. (See table 4.) By comparison, about four-fifths of workers in mining and manufacturing received health insurance from their jobs. Workers in transportation and public utilities; wholesale trade; and finance, insurance, and real estate also were more likely than workers in services to receive health benefits. Construction and retail trade

had relatively low participation rates; about two-fifths of workers in each industry participated in employer-sponsored health plans. In agriculture, only about a quarter of workers received health insurance from their employer.<sup>15</sup>

Within services, private hospitals had the highest participation rate, with more than three-quarters of workers enrolled in an employer-sponsored health plan. Only about a third of workers in entertainment and recreation services, personal services, and social services received health benefits from their employer. About half the workers in business services, private educational services, and health services (outside of hospitals) participated in an employer health plan.

As with the earnings data, one should not generalize about job quality based on industry averages of participation in employer-provided health plans. Although a smaller proportion of workers received health coverage in the services industry than in manufacturing, half the workers in services *do* receive health benefits from their employer. Workers who do receive employer-sponsored benefits fare better in this aspect of job quality than workers who do not receive health benefits.

However, it is also important to note that receiving health benefits from one's own employer might not be important to all workers. Many workers are covered under the employer health plan of a spouse or other family member.<sup>16</sup> Others might feel that they do not need or want health benefits. These workers may prefer to have the option of choosing additional cash compensation or other benefits, such as additional vacation days or life insurance coverage, in lieu of health coverage.<sup>17</sup> As table 5 shows, having these options is rare, regardless of industry. Among workers who participated in an employer health plan or waived the offer of coverage, 7 percent of those in services had the option of substituting additional cash for health benefits. This compares with about 5 percent of workers in wholesale trade and manufacturing. Only workers in finance, insurance, and real estate were more likely than those in services to have the option of choosing additional cash. Workers in finance, insurance, and real estate also were the most likely to have the option of choosing other benefits in place of health coverage. Workers in services were about equally likely as those in manufacturing and transportation and public utilities to have this option.

Another health benefit option that workers may value is the ability to choose from more than one plan. Having this option might make it easier for workers to find a plan that best suits their needs.<sup>18</sup> As table 5 shows, in finance, insurance, and real estate, three-fifths of workers offered a health plan could choose from more than one plan. About half the workers in ser-

VICES, manufacturing, and transportation and public utilities had this option. Two-fifths of workers in wholesale and retail trade had multiple health plan alternatives, as did about a third of workers in min-

**Table 4. Employed private wage and salary workers by industry and coverage under employer health plan, April 1993**

Industry	Total employed	Covered by employer health plan	
		Number	Percent of employed
Private wage and salary workers .....	85,436	49,419	57.8
Services .....	25,922	12,712	49.0
Private households .....	1,079	43	4.0
Services, except private households <sup>1</sup> .....	24,843	12,669	51.0
Business services .....	4,118	1,979	48.1
Automobile and repair services .....	1,062	442	41.6
Personal services .....	2,450	792	32.3
Entertainment and recreation services .....	1,454	457	31.4
Hospitals .....	3,829	2,916	76.2
Health services, except hospitals .....	4,107	1,938	47.2
Educational services .....	1,981	995	50.2
Social services .....	1,767	614	34.7
Other professional services .....	4,038	2,526	62.6
Agriculture .....	1,147	307	26.8
Mining .....	635	528	83.1
Construction .....	4,522	1,948	43.1
Manufacturing .....	18,543	14,798	79.8
Durable goods .....	10,541	8,912	84.5
Lumber and wood products .....	541	394	72.8
Furniture and fixtures .....	509	434	85.3
Stone, clay, and glass products .....	477	387	81.1
Primary metals .....	793	740	93.3
Fabricated metals .....	1,104	906	82.1
Machinery, except electrical .....	1,917	1,647	85.9
Electrical machinery and equipment .....	1,675	1,374	82.0
Transportation equipment .....	2,367	2,139	90.4
Motor vehicles and equipment .....	1,136	1,011	89.0
Aircraft and parts .....	573	552	96.3
Other transportation equipment .....	658	576	87.5
Professional and photographic equipment and watches .....	726	612	84.3
Toys, amusements, and sporting goods ...	129	98	76.0
Miscellaneous durable goods manufacturing .....	303	181	59.7
Nondurable goods <sup>1</sup> .....	8,002	5,886	73.6
Food and kindred products .....	1,761	1,270	72.1
Textile mill products .....	483	392	81.2
Apparel and other textile products .....	1,033	536	51.9
Paper and allied products .....	716	606	84.6
Printing and publishing .....	1,741	1,208	69.4
Chemicals and allied products .....	1,184	1,044	88.2
Petroleum and coal products .....	135	130	96.3
Rubber and miscellaneous plastics .....	775	577	74.5
Leather and leather products .....	120	80	66.7
Transportation and public utilities .....	6,366	4,901	77.0
Transportation .....	3,960	2,727	68.9
Communications .....	1,354	1,193	88.1
Utilities and sanitary services .....	1,052	981	93.3
Wholesale trade .....	4,176	3,017	72.2
Retail trade .....	17,479	6,704	38.4
Finance, insurance, and real estate .....	6,648	4,505	67.8
Banking and other finance .....	3,321	2,345	70.6
Insurance and real estate .....	3,327	2,160	64.9

<sup>1</sup> Includes other industries not shown separately.

**Table 5. Employed private wage and salary workers by industry and health coverage options, April 1993**

[Numbers in thousands]

Industry	Received or waived employer health coverage (in thousands)	Percent of total		
		Could choose from more than one health plan	Could choose extra cash instead of health coverage	Could choose other benefits instead of health coverage
Private wage and salary workers .....	56,566	47.3	5.2	5.1
Services <sup>1</sup> .....	15,318	47.3	7.0	5.2
Business services .....	2,303	46.6	5.9	3.7
Automobile and repair services .....	523	39.0	2.5	2.9
Personal services .....	972	46.8	1.1	5.2
Entertainment and recreation services .....	561	42.2	7.7	2.7
Hospitals .....	3,353	60.5	13.1	7.1
Health services, except hospitals .....	2,543	34.5	7.0	6.2
Educational services .....	1,265	53.8	4.1	6.2
Social services .....	847	41.4	3.1	2.6
Other professional services .....	2,894	45.6	5.1	3.9
Agriculture .....	375	16.0	3.5	6.4
Mining .....	557	35.5	2.7	1.8
Construction .....	2,268	32.0	2.7	2.6
Manufacturing .....	15,746	50.6	4.9	5.4
Durable goods .....	9,294	53.8	5.4	6.5
Lumber and wood products .....	417	19.2	2.2	3.1
Furniture and fixtures .....	456	32.9	3.3	5.3
Stone, clay, and glass products .....	397	37.8	3.8	3.8
Primary metals .....	747	40.6	2.9	3.3
Fabricated metals .....	962	40.7	4.3	6.2
Machinery, except electrical .....	1,725	57.3	5.6	7.7
Electrical machinery and equipment .....	1,439	62.4	7.1	7.8
Transportation equipment .....	2,176	67.6	6.9	6.9
Motor vehicles and equipment .....	1,019	60.7	8.7	6.4
Aircraft and parts .....	558	78.5	5.6	11.3
Other transportation equipment .....	599	69.1	5.2	3.8
Professional and photographic equipment and watches .....	673	69.8	7.0	5.9
Toys, amusements, and sporting goods .....	105	34.3	5.7	12.4
Miscellaneous durable goods manufacturing .....	197	30.5	—	8.6
Nondurable goods <sup>1</sup> .....	6,452	45.9	4.2	3.9
Food and kindred products .....	1,387	43.0	3.5	4.8
Textile mill products .....	404	29.2	4.5	5.2
Apparel and other textile products .....	607	23.1	—	2.0
Paper and allied products .....	635	42.5	5.2	4.1
Printing and publishing .....	1,339	53.8	4.6	4.5
Chemicals and allied products .....	1,122	66.0	7.8	2.3
Petroleum and coal products .....	130	50.8	—	—
Rubber and miscellaneous plastics .....	670	36.3	3.1	6.0
Leather and leather products .....	107	16.8	.9	—
Transportation and public utilities .....	5,222	53.4	3.6	5.3
Transportation .....	2,975	43.7	3.6	4.7
Communications .....	1,248	68.5	3.8	6.8
Utilities and sanitary services .....	999	63.3	3.3	5.2
Wholesale trade .....	3,227	39.4	5.2	3.6
Retail trade .....	8,693	39.5	2.4	3.5
Finance, insurance, and real estate .....	5,164	59.0	8.2	8.5
Banking and other finance .....	2,700	58.9	10.0	10.7
Insurance and real estate .....	2,464	59.2	6.3	6.2

<sup>1</sup> Includes other industries not shown separately.

NOTE: Dash indicates that no cases were found in survey sample.

ing and construction.

One aspect of employer health coverage that cannot be examined here is how the quality of health plans varies across industries. Plan quality can be assessed in terms of the services the plan provides and the cost to employees for premiums, deductibles, coinsurance, and copayments. The April 1993 CPS did not obtain information on these aspects of health benefit quality, but they are important factors to consider when comparing job quality.

*Retirement benefits.* In the April 1993 CPS, workers were considered to be covered by a retirement plan if they participated in a defined-benefit or defined-contribution plan that was sponsored by their employer.<sup>19</sup> Workers whose only retirement plan was Social Security were not counted as having retirement plan coverage. About 35 percent of workers in private services industries participated in an employer-sponsored retirement plan in April 1993. (See table 6.) By comparison, 69 percent of workers in mining participated in a retirement plan, the highest proportion of any major industry group. In manufacturing and transportation and public utilities, more than 3 out of 5 workers received retirement coverage. Construction workers received retirement benefits at a slightly lower rate than workers in services. In retail trade, 26 percent of workers were covered by a retirement plan, the lowest proportion of any major nonagricultural industry. In agriculture, fewer than 1 in 11 workers participated in a retirement plan.

Within services, there were wide differences in rates of retirement plan participation. Workers in hospitals were, by far, the most likely to have retirement coverage, with 62 percent participating in a plan. Workers in automobile and repair services were the least likely, with a participation rate of 16 percent. Personal services, entertainment and recreation services, and social services also had retirement plan participation rates that were lower than retail trade.

Some employers offer a type of defined-contribution retirement plan in which workers can contribute part of their salary to an investment account and not pay taxes on the money until it is withdrawn, usually at retirement. These plans have become increasingly common in the United States since passage of the Revenue Act of 1978 permitted them to be established. These plans have a number of different names, such as pretax savings plans or salary reduction plans. Often, they are called 401(k), 403(b), or Section 457 plans, after the relevant sections of the United States Internal Revenue Code. For this analysis, they are called tax-deferred retirement plans. Workers who choose to contribute to a tax-deferred plan offered by their employer are included in the figures on retirement plan participation discussed earlier.

Often, but not always, the employer matches the worker's contribution to a tax-deferred retirement plan, either fully or partially, up to some limit specified in the plan. Both the

employee and employer contributions are invested in stocks, bonds, and other securities, and the gains earned from these investments are not taxed until the money is withdrawn.<sup>20</sup> Even if the employer does not contribute to the plan, the tax-deferral features provide a valuable benefit that employees could not receive independently if they were to invest part of their earnings in an after-tax investment, such as a savings account or mutual fund. Even for employees who are eligible to invest in pretax Individual Retirement Accounts (IRA's) at banks or other financial institutions, the limit on the amount they can invest each year is much lower than that under an employer-provided plan.<sup>21</sup>

As table 6 shows, 35 percent of private wage and salary workers were offered a tax-deferred retirement plan in April 1993. Of those offered a plan, two-thirds actually contributed to it, resulting in an overall participation rate in tax-deferred retirement plans of 23 percent.

In private services industries, 30 percent of workers were offered a tax-deferred retirement plan, compared with about half of workers in finance, insurance, and real estate; mining; transportation and public utilities; and manufacturing. In retail trade, 21 percent of workers were offered a tax-deferred retirement plan, and just 15 percent of construction workers were offered a plan.

Within services, hospital workers had the highest proportion of workers offered a tax-deferred retirement plan. In private education, business services, and other professional services, the proportions of workers offered such a plan also was higher than the overall average for services. Automobile and repair services, personal services, entertainment and recreation services, and social services all had low proportions of workers who were offered a plan.

The last column of table 6 shows that, among workers offered a tax-deferred retirement plan, workers in services were less likely to contribute part of their salary to the plan than were workers in any other major nonagricultural industry except retail trade. Fifty-nine percent of services workers who were offered a plan contributed to it, compared with 80 percent of workers in mining, 75 percent of workers in wholesale trade, and 73 percent of workers in manufacturing and construction.

A number of factors might help to explain the differences across industries in the likelihood of contributing to a tax-deferred retirement plan offered by an employer. Some of these factors relate to the characteristics of workers, such as their age, marital status, salary level, preference for current versus future income, participation in other retirement plans, and understanding of financial issues. Other factors relate to the characteristics of the plan itself, such as the expected future investment performance of the plan and the extent to which the employer matches employee contributions.

Among workers who contributed to a tax-deferred retirement plan in April 1993, workers in services were among the

**Table 6. Employed private wage and salary workers by industry and participation in an employer-sponsored retirement plan, April 1993**

[Percent]

Industry	Total employed (in thousands)	Workers participated in pension or other retirement plan	Tax-deferred retirement plan		
			Workers were offered a plan	Workers contributed to a plan	Of all workers offered a plan, percent who contributed
Private wage and salary workers .....	85,436	43.8	35.2	23.4	66.4
Services .....	25,922	35.2	29.8	17.7	59.3
Private households .....	1,079	1.8	.9	.6	( <sup>2</sup> )
Services, except private households <sup>1</sup> .....	24,843	36.6	31.1	18.4	59.3
Business services .....	4,118	30.4	33.0	22.7	68.9
Automobile and repair services .....	1,062	15.5	12.9	8.0	62.0
Personal services .....	2,450	17.1	14.9	8.0	53.4
Entertainment and recreation services .....	1,454	18.5	16.0	9.0	56.2
Hospitals .....	3,829	62.5	52.6	26.2	49.8
Health services, except hospitals .....	4,107	33.8	25.5	13.5	52.8
Educational services .....	1,981	42.7	33.6	20.8	62.0
Social services .....	1,767	22.8	18.0	8.0	44.2
Other professional services .....	4,038	48.5	39.2	27.8	70.9
Agriculture .....	1,147	8.8	5.4	2.8	( <sup>2</sup> )
Mining .....	635	69.1	54.3	43.6	80.3
Construction .....	4,522	32.1	15.0	11.0	73.0
Manufacturing .....	18,543	64.2	49.2	36.1	73.3
Durable goods .....	10,541	68.2	53.8	40.2	74.7
Lumber and wood products .....	541	52.3	26.3	20.5	78.1
Furniture and fixtures .....	509	56.6	46.3	33.0	71.3
Stone, clay, and glass products .....	477	69.2	48.1	35.0	72.8
Primary metals .....	793	76.7	48.9	37.5	76.6
Fabricated metals .....	1,104	57.3	36.9	31.4	85.2
Machinery, except electrical .....	1,917	73.7	63.1	49.8	78.8
Electrical machinery and equipment .....	1,675	69.6	57.8	44.4	76.8
Transportation equipment .....	2,367	75.9	62.9	43.6	69.4
Motor vehicles and equipment .....	1,136	72.2	56.1	34.4	61.3
Aircraft and parts .....	573	85.0	74.4	56.2	75.6
Other transportation equipment .....	658	74.3	64.6	48.6	75.3
Professional and photographic equipment and watches .....	726	74.1	67.9	45.7	67.4
Toys, amusements, and sporting goods .....	129	50.4	37.1	37.1	( <sup>2</sup> )
Miscellaneous durable goods manufacturing .....	303	22.8	19.0	10.6	( <sup>2</sup> )
Nondurable goods <sup>1</sup> .....	8,002	59.0	43.2	30.7	71.1
Food and kindred products .....	1,761	58.2	38.2	25.9	67.8
Textile mill products .....	483	67.3	46.4	28.9	62.2
Apparel and other textile products .....	1,033	30.2	8.2	5.7	( <sup>2</sup> )
Paper and allied products .....	716	73.2	49.2	33.5	68.1
Printing and publishing .....	1,741	54.5	48.4	35.8	74.1
Chemicals and allied products .....	1,184	79.2	68.5	51.4	75.0
Petroleum and coal products .....	135	82.2	61.7	46.4	( <sup>2</sup> )
Rubber and miscellaneous plastics .....	775	57.0	39.9	28.7	71.9
Leather and leather products .....	120	45.0	28.6	18.1	( <sup>2</sup> )
Transportation and public utilities .....	6,366	61.8	51.7	36.7	71.0
Transportation .....	3,960	50.6	41.5	26.6	64.1
Communications .....	1,354	76.5	66.8	50.3	75.3
Utilities and sanitary services .....	1,052	84.7	70.5	57.2	81.2
Wholesale trade .....	4,176	50.5	38.3	28.8	75.2
Retail trade .....	17,479	25.7	20.8	10.9	52.2
Finance, insurance, and real estate .....	6,648	57.6	54.3	36.9	67.9
Banking and other finance .....	3,321	62.3	58.8	38.9	66.2
Insurance and real estate .....	3,327	52.8	49.8	34.9	70.0

<sup>1</sup> Includes other industries not shown separately.

<sup>2</sup> Percentage is not shown where base is less than 100,000.

least likely to receive a matching contribution (whether full or partial) from their employer. This can be seen in table 7, which shows the percent of plan participants in each industry who received a matching contribution from their employer.

There appears to be some relationship between the proportion of workers offered a plan who actually contribute to it and the proportion of plan participants who receive a matching contribution from their employer. For example, a large proportion of mining workers who were offered a plan contributed to it, and a large proportion of plan participants in mining received a matching contribution from their employer. Similarly, a relatively small proportion of services industry workers who were offered a plan contributed to it, and plan participants in services were less likely than workers in most other industries to receive a matching contribution. This relationship does not always hold. In construction, for example, a large proportion of workers contribute to a plan, even though the proportion of participants who receive matching contributions is the lowest of any major industry. Nevertheless, these data suggest that many workers view matching contributions from their employers as an important incentive to contribute to a tax-deferred retirement plan.

*Disability benefits.* Short-term disability benefits include paid sick leave and sickness and accident insurance plans. These plans provide income protection for workers who suffer illnesses or injuries that are not work related.<sup>22</sup> Sick leave plans usually provide workers with full pay during the time they use the benefits. Sickness and accident insurance plans usually provide partial pay. Although the April 1993 cps did not obtain information on the specific type of plan workers received, 55 percent of workers in private services industries were covered by a sick leave or sickness and accident insurance plan. (See table 8.) By comparison, 73 percent of workers in finance, insurance, and real estate and 72 percent of workers in transportation and public utilities received income protection for short-term illnesses and injuries. About 64 percent of workers in mining, wholesale trade, and manufacturing received such benefits. Slightly more than a third of retail trade workers received short-term illness and injury benefits, as did fewer than a quarter of workers in agriculture and construction.

Within services, hospital employees were the most likely to receive such benefits. Workers in private educational services and health services other than hospitals also had a relatively high probability of receiving short-term illness and injury benefits. Relatively few workers received these benefits in automobile and repair services, personal services, and entertainment and recreation services.

In addition to obtaining information on the number of workers receiving short-term illness and injury benefits, the April 1993 cps asked workers covered by those benefits the following question on their duration:

If you got sick tomorrow and couldn't go to work for six months, about how long during that time would you be paid any part of your wages—less than 1 month, 1 to 2 months, 3 to 4 months, or 5 to 6 months?

As table 9 shows, about 1 in 5 workers covered by short-term illness and injury plans did not know how long they would receive full or partial pay if they incurred a 6-month disability. Thus, the data should be used with caution. Nevertheless, for plan participants who knew how long they would be paid, the data reveal some interesting contrasts across industries. In private services, two-fifths of plan participants would be paid for less than a month if they had a 6-month disability, and one-fifth would be paid 5 to 6 months. Similar proportions arose among workers in retail trade. In contrast, the proportions essentially were reversed in mining and manufacturing. Among the other nonagricultural industries, the duration of pay generally was somewhat longer than in services and retail trade and shorter than in mining and manufacturing. Agriculture provided the shortest duration of benefits, with half the plan participants receiving pay for less than a month.

It should be noted that these industry differences result not just from differences in the generosity of plan benefits but other factors as well. For example, in some plans, the duration of benefits varies by the length of time workers have been with their current employer. In 1996, the median tenure was 3.0 years for workers in services and 1.9 years for those in retail trade. By comparison, the median tenure was 6.1 years for workers in mining and 5.4 years for those in manufacturing.<sup>23</sup> These differences in tenure contribute to the differences across industries in the duration of short-term illness and injury benefits.

Some disabilities require more than 6 months from which to recover, and may even be permanent. Income protection for these long-term disabilities can be provided through insurance plans or through the disability provisions of retirement plans. As table 8 shows, in most industries, long-term benefits are provided less commonly than are benefits for short-term disabilities. One exception is the mining industry, where workers were nearly as likely to receive long-term disability benefits in April 1993 as they were to receive short-term benefits. Slightly more than half the workers in transportation and public utilities, manufacturing, and finance, insurance, and real estate were covered by long-term disability plans. About 3 in 10 workers in services received long-term benefits, a slightly higher coverage rate than that for construction workers. Workers in agriculture and retail trade were the least likely to be covered by long-term disability benefits.

About half of hospital workers were covered by long-term plans, the highest proportion in the services industry. In educational services, 35 percent of workers received long-term disability benefits, as did 31 percent of workers in business

services. Personal services and automobile and repair services had relatively low rates of coverage.

Employers offer a number of other benefits that may affect the assessment of job quality. Among these are vacations, holidays, life insurance, child care benefits, and educational assistance. The April 1993 CPS did not obtain information on such benefits.

### Job security

A rise in the general perception that job security in the United States has diminished has been fueled by well publicized restructuring and job reductions at major corporations; rapid employment growth in the temporary help industry; firms' increasing use of outside contractors to perform activities that previously were done by in-house personnel; technological advancements that may reduce the demand for low-skilled workers while often raising the demand for highly skilled and educated workers; and intensified domestic and international competition. Despite this popular perception, there is some debate about whether employment has, in fact, become less stable than in the past.<sup>24</sup> Nevertheless, many workers are concerned not only about the level, but also the security, of their pay and benefits. Several measures of job security are examined in the following sections.

*Worker displacement.* One measure of job security is data on worker displacement. Beginning in January 1984, the Current Population Survey has included questions every 2 years on displaced workers. These questions are used to examine trends in the number of workers who have lost or left their jobs due to the closing or moving of their employer, the abolishment of

their shift or position, or insufficient work. Displacement rates—defined here as the number of persons displaced in each industry over a 2-year period as a proportion of average employment in the industry during that period—allow for comparisons of the displacement risk for workers in different industries.<sup>25</sup>

The services industry consistently has experienced lower displacement rates than the overall average for private nonagricultural industries. In fact, among the seven displaced worker surveys that have been conducted (1984 through 1996), the services industry has had the lowest displacement rate in the past five; the finance, insurance, and real estate industry experienced the lowest displacement rate in the first two surveys. Manufacturing and mining historically have had high displacement rates.<sup>26</sup> The construction industry also has experienced high displacement rates, which occasionally have exceeded the rate for mining. Table 10 shows 1993–94 displacement rates for all the major industries, as well as some detail within the services industry. Displacement rates for most services industries were relatively low, with the exceptions being business, automobile, and repair services.

*Involuntary part-time work.* Another measure of job security is the prevalence of involuntary part-time employment in an industry. Most people who work part time (defined in the CPS as fewer than 35 hours per week) prefer such a schedule because it accommodates their family, school, or other obligations or enables them to pursue leisure activities. Some people, however, work part time because they can only find part-time work or because their work hours have been reduced to part time by their employer.

Based on data from the CPS, nearly 1 in 5 part-time wage and salary workers in 1996 said that they would have preferred full-time hours, but worked part time for economic reasons. (See table 11.) Involuntary part-time work among the broad industry groups ranged from a high of 51 percent in construction to a low of 13 percent in finance, insurance, and real estate. The rate in manufacturing was 34 percent, well above the overall average. The rate for services was 17 percent, but there was great diversity within services. In personnel supply services, half of part-timers would have preferred full-time jobs. Other services industries with relatively high rates of involuntary part-time employment include hotels and motels (35 percent), automotive repair services (29 percent), building services (28 percent), laundry, cleaning, and garment services (25 percent), and detective and protective services (25 percent). Most services industries had much lower rates of involuntary part-time employment. Those with rates under 10 percent include legal services, religious organizations, private colleges and universities, and video tape rental. Accounting, auditing, and bookkeeping services, private hospitals, health services, private schools, child day care services, residential care facilities, beauty shops, and theaters and motion pictures also had

**Table 7. Percentage of participants who received matching contributions in tax-deferred retirement plans, by industry, April 1993**

Industry	Percent
Total private .....	67.8
Services .....	58.0
Business services .....	66.0
Personal services .....	63.4
Entertainment and recreation services .....	39.7
Hospitals .....	48.1
Health services, except hospitals .....	62.7
Educational services .....	66.9
Social services .....	41.3
Other professional services .....	57.1
Mining .....	81.5
Construction .....	55.2
Manufacturing .....	69.6
Durable goods .....	68.0
Nondurable goods .....	72.3
Transportation and public utilities .....	67.7
Wholesale trade .....	71.1
Retail trade .....	71.7
Finance, insurance, and real estate .....	77.5

rates of involuntary part-time employment that were below the average for all services industries.

*Contingent work.* Beyond these measures of past labor market performance, job security has another dimension—expectations of the future. In a dynamic economy like that of the United States, industry conditions can change rapidly. Industries that have endured high levels of displacement or involuntary part-time employment eventually may see conditions improve. Industries that have experienced rapid increases in sales and employment suddenly may undergo restructuring, consolidation, and job loss. In February 1995, the CPS included for the first time a series of supplemental questions on workers in “contingent” employment arrangements. In the survey, contingent workers were defined as those who did not have an explicit or implicit contract to continue their employment into the future. Workers who did not expect to continue in their job *solely for personal reasons*, such as retirement or returning to school, were not considered contingent. Contingent workers are those who did not expect their job to last much

longer for *economic* reasons.<sup>27</sup>

As table 12 shows, 4.9 percent of workers were in contingent employment arrangements in February 1995. In both construction and agriculture, about 1 in 10 wage and salary workers was contingent, the highest proportion among the major industry groups. These high rates of contingent employment undoubtedly resulted from the seasonal nature of work in these industries. Finance, insurance, and real estate, mining, and manufacturing all had relatively low rates of contingent employment, despite the many changes that have occurred in these industries in recent years. Transportation and public utilities and wholesale and retail trade also had rates of contingent employment that were below the overall average. In the services industry, the proportion of workers in contingent jobs, 7.4 percent, was higher than the overall average.

Within services, some industries had very low rates of contingent employment. For example, 1.8 percent of private hospital workers and 2.9 percent of workers in other health services were in contingent arrangements. Automobile and repair services also had a low rate of contingent employment, 2.2 percent. In

**Table 8. Employed private wage and salary workers by industry and coverage under short- and long-term disability plans, April 1993**

Industry	Total employed (in thousands)	Percent of total		Industry	Total employed (in thousands)	Percent of total	
		With paid sick leave or short-term disability insurance	With long-term disability coverage			With paid sick leave or short-term disability insurance	With long-term disability coverage
Private wage and salary workers .....	85,436	54.0	37.7	Other transportation equipment .....	658	73.6	53.0
Services .....	25,922	55.1	31.4	Professional and photographic equipment and watches .....	726	85.4	65.6
Private households .....	1,079	9.9	2.1	Toys, amusements, and sporting goods .....	129	50.4	28.7
Services, except private households <sup>1</sup> .....	24,843	57.1	32.6	Miscellaneous durable goods manufacturing .....	303	52.5	38.3
Business services .....	4,118	49.2	31.0	Nondurable goods <sup>1</sup> .....	8,002	59.6	47.5
Automobile and repair services .....	1,062	30.2	18.7	Food and kindred products .....	1,761	58.0	45.1
Personal services .....	2,450	30.4	18.1	Textile mill products .....	483	60.7	50.1
Entertainment and recreation services ..	1,454	33.3	21.1	Apparel and other textile products ....	1,033	34.6	27.9
Hospitals .....	3,829	83.2	51.0	Paper and allied products .....	716	65.5	58.9
Health services, except hospitals .....	4,107	61.5	25.5	Printing and publishing .....	1,741	60.4	43.1
Educational services .....	1,981	62.4	34.7	Chemicals and allied products .....	1,184	82.4	69.0
Social services .....	1,767	49.8	22.1	Petroleum and coal products .....	135	63.0	62.2
Other professional services .....	4,038	68.5	44.4	Rubber and miscellaneous plastics ..	775	54.5	43.6
Agriculture .....	1,147	24.3	12.6	Leather and leather products .....	120	42.5	22.5
Mining .....	635	64.4	61.3	Transportation and public utilities .....	6,366	72.0	53.8
Construction .....	4,522	22.5	28.4	Transportation .....	3,960	62.6	43.6
Manufacturing .....	18,543	63.6	52.0	Communications .....	1,354	86.0	68.3
Durable goods .....	10,541	66.7	55.4	Utilities and sanitary services .....	1,052	89.5	73.7
Lumber and wood products .....	541	36.0	43.6	Wholesale trade .....	4,176	64.2	45.2
Furniture and fixtures .....	509	49.7	42.0	Retail trade .....	17,479	35.3	22.3
Stone, clay, and glass products .....	477	55.8	49.5	Finance, insurance, and real estate .....	6,648	73.0	51.3
Primary metals .....	793	63.8	51.6	Banking and other finance .....	3,321	77.3	53.3
Fabricated metals .....	1,104	53.8	41.7	Insurance and real estate .....	3,327	68.8	49.2
Machinery, except electrical .....	1,917	68.1	61.6				
Electrical machinery and equipment .....	1,675	74.8	61.0				
Transportation equipment .....	2,367	76.6	61.6				
Motor vehicles and equipment .....	1,136	72.2	65.3				
Aircraft and parts .....	573	88.7	64.0				

<sup>1</sup> Includes other industries not shown separately.

NOTE: Coverage for long-term disability could be provided through a pension or insurance plan.

**Table 9. Employed private wage and salary workers covered by a short-term disability plan, by industry and duration of pay for 6-month disability, April 1993**

[Percent]

Industry	Duration of pay				
	Less than 1 month	1 to 2 months	3 to 4 months	5 to 6 months	Don't know
Private wage and salary workers .....	31.4	11.6	7.2	28.9	20.7
Services .....	39.4	12.5	7.9	19.4	20.5
Private households .....	43.0	12.1	6.5	11.2	27.1
Services, except private households <sup>1</sup> .....	39.4	12.5	7.9	19.5	20.5
Business services .....	39.1	7.0	6.4	24.0	23.3
Automobile and repair services .....	48.9	4.0	1.6	12.8	32.7
Personal services .....	39.5	13.0	3.8	17.4	26.4
Entertainment and recreation services .....	38.8	12.0	6.4	14.7	27.7
Hospitals .....	33.2	18.0	12.2	21.5	14.7
Health services, except hospitals .....	52.4	10.8	5.4	9.7	21.2
Educational services .....	31.1	11.8	7.8	26.7	22.2
Social services .....	57.2	15.6	7.5	7.3	12.5
Other professional services .....	31.9	12.0	8.5	25.7	21.8
Agriculture .....	49.1	11.8	4.7	8.2	26.5
Mining .....	16.6	6.6	9.3	46.5	21.3
Construction .....	34.8	5.3	4.7	28.3	26.0
Manufacturing .....	19.8	9.2	7.2	40.6	23.2
Durable goods <sup>1</sup> .....	20.8	9.4	6.8	41.8	21.2
Lumber and wood products .....	27.2	12.3	9.7	21.0	30.3
Furniture and fixtures .....	18.2	17.4	16.6	26.5	20.9
Stone, clay, and glass products .....	15.0	6.0	12.4	31.6	35.0
Primary metals .....	13.8	13.2	2.6	48.2	21.9
Fabricated metals .....	21.2	6.2	4.9	45.5	22.2
Machinery, except electrical .....	15.4	10.4	9.0	41.6	23.7
Electrical machinery and equipment .....	24.7	10.6	6.5	36.9	21.3
Transportation equipment .....	21.7	7.3	5.6	49.5	15.8
Motor vehicles and equipment .....	11.8	7.2	3.5	58.9	18.5
Aircraft and parts .....	35.2	8.3	7.7	29.3	19.5
Other transportation equipment .....	24.4	6.4	7.0	54.8	7.4
Professional and photographic equipment and watches .....	26.1	7.4	5.3	40.8	20.2
Miscellaneous durable goods manufacturing .....	35.8	14.5	4.4	27.0	19.5
Nondurable goods <sup>1</sup> .....	18.2	8.8	7.8	38.7	26.2
Food and kindred products .....	21.1	8.0	4.6	41.3	25.0
Textile mill products .....	8.9	8.9	7.5	36.9	37.9
Apparel and other textile products .....	26.6	13.7	12.9	9.5	37.3
Paper and allied products .....	17.9	4.7	6.4	49.0	22.0
Printing and publishing .....	25.2	9.4	10.5	29.9	24.5
Chemicals and allied products .....	10.5	7.5	8.4	49.3	24.4
Rubber and miscellaneous plastics .....	12.6	16.6	6.4	32.0	30.1
Transportation and public utilities .....	24.9	13.1	7.5	36.5	17.2
Transportation .....	34.0	12.5	6.3	28.1	18.2
Communications .....	13.0	12.9	7.0	50.0	15.8
Utilities and sanitary services .....	15.5	14.9	11.3	42.3	16.1
Wholesale trade .....	37.7	10.3	7.9	25.7	18.1
Retail trade .....	39.8	10.5	5.3	22.1	21.9
Finance, insurance, and real estate .....	27.4	17.0	7.3	31.1	16.9
Banking and other finance .....	29.2	16.9	8.1	29.4	15.9
Insurance and real estate .....	25.3	17.0	6.5	33.1	18.0

<sup>1</sup> Includes other industries not shown separately.

contrast, nearly 1 in 5 workers in private educational services expected their jobs to last only a short time longer for an economic reason. Contingent workers in this industry include several types of workers, such as college and university fac-

ulty members who do not have tenure, undergraduate and graduate students in work-study programs or teaching and research assistantships, and staff members with year-to-year contracts at private elementary and secondary schools. Business

services, which include personnel supply services, also had a high rate of contingent employment, 14.8 percent. Most jobs in personnel supply services are temporary and thus contingent. Excluding this component, the rate of contingent employment elsewhere in business services would have been much lower.<sup>28</sup>

*Other measures of job security.* Data on tenure (the amount of time a worker has been with his or her present employer) and turnover also have been used by researchers to assess job security. Changes in these measures may be difficult to interpret, however. In much of the research using CPS tenure data, rising tenure has been viewed as a sign of improving job security, and falling tenure, a sign of deteriorating security.<sup>29</sup> In research examining data on the frequency with which workers change employers—that is, turnover—falling turnover has been viewed as an indication of improving job security and rising turnover an indication of deteriorating security.<sup>30</sup> These studies imply that workers change employers only when they *lose* their jobs. Many—perhaps most—job changes occur because workers leave their jobs *voluntarily* to take better jobs. Regardless of the reason for the job change, the effect on the data is the same: a job change causes average tenure to decline and turnover to increase. But without knowing whether the job change was voluntary or involuntary, it is impossible to determine whether falling tenure and rising turnover indicate declining job security. For this reason, tenure and turnover are not used as measures of job security in this analysis.

## Occupational characteristics

The nature of the work itself is one important element of job quality that is difficult to evaluate. Some occupations are viewed as better than others because they pay more. For example, white-collar jobs often are viewed as superior to blue-collar jobs. But independent of compensation levels, different people are drawn to different kinds of work. Some people enjoy the analytical nature of engineering jobs, for example, while others enjoy the creative aspects of writing, music, art, and architecture. Some people thrive on the human interaction involved in sales work, while others prefer the relative solitude of farming. Because of individual preferences, it is difficult, if not impossible, to evaluate the intrinsic quality of different kinds of work. Nevertheless, it is useful to compare the occupational structure within different industries.

Table 13 shows 1996 CPS data on the percentage of each industry's employment level in each major occupational group. In the services industry, professional specialty and service occupations are the largest job categories, with each group making up nearly a quarter of industry employment. Professional occupations include such jobs as engineers, architects, computer scientists, natural scientists, physicians, registered nurses,

therapists, teachers, lawyers, social workers, and clergy. These occupations have especially large concentrations in industries such as engineering, architectural, and surveying services; educational services; hospitals; computer and data processing services; research and testing services; legal services; social services; and religious organizations. Services industries such as beauty shops, building services, detective and protective services, hotels and motels, health services, and social services employ a large number of workers in service occupations, which include security guards, maids, janitors, barbers, cosmetologists, child care providers, and health aides.

The services industry also employs a large number of workers in administrative support occupations, especially in legal

**Table 10. Two-year displacement rates of wage and salary workers by industry of lost job, 1993–94**

(Numbers in thousands)

Industry	Average employment, 1993–94	Displacement, 1993–94	
		Number	Rate
Total, 16 years and over .....	110,944	5,144	4.6
Agricultural wage and salary workers .....	1,702	59	3.5
Nonagricultural wage and salary workers ..	109,242	4,986	4.6
Private industries .....	90,806	4,704	5.2
Services .....	28,322	1,069	3.8
Private households .....	1,046	20	1.9
Services, except private households <sup>1</sup> .....	27,276	1,048	3.8
Business, automobile, and repair services .....	5,741	364	6.3
Personal services .....	2,680	116	4.3
Entertainment and recreation services .....	1,551	27	1.7
Hospitals .....	4,072	105	2.6
Health services, except hospitals .....	4,697	138	2.9
Educational services .....	2,064	58	2.8
Social services .....	1,841	44	2.4
Other professional services .....	4,576	167	3.6
Mining .....	655	58	8.9
Construction .....	5,315	428	8.1
Manufacturing .....	19,382	1,286	6.6
Durable goods .....	11,247	794	7.1
Nondurable goods .....	8,136	492	6.0
Transportation and public utilities .....	6,600	347	5.3
Wholesale trade .....	4,302	272	6.3
Retail trade .....	19,062	880	4.6
Finance, insurance, and real estate ...	7,169	357	5.0
Government .....	18,436	282	1.5

<sup>1</sup> Includes other industries not shown separately.

NOTE: The employment levels are for wage and salary workers age 16 and over. Displaced workers are persons age 20 and over who lost or left a job during the 1993–94 period because of the closing or moving of their employer, the abolishment of their shift or position, or insufficient work. The numbers of workers displaced in each industry do not sum to the total number of displaced workers because the total includes displaced workers whose industry could not be determined.

**Table 11. Wage and salary workers at work part time by industry, 1996 annual averages**

[Numbers in thousands]

Industry	At work part time	At work part time for economic reasons		Industry	At work part time	At work part time for economic reasons	
		Number	Percent of total at work part time			Number	Percent of total at work part time
Total .....	19,015	3,677	19.3	Health services, except hospitals .....	1,174	165	14.1
Agriculture .....	358	109	30.4	Educational services <sup>1</sup> .....	607	60	9.9
Nonagricultural industries .....	18,657	3,568	19.1	Elementary and secondary schools .....	210	27	12.9
Private industries .....	16,332	3,230	19.8	Colleges and universities .....	326	26	8.0
Services .....	6,538	1,096	16.8	Social services <sup>1</sup> .....	541	63	11.6
Private households .....	480	97	20.2	Child day care services .....	252	25	9.9
Services, except private households <sup>1</sup> .....	6,058	999	16.5	Residential care facilities, without nursing .....	71	7	9.9
Business, automobile, and repair services <sup>1</sup> .....	1,022	287	28.1	Other professional services <sup>1</sup> .....	742	72	9.7
Services to dwellings and other buildings .....	205	58	28.3	Legal services .....	135	9	6.7
Personnel supply services .....	178	89	50.0	Religious organizations .....	280	20	7.1
Computer and data processing services .....	60	10	16.7	Accounting, auditing, and bookkeeping services .....	68	7	10.3
Detective and protective services .....	81	20	24.7	Construction .....	593	302	50.9
Automotive repair and related services .....	101	29	28.7	Manufacturing .....	1,020	347	34.0
Personal services <sup>1</sup> .....	643	157	24.4	Durable goods .....	437	140	32.0
Hotels and motels .....	251	88	35.1	Nondurable goods .....	584	207	35.4
Laundry, cleaning, and garment services .....	92	23	25.0	Transportation and public utilities .....	604	162	26.8
Beauty shops .....	173	23	13.3	Transportation .....	495	137	27.7
Entertainment and recreation services <sup>1</sup> .....	590	97	16.4	Communications and public utilities .....	107	24	22.4
Theaters and motion pictures .....	128	20	15.6	Wholesale trade .....	337	73	21.7
Video tape rental .....	58	5	8.6	Retail trade .....	6,457	1,143	17.7
Professional and related services .....	3,797	456	12.0	Finance, insurance, and real estate .....	770	103	13.4
Hospitals .....	734	97	13.2	Banking and other finance .....	348	43	12.4
				Insurance and real estate .....	422	60	14.2
				Government .....	2,326	338	14.5

<sup>1</sup> Includes other industries not shown separately.

NOTE: The total at work part time excludes persons who usually work full time but worked fewer than 35 hours during the survey reference week for

noneconomic reasons, such as vacations, holidays, illnesses, child care problems, other family or personal obligations, civic or military duty, bad weather that affected the job, or labor disputes.

services, accounting, auditing, and bookkeeping services, physicians' offices, and personnel supply services. Executive, administrative, and managerial occupations account for a relatively large proportion of jobs in labor unions, accounting, auditing, and bookkeeping services, and management and public relations firms. Another large occupational category within the services industry is technicians and related support. Technicians include such jobs as dental hygienists, licensed practical nurses, laboratory and radiological technicians, electrical and electronic technicians, drafting and surveying technicians, chemical and biological technicians, computer programmers, and legal assistants. These occupations are especially prominent in such services industries as hospitals and other health services; computer and data processing services; engineering, architectural, and surveying services; research and testing services; and legal services.

The table also shows that a majority of workers in mining, construction, and manufacturing work in precision production, craft, and repair occupations or as operators, fabricators, and laborers. These two occupational groups account for relatively few workers in retail trade; finance, insurance, and real estate; and the services industry. In retail trade, the most prevalent types of work are service and sales occupations. In finance, insurance, and real estate, the two largest occupational groups are administrative support (including clerical), and executive, administrative, and managerial. Administrative support occupations include such job categories as secretaries, bank tellers, insurance adjusters, financial records processors, and computer operators. Executive, administrative, and managerial occupations include all types of managers and executives, as well as accountants, auditors, and underwriters. Salesworkers also are common in the finance, insurance, and real estate in-

dustry, particularly in insurance and real estate.

## Safety and health

Occupational safety is another key aspect of job quality. Although individual workers have different thresholds for the amount of danger they are willing to accept, jobs that pose a high risk of injury, illness, and death can reasonably be said to be less desirable than jobs with less risk, other things being equal. Two BLS data sources provide occupational safety data from each industry. One is the Survey of Occupational Injuries and Illnesses, which provides information on the number and characteristics of nonfatal job-related injuries and illnesses in each industry. The other is the Census of Fatal Occupational Injuries, which provides information on the number of job-related deaths from traumatic injuries, and the reasons for those deaths, in a given year.

In the Survey of Occupational Injuries and Illnesses, incidence rates of nonfatal occupational injuries and illnesses for each industry represent the number of injuries and illnesses per 100 full-time workers in the industry.<sup>31</sup> As table 14 shows, there were 8.1 work-related injuries and illnesses per 100 full-time workers in the private sector during 1995. The incidence rate for manufacturing, 11.6, was the highest among the major industry groups, with the rate ranging as high as 27.3 in ship and boat building and repairing. Occupational injuries and illnesses were nearly as common in construction as in manufacturing. Finance, insurance, and real estate had the lowest incidence of work-related injuries and illnesses, 2.6 per 100 full-time workers.

The incidence rate for the services industry was 6.4, but, as with other labor market measures examined in this article, there was considerable variation in incidence rates across different types of services. Nursing and personal care facilities had an

**Table 12. Contingent workers by industry, February 1995**

[Numbers in thousands]

Industry	Total employed	Contingent workers		Industry	Total employed	Contingent workers	
		Number	Percent of employed			Number	Percent of employed
Total .....	123,208	6,034	4.9	Other transportation equipment	595	40	6.7
Agricultural wage and salary workers .....	1,399	134	9.6	Professional and photographic equipment and watches .....	750	19	2.6
Nonagricultural wage and salary workers ...	107,477	5,450	5.1	Toys, amusements, and sporting goods .....	164	12	7.1
Private industries .....	88,531	4,186	4.7	Miscellaneous durable goods manufacturing .....	367	11	3.1
Services .....	28,194	2,083	7.4	Nondurable goods <sup>1</sup> .....	8,217	241	2.9
Private households .....	999	177	17.7	Food and kindred products .....	1,558	70	4.5
Services, except private households <sup>1</sup> .....	27,195	1,906	7.0	Textile mill products .....	753	9	1.1
Business services .....	4,043	599	14.8	Apparel and other textile products	983	29	2.9
Automobile and repair services ....	1,468	33	2.2	Paper and allied products .....	743	20	2.7
Personal services .....	2,415	170	7.0	Printing and publishing .....	1,787	34	1.9
Entertainment and recreation services .....	1,364	115	8.4	Chemicals and allied products ....	1,275	52	4.1
Hospitals .....	4,051	75	1.8	Petroleum and coal products .....	148	7	4.5
Health services, except hospitals ..	4,861	140	2.9	Rubber and miscellaneous plastics products .....	792	16	2.1
Educational services .....	2,353	453	19.3	Leather and leather products .....	135	2	1.2
Social services .....	1,937	112	5.8	Transportation and public utilities .....	6,538	195	3.0
Other professional services .....	4,692	209	4.5	Transportation .....	3,852	75	1.9
Mining .....	643	16	2.5	Communications .....	1,623	73	4.5
Construction .....	4,564	507	11.1	Utilities and sanitary services .....	1,063	47	4.4
Manufacturing .....	19,630	620	3.2	Wholesale trade .....	4,005	97	2.4
Durable goods .....	11,413	379	3.3	Retail trade .....	18,234	540	3.0
Lumber and wood products .....	693	35	5.1	Eating and drinking places .....	5,760	239	4.1
Furniture and fixtures .....	684	50	7.3	Other retail trade .....	12,474	301	2.4
Stone, clay, and glass products ....	552	14	2.5	Finance, insurance, and real estate ....	6,722	129	1.9
Primary metal industries .....	723	10	1.3	Banking and other finance .....	3,352	65	1.9
Fabricated metal products .....	1,206	44	3.6	Insurance and real estate .....	3,370	64	1.9
Machinery and computing equipment .....	2,399	60	2.5	Government .....	18,946	1,265	6.7
Electrical machinery, equipment, and supplies .....	1,739	54	3.1	Self-employed workers .....	14,332	450	3.1
Transportation equipment .....	2,136	70	3.3				
Motor vehicles and equipment ..	1,163	20	1.7				
Aircraft and parts .....	378	10	2.7				

<sup>1</sup> Includes other industries not shown separately.

NOTE: Contingent workers are defined as those who did not have an explicit or implicit contract to continue their employment into the future. Workers who

did not expect to continue in their job for personal reasons, such as retirement or returning to school, were not considered contingent as long as they had the option of continuing in the job if not for the personal reason.

**Table 13.** Percent distribution of private nonagricultural wage and salary workers by industry and occupation, 1996 annual averages

Industry	Executive, administrative, and managerial	Professional specialty	Technicians and related support	Sales occupations	Administrative support, including clerical	Service occupations	Precision production, craft, and repair	Operators, fabricators, and laborers
Total, 16 years and older .....	12.8	11.4	3.5	13.5	14.7	13.8	11.8	17.9
Services .....	14.0	24.9	6.7	3.3	16.8	23.9	4.6	5.2
Private households .....	.4	1.1	.1	.1	.4	92.4	1.0	1.2
Services, except private households <sup>1</sup> .....	14.4	25.7	7.0	3.4	17.4	21.7	4.7	5.3
Business, automobile, and repair services <sup>1</sup> ..	15.6	10.5	4.5	6.6	17.9	15.5	15.5	13.8
Advertising .....	45.2	17.1	.9	13.4	17.1	.5	1.8	5.1
Services to dwellings and other buildings ..	6.9	.3	.3	2.1	2.9	84.3	1.4	1.4
Personnel supply services .....	14.4	7.1	4.5	3.6	35.6	7.6	4.0	22.8
Computer and data processing services ..	21.9	37.6	16.1	3.1	14.0	.3	5.8	1.2
Detective and protective services .....	7.6	1.0	.8	3.7	8.6	69.4	6.8	2.1
Automobile rental and leasing, without drivers .....	16.7	( <sup>2</sup> )	1.3	29.5	13.5	( <sup>2</sup> )	16.0	22.4
Automobile parking and car washes .....	13.5	( <sup>2</sup> )	( <sup>2</sup> )	10.0	4.1	2.4	1.8	67.6
Automotive repair and related services .....	9.1	.1	.1	2.7	8.8	.4	60.5	18.1
Electrical repair shops .....	7.9	1.1	5.6	5.6	14.6	( <sup>2</sup> )	58.4	4.5
Miscellaneous repair services .....	5.5	.3	1.7	3.0	8.0	1.1	45.7	34.7
Personal services <sup>1</sup> .....	14.7	2.8	.3	6.2	11.5	49.0	3.4	11.1
Hotels and motels .....	17.6	1.5	.2	3.7	13.2	55.0	3.7	3.7
Lodging places, except hotels and motels ..	33.7	15.4	( <sup>2</sup> )	1.9	11.5	26.0	3.8	2.9
Laundry, cleaning, and garment services ..	7.0	.3	( <sup>2</sup> )	21.1	8.9	1.8	7.0	54.2
Beauty shops .....	.8	.2	( <sup>2</sup> )	.8	5.9	92.1	.2	( <sup>2</sup> )
Funeral services and crematories .....	50.0	1.4	5.4	5.4	16.2	12.2	( <sup>2</sup> )	8.1
Entertainment and recreation services <sup>1</sup> .....	15.3	19.8	1.0	14.7	9.0	28.9	3.3	3.4
Theaters and motion pictures .....	20.2	33.9	2.7	12.0	9.8	12.0	2.5	6.6
Video tape rental .....	11.5	( <sup>2</sup> )	( <sup>2</sup> )	77.9	9.6	( <sup>2</sup> )	( <sup>2</sup> )	1.0
Bowling centers .....	16.0	( <sup>2</sup> )	( <sup>2</sup> )	14.0	6.0	54.0	10.0	( <sup>2</sup> )
Professional and related services .....	13.9	34.8	9.3	.8	18.9	19.2	1.3	1.7
Hospitals .....	7.9	40.5	13.7	.5	17.8	17.0	1.6	1.1
Health services, except hospitals <sup>1</sup> .....	11.1	20.7	13.7	.4	18.3	33.3	1.2	1.3
Offices and clinics of physicians .....	12.2	25.6	19.7	.5	36.2	4.8	.6	.6
Offices and clinics of dentists .....	11.5	4.2	17.7	( <sup>2</sup> )	24.0	40.7	1.4	.4
Nursing and personal care facilities .....	6.5	15.2	8.9	.1	4.1	62.0	.6	2.4
Educational services <sup>1</sup> .....	12.5	52.7	2.0	1.0	18.3	9.7	1.8	1.5
Elementary and secondary schools .....	8.1	61.0	.5	.4	15.9	10.7	1.1	2.1
Colleges and universities .....	15.6	45.5	3.4	1.6	19.9	10.0	2.6	1.0
Social services .....	16.8	33.5	.7	1.2	9.5	32.4	.7	5.0
Job training and vocational rehabilitation services .....	12.1	24.2	.7	.7	10.7	16.1	2.0	34.2
Child day care services .....	7.7	39.3	.1	( <sup>2</sup> )	2.5	49.0	.1	1.2
Residential care facilities without nursing .....	17.3	29.7	1.3	.8	10.8	36.0	1.3	2.1
Other professional services <sup>1</sup> .....	22.2	36.5	7.9	1.2	25.0	4.3	1.0	1.4
Legal services .....	6.3	35.5	17.1	.1	39.7	.5	.1	.4
Museums, art galleries, and zoos .....	21.6	29.7	( <sup>2</sup> )	10.8	12.2	13.5	1.4	4.1
Labor unions .....	61.7	( <sup>2</sup> )	1.7	( <sup>2</sup> )	26.7	1.7	1.7	5.0
Religious organizations .....	2.9	60.5	.3	.5	20.0	12.8	1.2	.9
Engineering, architectural, and surveying services .....	13.5	55.4	13.7	.6	11.0	.3	2.5	3.1
Accounting, auditing, and bookkeeping services .....	56.0	3.3	.8	.8	38.3	.2	.2	.4
Research, development, and testing services .....	24.9	32.9	15.6	1.1	19.3	.7	2.3	2.5
Management and public relations services .....	49.2	25.3	2.6	4.0	16.5	.4	.9	.9
Mining .....	13.3	7.2	3.5	1.9	8.5	1.3	37.8	26.7
Construction .....	9.8	1.8	.5	1.0	6.1	.4	56.9	23.4
Manufacturing .....	12.2	9.3	3.2	3.7	10.1	1.3	18.9	40.9
Durable goods .....	12.4	10.0	3.5	2.8	9.5	1.2	22.3	37.9
Nondurable goods .....	12.1	8.1	2.6	5.2	11.1	1.5	14.0	45.3
Transportation and public utilities .....	13.2	7.0	4.4	3.7	21.4	2.9	14.7	32.6

See footnotes at end of table.

**Table 13. Continued—Percent distribution of private nonagricultural wage and salary workers by industry and occupation, 1996 annual averages**

Industry	Executive, administrative, and managerial	Professional specialty	Technicians and related support	Sales occupations	Administrative support, including clerical	Service occupations	Precision production, craft, and repair	Operators, fabricators, and laborers
Transportation .....	9.6	1.9	3.9	1.8	21.0	4.0	8.3	49.4
Communications .....	21.5	17.9	5.7	9.7	24.2	.4	19.0	1.5
Utilities and sanitary services .....	14.7	10.3	4.0	2.2	19.1	2.4	33.1	14.1
Wholesale trade .....	11.2	2.2	1.2	35.5	16.5	1.1	7.0	23.8
Retail trade .....	7.4	1.8	.6	39.4	7.7	25.3	5.5	12.0
Eating and drinking places .....	12.8	.5	( <sup>2</sup> )	9.4	1.4	72.6	.6	2.6
Other retail trade .....	4.9	2.4	.9	53.2	10.6	3.6	7.7	16.3
Finance, insurance, and real estate .....	27.8	3.7	2.2	20.1	38.6	4.0	2.1	.8
Banking and other finance .....	36.0	3.5	1.7	10.8	46.1	.8	.6	.4
Insurance and real estate .....	20.5	4.0	2.6	28.5	31.8	6.9	3.4	1.1

<sup>1</sup> Includes other industries not shown separately.

NOTE: Data for farming, forestry, and fishing occupations are not shown.

<sup>2</sup> Less than 0.05 percent.

**Table 14. Nonfatal occupational injury and illness incidence rates per 100 full-time equivalent workers by industry, 1995**

Industry	Incidence rate	Industry	Incidence rate
Private industries .....	8.1	Professional organizations .....	2.1
Services <sup>1</sup> .....	6.4	Civic and social associations .....	5.4
Hotels and other lodging places .....	9.7	Religious organizations .....	2.6
Personal services <sup>1</sup> .....	4.1	Other membership organizations .....	7.5
Laundry, cleaning, and garment services .....	7.2	Engineering and management services .....	2.3
Photographic studios, portrait .....	2.9	Engineering and architectural services .....	2.1
Beauty shops .....	1.7	Accounting, auditing, and bookkeeping .....	.9
Funeral services and crematories .....	3.2	Research and testing services .....	3.2
Business services .....	4.6	Management and public relations .....	3.0
Advertising .....	2.2	Agriculture, forestry, and fisheries .....	9.7
Credit reporting and collection .....	1.5	Mining .....	6.2
Mailing, reproduction, and stenographic services .....	3.7	Construction .....	10.6
Services to buildings .....	7.6	Manufacturing .....	11.6
Miscellaneous equipment rental and leasing .....	7.9	Durable goods .....	12.8
Personnel supply services .....	7.2	Lumber and wood products .....	14.9
Computer and data processing services .....	1.7	Furniture and fixtures .....	13.9
Miscellaneous business services .....	4.4	Stone, clay, and glass products .....	12.3
Auto repair, services, and parking .....	6.7	Primary metal industries .....	16.5
Miscellaneous repair services .....	8.1	Fabricated metal products .....	15.8
Motion pictures .....	3.3	Industrial machinery and equipment .....	11.2
Amusement and recreation services .....	9.5	Electronic and other electrical equipment .....	7.6
Health services .....	9.2	Transportation equipment .....	18.6
Offices and clinics of medical doctors .....	2.8	Motor vehicles and equipment .....	23.2
Offices and clinics of dentists .....	2.4	Aircraft and parts .....	8.8
Offices of other health practitioners .....	1.9	Ship and boat building and repairing .....	27.3
Nursing and personal care facilities .....	18.2	Instruments and related products .....	5.3
Hospitals .....	10.1	Miscellaneous durable goods manufacturing .....	9.1
Medical and dental laboratories .....	4.8	Nondurable goods .....	9.9
Home health care services .....	9.9	Food and kindred products .....	16.3
Legal services .....	1.0	Tobacco products .....	5.6
Educational services <sup>1</sup> .....	3.9	Textile mill products .....	8.2
Elementary and secondary schools .....	4.6	Apparel and other finished textile products .....	8.2
Colleges and universities .....	3.9	Paper and allied products .....	8.5
Social services <sup>1</sup> .....	7.6	Printing and publishing .....	6.4
Individual and family services .....	5.8	Chemicals and allied products .....	5.5
Job training and related services .....	10.6	Petroleum and coal products .....	4.8
Child day care services .....	3.8	Rubber and miscellaneous plastics products .....	12.9
Residential care .....	11.7	Leather and leather products .....	11.4
Museums and botanical and zoological gardens .....	7.2	Transportation and public utilities .....	9.1
Business associations .....	1.5	Wholesale trade .....	7.5
		Retail trade .....	7.5
		Finance, insurance, and real estate .....	2.6

<sup>1</sup> Includes other industries not shown separately.

incidence rate of 18.2 in 1995. Two other health-care industries, hospitals and home health care services, also had relatively high rates. In contrast, the offices of doctors, dentists, and other health practitioners and medical and dental laboratories had low incidences of occupational injuries and illnesses.

Other services industries with relatively high incidence rates were residential care (11.7), job training and related services (10.6), and hotels and other lodging places (9.7). Industries in which occupational injuries and illnesses were comparatively rare include legal services (1.0), engineering and management services (2.3), private education (3.9), and personal services (4.1). Business services also had a fairly low incidence rate (4.6), but there was considerable variation within the industry; credit reporting and collection had a rate of 1.5, while equipment rental and leasing had a rate of 7.9.

The incidence rates presented in this article provide a measure of the industries with the highest and lowest occurrence of nonfatal work-related injuries and illnesses. These rates, however, do not provide any information on the severity and nature of occupational injuries and illnesses in each industry. For example, how frequently do injuries result in days away from work in manufacturing, compared with the services industry? Are back injuries more common in manufacturing than in services? Such questions are examined in other BLS publications.<sup>32</sup>

In addition to nonfatal injuries and illnesses, it is also useful to examine data on workplace deaths. Such information is available from the BLS Census of Fatal Occupational Injuries, which obtains job-related fatality data from a variety of sources, including death certificates, workers' compensation records, and reports to Federal and State agencies. In 1996, there were 6,112 work fatalities in the United States.<sup>33</sup> Transportation incidents, such as highway crashes, industrial or farm vehicle incidents, plane crashes, and railroad or water craft incidents, accounted for 42 percent of these deaths. Assaults and other violent acts accounted for 19 percent of workplace fatalities. Other causes of workplace deaths include contact with objects and equipment, falls, exposure to harmful substances or environments, and fires and explosions.

Table 15 shows the number and percent distribution of work-related fatalities in each major industry in 1996. For comparison purposes, each industry's share of total employment also is shown. Construction accounted for 17 percent of workplace fatalities in 1996, the largest proportion of any major industry and nearly 3 times its share of total employment. Fifteen percent of job-related deaths occurred among workers in transportation and public utilities; more than two-thirds of fatalities in the industry resulted from transportation incidents.<sup>34</sup> Agriculture, forestry, and fisheries accounted for 13 percent of work-related deaths, even though the industry made up only 3 percent of employment.

Thirteen percent of workplace deaths occurred among workers in services; the industry made up 27 percent of total employ-

ment. Within services, transportation incidents and assaults and other violent acts were the two most prevalent causes of death. Manufacturing accounted for 12 percent of work-related fatalities, and retail trade accounted for 11 percent; both were smaller proportions than each industry's share of total employment. Manufacturing fatalities typically involved contact with objects and equipment or transportation incidents. Two-thirds of deaths in retail trade resulted from homicides.

### Keeping score

Ideally, an overall "score" could be computed to assess the average quality of jobs in each industry, but there are several difficulties with this approach. One problem is that many important job characteristics lack clear, unambiguous data. For example, little or no data exist on opportunities for advancement, travel requirements, and the likelihood of getting dirty. Some researchers have attempted to estimate the level of autonomy and creative freedom that workers have on the job, but there is no consensus on whether the measures are appropriate.<sup>35</sup> Even when there are acceptable measures of job characteristics, their interpretation often may depend on the

**Table 15. Distribution of work-related fatalities by industry, 1996**

Industry	Fatalities		Percent distribution of total employment <sup>1</sup>
	Number	Percent distribution	
Total, including resident Armed Forces <sup>2</sup> .....	6,112	100.0	100.0
Total private .....	5,521	90.3	84.7
Services .....	767	12.5	27.4
Agriculture, forestry, and fisheries .....	798	13.1	2.7
Mining .....	152	2.5	.4
Construction .....	1,039	17.0	5.8
Manufacturing .....	715	11.7	16.0
Transportation and public utilities .....	947	15.5	5.7
Wholesale trade .....	267	4.4	3.9
Retail trade .....	672	11.0	16.8
Finance, insurance, and real estate .....	114	1.9	6.1
Government .....	591	9.7	15.3
Federal, including resident Armed Forces .....	178	2.9	3.6
State .....	127	2.1	4.0
Local .....	284	4.6	7.6
Local police protection .....	76	1.2	—

<sup>1</sup> The employment percentages are based on annual average figures obtained from the Current Population Survey on employed civilians 16 years and over, plus the number of persons in the Armed Forces stationed in the United States.

<sup>2</sup> The total includes 54 fatalities for which there was insufficient information to determine the specific industry classification, although there was enough information to determine whether the workers were employed in the private sector or government.

NOTE: Dash indicates that data are not available.

preferences of individual workers. Union representation, for example, has been regarded as a desirable job characteristic in some of the research literature on job quality.<sup>36</sup> Data on union representation in each industry are available from the cps, but the presence of a union does not necessarily make a job better than one without a union.<sup>37</sup> When attempting to compute an overall score on job quality, a researcher could simply ignore those job characteristics that lack clear, unambiguous measures. Doing so, however, would render the score incomplete and possibly misleading.

Another problem in computing a job-quality score is how to weigh specific job characteristics in the calculation. Different workers value each job characteristic differently. One worker may consider pay to be the most important element, while another worker may place greater importance on job security. One approach for assigning these weights is to survey workers to learn the average value of different job characteristics, although such an approach is more complicated than it may seem.<sup>38</sup> Furthermore, these values may change over time. When the economy is growing strongly, workers may value compensation or opportunities for advancement most highly. During recessions, job security might be-

come the predominant concern. Because of the problems in constructing an overall job-quality score for each industry, the job characteristics examined in this article were presented separately.

THIS ARTICLE HAS EXAMINED pay, benefits, job security, occupational structure, and job safety to assess the quality of jobs in services and other industries. The evidence presented here shows that the services industry is very diverse in terms of job quality. Many industries within services equal or exceed manufacturing and other industries on measures of job quality, and some services industries could be viewed as less desirable by these measures. Thus, employment shifts away from manufacturing and toward services do not necessarily signal a deterioration in overall job quality in the United States. The evidence presented here highlights the importance of examining more than just average pay when assessing the quality of jobs in each industry. It also has become clear that, within each industry, there are jobs at a variety of different quality levels. The quality of services industry jobs is especially diverse, encompassing many of the “best” jobs in the economy and a substantial share of the “worst.” □

## Footnotes

<sup>1</sup> These estimates are compiled by the U.S. Department of Commerce, Bureau of Economic Analysis. An industry's gross product equals its gross output—sales or receipts and other operating income plus inventory change—minus the goods and services purchased from other industries or imported.

<sup>2</sup> See Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Book II, Chapter III (originally, Glasgow, Scotland, 1776).

<sup>3</sup> Ironically, Smith criticized a group of French thinkers of his era, called the Economistes or Physiocrats, for their view that the only productive members of society were “proprietors” and “cultivators,” that is, the people who owned and farmed land. According to the Physiocrats, “artificers, manufacturers, and merchants” were unproductive in the sense that they never added any new value that exceeded the cost of their labor. For Smith's criticism of the Physiocrats, see *The Wealth of Nations*, Book IV, Chapter IX. Many observers today might argue that Smith's view of the value of service providers also was too narrow.

<sup>4</sup> See, for example, Lawrence Mishel and Jacqueline Simon, “The State of Working America,” *Challenge*, November-December 1988, pp. 50–51; and Maggie Mahar, “Blue Collar, White Collar: Good Jobs Are Vanishing Throughout the Economy,” *Barron's*, May 11, 1992, pp. 8–24.

<sup>5</sup> See, for example, Robert S. Smith, “Compensating Wage Differentials and Public Policy: A Review,” *Industrial and Labor Relations Review*, April 1979, pp. 339–52; Charles Brown, “Equalizing Differences in the Labor Market,” *The Quarterly Journal of Economics*, February 1980, pp. 113–34.

<sup>6</sup> For a thorough discussion of the various factors that affect pay levels, see “The Structure of Earnings,” *Report on the American Workforce* (U.S. Department of Labor, 1994), pp. 49–93.

<sup>7</sup> BLS surveys that provide data on earnings include: the Current Population Survey (cps), the Current Employment Statistics (ces) survey, the Covered Employment and Wages program, the National Compensation Survey, the Employment Cost Index (eci), the Consumer Expenditure Survey, and the National Longitudinal Surveys.

<sup>8</sup> It should be noted that the category “production workers” in manufacturing encompasses different occupations from those in the

category “nonsupervisory workers” in services. This difference in occupational coverage complicates the comparison of wages between the two industries. For a more detailed discussion of wages and occupational coverage in the Current Employment Statistics survey, see Katharine G. Abraham, James R. Spletzer, and Jay C. Stewart, “Divergent Trends in Alternative Wage Series,” in John Haltiwanger, Marilyn Manser, and Robert Topel, eds., *Labor Statistics Measurement Issues* (University of Chicago Press, 1998) (in press).

<sup>9</sup> The Current Employment Statistics survey does not obtain earnings figures for each individual worker. Rather, from each surveyed establishment, an aggregate weekly payroll figure is obtained for all production or nonsupervisory workers. Average weekly earnings are computed by dividing the aggregate payroll by the number of workers. Average hourly earnings are computed by dividing the average weekly earnings by the average weekly hours of production or nonsupervisory workers. Because these methods are used, it is not possible to obtain information on the distribution of earnings.

<sup>10</sup> In the cps, however, the industry designation might not be as precise as that collected in the ces, and the earnings data reported by household respondents might lack the precision of payroll reports from establishments.

<sup>11</sup> Firms might provide health benefits to their employees if they feel that doing so will help to keep employees healthy and productive. Firms might offer vacation benefits if they feel that employees will be more productive if they periodically take time off from work. Some firms offer stock options or employee stock ownership plans to give employees a financial stake in meeting corporate goals. Firms also might provide retirement benefits, specifically, defined-benefit pensions, to encourage workers to remain with the firm long enough to receive the benefits. Providing pensions can help firms to keep productive workers and reduce turnover costs, such as hiring and training new workers to replace those who leave the firm. Another reason firms tend to provide pensions is to encourage employees to perform at an acceptable level of productivity so that they can keep their jobs long enough to receive retirement benefits, rather than being dis-

missed for poor performance. In addition, because it is illegal in the United States for firms to *require* mandatory retirement at a certain age, firms instead may use pension plans to *encourage* workers to retire. For a further discussion of these reasons, see Alan L. Gustman, Olivia S. Mitchell, and Thomas L. Steinmeier, *The Role of Pensions in the Labor Market*, working paper no. 4295 (Cambridge, MA, National Bureau of Economic Research, Inc., 1993). Firms also may prefer to provide benefits instead of cash compensation to avoid incurring larger expenses for legally required benefits that cost employers a fixed percentage of cash compensation. Of course, firms can essentially shift the entire cost of these benefits onto workers by reducing their cash compensation to cover the additional cost of the legally required benefits.

<sup>12</sup> See "Health Care and the Workplace: Recent Trends and Current Status," *Report on the American Workforce* (U.S. Department of Labor, 1995), pp. 101–35.

<sup>13</sup> Three BLS surveys provide data on benefits. The Employee Benefits Survey (EBS) obtains data from private-sector establishments and State and local governments on the incidence and detailed provisions of a variety of employee benefit plans. The Employment Cost Index (ECI) obtains information from private-sector establishments and State and local governments on the cost to employers of employee benefit plans. The Current Population Survey (CPS), the monthly survey of households that provides information on employment, unemployment, and other labor force measures, periodically has included supplemental questions on participation in employee benefit programs. The most recent CPS supplement on employee benefits was conducted in April 1993. The CPS is used in this analysis because its large sample size enables it to provide greater industry detail than the Employee Benefits Survey.

<sup>14</sup> See "Employer Costs for Employee Compensation—March 1997," USDL 97–371 (U.S. Department of Labor), Oct. 21, 1997.

<sup>15</sup> Health coverage differs from other employee benefits because it is a benefit not just to workers but, in many cases, their families as well. In the April 1993 CPS, workers were asked whether they received employer health coverage for themselves and their families, or simply for themselves. Among health plan participants, workers in services were less likely than those in other industries to receive family health coverage. There are, however, several possible explanations for the lower rate of family coverage in services industries. Employers in services may be less likely to *offer* family coverage. Alternatively, workers in services may be less likely to *need* or *accept* family coverage, either because they are less likely to have families or because their family members may receive health coverage from other sources, such as their own employers. Because it is not possible to determine the specific reasons for the different coverage rates across industries, family health coverage is not examined in this article.

<sup>16</sup> For further discussion on health insurance coverage from all sources in addition to one's own employer, see *Health Insurance Coverage: 1996, Current Population Reports*, Series P60–199 (Bureau of the Census, September 1997).

<sup>17</sup> For further discussion on flexible compensation arrangements, see Joseph R. Meisenheimer II and William J. Wiatrowski, "Flexible benefits plans: employees who have a choice," *Monthly Labor Review*, December 1989, pp. 17–23. For further discussion of the value employees may place on benefits, see Melissa Famulari and Marilyn E. Manser, "Employer-provided benefits: employer cost versus employee value," *Monthly Labor Review*, December 1989, pp. 24–32.

<sup>18</sup> For further discussion of health plan options, see Michael Bucci and Robert Grant, "Employer-sponsored health insurance: what's offered; what's chosen," *Monthly Labor Review*, October 1995, pp. 38–44.

<sup>19</sup> There are two major types of retirement plans: defined-benefit pensions and defined-contribution plans. Defined-benefit pensions legally obligate employers to provide payments to retirees according to a specified formula, which usually includes the retiree's salary and length of service with the firm. Defined-contribution plans generally specify the level of employer contributions to a plan, but not the formula for determining eventual benefits. Instead, individual accounts are established for participants of defined-contribution plans, and benefits depend on the amounts employers and employees contribute, plus the investment earnings of the

contributions. In contrast to defined-benefit pensions, defined-contribution plans place the entire financial risk on employees if plan investments perform poorly. If investments perform well, however, participants of defined-contribution plans could receive sizable returns on their investments. Defined-benefit pension participants generally receive no extra benefits if plan investments perform well. The April 1993 CPS asked retirement plan participants to specify whether they were in a defined-benefit pension, defined-contribution plan, or both. Nearly 1 in 5 respondents did not identify either a defined-benefit or defined-contribution plan, however, limiting the usefulness of the data. Because of this problem, this article does not compare which plan types are most common in each industry.

<sup>20</sup> There are other types of defined-contribution plans that do not include these tax-deferral features. Such plans are included in the overall figures on retirement plan participation, but they are not examined separately.

<sup>21</sup> The most that a single individual can contribute on a tax-deferred basis to an IRA is \$2,000 annually, and the most a married couple can contribute is \$4,000. Under 401(k), 403(b), and Section 457 plans, the maximum tax-deferred employee contribution permitted by the plan is often 10 percent or 15 percent of the employee's salary, subject to a dollar maximum specified by the Internal Revenue Code. In 1997 this maximum was \$9,500 for 401(k) and 403(b) plan participants and \$7,500 for Section 457 plan participants. Since enactment of the Tax Reform Act of 1986, single persons who are not eligible to participate in an employer-sponsored retirement plan can contribute up to \$2,000 annually on a tax-deferred basis to an Individual Retirement Account (IRA). Single persons who are eligible to participate in an employer-sponsored retirement plan can contribute up to \$2,000 annually if their annual adjusted gross income is under \$25,000. Single persons with income between \$25,000 and \$35,000 can contribute less than \$2,000 to an IRA, and those with annual income above \$35,000 cannot contribute on a tax-deferred basis to an IRA. Married couples can contribute up to \$4,000 annually if both spouses work and neither is eligible to participate in an employer-sponsored retirement plan. If either spouse is eligible to participate in an employer-sponsored plan, the couple can contribute up to \$4,000 on a tax-deferred basis to an IRA if their annual adjusted gross income is under \$40,000. Couples with incomes between \$40,000 and \$50,000 can make smaller IRA contributions, and those with incomes above \$50,000 cannot contribute on a tax-deferred basis. Tax legislation that was passed in 1997 and became effective on January 1, 1998, permits single persons and married couples with higher incomes to contribute to IRA's. Also, nonworking spouses can contribute up to \$2,000 annually on a tax-deferred basis to an IRA, even if the working spouse has an employer-sponsored retirement plan; this tax deferral phases out for couples with annual income above \$150,000.

<sup>22</sup> For work-related illnesses or injuries, most workers are covered by State workers' compensation laws.

<sup>23</sup> See *Employee Tenure in the Mid-1990s*, USDL 97–25 (U.S. Department of Labor), Jan. 30, 1997.

<sup>24</sup> See "Employment Relationships in a Changing Economy" in *Report on the American Workforce*, 1995, pp. 3–49.

<sup>25</sup> In most BLS analyses of data from the Displaced Worker Surveys, displacement rates have been calculated as the number of persons displaced who had been with their employer at least 3 years as a proportion of the average number of workers with at least 3 years of tenure with their current employer. In this analysis, the 3-year tenure restriction has been removed to provide a more comprehensive assessment of worker displacement in each industry.

<sup>26</sup> See Steven Hipple, "Worker displacement in an expanding economy," *Monthly Labor Review*, December 1997, pp. 26–39.

<sup>27</sup> See *Contingent and Alternative Employment Arrangements*, Report 900 (Bureau of Labor Statistics, August 1995). BLS has devised three measures of contingency. The narrowest measure includes wage and salary workers who have worked for their current employer 1 year or less and expect to work for this employer an additional year or less. The intermediate measure of contingency expands the first measure to include self-employed workers and independent contractors who had been and expect to be in these employment arrangements for 1 year or less. The broadest

measure of contingency removes the 1-year restriction on both current tenure and expected future job duration. This broadest measure, which is used in this analysis, includes all workers who expect their jobs will end in the near, although unspecified, future for an economic reason.

<sup>28</sup> The rate of contingent employment in business services also would have been lower if the calculation for workers in personnel supply services had been based on their expectation of future employment with the temporary-help firm, rather than the firm's client. In this analysis, workers in the personnel supply services industry were counted as contingent if they did not expect their assignment with the *present client* to last much longer. Many of these workers may expect their relationship with their *temporary-help firm* to continue well into the future, however.

<sup>29</sup> See, for example, Henry S. Farber, *Are Lifetime Jobs Disappearing? Job Duration in the United States: 1973–1993*, working paper no. 5014 (Cambridge, MA, National Bureau of Economic Research, Inc., 1995). Also see Robert E. Hall, "The Importance of Lifetime Jobs in the U.S. Economy," *American Economic Review*, September 1982, pp. 716–24; Manuelita Ureta, "The Importance of Lifetime Jobs in the U.S. Economy, Revisited," *American Economic Review*, March 1992, pp. 322–35; Francis X. Diebold, David Neumark, and Daniel Polsky, *Job Stability in the United States*, working paper no. 4859 (Cambridge, MA, National Bureau of Economic Research, Inc., 1994); and Kenneth A. Swinnerton and Howard Wial, "Is Job Stability Declining in the U.S. Economy?" *Industrial and Labor Relations Review*, January 1995, pp. 293–304.

<sup>30</sup> See Stephen J. Rose, *Declining Job Security and the Professionalization of Opportunity*, research report no. 95–04 (National Commission for Employment Policy, 1995).

<sup>31</sup> See *Survey of Occupational Injuries and Illnesses, 1995*, Summary 97–7 (Bureau of Labor Statistics, May 1997). Incidence rates are calculated as:  $(N/H) \times 200,000$ , where

N = Number of injuries and illnesses

H = Total hours worked by all employees during the calendar year

200,000 = Base number of annual work hours for 100 full-time equivalent workers, who are assumed to work 40 hours per week for 50 weeks.

In the Survey of Occupational Injuries and Illnesses, reports are collected from a sample of about 250,000 private-sector establishments. The survey includes job-related injuries, as well as illnesses that are recognized, diagnosed, and reported during the year. Some latent illnesses, such as those caused by long-term exposure to carcinogens, are difficult to attribute to the workplace and likely are underreported in the survey. Most of the illnesses reported in the survey are easier to relate directly to work activity. Examples of these illnesses are contact dermatitis and carpal tunnel syndrome. In 1995, there were 6.6 million nonfatal work-related injuries and illnesses in the private sector. Of these, nearly 6.1 million were injuries that resulted in lost worktime, medical treatment other than first aid, loss of consciousness, restriction of work or motion, or transfer to another job. Illnesses totaled 495,000 in 1995.

<sup>32</sup> See, for example, *Occupational Injuries and Illnesses: Counts, Rates, and Characteristics, 1994*, Bulletin 2485 (Bureau of Labor Statistics, April 1997).

<sup>33</sup> See "National Census of Fatal Occupational Injuries, 1996," USDL 97–266 (U.S. Department of Labor, Aug. 7, 1997).

<sup>34</sup> See *Fatal Workplace Injuries in 1995: A Collection of Data and Analysis*, Report 913 (Bureau of Labor Statistics, April 1997).

<sup>35</sup> See, for example, Erica L. Groshen and Alan B. Krueger, "The Structure of Supervision and Pay in Hospitals," *Industrial and Labor Relations Review*, February 1990, pp. 134–S–146–S. See also, Mahmood Arai, "Compensating Wage Differentials versus Efficiency Wages: An Empirical Study of Job Autonomy and Wages," *Industrial Relations*, April 1994, pp. 249–62. Groshen and Krueger tried to estimate the level of autonomy by examining the ratio of managers to nonmanagerial employees. Such a measure does not necessarily indicate the level of autonomy, however. A factory, for example, may have only 1 supervisor for every 50 production workers, but because much of the work is done on an assembly line, the employees have little discretion in how they do their jobs. By comparison, an economic research organization may have 1 manager for every 8 nonmanagerial economists, but the nature of the work may provide these economists with considerable autonomy in applying their technical and creative skills. It should be emphasized that Groshen and Krueger limited their study to hospitals, rather than comparing the autonomy of jobs in different industries. Because work activities tend to be similar across firms within a narrowly defined industry such as hospitals, comparing the ratio of supervisors to nonsupervisory personnel may be an acceptable measure of the level of supervision or autonomy. Such a measure is not appropriate when making comparisons across different industries, which is the focus of this article. Even within a specific industry, however, the ratio of supervisors to nonsupervisory workers may not be a good indicator of autonomy because workers who are not in managerial or supervisory occupations sometimes perform supervisory duties. For example, in many hospitals, registered nurses oversee the work of licensed practical nurses. In the study by Arai, the author examined data from Sweden and defined a job as having autonomy if three criteria were met: (1) the worker had a flexitime arrangement in which he or she could choose the beginning and ending times of the work day; (2) the worker did not have to use a time clock; and (3) the worker could decide the pace of the work. This measure misses other aspects of autonomy, such as the ability to choose different work methods and control the overall quality of the output. Furthermore, as defined in the study, this measure only allows for a job to be autonomous or not autonomous; it does not reflect the fact that different jobs have different *degrees* of autonomy.

<sup>36</sup> See, for example, Christopher Jencks, Lauri Perman, and Lee Rainwater, "What Is a Good Job? A New Measure of Labor Market Success," *American Journal of Sociology*, May 1988, pp. 1322–57; Maury B. Gittleman and David R. Howells, "Changes in the Structure and Quality of Jobs in the United States: Effects by Race and Gender, 1973–1990," *Industrial and Labor Relations Review*, April 1995, pp. 420–40.

<sup>37</sup> In some cases, unions provide workers with benefits that they might not receive in the absence of a union. However, there is an inverse relationship between union effect and skill level. That is, unionization does the least for the jobs that, in one important sense (level of skill), are "good" jobs. See Albert Rees, *The Economics of Work and Play* (New York, Harper & Row, 1973), pp. 155–57.

<sup>38</sup> For a discussion on surveying workers to determine how different job characteristics affect workers' assessments of job quality, see Jencks and others, "What Is a Good Job?" *American Journal of Sociology*, May 1988, pp. 1322–57.