

Dec 6

Tom Nardone -

Sharon Cohany, BLS

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press release this month

↳ surveys + forms
↳ employment + unemp.
↳ labor force stats from CPS
unt + alt arrangements

not aware of effort to make it annual. Tried to make it
every yr since the 1980s
no g-tee that we will do this

BLS has to come up w/ the funds

There haven't been many DS in data

↳ There are some surveys, like this one, that
measure things that in recent yrs have n
d'd much
don't think there would be support

hours - can cross classify w/ basic monthly
+ cross + find at

table 14 - Cohany 11/98 article
temp help agency hrs, full + p/t + you can
see that p/t hrs

if you have HI/personnel

www publicists + research papers
monthly labor rev on line
BLS

1998 - now.

Survey of employers

Survey of households

empl by detailed
temp industry since
1982

sharp ↑ in # of
whrs employed
temp agencies

Contingent work: results from the second survey

Although the incidence of contingent work declined between 1995 and 1997, it continues to be more common among women, youth, students, part-time workers, and in the construction and services industries; still, contingent workers are found in both high- and low-skilled occupations

Steven Hipple

Both the number and proportion of workers with contingent jobs—that is, jobs that are structured to be short term or temporary—fell between 1995 and 1997. In the early 1990s, the Bureau of Labor Statistics developed a survey to estimate the number of contingent workers, conducting its first survey on the topic in February 1995. When the results of that first survey were published, three alternative measures of contingent work were introduced.¹ Under the broadest of the three definitions, there were 5.6 million contingent workers in 1997, and the contingency rate, which represents the proportion of the employed population holding contingent jobs, was 4.4 percent.² By comparison, in 1995, 6.0 million workers held contingent jobs, or 4.9 percent of total employment. The decline in the number and proportion of workers with temporary jobs coincided with a period of low unemployment and strong job growth.³

This article examines data on contingent work arrangements from the second special supplement to the Current Population Survey (CPS) on the topic, conducted in February 1997.⁴ In the supplements, contingent workers are defined as individuals who do not perceive themselves as having an explicit or implicit contract for ongoing employment. The analysis presented here focuses on the most broadly defined group of contingent workers (estimate 3), using noncontingent workers—those who are not classified as contingent even under the broadest definition—as a point of comparison.⁵

Past analyses have shown that the characteristics of contingent and noncontingent workers differ markedly. Contingent work arrangements are more common among certain demographic groups, for example, and in certain occupations and in-

dustries. The two groups differ by other characteristics as well, including employee tenure and work schedules. Disentangling the impact of these differences on such things as earnings or health insurance coverage can be very complex. The purpose of this article is to provide an overview of the characteristics of contingent workers in 1997.

Demographics

The number of contingent workers and the contingency rate declined over the period between the two surveys for most of the major demographic groups. (See tables 1 and 2.) Among the age groups, young workers continued to be the most likely to work in contingent jobs—in 1997, the contingency rate for teens (16 to 19 years) was 11.5 percent, and the rate for 20- to 24-year-olds was 8.4 percent. In addition, both surveys showed that young contingent workers were more likely to be students than were their noncontingent counterparts. As the tabulation below shows, among 16- to 24-year-olds, 64 percent of contingent workers were enrolled in school in 1997, compared with 40 percent of noncontingent workers.

	Contingent workers (estimate 3)	Noncon- tingent workers
Total, 16 to 24 years (In thousands)	1,690	16,299
Percent	100.0	100.0
Enrolled	63.7	40.0
High school	19.5	16.0
College	44.3	24.0
Full time	38.6	17.2
Part time	5.6	6.8
Not enrolled	36.3	60.0

The large proportion of younger contingent

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Table 1. Employed contingent and noncontingent workers by age, sex, race, Hispanic origin, and educational attainment, February 1995 and February 1997

[Percent distribution]

Characteristic	Contingent workers ¹						Noncontingent workers ²	
	Estimate 1		Estimate 2		Estimate 3			
	1995	1997	1995	1997	1995	1997	1995	1997
Age and sex								
Total, 16 years and older (thousands)	2,739	2,385	3,422	3,096	6,034	5,574	117,174	121,168
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
16 to 19 years	16.6	19.2	15.2	16.0	10.7	12.4	4.3	4.4
20 to 24 years	25.0	23.9	22.2	21.0	19.8	17.9	9.6	9.0
25 to 34 years	26.0	23.7	27.5	24.4	26.3	24.8	26.1	25.0
35 to 44 years	18.5	17.5	19.8	20.6	21.0	20.9	28.0	28.2
45 to 54 years	8.2	8.3	9.5	10.8	12.6	13.6	19.8	21.0
55 to 64 years	3.8	5.3	3.7	5.4	5.9	7.3	9.4	9.6
65 years and older	1.8	2.1	2.1	1.9	3.7	3.1	2.8	2.9
Men	49.3	49.5	49.4	48.4	49.6	49.3	54.0	53.8
16 to 19 years	7.2	9.5	6.8	7.7	4.8	6.2	2.2	2.2
20 to 24 years	12.0	11.6	10.7	9.8	9.7	8.5	5.2	4.8
25 to 34 years	12.9	11.4	13.6	11.6	13.8	12.3	14.3	13.6
35 to 44 years	10.0	8.2	10.3	9.6	10.2	10.2	15.1	15.2
45 to 54 years	3.3	4.1	4.2	5.0	5.7	6.2	10.5	11.1
55 to 64 years	2.6	3.5	2.4	3.4	3.6	3.8	5.1	5.2
65 years and older	1.2	1.3	1.3	1.2	1.9	2.0	1.7	1.6
Women	50.7	50.5	50.6	51.6	50.4	50.7	46.0	46.2
16 to 19 years	9.5	9.8	8.4	8.2	5.9	6.2	2.1	2.2
20 to 24 years	13.0	12.3	11.5	11.1	10.1	9.4	4.4	4.3
25 to 34 years	13.1	12.2	13.9	12.8	12.5	12.5	11.8	11.4
35 to 44 years	8.5	9.3	9.5	11.0	10.8	10.6	12.9	13.0
45 to 54 years	4.9	4.3	5.3	5.7	6.9	7.4	9.3	9.6
55 to 64 years	1.2	1.8	1.3	2.0	2.3	3.5	4.3	4.4
65 years and older	.6	.8	.8	.7	1.8	1.1	1.2	1.2
Race and Hispanic origin								
White	80.0	79.5	80.1	80.6	80.9	81.9	85.6	85.3
Black	13.9	13.3	13.6	13.0	13.3	11.1	10.5	10.6
Hispanic origin	13.6	12.2	12.9	12.8	11.3	12.4	8.3	9.4
Educational attainment								
Total, 25 to 64 years (thousands)	1,547	1,308	2,070	1,893	3,968	3,710	97,633	101,397
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than a high school diploma	14.0	10.0	13.6	11.0	12.0	10.4	9.6	9.6
High school graduates, no college	27.9	27.9	27.5	28.5	27.3	26.8	32.4	32.8
Some college, no degree	22.8	21.9	23.3	20.2	19.6	18.8	19.9	18.9
Associate degree	8.4	10.7	8.0	10.1	7.9	8.2	9.1	9.1
College graduates	27.0	29.4	27.7	30.1	33.2	35.8	28.9	29.5
Advanced degree	9.4	10.5	10.0	9.3	14.9	14.7	9.9	10.0

¹ Contingent workers are defined as individuals who do not perceive themselves as having an explicit or implicit contract with their employers for ongoing employment. Estimate 1 above is calculated using the narrowest definition of contingent work; estimate 3 uses the broadest definition. For the specific criteria used for each definition, see the appendix, pp. 34-35.

² Noncontingent workers are those who do not meet the criteria for any of

the three definitions of contingent work.

NOTE: Data for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups. Detail for other characteristics may not sum to totals due to rounding.

workers enrolled in school suggests that the lack of a long-term commitment associated with temporary work is compatible with school attendance. For example, a job structured to last only until the end of the school year might be mutually satisfactory for both employer and employee. Interestingly,

much of the high rate of contingency among employed 20- to 24-year-old college students results from their employment in jobs that almost by definition are contingent. Thirteen percent of this group work in education (that is, at their schools), a higher percentage than any other industry except eating and

drinking places.

Women continued to be somewhat more likely than men to hold contingent jobs, although the rates for both groups fell over the 1995–97 period. Employment among women tends to be concentrated in many of the occupations and industries in which contingent work arrangements are most common. Women also have a greater tendency to work part time, and part-time workers are more likely to be contingent than full-time workers.

Similar to women, blacks and Hispanics in 1997 continued to have higher contingency rates than whites, although the rates for each of the three groups declined between the two surveys. The rates for whites (4.2 percent in 1997) and Hispanics (5.7 percent in 1997) fell slightly over the period, while the rate for blacks fell sharply, from 6.1 percent in 1995 to 4.6 percent in 1997.

Industry and occupation

Industry. As in the prior survey, the likelihood of holding a contingent job was greatest for workers in the construction and services industries. In 1997, contingency rates for construction and services were 7.2 percent and 6.7 percent, respectively.⁶ (See table 3.) Specific industries within services that had relatively

high rates of contingency included personnel supply services (44.4 percent), private household services (15.7 percent), educational services (11.4 percent), entertainment and recreation services (6.8 percent), and social services (6.2 percent).

Major industry groups with below-average contingency rates (less than 3.0 percent) included manufacturing; transportation and public utilities; wholesale and retail trade; and finance, insurance, and real estate.

Occupation. As in 1995, contingent workers in the 1997 survey were found in both low- and high-skilled occupations. For example, contingency rates were highest for those in professional specialty (6.0 percent), administrative support (6.0 percent), and farming occupations (5.9 percent). The fact that the probability of holding a contingent job was relatively high among occupations with such varying skill levels tends to refute the stereotype that contingent workers are primarily low-skilled.

Within the professional specialty category, the contingency rate was especially high for postsecondary teachers—28.4 percent. The rate for elementary and secondary school teachers, by contrast, although still above average, was just 6.2 per-

Table 2. Contingency rates by age, sex, race, Hispanic origin, and educational attainment, February 1995 and February 1997

Characteristic	Contingency rates ¹					
	Estimate 1		Estimate 2		Estimate 3	
	1995	1997	1995	1997	1995	1997
Age and sex						
Total, 16 years and older	2.2	1.9	2.8	2.4	4.9	4.4
16 to 19 years	8.1	7.6	9.2	8.2	11.4	11.5
20 to 24 years	5.5	4.8	6.1	5.4	9.6	8.4
25 to 34 years	2.2	1.8	2.9	2.4	4.9	4.4
35 to 44 years	1.5	1.2	2.0	1.8	3.7	3.3
45 to 54 years	.9	.8	1.4	1.3	3.2	2.9
55 to 64 years	.9	1.1	1.1	1.4	3.1	3.4
65 years and older	1.4	1.3	2.1	1.6	6.3	4.8
Men	2.0	1.7	2.5	2.2	4.5	4.0
Women	2.4	2.0	3.0	2.7	5.3	4.8
Race and Hispanic origin						
White	2.1	1.8	2.6	2.3	4.6	4.2
Black	2.9	2.4	3.5	3.0	6.1	4.6
Hispanic origin	3.6	2.4	4.2	3.3	6.5	5.7
Educational attainment						
Total, 25 to 64 years	1.5	1.2	2.0	1.8	3.9	3.5
Less than a high school diploma	2.2	1.3	2.9	2.1	4.8	3.8
High school graduates, no college	1.3	1.1	1.7	1.6	3.3	2.9
Some college, no degree	1.7	1.4	2.4	1.9	3.8	3.5
Associate degree	1.4	1.5	1.8	2.0	3.4	3.2
College graduates	1.4	1.2	1.9	1.8	4.5	4.3
Advanced degree	1.4	1.3	2.0	1.6	5.8	5.1

¹ Contingency rates are calculated by dividing the number of contingent workers in a specified worker group by the total number of employed persons in the same worker group. Estimate 1 above is calculated using the narrowest definition of contingent work; estimate 3 uses the broadest definition. For the specific criteria used for each definition, see the appendix, pp. 34–35.

Table 3. Contingency rates by occupation and industry, February 1995 and February 1997

[Percent]						
Occupation and industry	Contingency rates ¹					
	Estimate 1		Estimate 2		Estimate 3	
	1995	1997	1995	1997	1995	1997
Occupation						
Total, 16 years and older	2.2	1.9	2.8	2.4	4.9	4.4
Managerial and professional specialty	1.7	1.4	2.1	1.7	4.8	4.2
Executive, administrative, and managerial	.8	.7	1.1	1.0	2.7	2.2
Professional specialty	2.6	2.0	3.1	2.4	6.8	6.0
Technical, sales, and administrative support	2.1	2.1	2.5	2.6	4.4	4.3
Technicians and related support	1.3	1.8	1.9	2.7	4.2	4.7
Sales occupations	1.2	1.1	1.6	1.5	2.6	2.1
Administrative support, including clerical	3.1	3.0	3.4	3.5	5.8	6.0
Service occupations	3.0	2.3	4.1	3.2	5.8	5.0
Precision, production, craft, and repair	2.3	1.8	2.9	2.3	4.6	4.1
Operators, fabricators, and laborers	2.7	2.2	3.1	3.0	5.4	4.4
Farming, forestry, and fishing	2.2	2.0	3.2	3.0	5.6	5.9
Industry						
Total, 16 years and older	2.2	1.9	2.8	2.4	4.9	4.4
Agriculture	2.4	1.6	3.3	2.6	5.0	5.2
Mining	1.0	1.1	1.0	1.8	2.6	4.0
Construction	4.5	3.7	5.7	4.7	8.4	7.2
Manufacturing	1.3	.9	1.6	1.1	3.1	2.1
Transportation and public utilities	1.2	.7	1.3	1.2	2.9	2.6
Wholesale trade	.7	.8	1.0	1.3	2.3	2.1
Retail trade	1.6	1.5	2.0	1.7	3.0	2.6
Finance, insurance, and real estate	.7	1.1	.8	1.3	2.0	2.1
Services	3.4	2.8	4.3	3.7	7.5	6.7
Public administration	1.2	1.2	1.2	1.2	3.6	4.2

¹ Contingency rates are calculated by dividing the number of contingent workers in a specified worker group by the total number of employed persons in the same worker group. Estimate 1 above is calculated using the narrowest definition of contingent work; estimate 3 uses the broadest definition. For the specific criteria used for each definition, see the appendix, pp. 34–35.

cent. The high rate among college and university instructors most likely reflects the increasingly common practice within these institutions of employing untenured faculty, most of whom work under short-term contracts.⁷ It also may help explain the relatively high contingency rate (5.1 percent) among workers with advanced degrees—more than three-fifths of these workers were in professional specialty occupations, which have above-average rates of contingency. Many workers with advanced degrees are employed by colleges and universities.

Other professional specialty occupations with relatively high contingency rates include biological and life scientists (19.8 percent), musicians and composers (12.6 percent), physicians (9.9 percent), actors and directors (9.9 percent). Occupations within the administrative support category having high contingency rates include library clerks (23.9 percent), file clerks (16.1 percent), general office clerks (14.4 percent), data entry keyers (14.4 percent), teachers' aides (11.8 percent), and interviewers (9.9 percent), and receptionists (8.6 percent.)

Contingent work and mothers

Some researchers have expressed concern about the negative impact that contingent work has on families.⁸ Table 4 shows contingency rates for women by marital status and presence of children. Interestingly, both married and unmarried women with children under the age of 18 had *below-average* contingency rates—3.9 percent each, compared with 4.4 percent for all workers. This is related, in part, to the fact that most women with children under 18 are beyond the very young age groups in which contingent work is most common. When limited to women with children under 6 years, the contingency rate was 4.6 percent, slightly higher than the rate for all workers.

Hours of work

Much like in the first survey, the 1997 data show that part-time workers—those *usually* working fewer than 35 hours per week—were more likely than full-time workers to hold contingent jobs. About 10 percent of part-timers were classified

as contingent workers in 1997, compared with just 3 percent of those who usually work full time. Viewed another way, among those holding contingent jobs in 1997, 43 percent usually worked fewer than 35 hours per week; among noncontingent workers, by contrast, only 18 percent usually worked part time. (See table 5).

As shown in the following tabulation, contingency rates were higher for part-time workers in each of the major industry groups.

	<i>Full-time workers</i>	<i>Part-time workers</i>
Total	3.1	9.9
Agriculture	4.3	8.3
Mining	2.5	—
Construction	6.9	9.8
Manufacturing	1.9	6.7
Transportation and public utilities	2.1	7.3
Wholesale trade	1.4	8.8
Retail trade	1.5	4.5
Finance, insurance and real estate	1.8	4.4
Services	4.3	14.4
Public administration	3.2	18.1

Data not available where base employment is less than 75,000.

Moreover, the rates for part-time workers were higher than the overall average of 4.4 percent in all but one industry—finance, insurance, and real estate. Among full-time workers, by contrast, the contingency rate was above average in just one industry, construction, in which the rate was 6.9 percent. This suggests that, while contingency may be closely related to certain types of work (construction and college teaching, for example), it also is an attribute of part-time jobs, regardless of the industry.

Among part-time workers, contingent and noncontingent workers were about equally likely to prefer working part time—that is, they worked part time voluntarily and not for economic reasons; four-fifths of workers in each group preferred working part time. Of those who did work part time for economic reasons, the vast majority (91 percent) held jobs that were not structured to be temporary. Contingent workers also tend to work slightly fewer hours per week than their noncontingent counterparts. Among persons who usually worked full time, average weekly hours were 40.2 for contingent workers, compared with 42.6 for noncontingent workers. For those who usually worked part time, contingent workers averaged 17.3 hours per week, compared with 20.7 hours per week for noncontingent workers.

Multiple jobholding

Contingent workers were more likely than noncontingent workers to hold more than one job. (For multiple jobholding respondents in the survey, the questions about contingency

refer to their main jobs, that is, the job at which they worked the most hours during the reference week.) The multiple jobholding rate—the proportion of workers with more than one job—was 8.9 percent for contingent workers, compared with 6.7 percent for noncontingent workers. (See table 5.) One possible explanation for the higher multiple jobholding rate among contingent workers is that these workers are much more likely to work part time, and part-time workers are more likely than full-time workers to hold two or more jobs. Also, because they both work fewer hours and earn less, regardless of their work schedules, contingent workers probably are more likely to require an additional job to supplement their income.

Preferences and reasons

Workers holding contingent jobs were asked if they preferred such employment to noncontingent work, as well as the reason they were employed in a contingent job. Nearly three-fifths of contingent workers said they would rather hold a noncontingent job.⁹ (See table 6.) Young contingent workers (aged 16 to 24) were much more likely than their older counterparts to be satisfied with their current arrangement—nearly half of the younger workers were happy with their contingent jobs, compared with about a third of those aged 25 and older. As discussed earlier, the majority of younger contingent work-

Table 4. Contingency rates for women by marital status and presence and age of children, February 1997

Characteristic	Contingency rates ¹		
	Estimate 1	Estimate 2	Estimate 3
Total			
Wives and women who maintain families	1.3	2.0	3.7
With children under 18 years	1.5	2.3	3.9
With children under 6 years	1.9	3.3	4.6
With children 6 to 17 years	1.3	1.6	3.5
With no children under 18 years	1.0	1.6	3.4
Married, spouse present			
Wives	1.2	1.9	3.7
With children under 18 years	1.3	2.1	3.9
With children under 6 years	1.6	3.1	4.5
With children 6 to 17 years	1.1	1.4	3.5
With no children under 18 years	0.9	1.6	3.5
Other marital status			
Women who maintain families	1.8	2.5	3.6
With children under 18 years	2.2	2.9	3.9
With children under 6 years	3.0	4.2	4.9
With children 6 to 17 years	1.9	2.1	3.4
With no children under 18 years	1.0	1.7	3.1

¹ Contingency rates are calculated by dividing the number of contingent workers in a specified worker group by the total number of employed persons in the same worker group. Estimate 1 above is calculated using the narrowest definition of contingent work; estimate 3 uses the broadest definition. For the specific criteria used for each definition, see the appendix, pp. 34–35.

Table 5. Employed contingent and noncontingent workers by full- and part-time status, reason for part-time work, usual hours at work on primary job, and multiple job holding, February 1997

Characteristic	Contingent workers ¹			Noncontingent workers ²
	Estimate 1	Estimate 2	Estimate 3	
Full- or part-time status³				
Total employed, 16 years and older (thousands)	2,385	3,096	5,574	121,168
Percent	100.0	100.0	100.0	100.0
Full-time workers	53.5	54.8	57.5	82.2
Part-time workers	46.6	45.2	42.5	17.8
At work part time for economic reasons	9.9	10.0	7.6	3.3
At work part time for noneconomic reasons	36.9	34.8	33.9	14.1
Hours of work				
Average hours, total at work	28.6	29.0	30.2	38.6
Average hours, usually work full time	39.4	39.3	40.2	42.6
Average hours, usually work part time	16.7	16.9	17.3	20.7
Multiple jobholding				
Total, 16 years and older (thousands)	202	243	497	8,077
Percent ⁴	100.0	100.0	100.0	100.0
Primary job full time, secondary job part time	49.5	51.0	49.3	55.9
Primary and secondary job both part time	37.1	36.6	35.4	21.4
Hours vary on primary or secondary jobs	11.9	10.7	13.7	19.8
Proportion of full-time workers who combined part-time jobs	2.2	2.2	2.4	1.0
Multiple jobholding rate ⁵	8.4	7.8	8.9	6.7

¹ Contingent workers are defined as individuals who do not perceive themselves as having an explicit or implicit contract with their employers for ongoing employment. Estimate 1 above is calculated using the narrowest definition of contingent work; estimate 3 uses the broadest definition. For the specific criteria used for each definition, see the appendix, pp. 34-35.

² Noncontingent workers are those who do not meet the criteria for any of the three definitions of contingent work.

³ Part-time is defined as 1 to 34 hours per week; full time is 35 hours or more. The classification of full- and part-time workers is based on the number of hours usually worked. The sum of the at-work part time categories would not equal the estimate for part-time workers as the latter includes those who had a

job but were not at work in the reference week. Persons who are at work part time for an economic or noneconomic reason are limited to those who usually work part time.

⁴ A small number of individuals who worked full time on both their primary and secondary jobs or worked part time on their primary jobs and full time on their secondary jobs are not shown separately.

⁵ Multiple jobholding rates are calculated by dividing the number of multiple jobholders in a specified worker group by total employment for the same worker group.

NOTE: Some of the detail above may not sum to totals due to rounding.

ers (64 percent) are enrolled in school, and students often prefer alternative work arrangements to accommodate their schedules.

Nearly half of contingent workers gave personal reasons for accepting their contingent jobs, although among those who said they would rather have a noncontingent job, only 30 percent cited personal reasons. (See table 7.) Also, 46 percent of those who preferred noncontingent employment gave an economic reason for being in their current arrangement, compared with 6 percent of those who preferred contingent work.¹⁰

Contingent workers in 1997 were more likely to give a personal reason for holding a contingent job than were their counterparts in 1995. The proportion reporting a personal reason for holding a contingent job was 49 percent in 1997, compared with 44 percent in 1995. The increase between the two surveys suggests that contingent work was more of a voluntary choice in the most recent survey, coinciding with a stronger overall labor market.

About a fifth of contingent workers reported attending school or training as the reason for being in their current ar-

rangement. Other reasons suggest contingent work enabled some to participate in the labor market despite their involvement in activities that otherwise may have precluded them from employment. Specifically, 15 percent of contingent workers gave either flexibility of schedule or family obligations as a reason for being in a contingent arrangement. The primary economic reason given was that it was the only type of work they could find; 18 percent of contingent workers gave such a reason.

Compensation

Earnings. As in the prior survey, contingent workers in 1997 earned less per week than noncontingent workers. Median earnings were \$266 per week for contingent workers, compared with \$444 per week for their noncontingent counterparts. The disparity reflects the many differences between the two groups in terms of work schedules, demographics, occupational and industry concentration, and employer tenure. As mentioned previously, for example, contingent workers are more likely to hold part-time jobs than are noncontingent workers.

Still, even among those who worked full time, median weekly earnings were just \$417, or roughly 80 percent of the median for full-time noncontingent workers.¹ Similarly, earnings for part-time contingent workers were \$111 per week, or 76 percent of what those who held permanent jobs earned. The ratios were roughly similar for all of the major worker groups—men, women, whites, blacks, and Hispanics. (See table 8.)

As mentioned earlier, contingent workers are employed in both high- and low-skilled occupations. As a result, their earnings varied considerably by occupation. Among occupations that had above-average contingency rates, full-time contingent workers holding professional specialty jobs had the highest weekly earnings (\$677), followed by administrative support, including clerical (\$342); service occupations (\$258);

Table 6. Preferences of employed contingent workers for contingent and noncontingent arrangements by sex and age, February 1997

[Percent distribution]

Characteristic	Contingent workers ¹		
	Estimate 1	Estimate 2	Estimate 3
Total			
Employed (thousands)	2,385	3,096	5,574
Percent	100.0	100.0	100.0
Prefer noncontingent arrangement ..	60.2	56.7	55.5
Prefer contingent arrangement	34.1	35.8	36.1
It depends	4.9	5.2	5.8
Preference not available	.9	2.3	2.5
Men, 25 years and older			
Employed (thousands)	679	954	1,926
Percent	100.0	100.0	100.0
Prefer noncontingent arrangement ..	69.8	63.8	60.9
Prefer contingent arrangement	24.2	28.5	29.3
It depends	4.9	5.1	6.7
Preference not available	1.2	2.6	3.1
Women, 25 years and older			
Employed (thousands)	677	999	1,958
Percent	100.0	100.0	100.0
Prefer noncontingent arrangement ..	70.2	59.7	58.5
Prefer contingent arrangement	25.4	31.9	33.4
It depends	4.0	5.2	5.2
Preference not available	.4	3.2	2.9
Both sexes, 16 to 24 years			
Employed (thousands)	1,029	1,143	1,690
Percent	100.0	100.0	100.0
Prefer noncontingent arrangement ..	47.3	48.1	46.0
Prefer contingent arrangement	46.4	45.4	47.1
It depends	5.4	5.3	5.4
Preference not available	1.0	1.2	1.5

¹ Contingent workers are defined as individuals who do not perceive themselves as having an explicit or implicit contract with their employers for ongoing employment. Estimate 1 above is calculated using the narrowest definition of contingent work; estimate 3 uses the broadest definition. For the specific criteria used for each definition, see the appendix, pp. 34–35.

NOTE: Some of the detail above may not sum to totals due to rounding.

Table 7. Employed contingent workers by reason for contingency and preference for noncontingent work, February 1997

[Percent distribution]

Reason	Contingent workers ¹		
	Estimate 1	Estimate 2	Estimate 3
Total			
Total, 16 years and older (thousands)	2,385	2,663	5,140
Percent	100.0	100.0	100.0
Economic reasons	38.2	39.6	30.5
Only type of work could find	23.2	24.8	18.2
Hope job leads to permanent employment	8.1	8.0	6.7
Other economic reason	7.0	6.8	5.6
Personal reasons	48.7	47.3	48.5
Flexibility of schedule and only wanted to work a short period of time	11.2	12.6	11.7
Family or personal obligations and child-care problems	2.9	2.8	3.2
In school or training	21.6	19.7	19.2
Money is better	1.7	1.5	1.4
Other personal reason	11.2	10.7	13.0
Reason not available	13.1	13.1	20.9
Prefer noncontingent employment			
Total, 16 years and older (thousands)	1,436	1,755	3,096
Percent	100.0	100.0	100.0
Economic reasons	57.9	55.2	45.8
Only type of work could find	36.1	35.6	28.3
Hope job leads to permanent employment	12.3	11.1	10.1
Other economic reason	9.5	8.5	7.5
Personal reasons	28.3	26.6	29.6
Flexibility of schedule and only wanted to work a short period of time	6.3	6.5	6.1
Family or personal obligations and child-care problems	2.5	2.5	2.2
In school or training	10.0	8.8	10.6
Money is better	1.8	1.5	1.3
Other personal reason	7.9	7.3	9.3
Reason not available	13.6	18.2	24.6

¹ Contingent workers are defined as individuals who do not perceive themselves as having an explicit or implicit contract with their employers for ongoing employment. Estimate 1 above is calculated using the narrowest definition of contingent work; estimate 3 uses the broadest definition. For the specific criteria used for each definition, see the appendix, pp. 34–35.

and farming, forestry, and fishing (\$233). (See table 9.)

Health insurance. As in the first survey, contingent workers in 1997 were much less likely than noncontingent workers to have employer-provided health insurance coverage—slightly more than a third of those holding contingent jobs were offered health insurance coverage by their employer, in contrast to nearly three-fourths of those in noncontingent jobs.¹¹ (See table 10.) As with other measures discussed earlier, the low coverage rates can be partially explained by the make-up of the contingent workforce—its age, work schedules, industry and occupational concentrations.

Although workers with contingent jobs were less likely than those with noncontingent jobs to obtain health insurance from their employers, a relatively large share (about two-thirds) had coverage from some source. Contingent workers received coverage from a variety of sources, but access through another family member was the most prevalent source.

Relatively high proportions of both teenage contingent workers and those aged 65 years and older had health insurance from some source—nearly the same coverage rates as their noncontingent counterparts. Teenagers often are covered under their parents' plans, and persons in the older age group have almost universal coverage under medicare. Among

Table 8. Median weekly earnings of full- and part-time time contingent and noncontingent wage and salary workers by selected characteristics, February 1997

Characteristic	Median weekly earnings			
	Full-time workers ¹		Part-time workers ²	
	Contingent (Estimate 3) ³	Noncontingent ⁴	Contingent (Estimate 3)	Noncontingent
Age and sex				
Total, 16 years and older	\$417	\$510	\$111	\$146
16 to 19 years	246	238	67	97
20 to 24 years	300	329	90	131
25 years and older	475	549	170	175
25 to 34 years	421	486	186	184
35 to 44 years	518	578	166	188
45 to 54 years	490	612	191	199
55 to 64 years	502	572	151	171
65 years and older	(⁵)	447	121	123
Men, 16 years and older	486	578	111	129
Women, 16 years and older	353	449	110	153
Race and Hispanic origin				
White	426	523	110	145
Black	377	426	107	150
Hispanic origin	278	359	101	141
Educational attainment				
Less than a high school diploma	235	304	74	101
High school graduates, no college	382	427	134	154
Some college, no degree	399	494	93	142
Associate degree	498	519	148	222
College graduates	592	772	203	249

¹ Full-time workers are those who *usually* work 35 hours per week or more.

² Part-time workers are those who *usually* work 1 to 34 hours per week.

³ Contingent workers are defined as individuals who do not perceive themselves as having an explicit or implicit contract with their employers for ongoing employment. Estimate 3 above is calculated using the broadest definition. For the specific criteria used for each definition, see the appendix, pp. 34–35.

⁴ Noncontingent workers are those who do not meet the criteria for any of the three definitions of contingent work.

⁵ Data not shown where base employment is less than 75,000.

Table 9. Median weekly earnings of full- and part-time time contingent and noncontingent wage and salary workers by occupation and industry, February 1997

Occupation and industry	Median weekly earnings			
	Full-time workers ¹		Part-time workers ²	
	Contingent (Estimate 3) ³	Noncontingent ⁴	Contingent (Estimate 3)	Noncontingent
Occupation				
Managerial and professional specialty	\$627	\$755	\$165	\$256
Executive, administrative, and managerial	557	733	126	234
Professional specialty	677	783	169	266
Technical, sales, and administrative support	357	459	107	145
Technicians and related support	529	578	154	300
Sales occupations	325	486	97	125
Administrative support, including clerical	342	419	107	160
Service occupations	258	312	73	126
Private household	241	212	57	91
Other services	263	314	78	129
Precision, production, craft, and repair	630	534	203	221
Operators, fabricators, and laborers	323	410	115	134
Farming, forestry, and fishing	233	310	87	115
Industry				
Agriculture	234	322	78	117
Mining	(⁵)	666	(⁵)	430
Construction	668	508	212	259
Manufacturing	391	529	174	156
Durable goods	408	575	152	168
Nondurable goods	314	490	199	146
Transportation and public utilities	614	635	140	196
Wholesale trade	(⁵)	513	(⁵)	140
Retail trade	273	351	90	124
Finance, insurance, and real estate	515	545	119	165
Services	397	513	112	161
Private household	267	224	67	87
Other services	401	516	114	164
Professional services	473	554	111	176
Public administration	462	619	114	181

¹ Full-time workers are those who *usually* work 35 hours per week or more.

² Part-time workers are those who *usually* work 1 to 34 hours per week.

³ Contingent workers are defined as individuals who do not perceive themselves as having an explicit or implicit contract with their employers for ongoing employment. Estimate 3 above is calculated using the broadest definition. For the specific criteria used for each definition, see the appendix, pp. 34–35.

⁴ Noncontingent workers are those who do not meet the criteria for any of the three definitions of contingent work.

⁵ Data not shown where base employment is less than 75,000.

ences in coverage rates were substantial—less than two-thirds of those with contingent arrangements had health insurance

whose jobs were noncontingent.

Women with contingent jobs were less likely than their

Table 10. Employed contingent and noncontingent wage and salary workers with health insurance coverage by selected characteristics, February 1997

Characteristic	Contingent workers (estimate 3) ¹					Noncontingent workers ²				
	Total (in thousands)	Percent with health insurance coverage			Percent Eligible for employer-provided health insurance	Total (in thousands)	Percent with health insurance coverage			Percent
		Total	Through current employer at main job	Through other job or union			Total	Through current employer at main job	Through other job or union	
Age and sex										
Total, 16 years and older	5,140	67.1	22.4	3.5	35.3	106,697	83.0	61.2	0.7	73.8
16 to 19 years	664	70.6	5.6	(³)	12.3	5,272	71.7	9.4	(³)	22.6
20 to 24 years	945	65.1	11.5	1.0	26.6	10,653	65.2	41.8	.3	57.7
25 years and older	3,531	66.9	28.5	4.9	42.0	90,773	85.7	66.5	.8	78.7
25 to 34 years	1,251	59.6	30.0	3.4	43.2	27,845	80.7	63.7	.6	77.4
35 to 44 years	1,041	63.2	28.6	4.8	40.8	29,790	86.4	67.9	.7	80.0
45 to 54 years	683	72.5	29.3	7.3	45.8	21,539	88.8	70.9	.8	81.8
55 to 64 years	393	81.2	28.5	6.4	39.2	9,349	89.8	67.9	1.9	78.3
65 years and older	163	90.2	13.5	4.3	31.3	2,249	91.7	35.4	2.5	48.9
Men	2,547	62.6	24.8	6.1	37.1	55,754	82.2	66.7	1.1	76.5
Women	2,593	71.5	20.1	1.0	33.6	50,944	83.8	55.3	.3	70.9
Race and Hispanic origin										
White	4,177	69.4	22.4	4.1	35.0	90,098	84.0	61.1	.7	73.9
Black	585	49.7	13.7	.3	25.6	12,218	77.0	62.6	.6	73.7
Hispanic origin	610	39.0	13.9	3.0	27.5	10,534	62.1	48.9	.6	60.8
Full- and part-time status										
Full-time workers	2,890	62.0	31.7	5.5	45.3	87,378	84.8	70.8	.7	82.9
Part-time workers	2,230	73.4	10.4	1.1	22.4	19,067	74.7	17.5	.8	32.4
Educational attainment ⁴										
Less than a high school diploma	495	36.6	14.7	2.2	22.2	10,882	61.6	45.4	.8	57.1
High school graduates, no college	1,116	55.5	18.9	7.0	30.2	34,508	79.8	58.9	1.0	72.7
Some college, no degree	783	64.2	20.2	5.4	35.6	18,901	84.9	65.7	.7	78.5
Associate degree	308	59.4	21.8	7.1	37.0	8,989	89.0	67.8	.8	83.0
College graduates	1,381	79.6	41.6	2.0	56.2	26,998	93.5	77.1	.5	87.3

¹ Contingent workers are defined as individuals who do not perceive themselves as having an explicit or implicit contract with their employers for ongoing employment. Estimate 3 above is calculated using the broadest definition. For the specific criteria used for each definition, see the appendix, pp. 34-35.

² Noncontingent workers are those who do not meet the criteria for any of the three definitions of contingent work.

³ Less than 0.05 percent.

⁴ Excludes workers aged 16 to 24 enrolled in school.

Note: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups. Detail for other characteristics may not sum to totals due to rounding.

ployer or an employment-related source, but they were *more* likely than men to have coverage from all sources. (Many women are covered under their spouses' plans.) Among the race and ethnic groups, white contingent workers had much higher coverage rates than either blacks or Hispanics, regardless of the source considered. Nearly 70 percent of whites were insured, compared with 50 percent of blacks and 39 percent of Hispanics. White workers also were considerably more likely than blacks or Hispanics to have employer-provided

insurance.

In terms of occupation and industry, contingent workers in every major group were less likely than their noncontingent counterparts to have health insurance from any source; they also were less likely to be eligible for, and to receive, employer-provided insurance. However, the likelihood of receiving employer-provided coverage or of being eligible for coverage also varies by occupation and industry. For example, managers and professionals in both contingent and

noncontingent work arrangements had higher employer-provided coverage and eligibility rates than their counterparts in other occupations. In fact, coverage and eligibility rates for managers and professionals in contingent jobs actually *exceeded* those of some workers holding noncontingent jobs in other occupations—namely, workers in service and farming occupations. (See table 11.)

By industry, public administration workers in contingent or noncontingent arrangements had higher employer-provided coverage and eligibility rates than their counterparts in other industries. And, as with occupations, coverage and eligibility rates for contingent workers in some industries were higher

than those of some noncontingent workers. Specifically, contingent workers in public administration and in durable-goods manufacturing had higher rates than did noncontingent workers in agriculture.

Pensions. As in the prior survey, the 1997 data show that contingent workers were much less likely than those with noncontingent arrangements to participate in employer-sponsored pension plans.¹² (See table 12.) Only 16 percent of contingent workers participated in such plans, in contrast to half of noncontingent workers. Moreover, contingent workers were much less likely than noncontingent workers to be eligible

Table 11. Employed contingent and noncontingent wage and salary workers with health insurance coverage by occupation and industry, February 1997

Occupation and industry	Contingent workers (estimate 3) ¹					Noncontingent workers ²				
	Total (in thousands)	Percent with health insurance coverage			Percent eligible for employer-provided health insurance	Total (in thousands)	Percent with health insurance coverage			Percent eligible for employer-provided health insurance
		Total	Through current employer at main job	Through other job or union			Total	Through current employer at main job	Through other job or union	
Occupation										
Managerial and professional specialty	1,497	80.7	40.9	1.5	54.2	30,610	92.5	75.6	0.3	86.4
Executive, administrative, and managerial	372	77.7	39.5	1.1	53.8	14,415	91.2	75.2	.4	86.3
Professional specialty	1,125	81.7	41.4	1.6	54.4	16,195	93.7	76.0	.3	86.6
Technical, sales, and administrative support	1,523	71.0	13.9	1.9	30.5	32,451	85.5	58.1	.5	73.4
Technicians and related support	184	70.7	28.3	1.1	56.0	3,851	90.5	70.3	.5	83.8
Sales occupations	256	66.0	10.2	1.2	25.0	11,916	79.9	47.5	.6	63.3
Administrative support, including clerical	1,082	72.4	12.2	2.2	27.5	16,684	88.4	62.8	.4	78.2
Service occupations	736	61.4	9.1	.8	19.6	14,759	68.5	37.5	.6	50.8
Private household	99	40.4	(³)	(³)	3.0	533	46.0	4.5	(³)	6.4
Other services	636	64.8	10.5	.9	22.2	14,226	69.3	38.8	.6	52.5
Precision production, craft, and repair	508	62.2	25.8	20.7	33.1	11,230	79.5	65.4	2.4	75.6
Operators, fabricators, and laborers	729	46.0	16.0	2.7	28.4	16,206	77.9	61.5	1.0	73.5
Farming, forestry, and fishing	147	37.4	9.5	(³)	12.2	1,443	54.4	34.0	.1	41.2
Industry										
Agriculture	126	44.4	12.7	(³)	18.3	1,350	57.0	33.6	.1	41.5
Mining	25	(⁴)	(⁴)	(⁴)	(⁴)	575	90.1	85.4	(³)	90.8
Construction	515	55.5	20.0	20.6	28.7	5,222	70.0	48.3	4.7	60.2
Manufacturing	436	57.3	32.8	.7	45.2	19,576	87.9	78.1	.3	88.1
Durable goods	245	62.0	35.5	1.2	49.8	11,809	89.3	80.4	.3	90.1
Nondurable goods	188	52.7	29.8	(³)	39.4	7,697	86.0	74.7	.3	85.4
Transportation and public utilities	193	78.2	28.5	9.8	46.1	7,958	88.4	76.0	.7	85.3
Wholesale trade	78	62.8	29.5	(³)	35.9	4,182	85.5	68.1	.9	80.1
Retail trade	487	58.5	7.6	.8	22.6	18,060	70.6	35.2	.8	51.7
Finance, insurance, and real estate	160	71.3	27.5	(³)	34.4	6,902	90.0	67.5	.5	81.6
Services	2,887	70.8	21.9	1.6	35.7	37,537	84.3	58.8	.5	72.4
Private household	124	42.7	(³)	1.6	2.4	606	44.1	4.5	(³)	7.3
Other services	2,763	72.0	22.8	1.6	37.2	36,931	85.0	59.7	.5	73.4
Professional and related services	1,834	79.3	30.0	1.5	42.0	26,814	89.3	64.3	.4	77.9

¹ Contingent workers are defined as individuals who do not perceive themselves as having an explicit or implicit contract with their employers for ongoing employment. Estimate 3 above is calculated using the broadest definition. For the specific criteria used for each definition, see the appendix, pp. 34–35.

² Noncontingent workers are those who do not meet the criteria for any of the three definitions of contingent work.

³ Less than 0.05 percent.

⁴ Data not shown where base employment is less than 75,000.

Table 12 Employed contingent and noncontingent wage and salary workers with pension coverage by selected characteristics, February 1997

Characteristic	Contingent workers (estimate 3) ¹			²		
	Total (in thousands)	Percent with pension coverage	Percent eligible pension	Total (in thousands)	Percent with pension	pension
Age and sex						
Total, 16 years and older	5,140	15.9	23.1	106,697	50.0	57.2
16 to 19 years	664	6	5.6	5,272	4.4	14.7
20 to 24 years	945	3.1	11.1	10,653	20.6	34.7
25 years and older	3,531	22.2	29.6	90,773	56.1	62.3
25 to 34 years	1,251	13.7	24.0	27,845	47.9	57.0
35 to 44 years	1,041	23.9	29.9	29,790	58.9	64.6
45 to 54 years	683	32.4	38.9	21,539	63.9	68.1
55 to 64 years	393	29.0	34.1	9,349	59.7	63.4
65 years and older	163	19.0	21.5	2,249	31.5	38.0
Men	2,547	16.5	24.1	55,754	52.3	58.8
Women	2,593	15.3	22.2	50,944	47.5	55.4
Race and Hispanic origin						
White	4,177	17.1	24.2	90,098	50.3	57.4
Black	585	9.1	15.4	12,218	50.0	57.8
Hispanic origin	610	8.5	16.4	10,534	31.5	38.4
Full- and part-time status						
Full-time workers	2,890	23.6	32.4	87,378	57.2	64.6
Part-time workers	2,230	6.0	10.9	19,067	17.2	23.6
Educational attainment³						
Less than a high school diploma	495	8.3	13.9	10,882	27.0	33.2
High school graduates, no college	1,116	15.1	20.8	34,508	46.5	54.2
Some college, no degree	783	16.6	26.3	18,901	53.0	60.5
Associate degree	308	21.8	28.9	8,989	58.5	67.1
College graduates	1,381	29.4	38.9	26,998	69.0	75.0

¹ Contingent workers are defined as individuals who do not perceive themselves as having an explicit or implicit contract with their employers for ongoing employment. Estimate 3 above is calculated using the broadest definition. For the specific criteria used for each definition, see the appendix, pp. 34–35.

² Noncontingent workers are those who do not meet the criteria for any of the three definitions of contingent work.

³ Excludes workers age 16 to 24 enrolled in school.

for pensions from their employers—slightly less than one-fourth of those with contingent jobs were offered employer-provided pensions, compared with nearly three-fifths of noncontingent workers.

Contingent workers under the age of 25—who make up nearly a third of all contingent workers—were much less likely than those aged 25 to 54 to participate in pension plans or to be employed in industries that have a higher probability of offering pensions. Among workers in each age group, those with contingent jobs were less likely than those holding noncontingent jobs to have, or to be eligible for, employer-provided pensions. Finally, as with health insurance coverage, contingent workers had lower rates of pension coverage and eligibility than noncontingent workers in virtually every occupation and industry group. (See table 13.)

AS THE ECONOMY EXPANDED and the labor market strengthened between 1995 and 1997, both the number of contingent workers and the proportion of total employment made up of such workers declined. The overall characteristics of these workers, however, changed little over the period. In both surveys, for example, contingent workers were more likely to be women, under the age of 25, enrolled in school, and to be employed part time. Workers in construction and services continued to have the greatest likelihood of holding a contingent job. However, as in the first survey, contingent workers were likely to be found in both high- and low-skilled occupations. Workers in professional specialty occupations and in administrative support, including clerical, for example, were about equally likely to work in contingent jobs.

Although most contingent workers would have preferred a noncontingent job, many were satisfied with their current ar-

Table 13. Employed contingent and noncontingent wage and salary workers with pension coverage by occupation and industry, February 1997

Occupation and Industry	Contingent workers (estimate 3) ¹			Noncontingent workers ²		
	Total (in thousands)	Percent with pension coverage	Percent eligible for employer- provided pension	Total (in thousands)	Percent with pension coverage	Percent eligible for employer- provided pension
Occupation						
.....	1,497		36.6	30,610		72.7
Executive, administrative, and managerial	372	33.9		14,415	63.2	
Professional specialty		26.3	34.8		70.0	75.5
.....	1,523		19.4	32,451		57.2
Technicians and related support	184	15.2		3,851	59.3	
Sales occupations		3.9	13.7		36.0	44.7
.....	1,082		20.2	16,684		63.5
Service occupations	736	6.1		14,759	28.6	
Private household		3.0	3.0		1.3	1.5
.....	636		13.2	14,226		36.6
Precision production, craft, and repair	508	21.3		11,230	49.5	
Operators, fabricators, and laborers		9.7	14.5		44.3	52.6
.....	147		10.2	1,443		20.6
Industry						
.....	126		11.1	1,350		17.8
Mining	25	(³)	(³)	575	66.4	71.8
Construction	515	14.6	21.2	5,222	31.6	37.2
Manufacturing	436	22.0	32.6	19,576	62.0	69.9
Durable goods	245	23.7	33.1	11,809	64.2	71.8
Nondurable goods	188	20.2	31.9	7,697	58.9	67.2
Transportation and public utilities	193	28.5	34.7	7,958	65.2	71.2
Wholesale trade	78	7.7	19.2	4,182	51.5	57.6
Retail trade	487	4.1	11.7	18,060	23.7	32.5
Finance, insurance, and real estate	160	26.9	35.0	6,902	57.8	66.6
Services	2,887	14.8	20.9	37,537	49.7	56.9
Private household	124	2.4	2.4	606	2.1	3.0
Other services	2,763	15.3	21.8	36,931	50.5	57.8
Professional and related services	1,834	20.3	26.4	26,814	58.7	65.6
Public administration	234	39.3	52.6	5,336	89.1	91.1

¹ Contingent workers are defined as individuals who do not perceive themselves as having an explicit or implicit contract with their employers for ongoing employment. Estimate 3 above is calculated using the broadest definition. For the specific criteria used for each definition, see the appendix, pp.34-35.

² Noncontingent workers are those who do not meet the criteria for any of the three definitions of contingent work.

³ Data not shown where base employment is less than 75,000.

rangement. Specifically, younger workers were about as likely to prefer contingent arrangements as noncontingent ones, probably because a large number were enrolled in school and thus were less concerned with establishing longstanding relationships with their employers. Compared with the first survey, contingent workers in 1997 were more likely to have cited personal, rather than economic, reasons for being in contin-

gent arrangements, implying that workers were more likely to have chosen contingent work in the most recent survey.

Finally, contingent workers earned less and were less likely than noncontingent workers to have been included in employer-provided health insurance or pension plans. When comparing the wages and benefits of contingent and noncontingent workers, however, there was considerable variation by age, educational attainment, occupation, and industry. □

Footnotes

¹ For an explanation of the three measures, as well as other relevant concepts and definitions, see the appendix, pp. 34-35. For more on the definitions, as well as analysis of the results of the 1995 survey, see the articles in the special issue of the *Monthly Labor Review* on contingent workers and alternative work arrangements, October 1996.

² Contingency rates are calculated by dividing the number of contingent workers in a specified worker group by total employment for the same worker group.

³ For instance, the unemployment rate was 5.4 percent in February 1995

and 5.3 percent in February 1997, both low by historical standards. Employment growth, as measured by the Current Employment Statistics (CES) survey, a monthly sample survey of about 390,000 nonfarm business establishments, averaged 206,000 per month between the two survey dates.

⁴ The Current Population Survey (CPS) is a nationwide sample survey of about 50,000 households, conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The CPS collects information about the demographic characteristics and employment status of the noninstitutional working-age population (16 years and older). Special supplements

to the CPS occasionally are added to the survey questionnaire to obtain information on various topics of interest. The first CPS supplement on contingent work and alternative work arrangements was conducted in February 1995. This article examines data from the 1997 supplement, comparing the results with those obtained in 1995.

⁵ The two narrower estimates of contingency (estimates 1 and 2) require a 1-year tenure restriction on workers' current and expected tenure with their employers. The broadest definition of contingency (estimate 3) removes this tenure restriction and basically includes all workers who say that their jobs are temporary. Although the median tenure for contingent workers under the broadest definition (0.7 year) was much less than that for noncontingent workers (5 years), 45 percent of these contingent workers had been with their employers for 1 year or more.

⁶ Although contingent workers were employed in all industries, they were disproportionately concentrated in services and construction. In both the 1995 and 1997 surveys, more than half of all contingent workers were employed in the services industry, and an additional 10 percent were employed in the construction industry. As the contingency rates show, however, the vast majority (93 percent) of workers in these two industries were not contingent.

⁷ For an in-depth discussion of the prevalence of contingent work in post-secondary education, see Kathleen Barker, "Contingent Work in Higher Education," in Kathleen Barker and Kathleen Christensen, eds., *Contingent Work: American Employment Relations in Transition* (Cornell University Press, 1998).

⁸ See Kathleen Christensen, "Countervailing Human Resource Trends in

Family-Sensitive Firms," in Barker and Christensen, *Contingent Work*.

⁹ It should be noted that under estimate 1, the proportion of workers aged 25 years and older who were dissatisfied with their arrangement was much higher than under estimate 3.

¹⁰ In the survey, information concerning preferences for a contingent or noncontingent job was collected separately from the reasons for holding a contingent job. Thus, a contingent worker could prefer noncontingent work but still provide a personal reason for holding a contingent job.

¹¹ In the survey, respondents were asked, "Do you have health insurance from any source?" If the response was "yes," they were then asked if their insurance was provided by their employer. Those who did not receive health insurance from their employer were asked for the source of their health insurance; in addition, they were asked if they were eligible for employer-provided health insurance. Respondents who said "no" to the initial question were asked, "Does (employer's name) offer a health insurance plan to any of its employees?" If the answer to that question was "yes," the respondent was then asked, "Are you included in this plan?" If the response was "no," the respondent was asked, "Why not?" The answer to this question was used to determine whether or not the respondent was eligible to receive insurance from his or her employer.

¹² In the survey, respondents were asked, "Does (employer's name) offer a pension or retirement plan to any of its employees?" If they answered "yes," they were then asked, "Are you included in this plan?" If the response was "no," respondents were then asked "Why not?" The response to this last question was used to determine eligibility for those not in the plan.

APPENDIX: Concepts and definitions

The supplement to the February 1997 Current Population Survey obtained information on workers in contingent jobs, or jobs that were expected to last only for a limited period. Additional information was collected on employees working under alternative employment arrangements—namely, working as independent contractors or being "on call," as well as working through temporary help agencies or contract firms. (A companion article in this issue by Sharon R. Cohany presents a profile of workers in alternative employment arrangements.) All employed persons except unpaid family workers were included in the supplement. For persons holding more than one job, the questions referred to the characteristics of their main job—the job in which they worked the most hours. A similar survey was conducted in February 1995.

The contingent workforce

Contingent workers were defined as those who do not have an explicit or implicit contract for long-term employment. Several pieces of information were collected in the supplement from which the existence of a contingent employment arrangement could be discerned: whether the job was temporary or not expected to continue, how long the worker expected to be able to hold the job, and how long the worker had held the job. For workers who had a job with an intermediary, such as a temporary help agency or a contract company, information was collected about their employment at the place they were assigned to work by the intermediary as well as their employment with the intermediary itself.

The key factor used to determine if a job fit the conceptual definition of contingent work was whether the job was temporary or not expected to continue. The first two questions in the supplement were:

1. Some people are in temporary jobs that last only for a limited time or until the completion of a project. Is your job temporary?
2. Provided the economy does not change and your job perfor-

mance is adequate, can you continue to work for your current employer as long as you wish?

Respondents who answered "yes" to the first question, or "no" to the second, were then asked a series of questions to distinguish persons who were in temporary jobs from those who, for personal reasons, were temporarily holding jobs that offered the opportunity of ongoing employment. For example, students holding part-time jobs in fast-food restaurants while in school might view those jobs as temporary if they intend to leave them at the end of the school year. The jobs themselves, however, would be filled by other workers once the students leave. Jobs were defined as being short term or temporary if the person was working only until the completion of a specific project, temporarily replacing another worker, being hired for a fixed period, filling a seasonal job that is available only during certain times of the year, or if other business conditions dictated that the job was short term.

Workers also were asked how long they expected to stay in their current job and how long they had been with their current employer. The rationale for asking how long an individual expects to remain in his or her current job was that being able to hold a job for a year or more could be taken as evidence of at least an implicit contract for ongoing employment. In other words, the employer's need for the worker's services is not likely to evaporate tomorrow. By the same token, the information on how long a worker has been with the employer shows whether a job has been ongoing. Having remained with an employer for more than a year may be taken as evidence that, at least in the past, there was an explicit or implicit contract for continuing employment.

To assess the impact of altering some of the defining factors on the estimated size of the contingent workforce, the following three measures of contingent employment were developed:

Estimate 1. The narrowest definition, estimate 1 defines contin-

gent workers as wage and salary workers who indicated that they expected to work in their current job for 1 year or less and who had worked for their current employer for 1 year or less. Self-employed workers, both incorporated and unincorporated, and independent contractors are excluded from the count of contingent workers under estimate 1; the rationale was that people who work for themselves, by definition, have ongoing employment arrangements, although they may face financial risks. Individuals who worked for temporary help agencies or contract companies are considered contingent under estimate 1 only if they expect their employment arrangement with the temporary help or contract company to last for 1 year or less, and they had worked for that company for 1 year or less.

Estimate 2. This measure expands the definitions of contingent workers by including the self-employed (incorporated and unincorporated) and independent contractors who expect to be, and had been, in such employment arrangements for 1 year or less. (The questions asked of the self-employed are different from those asked of wage and salary workers.) In addition, temporary help and contract company workers are classified as contingent under estimate 2 if they had worked and expected to work for the customers to whom they were assigned for 1 year or less. For example, a "temp" secretary who is sent to a different customer each week but has worked for the same temporary help firm for more than 1 year and expects to be able to continue with that firm indefinitely is contingent under estimate 2, but not under estimate 1. In contrast, a "temp" who is assigned to a single client for more than a year and expects to be able to stay with that client for more than a year is not counted as contingent under either estimate.

Estimate 3. The third definition expands the concept of contingency by removing the 1-year requirement on expected duration of the job and on tenure in the current job (for wage and salary workers). Thus, the estimate effectively includes all the wage and salary workers who do not expect their employment to last, except for those who, for personal reasons, expect to leave jobs that they would otherwise be able to keep. Thus, a worker who had held a job for 5 years could be considered contingent if he or she now viewed the job as temporary. These conditions on expected and current tenure are not relaxed for the self-employed and independent contractors, because they were asked a different set of questions from wage and salary workers.

Alternative employment arrangements

To provide estimates of the number of workers in alternative employment arrangements, the February 1997 CPS supplement included questions about whether individual workers were paid by a temporary help agency or a contract company, or whether they were "on call" or independent contractors. The definitions of each category, as well as the main questions used to identify workers in each category, follow.

Independent contractors. Workers who were identified as independent contractors, consultants, and freelance workers in the supplement—regardless of whether they were identified as wage

and salary workers or self-employed in the responses to basic CPS labor force status questions—all are classified as independent contractors. Workers identified as self-employed (incorporated and unincorporated) in the basic CPS were asked, "Are you self-employed as an independent contractor, independent consultant, freelance worker, or something else (such as a shop or restaurant owner)?" in order to distinguish those who consider themselves to be independent contractors, consultants, or freelance workers from those who were business operators such as shop owners or restaurateurs. Those identified as wage and salary workers in the basic CPS were asked, "Last week, were you working as an independent contractor, an independent consultant, or a freelance worker? That is, someone who obtains customers on their own to provide a product or service." (About 88 percent of independent contractors were identified as self-employed in the main questionnaire, while 12 percent were identified as wage and salary workers; conversely, about half of the self-employed were identified as independent contractors.)

On-call workers. These are persons who are called into work only when they are needed. This category includes workers who answered affirmatively to the question, "Some people are in a pool of workers who are ONLY called to work as needed, although they can be scheduled to work for several days or weeks in a row—for example, substitute teachers and construction workers supplied by a union hiring hall. These workers sometimes are referred to as ON-CALL workers. Were you an ON-CALL worker last week?" Persons with regularly scheduled work that might include periods of being on call to perform work at unusual hours, such as medical residents, were not included in this category.

Temporary help agency workers. These are workers who were paid by a temporary help agency. To the extent that permanent staff of temporary help agencies indicate that they are paid by their agencies, the estimate of the number of workers whose employment was mediated by temporary help agencies is overstated. This category includes workers who said that their job was temporary and answered "yes" to the question, "Are you paid by a temporary help agency?" Also included are workers who said their job was not temporary and answered affirmatively to the question, "Even though you told me your job was not temporary, are you paid by a temporary help agency?"

Workers provided by contract firms. These are individuals identified as working for a contract company and who usually work for only one customer, usually at the customer's worksite. The last two requirements were imposed to focus on workers whose employment appeared to be very closely tied to the firm for which they were performing the work, rather than on all workers employed by firms that provide services to other firms. This category included workers who answered "yes" to the question, "Some companies provide employees or their services to others under contract. A few examples of services that can be contracted out include security, landscaping, or computer programming. Did you work for a company that contracts out you or your services last week?" These workers also had to respond negatively to the question, "Are you usually assigned to more than one customer?" They also had to answer "yes" to the question, "Do you usually work at the customer's worksite?"

Comparing benefit costs for full- and part-time workers

Health insurance appears to be the only benefit representing a true "quasi-fixed cost" to employers, meaning that the cost per hour worked is greater for part-time employees than it is for full-time employees

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Employers' costs for total benefits grew roughly 50 percent faster than employee wages over the 1980–96 period, according to the Bureau of Labor Statistics Employment Cost Index (ECI). By March 1996, nonwage compensation represented 28 percent of total compensation for U.S. private workers. Given these figures, it is not surprising that there is great interest among economists and other analysts in the role that benefits play in labor markets.

Simple labor market theory suggests that employers mainly are concerned about the level of *total* worker compensation (wages, salaries, and benefits), and that, apart from tax considerations, they consider the division between cash wages and other compensation of little economic consequence. However, this simple approach ignores potentially important differences between wages and benefits. It is commonly asserted that benefits represent quasi-fixed costs, meaning that they vary with the number of workers rather than with the number of hours worked.¹ To the extent that this is true, the structure of employee compensation packages may influence employers' demand for full- and part-time workers, as well as their decisions on the use of overtime.

The assumption that benefits represent quasi-fixed costs is common in studies of the effect of benefits on decisions of employers and employees.² The basis for this assumption, however, is

somewhat tenuous. For many benefits—such as defined contribution pension plans and certain types of paid leave—costs are a direct function of cash earnings and thus are proportional to the number of hours worked. And while this generally is not the case for benefits such as health insurance, employers can at least use employee contributions to vary the costs of such benefits by employee hours.

By comparing the costs to employers of providing various benefits to full- and part-time workers, this article directly tests the hypothesis that benefits represent quasi-fixed costs. It also examines the extent to which these costs vary across different types of benefits. The results suggest that, because it is the only benefit for which the average per-hour cost is greater for part-time workers than for full-time workers, health insurance is the only benefit representing a true quasi-fixed cost to employers.

The data

This article analyzes data from two establishment surveys conducted by the Bureau of Labor Statistics—the Employee Benefits Survey (EBS) and the Employment Cost Index (ECI) survey. These data provide rich detail on the costs and provisions of various benefit plans offered by employers. Also, the data usually are collected for mul-

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multiple jobs from each establishment surveyed. Thus, although benefit plans in part-time jobs are relatively rare, where they do exist, they nearly always can be compared with a benefit plan offered to full-time workers from the same establishment.

The ECI survey, conducted quarterly by BLS, collects data on total compensation per hour for a sample of jobs. The microdata from the ECI report the average cost per hour among workers who hold the sampled job. The EBS, on the other hand, is an annual study of the incidence and detailed characteristics of employer-provided benefit plans; the EBS also provides information on employee participation in such plans. The EBS covers medium- and large-size establishments in odd-numbered years, and small establishments in even-numbered years.³

The ECI data used here are from March 1994. For the EBS, data from the 1993 and 1994 surveys were combined in order to obtain a representative sample of small-, medium-, and large-size establishments. Both the ECI and EBS samples are restricted to private establishments. Also, for both surveys, the data usually are collected for four, six, or eight jobs for each establishment in the sample.

Following the practice of the ECI and EBS, jobs are defined in this study as full or part time based on how the establishment classifies the job. The ECI also provides information on each job's scheduled annual hours. In general, the establishments' designation of full time and part time coincides with a definition based on scheduled hours. For example, the median scheduled annual hours among jobs designated as full time is 2,080, while the comparable median for part-time jobs is 1,040. Moreover, 90 percent of the jobs designated as full time report scheduled annual hours of at least 1,820 (35 hours per week times 52 weeks per year), while 95 percent of those designated as part time have scheduled annual hours of not more than 1,820. Among part-time jobs, those with benefit plans tend to have a longer work schedule. For example,

among part-time jobs with a health insurance plan, the median for scheduled annual hours is 1,342.

Comparing benefit costs

Based on microdata from the ECI, table 1 presents summary statistics on benefit plan coverage and costs for full- and part-time jobs. The top portion of the table shows the proportion of jobs that have a positive cost for the benefit. For all benefits except those that are legally required, full-time jobs are substantially more likely to be covered by benefit plans than are part-time jobs. In addition, the difference in coverage rates between full- and part-time jobs varies considerably, ranging from about 19 percentage points for savings plans to 63 percentage points for health insurance benefits.

The lower portion of the table shows statistics for the cost of benefit plans among jobs that offer such plans, excluding jobs for which the costs of benefits are imputed. A comparison of average costs for full- and part-time jobs provides information on the degree to which the different benefits are effectively prorated by employee hours. For benefits that represent quasi-fixed costs, the hourly cost will be higher for part-time jobs. Costs are "purely quasi-fixed" when the annual cost is the same for both full- and part-time jobs. Prorating benefits by the number of hours worked will lower the relative cost of providing benefits to part-time employees. If benefits are "perfectly prorated" by hours—meaning that the benefit accrues at the same rate per hour worked for full- and part-time workers—the cost per hour will be the same for both groups of workers.

The figures in table 1 provide little evidence to suggest that benefits represent quasi-fixed costs. Indeed, all benefits appear to be more than perfectly prorated, in the sense that their costs accrue more slowly with hours worked for part-timers than for full-timers among covered workers. One po-

Table 1. Benefit provision and costs for full- and part-time workers, March 1994

Characteristic	Vacation	Holiday	Sick leave	Health Insurance	Pension	Savings	Legally required
Percent of jobs covered							
Part time	44.9	43.3	25.7	23.5	26.0	16.3	100.0
Full time	89.1	89.3	63.0	86.4	52.4	34.9	100.0
Average cost per hour							
Part time	\$0.26	\$0.24	\$0.18	\$1.56	\$0.47	\$0.11	\$1.02
Full time	.73	.51	.29	1.61	1.09	.44	1.77
Average annual cost							
Part time	\$300	\$261	\$215	\$1,844	\$547	\$139	\$1,016
Full time	1,377	968	522	3,078	2,079	821	3,404
Number of covered jobs							
Part time	937	939	457	469	560	251	1,792
Full time	11,908	13,024	7,609	11,619	6,915	4,819	12,252

SOURCE: Microdata from the March 1994 Employment Cost Index.

tential difficulty with interpreting these statistics is that they may result from differences between full- and part-time jobs and the firms that employ them that are unrelated to the issue of prorating. For example, the mean comparisons do not control for wages, which is important because the cost of some benefits are defined as a technical function of cash earnings, and it is well established that part-time jobs tend to have lower cash wages than do full-time jobs.⁴

In addition, the mean comparisons may be confounded by differences in the types of establishments that employ full- and part-time workers. To mitigate these problems, the difference in annual costs and cost per hour worked between full- and part-time jobs is estimated in a regression framework.⁵ The regressions include as controls the natural logarithm of the job's wage rate and zero-one indicator variables for whether the job is unionized, the occupation of the job, and an indicator variable for each job's establishment.⁶

With the exception of health care benefits and legally required benefits, the regression analysis yields qualitatively similar results to the mean tabulations shown in table 1—they suggest that most benefits are more than perfectly prorated by employee hours and hence are not quasi-fixed costs. For health insurance, the regression estimates suggest that the cost per hour worked is 18 percent higher for part-time jobs than for full-time jobs, while the annual cost is 31 percent *lower* for part-time jobs. These results suggest that health insurance costs are only partially prorated. For legally required benefits, the cost per hour worked is slightly higher for part-time jobs, at about 2 percent.

Prorating health insurance costs

The extent to which employers prorate health insurance costs by employee hours and the means by which prorating is achieved are explored next. The focus is on health insurance for three reasons. First, health insurance is arguably the most important benefit, as indicated by its share of total compensation and the importance of employer-provided health insurance in the U.S. health care system. Second, both prior expectations and the results above suggest that health insurance is unique among employee benefits in terms of the relationship between employer costs and employee hours. Third, this relationship has potentially important policy implications. In recent years, for example, numerous legislative and other policy proposals would have mandated that employers provide health insurance to certain employees. The cost and impact of such mandates will depend on the extent to which they allow for prorating, as well as the ability of employers to achieve prorating.

To investigate how employers prorate the cost of health insurance benefits, a sample of 253 establishments in which there is at least one part-time job and one full-time job—both

Table 2. Differences in annual health insurance costs between full- and part-time jobs, March 1994

Characteristic	Part time	Full time	Difference
Number of jobs	424	787	—
Number of establishments ...	253	253	—
Mean	\$2,052	\$2,715	\$664
Standard deviation	1,275	1,395	1,279
25th percentile	1,115	1,834	0
Median	1,834	2,393	0
75th percentile	2,715	3,408	1,209

SOURCE: Microdata from the March 1994 Employment Cost Index. Sample restricted to establishments reporting data for both full- and part-time jobs.

with health insurance—was examined. Such firms contribute 424 part-time and 787 full-time jobs to the ECI sample. Table 2 presents three cost measures for which the unit of observation is the establishment: (a) the average cost of health benefits provided to part-time jobs; (b) the average cost of health benefits provided to full-time jobs; and (c) the within-establishment difference between (a) and (b). In addition to the mean of each variable, we also report the 25th, 50th, and 75th percentiles.

The difference in the mean annual costs for health insurance plans between full- and part-time jobs is about 24 percent, which, as expected, is quite close to the differential implied by the regression results discussed earlier. The difference in median costs is of roughly the same magnitude, at 23 percent. Again, this suggests that employers who offer health insurance to part-time workers structure employee cost sharing, benefits, or other plan provisions in such a way as to partially prorate the cost by employee hours.

But a closer examination of the distribution of cost differentials within the same establishment reveals a more complex story. Both the 25th percentile and the median of intrafirm difference are zero. In contrast, the 75th percentile difference is quite large at \$1,209. In other words, for a substantial proportion of the establishments, the cost of health insurance does represent a purely quasi-fixed cost. The difference in mean costs is driven by large cost differentials within a minority of establishments.

Comparing health insurance plans

In this section, several possible explanations for the differences in annual costs for providing benefits to full- and part-time workers are examined. First, they may arise indirectly from the fact that part-time employees are less likely to participate in available benefit plans—either because they are less likely to meet tenure-related eligibility requirements, or because they are more likely to decline coverage.⁷ Also, prorating may result from specific employer policies—for example,

employers may require higher premium contributions from part-time employees. Finally, in the extreme, employers may offer their part-time employees different plans than those offered to their full-time employees; such plans may be less costly to employers and provide fewer overall benefits to employees.

The first explanation explored is whether the lower average cost for part-time jobs arises from lower participation rates among part-time workers. Tabulations from the full sample of combined EBS data from the 1993 and 1994 surveys reveal significant differences in health plan participation rates between full- and part-time employees among jobs in which at least one employee participates in a health plan. When only medical plans are considered, the average participation rate for part-time jobs is 76 percent, compared with 92 percent for full-time jobs. When dental and vision plans also are considered, the full- and part-time average participation rates are about 94 percent and 79 percent, respectively.⁸

Thus, the average participation rate among part-time jobs is 84 percent of the average participation rate among full-time jobs. If full- and part-time plans otherwise were the same, the average annual cost for health insurance would be 16 percent lower in part-time jobs than in full-time jobs. The results in table 1 suggest that the average annual cost for health insurance in part-time jobs is 40 percent lower than in full-time jobs. Therefore, participation rates appear to provide only a partial explanation for the lower average cost for part-time jobs.

As noted above, the difference in the average annual cost for health insurance between full- and part-time jobs is smaller when jobs from the same establishment are compared, either using the regression framework or as reported in table 2. However, when the same regression framework is used to compare participation rates among jobs from the same establishment, the resulting average participation rate in part-time jobs is about 11 percentage points lower than in full-time jobs. Thus, lower participation rates in part-time jobs again appear to provide only part of the explanation.

The EBS data do not provide information on the exact reason for this difference in participation. Figures presented below indicate that it is at least partly due to the tendency of some employers to impose longer length-of-service requirements on part-time workers. The result is that, among workers with low job tenure, part-time workers will have lower rates of benefit eligibility. Higher rates of job turnover among part-time workers will magnify the effect of differences in length-of-service requirements. In addition, even when they are eligible, part-timers may be less likely to participate in certain benefits plans, such as health insurance, often obtaining such benefits through the plans of their spouses or other family members.⁹

Next, the extent to which employers vary the terms and

conditions of health insurance coverage between full- and part-time employees is explored, and whether these differences effectively prorate the cost of health insurance by employee hours. For each establishment in its sample, the EBS provides data on plan provisions and employee participation for all plans in which at least one worker participates. If any plan provisions—such as covered benefits, eligibility periods, or contribution requirements—differ across sampled jobs, workers in different jobs are considered to be in separate plans.

The EBS also provides information on the rate at which workers in each sampled job participate in each available plan. Therefore, in establishments in which health insurance represents a purely quasi-fixed cost, workers in full- and part-time jobs will be observed with similar participation rates in a common set of plans. Such establishments are defined as *integrated*. In contrast, where employers have modified plan provisions in order to reduce the hourly cost of health benefits provided to part-time workers, full-time workers participate in one set of plans, while their part-time counterparts participate in a distinctly different set of plans. These establishments are defined as *segregated*.¹⁰ Differences in plan provisions within segregated establishments provide some insight into how employer policies affect the cost of health benefits provided to full- and part-time employees.

Table 3 shows average plan provisions by whether the establishments are classified as integrated or segregated. Plans with imputed provisions are excluded. Of the 264 establishments with at least one full-time job with a health insurance plan and one part-time job with a health insurance plan, 192 are classified as integrated and 72 are classified as segregated. Applying the EBS sample weights, the 72 segregated establishments represent more than one-fourth (28 percent) of the 264 establishments.

The estimates in table 3 suggest that there are three ways in which segregated establishments lower the cost of providing health benefits to part-time workers. The first is to require greater monthly premium contributions for part-time workers. In 73 percent of the plans offered by segregated establishments to full-time employees, the entire monthly premium for single coverage is paid by the establishment; by contrast, employers pay the entire premium in only 48 percent of the plans offered to part-time employees.

When limited to plans requiring workers to make some contribution, however, the differences between full- and part-time employees are small. For single coverage, the average contribution required of full-time employees is \$40.19, compared with an average of \$45.86 for part-time workers. For family coverage, the difference is even smaller and is not statistically significant.

A second way that plans offered to part-time workers differ from those offered to their full-time counterparts is that the former are more likely to have a restriction on preexisting con-

Table 3. Proportion of full- and part-time jobs covered by various medical plan provisions by type of establishment (integrated or segregated), 1993-94

[In percent, except where noted]

Characteristic	Integrated establishments		Segregated establishments	
	Part-time jobs	Full-time jobs	Part-time jobs	Full-time jobs
Fee arrangement:				
Fee-for-service	54.6	54.5	59.5	32.8
PPO	18.2	18.4	26.9	53.2
HMO	27.2	27.1	13.6	14.0
Other	0.1	0.1	0.0	0.0
Self-insured	42.9	45.4	31.0	17.2
Employee contribution for single coverage:				
None	46.1	44.5	48.1	72.8
Flat amount	31.0	26.1	44.7	16.6
Average monthly contribution (in dollars)	\$48.33	\$48.58	\$45.86	\$40.19
Other	22.8	29.3	7.2	10.6
No information	0.1	0.1	0.0	0.0
Employee contribution for family coverage:				
None	8.9	8.9	41.5	44.6
Flat amount	31.4	30.9	28.2	25.0
Average monthly contribution (in dollars)	\$156.00	\$148.99	\$185.96	\$186.59
Other	59.2	59.8	30.3	30.4
No information	0.4	0.4	0.0	0.0
Preexisting restriction	63.9	64.5	68.0	43.7
Eligibility requirement:				
Yes	18.3	19.7	29.6	60.1
Number of months:				
1	19.4	19.3	36.7	25.3
2	4.1	4.1	2.5	16.4
3	50.1	51.6	16.3	55.9
4	4.5	4.6	0.0	1.9
5	0.4	5.3	0.0	0.0
6	14.2	9.5	41.2	0.6
7	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0
12	1.0	1.0	3.3	0.0
14	0.0	0.0	0.0	0.0
36	6.3	4.6	0.0	0.0
No	40.4	39.5	2.5	3.7
No information	41.2	40.8	67.9	36.2
Number of plans	480	1,007	226	429
Number of establishments	192	192	72	72

NOTE: Sample restricted to establishments reporting data for both full- and part-time jobs.

SOURCE: Microdata from 1993 and 1994 Employee Benefits Survey.

ditions. The explanation for this difference probably has more to do with insurer concerns about adverse selection—the situation in which individuals take insurance coverage because they anticipate large medical expenses—than the desire of employers to prorate costs. Nonetheless, the differential treatment of preexisting conditions may partially explain why the cost of health benefits is lower for part-time employees in some establishments.¹¹

The third important way that the plans available to part-time employees differ from those offered to full-timers is the length-of-service eligibility requirement. Among part-time

plans that have such a probationary period, 45 percent have periods of 6 months or longer. In contrast, in 98 percent of the plans in which full-time employees are required to complete a probationary period, that period is 3 months or less. An important caveat concerning these figures is that, for a large fraction of plans—particularly those offered to part-time employees—no information is available on the existence or length of a probationary period.

Nonetheless, when this information is available, the data suggest that the difference in probationary periods may partly explain the differences in plan participation. Moreover, participation rates in segregated versus integrated establishments provide supportive evidence. As noted above, the within-establishment regressions suggest that the average participation rate is about 11 percentage points lower in part-time jobs than in full-time jobs. When similar regressions are estimated separately for integrated and segregated establishments, the average rate is lower by about 19 percentage points for segregated establishments, compared with about 10 percentage points for integrated establishments.

THIS ARTICLE PRESENTS EVIDENCE on the cost to employers of providing benefits to full- and part-time workers. The evidence corroborates the well-documented difference in benefit coverage between these two groups of workers. Additionally, however, this analysis finds significant differences in the *value* of benefits received by full-

and part-time workers.

Previous studies have suggested that the low rate of benefit coverage among part-time workers may be explained by the fact that nonwage compensation is a quasi-fixed cost, making it more costly, on a per-hour basis, to provide benefits to part-time workers. However, the results presented in this article challenge that argument, showing that most voluntary benefits—such as pensions and paid leave—are not quasi-fixed costs. The cost of employer-provided health insurance, on the other hand, does have an important quasi-fixed component.

Mean regressions suggest that health benefit costs often are partially prorated, although a closer examination reveals that in a substantial number of establishments in which part-time workers are eligible for health insurance, the costs associated with these benefits are not prorated by hours at all. The mean results appear to be driven by a minority of establishments in which there are large differences between the cost of health benefits provided to full- and part-time employees.

The data show that, when it does occur, prorating is accomplished by several means. Part of the cost differential arises

from lower plan participation rates for part-time employees. This difference probably is due in part to employers setting different eligibility requirements for full- and part-time workers. Also, part-time workers are somewhat more likely to decline certain benefits (particularly health insurance), often obtaining them through their spouses or other family members. Finally, a relatively small proportion of employers require that part-time workers make greater premium contributions to their plans, some offer less generous coverage to part-time workers, and some employ both of these methods.

Footnotes

¹ See, for example, Ronald G. Ehrenberg and Robert S. Smith, *Modern Labor Economics* (New York, HarperCollins, 1994), pp. 132–136.

² Selected examples include Ronald G. Ehrenberg, *Fringe Benefits and Overtime Behavior* (Lexington, MA, Lexington Books, 1971); Mark Montgomery and James Cosgrove, "The Effect of Employee Benefits on the Demand for Part-Time Workers," *Industrial and Labor Relations Review*, October 1993, pp. 87–98; and David M. Cutler and Brigitte C. Madrian, "Labor Market Responses to Rising Health Insurance Costs: Evidence on Hours Worked," *RAND Journal of Economics*, Autumn 1998, pp. 509–30.

³ For more information on the ECI, EBS, and other BLS compensation measures, see *BLS Handbook of Methods*, Bulletin 2490 (Bureau of Labor Statistics, April 1997), pp. 57–66.

⁴ See, for example, Michael K. Lettau, "Compensation in Part-Time Jobs versus Full-Time Jobs: What if the Job is the Same?" *Economics Letters*, September 1997, pp. 101–06.

⁵ The actual regression estimates may be obtained from the authors upon request. E-mail: Lettau_M@BLS.GOV

⁶ The regression equations are of the form

$$(1) \quad \ln B_{ji} = a_j PT_i + b_j \ln W_i + g_j \phi X_i + u_{ji}$$

$$(2) \quad \ln b_{ji} = a_j PT_i + b_j \ln W_i + g_j \phi X_i + v_{ji}$$

where B_{ji} (b_{ji}) represents the annual (hourly) cost of providing benefit j to job i . The independent variable of primary interest is PT , an indicator variable that equals one for part-time jobs and zero for full-time jobs.

⁷ The average cost among workers in the job for the ECI includes both nonparticipants and participants in the benefit plan.

⁸ The sample generating these figures includes some observations for

which plan participation is imputed. Regardless of how imputations are treated, however, the average participation rate for full-time workers is roughly 15 percentage points higher than that for part-time workers. Also note that the median participation rate equals one for both full- and part-time jobs. The lower average rate for part-time jobs is due entirely to a lower rates in the bottom third of the distribution.

⁹ Data from the Current Population Survey suggest that part-time and low-wage workers are less likely than their full-time or high-wage counterparts to participate in health insurance plans offered by their employers. See Stephen H. Long and M. Susan Marquis, "Gaps in Employment-Based Health Insurance: Lack of Supply Or Lack of Demand?" *Health Benefits and The Workforce* (U.S. Department of Labor, 1992), pp. 37–42; and Henry S. Farber and Helen Levy, "Recent Trends in Employer-Sponsored Health Insurance Coverage: Are Bad Jobs Getting Worse?" NBER Working Paper No. 6709, 1998.

¹⁰ The classification of integrated versus segregated establishments is based on a segregation summary statistic calculated by comparing participation rates among full- and part-time jobs for each health plan in the establishment. The segregation statistic ranges from zero to one. At the extremes, it equals one if full- and part-time workers never participate in the same plan, and it equals zero if full- and part-time workers participate in the same plans at the same rates. An arbitrary threshold of 0.5 is used to designate whether the establishment is integrated or segregated. Only participants in health plans are considered, so nonparticipants do not affect the classification.

¹¹ The Health Insurance Portability and Accountability Act of 1996 limits the use of preexisting conditions exclusions. Under the new law, coverage for preexisting conditions can be denied for no more than 12 months. New employees who were insured prior to joining a group plan can apply the period of their prior coverage to the exclusionary period.

Earnings and benefits of workers in alternative work arrangements

Workers in alternative work arrangements were generally less likely to receive health insurance or pension coverage from their employers, but many earned higher wages than workers in traditional arrangements

Steven Hipple
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Approximately 1 of 10 workers was employed in an alternative work arrangement, according to data from the February 1995 Contingent Worker/Alternative Work Arrangement Supplement to the Current Population Survey (CPS). Alternative work arrangements include working through a temporary help agency, working for a contract company, working on-call, and working as an independent contractor.

It has been argued that some alternative work arrangements have come about through companies' efforts to reduce costs. Firms often find it cheaper to contract out for services such as security and payroll than to perform these functions in-house. In addition, the use of temporary help agencies can reduce costs by allowing firms to expand production during periods of increased demand without having to hire permanent workers or incur the costs of firing unneeded workers. Having a pool of on-call workers available serves the same purpose. By hiring independent contractors, firms can gain access to workers with highly specialized skills on an as-needed basis.

Have these developments been detrimental to workers? Not necessarily, if these arrangements allow workers to better direct their talents to where they are most highly valued, they may actually be better off. This article compares the earnings and benefits of workers in these alternative work arrangements with those of workers in traditional arrangements.

Earnings

The earnings of workers in alternative work arrangements relative to those in traditional

arrangements vary significantly. Workers employed by temporary help agencies and those who are on call earned less than workers in traditional arrangements, while contract company workers and independent contractors earned more. (See table 1.) Some of the difference between the various alternative arrangements can be attributed to the occupational make-up of each arrangement. For instance, people employed by temporary help agencies were more likely to work in administrative support or laborer occupations which tend to pay lower wages. In contrast, independent contractors were more likely to work in higher paying managerial and professional specialty occupations.

Of the four alternative work arrangements, persons employed by temporary help agencies earned the least. Overall, full-time temporary help workers earned 60 percent of the traditional worker wage. Men who worked for temporary help agencies earned 51 percent as much as men in traditional work arrangements, while women earned 72 percent as much. Younger temporary help workers earned a larger percentage of traditional worker earnings than did their older counterparts. Interestingly, among temporary help workers, women out-earned men.

Although earnings of temporary help workers generally increased with educational attainment, temporary help workers earned more, relative to traditional workers, at lower education levels. Temporary help workers tend to work in lower paying occupations; about three-fifths of them hold administrative support and operator, fabricator, and laborer jobs.

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Full-time employees of contract companies earned more (\$512—median weekly earnings), in general, than workers in traditional arrangements (\$480—median weekly earnings). Women who work for contract companies earned slightly less than women in traditional arrangements, while men earned more. (Unfortunately, it is not possible to say much more than this, because the sample sizes in many of the cells are too small for analysis.)

On-call workers who worked full time as well as those who worked part time earned about 80 percent of what similar workers in traditional arrangements earned. On-call workers were much more likely than those in traditional arrangements to work part time, however. Men working on-call earned more relative to traditional workers than did women. By age, on-call workers earned about 25 percent of what traditional workers earned. This reflects the higher proportion of on-call workers who are younger.

Among full-time on-call workers, those with an associate degree fared the best, and even out-earned those with college degrees (a large share of whom are substitute teachers). As one might expect, weekly earnings of high school dropouts who

work on-call were the lowest, although their earnings were very close to the earnings of high school dropouts in traditional arrangements.

Overall, independent contractors earned more than workers in traditional arrangements. However, female independent contractors earned less than workers in traditional arrangements; for men (who dominate the group numerically), the reverse was true. In nearly every age group, independent contractors earned more than traditional workers, with older workers having the greatest difference. Independent contractors without a post-secondary degree earned more than their traditional counterparts, while those with a degree earned less.

Health insurance coverage

Overall, workers in traditional arrangements were more likely than those in alternative arrangements to have health insurance, although there was wide variation in coverage among alternative work arrangements.¹ Workers employed by temporary help companies had the lowest rate of health insurance coverage from all sources (45 percent), while indepen-

Table 1. Median weekly earnings of full-time wage and salary workers with alternative and traditional work arrangements by selected characteristics, February 1995

Characteristic	Temporary help agency workers	Workers provided by contract firms	On-call workers	Independent contractors	Workers with traditional arrangements
Age and sex					
Total, 16 years and older	\$290	\$512	\$386	\$518	\$480
16 to 19 years	(¹)	(¹)	(¹)	(¹)	236
20 to 24 years	276	(¹)	259	327	305
25 years and older	299	557	424	524	507
25 to 34 years	287	508	389	497	453
35 to 44 years	319	607	457	536	522
45 to 54 years	323	(¹)	505	592	595
55 to 64 years	258	(¹)	(¹)	583	506
65 years and older	(¹)	(¹)	(¹)	493	381
Men	277	562	433	590	543
Women	297	399	267	361	410
Race and Hispanic origin					
White	298	530	416	527	498
Black	261	476	280	375	364
Hispanic origin	237	268	281	370	343
Educational attainment					
Less than a high school diploma	246	(¹)	290	360	299
High school graduates, no college	261	384	376	482	405
Some college, no degree	297	519	349	499	450
Associate degree	(¹)	(¹)	672	473	564
College graduates	414	715	411	668	733

¹Data not shown where base is less than 75,000.

Note: Workers with traditional arrangements are those who do not fall into any of the "alternative arrangement" categories.

Table 2. Percent of employed temporary help agency workers with health insurance and pension coverage, by selected characteristics, February 1995

Characteristic	Total (in thousands)	With health insurance coverage				With pension coverage	
		Total	Through current employer at main job	Through other job or union	Eligible for employer- provided health insurance	Total	Eligible for employer- provided pension
Age and sex							
Total, 16 years and older	1,181	44.9	5.7	0.8	22.6	2.5	7.0
16 to 24 years	295	36.6	5.1	.3	23.7	2.4	9.5
25 years and older	886	47.6	5.9	1.0	22.2	2.6	6.1
25 to 34 years	403	41.2	6.9	(¹)	18.9	2.0	4.7
35 to 44 years	251	46.6	3.6	2.0	25.1	2.0	7.2
45 to 54 years	143	60.8	7.7	2.8	29.4	4.2	8.4
55 years and older	89	58.4	(¹)	(¹)	16.9	4.5	5.6
Men	557	38.8	3.6	.4	19.7	3.1	6.1
Women	624	50.3	7.5	1.3	25.2	2.1	7.7
Race and Hispanic origin							
White	859	50.8	6.6	.7	26.0	3.3	9.4
Black	257	30.7	3.5	1.6	12.5	.4	.4
Hispanic origin	134	17.9	(¹)	(¹)	9.0	3.7	3.7
Full- and part-time status							
Full-time workers	927	45.3	7.1	1.1	26.0	2.9	7.8
Part-time workers	254	43.7	.4	(¹)	10.2	1.2	3.9
Educational attainment							
Less than a high school diploma	173	15.6	1.2	(¹)	16.2	1.1	1.1
High school graduates, no college	384	42.4	3.1	.3	20.3	1.6	4.9
Some college, no degree	270	46.7	6.7	1.5	20.0	2.9	7.7
Associate degree	77	61.0	7.8	(¹)	28.6	3.9	13.0
College graduates	216	61.1	13.4	2.3	29.2	4.9	12.1
Selected occupation							
Executive, administrative, and managerial	77	59.7	3.9	5.2	27.3	(¹)	9.1
Professional specialty	98	69.4	15.3	1.0	41.8	8.2	18.4
Administrative support, including clerical	355	50.7	3.4	1.1	22.5	2.3	8.5
Service occupations	106	44.3	4.7	(¹)	10.4	(¹)	(¹)
Operators, fabricators, and laborers	392	30.1	2.0	.3	18.6	2.0	2.6
Selected industry							
Manufacturing	230	43.5	2.6	1.7	20.4	3.0	10.9
Services	789	47.3	6.3	.6	22.9	1.8	5.7

¹Less than 0.05 percent.

NOTE: Workers with traditional arrangements are those who do not fall into any of the "alternative arrangement" categories. Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races"

group are not presented and Hispanics are included in both the white and black population groups. Data for full- and part-time workers will not sum to totals because usual status on the principal job is not identifiable for a small number of multiple jobholders.

dent contractors had the highest rate (73 percent). By comparison, the proportion of workers in traditional arrangements with health insurance was 83 percent.

Workers in traditional arrangements also were more likely than those in alternative arrangements to be eligible for, and receive, *employer-provided* health insurance. Among traditional workers, women were slightly more likely than men to have health insurance from any source, while men were likely to receive coverage from their employer.

Of workers employed by temporary help companies, 6 percent received their health insurance from their employer, while 23 percent said they were eligible for coverage. Although workers employed by temporary help companies were not likely to have employee-provided health insurance, more than two-fifths had coverage from any source, implying that many of these workers were receiving coverage from a family member or some other nonemployment-related source. (See table 2.)

Compared with temporary help workers, contract workers were more likely to receive or be eligible for health insurance from their employer. They also were more likely to accept coverage from their employer, when it was offered. Slightly more than two-fifths of contract workers received health insurance from their employer, while nearly three-fifths were offered coverage. (See table 3.) Unlike temporary help workers, a relatively large fraction (7 percent) of contract workers received health insurance through a union or other job. A large proportion of contract workers—70 percent—had health insurance coverage from some source. Contract company workers in service occupations were much less likely to have health insurance than were those in other occupations. In fact, excluding those employed in service occupations, the health insurance coverage rate for contract workers would be about 78 percent, which is very close to the coverage rate for traditional workers.

On-call workers were 1-1/2 times more likely than temporary help company workers to have coverage, and were about 3 times as likely to obtain coverage from their employer. In comparison to temporary help workers, a slightly higher proportion of on-call workers (27 percent) were offered employer-provided health insurance. (See table 4.) About two-thirds of on-call workers had health insurance from some source. Older on-call workers were more likely to be covered overall, although they were less likely to receive coverage from their employer. The proportion of on-call workers with health insurance ranged from 28 percent among those in farming, forestry, and fishing occupations to 76 percent among those in administrative support occupations.

As stated previously, independent contractors had the highest proportion of workers with health insurance among workers in alternative employment arrangements. Given that most independent contractors are self-employed, it is not

surprising that they were much more likely than workers in traditional arrangements to receive health insurance from a nonemployment-related source. (See tables 5 and 6.) Out of all independent contractors, 69 percent received health insurance from a source not related to their employment. Of this total, 31 percent said they purchased their own health insurance, 27 percent obtained coverage through a family member, and 11 percent received health insurance from some other source. In contrast, 22 percent of traditional workers received coverage through a nonemployment-related source. Because very few independent contractors received employer-provided health insurance, most of the variation in health insurance coverage was attributable to differences in coverage from nonemployment sources.

In general, workers with higher levels of education were more likely to have health insurance, and also were more likely to be offered, or obtain, coverage from their employer. Among workers in alternative arrangements, those arrangements that had a disproportionate share of workers with more education tended to have higher rates of coverage. For example, independent contractors (41 percent) and contract company workers (35 percent) had the largest proportions of workers with an associate or college degree. Workers in these arrangements had relatively high rates of coverage, but that coverage was often unrelated to their own employment. For example, among independent contractors, college graduates were most likely to purchase their insurance on their own, while those who had completed some college were most likely to rely on a family member for coverage.

Pension coverage

Workers in alternative arrangements were less likely than traditional workers to have pension coverage, although there was considerable variation among the different alternative arrangements.² Temporary help workers had the lowest proportion with pensions (3 percent), while independent contractors had the highest (35 percent). By comparison, nearly one-half of workers in traditional arrangements had pension coverage.

Because most independent contractors are self-employed and, therefore, not likely to be covered by an employer-sponsored pension plan, the tabulations for pension coverage in table 5 include a category for tax deferred savings accounts such as Individual Retirement Accounts (IRA's) and Keogh plans. Of the independent contractors who participate in pension plans, 9 of every 10 had an IRA or Keogh plan. Independent contractors age 55 and older were the most likely to have pension coverage; slightly more than half of these workers had coverage, compared with one-third of those ages 25 to 54. A very small proportion of independent contractors age 16 to 24 participated in employer-sponsored pension plans, and, in fact,

(Text continues on page 54.)

Table 3. Percent of workers employed by contract firms providing health insurance and pension coverage, by selected characteristics, February 1995

Characteristic	Total (In thousands)	With health insurance coverage				With pension coverage	
		Total	Through current employer at main job	Through other job or union	Eligible for employer- provided health insurance	Total	Eligible for employer- provided pension
Age and sex							
Total, 16 years and older	652	69.9	42.5	6.6	58.0	28.5	36.0
16 to 24 years	99	57.6	49.5	(1)	60.6	23.2	34.3
25 years and older	554	71.8	41.2	7.8	57.6	29.4	36.3
25 to 34 years	254	68.1	46.5	8.7	61.0	26.8	35.8
35 to 44 years	152	78.9	48.7	7.2	65.8	42.1	48.0
45 to 54 years	77	80.5	31.2	7.8	45.5	28.6	33.8
55 years and older	71	(2)	(2)	(2)	(2)	(2)	(2)
Men	466	69.1	40.8	8.6	58.8	29.2	36.3
Women	186	71.5	46.8	1.6	56.5	26.9	35.5
Race and Hispanic origin							
White	541	72.8	43.3	7.6	58.6	28.7	36.8
Black	76	55.3	35.5	2.6	53.9	23.7	28.9
Hispanic origin	55	(2)	(2)	(2)	(2)	(2)	(2)
Full- and part-time status							
Full-time workers	542	74.2	48.7	6.8	64.8	32.7	41.3
Part-time workers	109	47.7	11.9	3.7	24.8	9.2	10.1
Educational attainment							
Less than a high school diploma	75	41.3	18.7	1.3	29.3	16.7	23.1
High school graduates, no college	187	63.6	34.2	8.0	53.5	17.4	23.7
Some college, no degree	143	74.1	37.1	11.9	58.7	24.5	31.6
Associate degree	44	(2)	(2)	(2)	(2)	(2)	(2)
College graduates	185	80.0	60.5	3.2	68.6	44.9	53.5
Selected occupation							
Professional specialty	167	78.4	63.5	2.4	77.2	42.5	54.5
Technical, sales, and administrative support	97	84.5	48.5	(1)	67.0	29.9	42.3
Service occupations	181	48.1	19.3	1.7	42.0	6.1	11.0
Precision production, craft, and repair	95	70.5	31.6	25.3	44.2	46.3	46.3
Selected industry							
Construction	109	72.5	36.7	27.5	45.0	33.9	37.6
Services	403	67.2	44.4	1.0	64.3	26.6	36.2

¹Less than 0.05 percent.²Data not shown where base is less than 75,000.

NOTE: Workers with traditional arrangements are those who do not fall into any of the "alternative arrangement" categories. Detail for the above race and Hispanic-origin groups will not sum to totals because data for

the "other races" group are not presented and Hispanics are included in both the white and black population groups. Data for full- and part-time workers will not sum to totals because usual status on the principal job is not identifiable for a small number of multiple jobholders.

Table 4. Percent of employed on-call workers with health insurance and pension coverage, by selected characteristics, February 1995

Characteristic	Total (in thousands)	With health insurance coverage				With pension coverage	
		Total	Through current employer at main job	Through other job or union	Eligible for employer- provided health insurance	Total	Eligible for employer- provided pension
Age and sex							
Total, 16 years and older	1,968	66.1	17.2	5.6	26.5	18.6	25.3
16 to 24 years	379	58.0	7.1	1.1	15.3	5.5	11.1
25 years and older	1,589	68.0	19.6	6.7	29.1	21.8	28.6
25 to 34 years	499	57.7	22.4	5.6	36.5	19.4	29.5
35 to 44 years	456	69.1	21.9	7.7	31.6	23.9	31.6
45 to 54 years	313	70.6	19.5	9.9	25.6	23.6	26.8
55 years and older	320	79.7	11.9	3.8	18.4	20.9	25.0
Men	952	64.6	23.7	10.0	32.6	20.8	28.7
Women	1,015	67.5	11.0	1.6	20.9	16.7	22.2
Race and Hispanic origin							
White	1,671	68.4	16.5	5.9	25.5	19.1	24.8
Black	204	55.9	20.6	5.4	34.8	18.1	34.3
Hispanic origin	189	32.3	13.8	1.6	16.9	10.6	13.2
Full- and part-time status							
Full-time workers	817	65.5	31.6	11.1	43.9	26.3	37.2
Part-time workers	1,130	66.4	7.0	1.6	14.1	12.7	16.3
Educational attainment							
Less than a high school diploma	238	44.5	21.8	1.3	31.1	11.4	14.3
High school graduates, no college	646	62.4	19.0	8.2	30.2	19.1	26.9
Some college, no degree	327	73.4	19.6	8.6	29.7	14.4	19.7
Associate degree	206	75.2	22.3	9.7	29.1	25.5	35.8
College graduates	371	72.8	13.5	1.1	24.0	24.5	31.3
Selected occupation							
Professional specialty	434	73.5	11.5	.2	23.7	24.0	30.6
Sales occupations	122	60.7	8.2	(¹)	15.6	9.0	15.6
Administrative support, including clerical	194	75.8	14.4	1.5	25.3	20.1	26.3
Service occupations	393	61.8	13.7	3.1	23.2	11.2	18.6
Precision production, craft, and repair	262	75.2	34.7	26.7	39.3	26.7	30.5
Operators, fabricators, and laborers	395	62.0	20.8	6.3	30.9	21.3	30.9
Farming, forestry, and fishing	75	28.0	10.7	(¹)	10.7	(¹)	(¹)
Selected industry							
Construction	268	62.7	23.5	25.0	29.1	23.5	26.5
Manufacturing	119	59.7	29.4	11.8	42.9	27.7	49.6
Transportation and public utilities	171	73.7	34.5	4.1	50.9	37.4	49.7
Retail trade	246	54.9	8.9	0.4	13.0	8.1	11.0
Services	945	68.4	10.9	1.6	22.1	15.4	21.8

¹Less than 0.05 percent.

NOTE: Workers with traditional arrangements are those who do not fall into any of the "alternative arrangement" categories. Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races"

group are not presented and Hispanics are included in both the white and black population groups. Data for full- and part-time workers will not sum to totals because usual status on the principal job is not identifiable for a small number of multiple jobholders.

Table 5. Percent of employed independent contractors with health insurance and pension coverage by selected characteristics, February 1995

Characteristic	Total (in thousands)	With health insurance coverage					With pension coverage		
		Total	Through current employer at main job	Through spouse or other family member	Purchased on own	Other source	Total	Through current employer at main job	IRA or Keogh
Age and sex									
Total, 16 years and older	8,309	72.6	3.0	27.0	31.0	10.7	35.1	2.5	32.6
16 to 19 years	125	75.2	(¹)	60.0	1.6	7.2	6.4	4.0	2.4
20 to 24 years	197	54.3	3.6	21.3	22.3	4.6	6.1	5.1	1.0
25 years and older	7,987	73.1	3.1	26.6	31.6	11.0	36.3	2.4	33.8
25 to 34 years	1,639	61.3	3.8	27.0	24.3	5.3	19.6	3.2	16.4
35 to 44 years	2,559	68.8	3.0	27.9	31.2	6.2	35.2	2.2	33.0
45 to 54 years	2,099	75.9	2.7	29.1	36.6	6.9	37.7	2.6	35.1
55 to 64 years	1,131	83.6	3.5	27.2	34.4	16.9	54.1	2.7	51.4
65 years and older	559	94.6	1.4	8.9	31.1	53.0	49.0	.2	48.8
Men	5,595	71.3	3.4	20.6	35.1	11.7	35.7	2.8	33.0
Women	2,714	75.3	2.2	40.2	22.5	8.8	33.8	2.0	31.8
Race and Hispanic origin									
White	7,671	73.6	2.9	27.5	31.4	10.8	36.6	2.4	34.2
Black	416	63.0	3.8	24.3	23.8	10.8	14.7	4.6	9.9
Hispanic origin	431	51.0	4.2	19.3	20.6	6.0	13.2	3.7	9.5
Full- and part-time status									
Full-time workers	5,945	72.3	3.7	23.9	35.5	8.4	36.1	3.0	33.1
Part-time workers	2,278	73.5	1.4	35.0	18.7	17.2	32.1	1.4	30.8
Educational attainment									
Less than a high school diploma ..	795	48.7	.6	16.6	20.8	9.7	14.6	1.3	13.3
High school graduates, no college	2,351	64.6	2.0	24.2	29.3	7.6	25.1	2.0	23.1
Some college, no degree	1,623	76.6	2.2	32.3	32.0	9.6	32.5	1.6	31.0
Associate degree	618	71.2	3.4	26.1	29.6	11.7	31.1	1.8	29.3
College graduates	2,800	83.5	5.1	27.6	36.0	14.3	53.0	4.0	49.1
Occupation									
Executive, administrative, and managerial	1,542	80.6	2.3	28.5	37.3	11.6	45.7	2.4	43.3
Professional specialty	1,353	78.9	3.5	28.2	33.2	13.7	48.3	2.9	45.4
Technicians and related support	91	70.3	15.4	23.1	22.0	9.9	33.0	7.7	25.3
Sales occupations	1,558	80.9	5.4	28.5	35.6	11.0	45.6	4.6	40.9
Administrative support, including clerical	318	85.8	4.4	39.3	26.4	15.7	42.5	1.9	40.3
Service occupations	881	63.6	1.6	31.8	17.4	8.4	15.7	1.5	14.3
Precision production, craft, and repair	1,596	62.3	1.3	22.1	29.7	8.6	22.9	1.4	21.6
Operators, fabricators, and laborers	542	54.6	2.4	22.0	20.7	9.4	17.7	2.2	15.5
Farming, forestry, and fishing	427	65.1	1.6	19.4	35.1	8.7	20.1	.5	19.7
Selected Industry									
Agriculture	412	70.6	3.2	23.1	37.6	6.8	25.2	.5	25.0
Construction	1,764	62.6	.6	23.6	30.4	7.5	25.5	.9	24.6
Manufacturing	414	73.9	7.2	20.0	34.1	12.3	38.4	7.0	31.6
Transportation and public utilities	415	62.4	1.7	20.7	32.3	7.7	22.7	.5	22.2
Wholesale trade	277	80.5	6.9	19.5	40.4	13.0	43.7	3.6	40.1
Retail trade	817	78.9	2.7	29.6	33.7	12.1	34.1	3.3	30.8
Finance, insurance, and real estate	795	84.2	7.0	27.3	38.1	11.3	59.2	5.8	53.5
Services	3,377	74.4	2.5	30.9	26.9	12.4	36.3	2.2	34.1

¹Less than 0.05 percent.

NOTE: Workers with traditional arrangements are those who do not fall into any of the "alternative arrangement" categories. Detail for the above race and Hispanic-origin groups will not sum to totals because data for the

"other races" group are not presented and Hispanics are included in both the white and black population groups. Data for full- and part-time workers will not sum to totals because usual status on the principal job is not identifiable for a small number of multiple jobholders.

Table 6. Percent of workers employed in traditional job arrangements providing health insurance and pension coverage, by selected characteristics, February 1995

Characteristic	Total (in thousands)	With health insurance				With pension coverage	
		Total	Through current employer at main job	Through other job or union	Eligible for employer- provided health insurance	Total	Eligible for employer- provided pension
Age and sex							
Total, 16 years and older	103,795	82.9	61.2	0.9	73.5	49.0	56.0
16 to 24 years	16,608	68.2	31.3	.5	45.5	14.7	26.1
25 years and older	87,187	85.7	66.9	.9	78.8	55.5	61.7
25 to 34 years	28,171	80.1	63.9	.6	77.3	46.5	55.8
35 to 44 years	28,586	86.7	68.7	.8	80.7	58.9	64.3
45 to 54 years	19,467	89.9	71.8	1.1	82.6	64.8	68.7
55 years and older	10,964	90.0	61.1	1.9	71.3	53.3	57.6
Men	54,244	82.2	66.3	1.3	76.2	51.0	57.3
Women	49,551	83.6	55.6	.4	70.6	46.8	54.6
Race and Hispanic origin							
White	87,667	84.3	61.5	.9	73.8	49.5	56.3
Black	11,945	75.7	60.5	.7	73.0	48.9	56.9
Hispanic origin	9,209	62.6	49.5	1.2	59.3	31.5	37.4
Full- and part-time status							
Full-time workers	84,333	85.1	71.2	.9	82.8	56.5	63.8
Part-time workers	19,272	73.3	17.4	.8	32.9	16.0	22.1
Educational attainment							
Less than a high school diploma	10,347	59.9	43.8	1.0	56.8	22.7	28.9
High school graduates, no college	32,896	80.3	60.3	1.2	73.7	45.7	53.5
Some college, no degree	19,261	84.2	64.3	1.0	77.8	45.1	52.4
Associate degree	8,556	89.5	69.3	.9	82.4	57.5	65.0
College graduates	25,974	93.5	77.0	.3	87.0	66.6	72.6
Selected occupation							
Executive, administrative, and managerial	13,484	91.9	75.8	.3	86.8	64.0	69.4
Professional specialty	15,494	92.9	74.4	.4	84.9	67.6	73.2
Technicians and related support	3,686	91.1	72.0	.4	83.7	60.2	67.6
Sales occupations	11,569	80.1	48.0	.4	63.1	33.5	41.8
Administrative support, including clerical	17,119	88.6	64.0	.4	78.0	53.9	62.7
Service occupations	14,423	67.2	35.8	.8	50.1	27.1	33.5
Precision production, craft, and repair	10,704	79.9	65.3	2.9	75.3	49.7	55.1
Operators, fabricators, and laborers	15,908	77.5	62.2	1.5	73.9	43.2	52.2
Farming, forestry, and fishing ...	1,408	61.8	37.7	1.3	46.7	21.7	24.3
Selected industry							
Agriculture	1,277	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
Mining	618	90.0	81.1	1.1	88.5	62.8	69.9
Construction	4,491	67.8	44.5	6.0	56.0	30.6	34.6
Manufacturing	19,319	88.1	77.8	0.6	87.6	61.1	69.1
Transportation and public utilities	7,772	89.4	77.9	1.3	86.2	64.2	70.7
Wholesale trade	3,916	86.2	69.3	.9	81.1	50.1	56.2
Retail trade	17,933	70.0	34.9	.7	51.4	21.7	30.1
Finance, insurance, and real estate	6,711	90.1	69.6	.3	82.2	58.9	67.6
Services	35,811	83.9	58.0	.5	71.6	48.1	55.0
Public administration	5,947	95.4	85.8	.3	92.5	85.1	88.3

¹Less than 0.05 percent.

NOTE: Workers with traditional arrangements are those who do not fall into any of the "alternative arrangement" categories. Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races"

group are not presented and Hispanics are included in both the white and black population groups. Data for full- and part-time workers will not sum to totals because usual status on the principal job is not identifiable for a small number of multiple jobholders.

the vast majority of younger workers do not participate in pension plans, even those in traditional arrangements.

In terms of eligibility for pensions from their employers, contract company workers were most likely to be offered pensions. The proportion eligible for coverage was 36 percent, compared with 25 percent for on-call workers and 7 percent for temporary help workers. In contrast, more than half of workers in traditional arrangements were eligible for pensions from their employer.

Men in traditional arrangements and in each alternative work arrangement were slightly more likely than their female counterparts to have pension coverage. Among workers in alternative arrangements, women working for temporary help companies had the lowest rate of coverage (2 percent), while men working as independent contractors had the highest—36 percent.

In each employment arrangement, workers with higher levels of education tended to have higher rates of pension coverage. Among alternative work arrangements, at each level of educational attainment, independent contractors had the largest proportion of workers with coverage, although there was wide variation among independent contractors by level of education. Much of this variation in coverage rates was attributable to differences in the fraction of workers with tax deferred savings accounts, and may reflect differences in income levels. People

with more education and higher incomes have more disposable income from which to save, and also have a greater tax incentive to put money into tax deferred savings accounts. It also could be that more highly educated workers are more willing to forego current consumption, and, hence, are more likely to save in general.

EARNINGS OF WORKERS in alternative work arrangements vary not only by type of arrangement, but also within the different arrangements by occupation, education, and other factors. Overall, contract company workers and independent contractors, who tend to be more highly educated and concentrated in skilled occupations, actually out-earn similar workers in traditional arrangements, while on-call workers and temporary help workers earn less than their counterparts in traditional arrangements. In terms of health insurance and pensions, workers in each alternative arrangement were less likely than traditional workers to have coverage from any source. Among the alternative arrangements, independent contractors and contract company workers were most likely to have health insurance coverage and pensions, while on-

Footnotes

call and temporary help workers were least likely. ☐

¹ In the survey, respondents were asked, "Do you have health insurance from any source?" If the answer to that question was "yes," respondents were then asked whether they received insurance from their employer. Those who did not receive health insurance from their employer were asked for the source of their health insurance; in addition, they were asked whether they were eligible to receive insurance from their employer. Respondents who said "no" to the initial question, "Do you have health insurance from any source?," were asked if their employer offered health insurance to any of its workers, and if they were eligible to be in the plan if they wanted.

² In the survey, respondents were asked, "Does (employer's name) offer a pension or retirement plan to any of its employees?" If the answer to that question was "yes," the respondent was then asked, "Are you included in this plan?" If the response was "no," the respondent was asked, "why not?" The response to this question was used to determine eligibility for those not in a plan.

Labor Force Statistics from the Current Population Survey **Contingent and Alternative Employment Arrangements,
February 1997**Internet address: <http://stats.bls.gov/newsrels.htm>

Technical information: (202) 606-6378 USDL 97-422

Media contact: 606-5902 For release: 10:00 A.M. EST
Tuesday, December 2, 1997

CONTINGENT AND ALTERNATIVE EMPLOYMENT ARRANGEMENTS, FEBRUARY 1997

The proportion of U.S. workers who hold contingent jobs--basically those jobs that are not expected to last--declined slightly in the 2 years between February 1995 and February 1997, according to the Bureau of Labor Statistics, U.S. Department of Labor. Using three alternative estimates (table A), contingent workers accounted for 1.9 to 4.4 percent of all employment in February 1997; the range was 2.2 to 4.9 percent in February 1995. The analysis in this release is focused on the broadest estimate of contingent workers.

During this 2-year period, there was little change in the proportions of the employed who had alternative work arrangements--the 6.7 percent (8.5 million workers) who were identified as independent contractors, the 1.6 percent (2.0 million workers) who were on-call workers, the 1.0 percent (1.3 million workers) who worked for temporary help agencies, and the 0.6 percent (800,000 workers) who worked for contract firms.

Alternative employment arrangements were identified separately from the contingency of a job, and the proportions of employees in alternative arrangements who considered their employment to be contingent ranged from less than 4 percent for independent contractors to about 57 percent for temporary help agency workers.

The findings on the characteristics of workers in contingent jobs and in alternative work arrangements in February 1997 were similar to those in the first survey 2 years before. The data were collected as a supplement to the Current Population Survey (CPS), a monthly sample survey of about 50,000 households conducted by the Bureau of the Census for BLS. A description of the concepts and definitions used in the supplement is presented in the Technical Note beginning on page 6. Some of the highlights of the February 1997 survey follow.

--A total of 5.6 million workers held a contingent job under the broadest estimate. They were younger than other workers; persons under the age of 25 made up about 30 percent of contingent workers, compared with about 13 percent of noncontingent workers. Contingent workers also were more likely than noncontingent workers to be female.

--About 43 percent of contingent workers were employed part time (less than 35 hours a week), compared with only 18 percent of noncontingent workers. Only 10 percent of all part-time workers were contingent, however.

- 2 -

--Characteristics of workers in alternative arrangements varied widely.

Independent contractors tended to be middle-aged men, for example, while temporary help agency workers tended to be younger women.

--The majority (56 percent) of contingent workers would have preferred a permanent job.

Table A. Contingent workers and workers in alternative arrangements as a percent of total employment, February 1997

Definition and alternative estimates of contingent workers	Percent of total employed
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Contingent workers are those who do not have an implicit or explicit contract for ongoing employment. Persons who do not expect to continue in their jobs for personal reasons such as retirement or returning to school are not considered contingent workers, provided that they would have the option of continuing in the job were it not for these personal reasons.

Estimate 1

Wage and salary workers who expect their jobs will last for an additional year or less and who had worked at their jobs for 1 year or less. Self-employed workers and independent contractors are excluded from the estimate. For temporary help and contract workers, contingency is based on the expected duration and tenure of their employment with the temporary help or contract firm, not with the specific client to whom they were assigned

1.9

Estimate 2

Workers including the self-employed and independent contractors who expect their employment to last for an additional year or less and who had worked at their jobs (or been self-employed) for 1 year or less. For temporary help and contract workers, contingency is determined on the basis of the expected duration and tenure with the client to whom they are assigned, instead of their tenure with the temporary help or contract firm.

2.4

Estimate 3

Workers who do not expect their jobs to last. Wage and salary workers are included even if they already had held the job for more than 1 year and expect to hold the job for at least an additional year. The self-employed and independent contractors are included if they expect their employment to last for an additional year or less and they had been self-employed or independent contractors for 1 year or less.

4.4

Type of alternative arrangement

Independent contractors

Workers who were identified as independent contractors, independent consultants, or freelance workers, whether they were self-employed or wage and salary workers.	6.7
On-call workers Workers who are called to work only as needed, although they can be scheduled to work for several days or weeks in a row.	1.6
Temporary help agency workers Workers who were paid by a temporary help agency, whether or not their job was temporary.	1.0
Workers provided by contract firms Workers who are employed by a company that provides them or their services to others under contract, and who are usually assigned to only one customer and usually work at the customer's worksite.	.6

- 3 -

--The satisfaction of workers in the various alternative employment arrangements varied considerably. For instance, the vast majority (84 percent) of independent contractors were satisfied with their work arrangement, while most (59 percent) temporary help agency workers would have preferred a traditional job.

--Median weekly earnings of full-time contingent workers were 82 percent of the earnings of noncontingent workers.

--Among workers in alternative arrangements, persons employed by contract companies had higher earnings than workers in traditional arrangements, while persons employed by temporary help firms and on-call workers earned less.

Demographic characteristics of contingent workers

The February 1997 survey reported 5.6 million contingent workers under the broadest estimate. (See table 1.) As was the case in the February 1995 survey, contingent workers were more than twice as likely as noncontingent workers to be between the ages of 16 and 24, with many young workers combining contingent employment and school attendance. More than three-fifths of young contingent workers were in school, compared with two-fifths of their noncontingent counterparts. Among 25- to 64-year olds, a higher proportion of contingent than noncontingent workers had graduated from college--36 and 30 percent, respectively. (See table 3.)

Slightly more than half of contingent workers were women, compared with 46 percent of noncontingent workers. Blacks accounted for about 11 percent of both contingent and noncontingent workers. (See table 2.)

Occupation and industry of contingent workers

Contingent workers were employed in a wide range of jobs. They were more likely than noncontingent workers to hold professional and administrative support positions and less likely to be in managerial and sales jobs. They also were overrepresented in the services and construction industries. (See table 4.)

Job preferences of contingent workers

The majority of contingent workers (56 percent) would have preferred

noncontingent jobs; nevertheless, more than one-third of contingent workers preferred their arrangement. (The remainder expressed no clear preference.) (See table 10.)

Compensation of contingent workers

Median earnings were lower for contingent workers than for their noncontingent counterparts. Full-time contingent workers' median earnings (\$417) were 82 percent of those of noncontingent workers (\$510) in February 1997. (See table 13.) The disparity in median earnings reflects in part differences in the characteristics of contingent and noncontingent workers.

Contingent workers also were less likely to receive health insurance from their employers. Only 1 in 5 contingent workers had employer-provided coverage, compared with more than 1 in 2 noncontingent workers. (See table 9.) Although contingent workers were less likely to have health insurance coverage through their jobs, a substantial proportion (two-thirds) had some type of coverage, including those who were covered by family members' policies or who had purchased coverage on their own.

- 4 -

Only about one-fourth of contingent workers were eligible for employer-provided pension plans, compared with nearly one-half of noncontingent workers. (See table 9.) Contingent workers also were less likely to actually participate in employer-provided pension plans--15 versus 44 percent, respectively.

Alternative employment arrangements

The February 1997 supplement also measured the characteristics of workers in four alternative employment arrangements--independent contractors, on-call workers, temporary help agency workers, and workers employed by contract firms. In general, the results of the 1997 survey were very similar to those of the 1995 survey with respect to the numbers and characteristics of these workers. As in the earlier survey, workers in the four groups differed considerably from one another as well as from workers in traditional arrangements.

Independent contractors

Independent contractors, independent consultants, and free-lance workers made up the largest group of workers in alternative employment arrangements. Workers in this group were considerably more likely than workers in traditional arrangements to be men, white, at least 35 years old, and college educated. Specifically, two-thirds of the independent contractors were men, compared with just over one-half of workers in traditional arrangements. Nearly 4 out of 5 were at least 35 years old, compared with 3 out of 5 traditional workers. Fully one-third of independent contractors had a college degree, a higher proportion than traditional workers. (See tables 5, 6, and 7.)

Independent contractors were more likely than traditional workers to hold managerial, sales, or precision production jobs. Relatively few were in technical, administrative support, or operator, fabricator, and laborer positions. Independent contractors were overrepresented in the agriculture, construction, and services industries. About 26 percent of them worked part time, compared with about 18 percent of traditional workers. Independent contractors had a stronger preference for their employment arrangement than did workers in the other alternative arrangements, with 84 percent preferring their arrangement over a traditional job. (See tables 6, 8, and 11.)

On-call workers

On-call workers, who made up the second largest alternative arrangement, are defined as those who report to work only when called, although they can be scheduled to work for several days or weeks in a row. Demographically, they resembled workers in traditional arrangements, but on-call workers were somewhat younger. They also were more likely to be in professional, service, precision production, and operator, fabricator, and laborer occupations and in the services and construction industries. Nearly 53 percent worked part time, the highest proportion of any employment arrangement. One-half of on-call workers had a preference for a traditional arrangement. (See tables 5, 6, 8, and 11.)

Temporary help agency workers

Workers paid by temporary help agencies were more likely than workers in traditional arrangements to be women, young, black, or Hispanic. Eighty percent worked full time. They were heavily concentrated in administrative support and operator, fabricator, and laborer positions and in the services and manufacturing industries. Nearly 60 percent would have preferred a traditional job. (See tables 5, 6, 8, and 11.)

- 5 -

Workers provided by contract firms

Individuals who are employed by companies that provide workers or their services to other companies under contract are in the smallest of the alternative arrangements; these workers are assigned to one customer at a time and perform the work at the customer's worksite. This group was disproportionately male and nearly one-third had a college degree. Most were assigned to the services, manufacturing, public administration, or transportation and public utilities industries. (See tables 6, 7, and 8.)

Compensation of workers in alternative arrangements

Among workers employed full time, there was wide variation in the median earnings of those in alternative work arrangements relative to one another and to workers in traditional arrangements. In February 1997, median weekly earnings for full-time workers employed by contract companies (\$619) were higher than earnings for workers in traditional arrangements (\$510), while earnings for independent contractors were about the same (\$523), and earnings for on-call workers (\$432) and those employed by temporary help agencies (\$329) were lower. This pattern held for men; however, women in traditional arrangements outearned women in every alternative arrangement. (See table 13.)

The earnings differences between the alternative work arrangements reflect in part the occupational concentration of each arrangement. For example, workers employed by temporary help agencies were more likely to hold administrative support and laborer jobs, which pay lower-than-average wages, in general. In contrast, independent contractors were more likely to be in higher-paying managerial and professional specialty jobs.

Compared with workers in traditional arrangements, workers in alternative arrangements (except those employed by a contract company) were less likely to have health insurance coverage from any source at the time of the survey, although coverage rates among the alternative arrangements varied significantly. Temporary help agency workers had the lowest rate of health insurance coverage (only 46 percent had health insurance from any source). In contrast, the coverage rate for contract company workers, 82 percent, was nearly equal to that for workers in traditional arrangements. (See table 9.)

Contract company workers also were most likely to receive health insurance coverage from their employers; 1 in 2 received employer-provided health insurance. Among temporary help agency workers, in contrast, only 7

percent had employer-provided health insurance. Nearly three-fifths of workers in traditional arrangements had health insurance coverage through their employer.

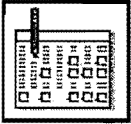
Workers in alternative arrangements were less likely than workers in traditional arrangements to be eligible for employer-provided pension plans, although, as with health insurance coverage, there was wide variation among the arrangements. Nearly half of contract company workers were eligible for their employer's pension plan, for example, compared with only 10 percent of temporary help agency workers. Over one-half of workers in traditional arrangements were eligible for employer-provided pensions. (See table 9.)

Of the four alternative work arrangements, 36 percent of contract company workers actually participated in an employer-provided pension plan, compared with 19 percent of on-call workers and only 4 percent of temporary help agency workers. By comparison, nearly half of workers in traditional arrangements participated in a pension plan at work.

- Contingent and Alternative Employment Arrangements, February 1997 Technical Note
- Table 1. Employed contingent and noncontingent workers by selected characteristics, February 1997
- Table 2. Percent distribution of employed contingent and noncontingent workers by selected characteristics, February 1997
- Table 3. Employed contingent and noncontingent workers by school enrollment and educational attainment, February 1997
- Table 4. Employed contingent and noncontingent workers by occupation and industry, February 1997
- Table 5. Employed workers with alternative and traditional work arrangements by selected characteristics, February 1997
- Table 6. Employed workers with alternative and traditional work arrangements by selected characteristics, February 1997
- Table 7. Employed workers with alternative and traditional work arrangements by school enrollment and educational attainment, February 1997
- Table 8. Employed workers with alternative and traditional work arrangements by occupation and industry, February 1997
- Table 9. Employed contingent and noncontingent workers and those with alternative and traditional work arrangements by health insurance coverage and eligibility for employer-provided pension plans, February 1997
- Table 10. Employed contingent workers by their preference for contingent or noncontingent work arrangements, February 1997
- Table 11. Employed workers with alternative work arrangements by their preference for a traditional work arrangement, February 1997
- Table 12. Employed workers with alternative and traditional work arrangements by contingent and noncontingent employment, February 1997
- Table 13. Median usual weekly earnings of full- and part-time contingent and noncontingent wage and salary workers and those with alternative and traditional work arrangements by sex, age, race, and Hispanic origin, February 1997
- Text version of entire news release



Table of Contents



Labor Force Statistics from the Current Population Survey

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Last modified: Tuesday, February 03 1998

URL: </news.release/conemp.nws.htm>

Labor Force Statistics from the Current Population Survey

Contingent and Alternative Employment Arrangements, February 1997 Technical Note

Technical Note

Source of data

The data presented in this release were collected through a supplement to the February 1997 Current Population Survey (CPS), a monthly survey of about 50,000 households that provides the basic data on employment and unemployment for the nation. This supplement obtained information from workers on whether they held contingent jobs, that is, jobs which were expected to last only a limited period of time. In addition, information was collected on several alternative employment arrangements, namely working as independent contractors and on call, as well as working through temporary help agencies and contract firms.

All employed persons, except unpaid family workers, were included in the supplement. For persons holding more than one job, the questions referred to the characteristics of their main job--the job in which they worked the most hours. A similar survey was conducted in February 1995.

Concepts and definitions

Defining and estimating the contingent workforce. Contingent workers were defined as those who do not have an explicit or implicit contract for long-term employment. Several pieces of information were collected in the supplement from which the existence of a contingent employment arrangement could be discerned. These include: whether the job was temporary or not expected to continue, how long the worker expected to be able to hold the job, and how long the worker had held the job. For workers who had a job with an intermediary, namely a temporary help agency or a contract company, information was collected about their employment at the place they were assigned to work by the intermediary as well as their employment with the intermediary itself.

The key factor used to determine if a worker's job fit the conceptual definition of contingent was whether the job was temporary or not expected to continue. The first questions of the supplement were:

1. Some people are in temporary jobs that last only for a limited time or until the completion of a project. Is your job temporary?
2. Provided the economy does not change and your job performance is adequate, can you continue to work for your current employer as long as you wish?

Respondents who answered "yes" to the first question, or "no" to the second, were then asked a series of questions to distinguish persons who were in temporary jobs from those who, for personal reasons, were temporarily holding jobs that offered the opportunity of ongoing employment. For example, students holding part-time jobs in fast-food restaurants while in school might view those jobs as temporary if they intend to leave them at the end of the school year. The jobs themselves, however, would be filled by other workers once the students leave.

Jobs were defined as being short term or temporary if the person was working only until the completion of a specific project, temporarily

replacing another worker, being hired for a fixed time period, filling a seasonal job that is available only during certain times of the year, or if other business conditions dictated that the job was short term.

Workers also were asked how long they expected to stay in their current job and how long they had been with their current employer. The rationale for asking how long an individual expects to remain in his or her current

- 2 -

job was that being able to hold a job for a year or more could be taken as evidence of at least an implicit contract for ongoing employment. In other words, the employer's need for the worker's services is not likely to evaporate tomorrow. By the same token, the information on how long a worker has been with the employer shows whether a job has been ongoing. Having remained with an employer for more than a year may be taken as evidence that, at least in the past, there was an explicit or implicit contract for continuing employment.

To assess the impact of altering some of the defining factors on the estimated size of the contingent workforce, three measures of contingent employment were developed, as follows:

Estimate 1, which is the narrowest, measures contingent workers as wage and salary workers who indicated that they expected to work in their current job for 1 year or less and who had worked for their current employer for 1 year or less. Self-employed workers, both incorporated and unincorporated, and independent contractors are excluded from the count of contingent workers under estimate 1; the rationale was that people who work for themselves, by definition, have ongoing employment arrangements, although they may face financial risks. Individuals who worked for temporary help agencies or contract companies are considered contingent under estimate 1 only if they expect their employment arrangement with the temporary help or contract company to last for 1 year or less and they had worked for that company for 1 year or less.

Estimate 2 expands the measure of the contingent work force by including the self-employed--both the incorporated and the unincorporated--and independent contractors who expect to be, and had been, in such employment arrangements for 1 year or less. (The questions asked of the self-employed are different from those asked of wage and salary workers.) In addition, temporary help and contract company workers are classified as contingent under estimate 2 if they had worked and expected to work for the customers to whom they were assigned for 1 year or less. For example, a "temp" secretary who is sent to a different customer each week but has worked for the same temporary help firm for more than 1 year and expects to be able to continue with that firm indefinitely is contingent under estimate 2, but not under estimate 1. In contrast, a "temp" who is assigned to a single client for more than a year and expects to be able to stay with that client for more than a year is not counted as contingent under either estimate.

Estimate 3 expands the count of contingency by removing the 1-year requirement on both expected duration of the job and current tenure for wage and salary workers. Thus, the estimate effectively includes all the wage and salary workers who do not expect their employment to last, except for those who, for personal reasons, expect to leave jobs that they would otherwise be able to keep. Thus, a worker who had held a job for 5 years could be considered contingent if he or she now viewed the job as temporary. These conditions on expected and current tenure are not relaxed for the self-employed and independent contractors, because they were asked a different set of questions from wage and salary workers.

Defining alternative employment arrangements. To provide estimates of the number of workers in alternative employment arrangements, the February

1997 CPS supplement included questions about whether individuals were paid by a temporary help agency or contract company, or whether they were on-call workers or independent contractors. Definitions of each category, as well as the main questions used to identify workers in each category, follow.

Independent contractors are all those who were identified as independent contractors, consultants, and free-lance workers in the supplement, regardless of whether they were identified as wage and salary workers or self-employed in the responses to basic CPS labor force status questions. Workers identified as self-employed (incorporated and unincorporated) in the basic CPS were asked, "Are you self-employed as an independent contractor, independent consultant, free-lance worker, or something else (such as a shop or restaurant owner)?" in order to distinguish those who consider themselves to be independent contractors, consultants, or free-lance workers from those who were business operators such as shop owners or restaurateurs. Those identified as wage and salary

- 3 -

workers in the basic CPS were asked, "Last week, were you working as an independent contractor, an independent consultant, or a free-lance worker? That is, someone who obtains customers on their own to provide a product or service."

About 88 percent of independent contractors were identified as self-employed in the main questionnaire, while 12 percent were identified as wage and salary workers. Conversely, about half of the self-employed were identified as independent contractors.

On-call workers are persons who are called into work only when they are needed. This category includes workers who answered affirmatively to the question, "Some people are in a pool of workers who are ONLY called to work as needed, although they can be scheduled to work for several days or weeks in a row, for example, substitute teachers and construction workers supplied by a union hiring hall. These people are sometimes referred to as ON-CALL workers. Were you an ON-CALL worker last week?" Persons with regularly scheduled work which might include periods of being "on call" to perform work at unusual hours, such as medical residents, were not included in this category.

Temporary help agency workers were all those who were paid by a temporary help agency. To the extent that permanent staff of temporary help agencies indicate that they are paid by their agencies, the estimate of the number of workers whose employment was mediated by temporary help agencies is overstated. This category includes workers who said their job was temporary and answered affirmatively to the question, "Are you paid by a temporary help agency?" Also included are workers who said their job was not temporary and answered affirmatively to the question, "Even though you told me your job is not temporary, are you paid by a temporary help agency?"

Workers provided by contract firms are those individuals identified as working for a contract company, and who usually work for only one customer and usually work at the customer's worksite. The last two requirements were imposed to focus on workers whose employment appeared to be very closely tied to the firm for which they are performing the work, rather than include all workers employed by firms that provide services. This category included workers who answered affirmatively to the question, "Some companies provide employees or their services to others under contract. A few examples of services that can be contracted out include security, landscaping, or computer programming. Did you work for a company that contracts out you or your services last week?" These workers also had to respond negatively to the question, "Are you usually assigned to more than one customer?" In addition, these workers had to respond affirmatively to

the question, "Do you usually work at the customer's worksite?"

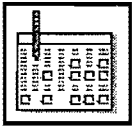
Additional information

Persons interested in additional information about this release or the February supplement should contact (202) 606-6378 (email: CPSINFO@bls.gov). Further information on the concepts used in this release can be found in "Contingent and alternative work arrangements, defined," in the October 1996 issue of the Monthly Labor Review.

Information in this release is made available to sensory impaired individuals upon request. Voice phone: (202) 606-7828; TDD phone: (202) 606-5897; TDD message referral phone: 1-800-326-2577.



Table of Contents



Labor Force Statistics from the Current Population Survey

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Last modified: Tuesday, February 03 1998

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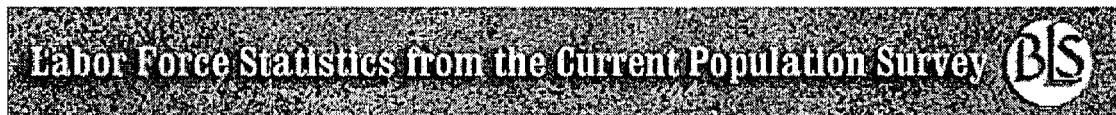


Table 1. Employed contingent and noncontingent workers by selected characteristics, February 1997

Table 1. Employed contingent and noncontingent workers by selected characteristics
(In thousands)

Characteristic	Total employed	Contingent workers	
		Estimate 1	Estimate 2
Age and sex			
Total, 16 years and over.....	126,742	2,385	3,096
16 to 19 years.....	6,031	459	494
20 to 24 years.....	11,958	570	650
25 to 34 years.....	31,647	565	756
35 to 44 years.....	35,282	417	638
45 to 54 years.....	26,146	199	333
55 to 64 years.....	12,032	127	166
65 years and over.....	3,646	49	60
Men, 16 years and over.....			
16 to 19 years.....	67,931	1,181	1,498
20 to 24 years.....	3,068	226	239
25 to 34 years.....	6,269	276	304
35 to 44 years.....	17,185	273	360
45 to 54 years.....	18,965	196	297
55 to 64 years.....	13,775	97	155
65 years and over.....	6,558	83	104
Women, 16 years and over.....	2,111	30	38
Women, 16 years and over.....			
16 to 19 years.....	58,811	1,204	1,599
20 to 24 years.....	2,963	233	255
25 to 34 years.....	5,689	294	345
35 to 44 years.....	14,462	292	395
45 to 54 years.....	16,317	221	341
55 to 64 years.....	12,371	102	178
65 years and over.....	5,474	44	62
	1,535	18	22

Race and Hispanic origin

White.....	107,899	1,895	2,494
Black.....	13,465	318	403
Hispanic origin.....	12,026	290	396

Full- or part-time status

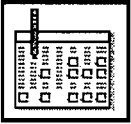
Full-time workers.....	102,813	1,275	1,698
Part-time workers.....	23,929	1,111	1,399

NOTE: Noncontingent workers are those who do not fall into any estimate of for the above race and Hispanic-origin groups will not sum to totals because data are not presented and Hispanics are included in both the white and black population.

characteristics may not sum to totals due to rounding.



Table of Contents



Labor Force Statistics from the Current Population Survey

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Last modified: Tuesday, February 03 1998

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Labor Force Statistics from the Current Population Survey

Table 2. Percent distribution of employed contingent and noncontingent workers by selected characteristics, February 1997

Table 2. Percent distribution of employed contingent and noncontingent workers characteristics, February 1997

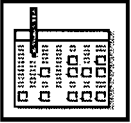
Characteristic	Contingent workers		
	Estimate 1	Estimate 2	Estimate 3
Age and sex			
Total, 16 years and over.....	100.0	100.0	100.0
16 to 19 years.....	19.3	15.9	12.4
20 to 24 years.....	23.9	21.0	17.9
25 to 34 years.....	23.7	24.4	24.8
35 to 44 years.....	17.5	20.6	20.9
45 to 54 years.....	8.3	10.8	13.6
55 to 64 years.....	5.3	5.4	7.3
65 years and over.....	2.0	1.9	3.1
Men, 16 years and over.....	49.5	48.4	49.3
16 to 19 years.....	9.5	7.7	6.2
20 to 24 years.....	11.6	9.8	8.5
25 to 34 years.....	11.4	11.6	12.3
35 to 44 years.....	8.2	9.6	10.2
45 to 54 years.....	4.1	5.0	6.2
55 to 64 years.....	3.5	3.4	3.8
65 years and over.....	1.3	1.2	2.0
Women, 16 years and over.....	50.5	51.6	50.7
16 to 19 years.....	9.8	8.2	6.2
20 to 24 years.....	12.3	11.2	9.4
25 to 34 years.....	12.3	12.8	12.5
35 to 44 years.....	9.3	11.0	10.6
45 to 54 years.....	4.3	5.8	7.4
55 to 64 years.....	1.8	2.0	3.5
65 years and over.....	.8	.7	1.1
Race and Hispanic origin			
White.....	79.4	80.6	81.9
Black.....	13.3	13.0	11.1
Hispanic origin.....	12.2	12.8	12.4
Full- or part-time status			
Full-time workers.....	53.4	54.8	57.5
Part-time workers.....	46.6	45.2	42.5

NOTE: Noncontingent workers are those who do not fall into any estimate of workers. Detail for the above race and Hispanic-origin groups will not sum to total data for the "other races" group are not presented and Hispanics are included in

and black population groups. Detail for other characteristics may not sum to to rounding.



Table of Contents



Labor Force Statistics from the Current Population Survey

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Last modified: Tuesday, February 03 1998

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Labor Force Statistics from the Current Population Survey



Table 3. Employed contingent and noncontingent workers by school enrollment and educational attainment, February 1997

Table 3. Employed contingent and noncontingent workers by school enrollment and attainment, February 1997

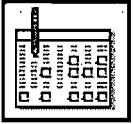
(Percent distribution)

Characteristic	Contingent workers		
	Estimate 1	Estimate 2	Estimate 3
School enrollment			
Total, 16 to 24 years (thousands).....	1,029	1,143	1,690
Percent.....	100.0	100.0	100.0
Enrolled.....	61.4	57.7	63.7
Not enrolled.....	38.6	42.3	36.3
Less than a high school diploma	8.0	9.3	8.5
High school graduates, no college.....	13.5	16.0	13.2
Less than a bachelor's degree..	9.4	9.9	8.2
College graduates.....	7.8	7.1	6.3
Educational attainment			
Total, 25 to 64 years (thousands).....	1,308	1,893	3,710
Percent.....	100.0	100.0	100.0
Less than a high school diploma....	10.0	11.0	10.4
High school graduates, no college..	27.9	28.5	26.8
Less than a bachelor's degree.....	32.7	30.3	27.0
College graduates.....	29.4	30.1	35.9

NOTE: Noncontingent workers are those who do not fall into any estimate of workers. Detail may not sum to totals due to rounding.



Table of Contents



Labor Force Statistics from the Current Population Survey

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Labor Force Statistics from the Current Population Survey

Table 4. Employed contingent and noncontingent workers by occupation and industry, February 1997

Table 4. Employed contingent and noncontingent workers by occupation and industry, February 1997

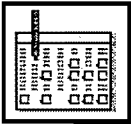
(Percent distribution)

Characteristic	Contingent workers		
	Estimate 1	Estimate 2	Estimate 3
Occupation			
Total, 16 years and over			
(thousands).....	2,385	3,096	5,574
Percent.....	100.0	100.0	100.0
Executive, administrative, and managerial.....	5.2	5.6	7.3
Professional specialty.....	16.2	15.1	21.2
Technicians and related support....	3.2	3.6	3.5
Sales occupations.....	7.0	7.5	5.8
Administrative support, including clerical.....	23.0	20.6	19.7
Services.....	15.9	17.3	15.2
Precision production, craft, and repair.....	10.6	10.4	10.2
Operators, fabricators, and laborers.....	16.3	17.0	14.1
Farming, forestry, and fishing.....	2.5	2.9	3.1
Industry			
Total, 16 years and over			
(thousands).....	2,385	3,096	5,574
Percent.....	100.0	100.0	100.0
Agriculture.....	1.9	2.4	2.8
Mining.....	.3	.3	.4
Construction.....	12.3	12.0	10.1
Manufacturing.....	7.4	7.2	8.0
Transportation and public utilities	2.5	3.5	4.1
Wholesale trade.....	1.7	2.1	1.8
Retail trade.....	13.1	11.6	9.5
Finance, insurance, and real estate	3.6	3.5	3.1
Services.....	54.2	55.1	55.9
Public administration.....	2.8	2.2	4.2

NOTE: Noncontingent workers are those who do not fall into any estimate of workers. Detail may not sum to totals due to rounding.



Table of Contents



Labor Force Statistics from the Current Population Survey

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Last modified: Tuesday, February 03 1998

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Labor Force Statistics from the Current Population Survey

Table 5. Employed workers with alternative and traditional work arrangements by selected characteristics, February 1997

Table 5. Employed workers with alternative and traditional work arrangements by February 1997

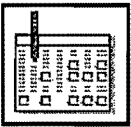
(In thousands)

Characteristic	Total employed	Workers with alternative arra		
		Independent contractors	On-call workers	Temporar help agen workers
Age and sex				
Total, 16 years and over..	126,742	8,456	1,996	1,300
16 to 19 years.....	6,031	66	193	79
20 to 24 years.....	11,958	206	237	214
25 to 34 years.....	31,647	1,549	448	394
35 to 44 years.....	35,282	2,631	508	279
45 to 54 years.....	26,146	2,237	288	211
55 to 64 years.....	12,032	1,173	193	87
65 years and over.....	3,646	595	129	37
Men, 16 years and over....				
16 to 19 years.....	67,931	5,633	979	581
20 to 24 years.....	3,068	25	106	37
25 to 34 years.....	6,269	128	128	125
35 to 44 years.....	17,185	960	236	197
45 to 54 years.....	18,965	1,754	241	90
55 to 64 years.....	13,775	1,495	138	81
65 years and over.....	6,558	838	77	29
Women, 16 years and over..				
16 to 19 years.....	58,811	2,824	1,017	719
20 to 24 years.....	2,963	41	86	42
25 to 34 years.....	5,689	78	109	90
35 to 44 years.....	14,462	589	212	197
45 to 54 years.....	16,317	877	267	189
55 to 64 years.....	12,371	742	150	130
65 years and over.....	5,474	335	116	58
Race and Hispanic origin				
White.....	107,899	7,667	1,783	976
Black.....	13,465	448	156	277
Hispanic origin.....	12,026	614	265	160
Full- or part-time status				
Full-time workers.....	102,813	6,221	947	1,044
Part-time workers.....	23,929	2,235	1,049	256

NOTE: Workers with traditional arrangements are those who do not fall into arrangements" categories. Detail may not add to totals because the total employ alternative arrangement, not shown separately, and a small number of workers wer "provided by contract firms." Detail for the above race and Hispanic-origin gro because data for the "other races" group are not presented and Hispanics are inc black population groups. Detail for other characteristics may not sum to totals



Table of Contents



Labor Force Statistics from the Current Population Survey

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Last modified: Tuesday, February 03 1998

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Labor Force Statistics from the Current Population Survey



Table 6. Employed workers with alternative and traditional work arrangements by selected characteristics, February 1997

Table 6. Employed workers with alternative and traditional work arrangements by February 1997

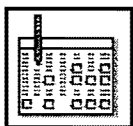
(Percent distribution)

Characteristic	Workers with alternative arrangem		
	Independent contractors	On-call workers	Temporary help agency workers
Age and sex			
Total, 16 years and over.....	100.0	100.0	100.0
16 to 19 years.....	.8	9.6	6.1
20 to 24 years.....	2.4	11.9	16.5
25 to 34 years.....	18.3	22.5	30.3
35 to 44 years.....	31.1	25.4	21.5
45 to 54 years.....	26.5	14.4	16.2
55 to 64 years.....	13.9	9.7	6.7
65 years and over.....	7.0	6.5	2.8
Men, 16 years and over.....	66.6	49.0	44.7
16 to 19 years.....	.3	5.3	2.9
20 to 24 years.....	1.5	6.4	9.6
25 to 34 years.....	11.4	11.8	15.1
35 to 44 years.....	20.7	12.1	6.9
45 to 54 years.....	17.7	6.9	6.2
55 to 64 years.....	9.9	3.9	2.2
65 years and over.....	5.1	2.6	1.7
Women, 16 years and over.....	33.4	51.0	55.3
16 to 19 years.....	.5	4.3	3.2
20 to 24 years.....	.9	5.4	6.9
25 to 34 years.....	7.0	10.6	15.1
35 to 44 years.....	10.4	13.4	14.6
45 to 54 years.....	8.8	7.5	10.0
55 to 64 years.....	4.0	5.8	4.4
65 years and over.....	1.9	3.9	1.1
Race and Hispanic origin			
White.....	90.7	89.3	75.1
Black.....	5.3	7.8	21.3
Hispanic origin.....	7.3	13.3	12.3
Full- or part-time status			
Full-time workers.....	73.6	47.4	80.3
Part-time workers.....	26.4	52.6	19.7

NOTE: Workers with traditional arrangements are those who do not fall into arrangements" categories. Detail for the above race and Hispanic-origin groups data for the "other races" group are not presented and Hispanics are included in population groups. Detail for other characteristics may not sum to totals due t



Table of Contents



Labor Force Statistics from the Current Population Survey

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Last modified: Tuesday, February 03 1998

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Table 7. Employed workers with alternative and traditional work arrangements by school enrollment and educational attainment, February 1997

Table 7. Employed workers with alternative and traditional work arrangements by educational attainment, February 1997

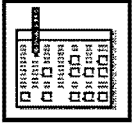
(Percent distribution)

Characteristic	Workers with alternative arrangem		
	Independent contractors	On-call workers	Temporary help agency workers
School enrollment			
Total, 16 to 24 years			
(thousands).....	272	429	294
Percent.....	100.0	100.0	100.0
Enrolled.....	30.7	50.4	16.1
Not enrolled.....	69.3	49.6	83.9
Less than a high school diploma	9.5	15.8	14.7
High school graduates, no college.....	27.7	21.5	31.6
Less than a bachelor's degree..	24.1	7.8	28.7
College graduates.....	7.9	4.4	8.8
Educational attainment			
Total, 25 to 64 years			
(thousands).....	7,590	1,437	970
Percent.....	100.0	100.0	100.0
Less than a high school diploma....	8.7	13.4	11.2
High school graduates, no college..	30.3	28.7	30.7
Less than a bachelor's degree.....	26.8	32.0	36.3
College graduates.....	34.1	25.9	21.8

NOTE: Workers with traditional arrangements are those who do not fall into arrangements" categories. Detail may not sum to totals due to rounding.



Table of Contents



Labor Force Statistics from the Current Population Survey

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Labor Force Statistics from the Current Population Survey



Table 8. Employed workers with alternative and traditional work arrangements by occupation and industry, February 1997

Table 8. Employed workers with alternative and traditional work arrangements by February 1997

(Percent distribution)

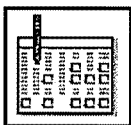
Characteristic	Workers with alternative arrangem		
	Independent contractors	On-call workers	Temporary help agency workers
Occupation			
Total, 16 years and over (thousands).....	8,456	1,996	1,300
Percent.....	100.0	100.0	100.0
Executive, administrative, and managerial.....	20.7	2.7	6.9
Professional specialty.....	17.9	21.2	6.6
Technicians and related support....	.8	4.1	5.8
Sales occupations.....	17.9	6.7	1.7
Adminstrative support, including clerical.....	3.9	8.6	34.1
Services.....	9.1	20.4	9.0
Precision production, craft, and repair.....	17.9	14.7	5.2
Operators, fabricators, and laborers.....	6.8	18.8	29.1
Farming, forestry, and fishing.....	5.1	2.8	1.6
Industry			
Total, 16 years and over (thousands).....	8,456	1,996	1,300
Percent.....	100.0	100.0	100.0
Agriculture.....	5.7	3.4	-
Mining.....	.2	.4	.6
Construction.....	20.7	14.4	2.2
Manufacturing.....	4.7	5.3	27.7
Transportation and public utilities	5.1	8.6	5.3
Wholesale trade.....	3.5	1.7	3.8
Retail trade.....	10.1	12.5	3.4
Finance, insurance, and real estate	8.4	1.5	7.4
Services.....	41.4	47.5	36.6
Public administration.....	.2	4.0	(1)
Not reported or ascertained.....	-	.6	12.9

1 Less than 0.05 percent.

NOTE: Workers with traditional arrangements are those who do not fall into arrangements" categories. Detail may not sum to totals due to rounding. For te and workers provided by contract firms, the industry classification is that of t assigned. Dash represents zero.



Table of Contents



Labor Force Statistics from the Current Population Survey

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Last modified: Tuesday, February 03 1998

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Labor Force Statistics from the Current Population Survey



Table 9. Employed contingent and noncontingent workers and those with alternative and traditional work arrangements by health insurance coverage and eligibility for employer-provided pension plans, February 1997

Table 9. Employed contingent and noncontingent workers and those with alternative work arrangements by health insurance coverage and eligibility for employer-provided pension plans, February 1997

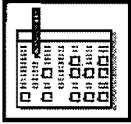
Characteristic	Total employed	Percent with health insurance coverage	
		Total	Provided by employer(1)
Contingent workers:			
Estimate 1.....	2,385	60.5	10.9
Estimate 2.....	3,096	59.2	9.4
Estimate 3.....	5,574	66.1	20.7
Noncontingent workers.....	121,168	82.2	53.9
With alternative arrangements:			
Independent contractors.....	8,456	72.7	(3)
On call workers.....	1,996	67.3	19.6
Temporary help agency workers....	1,300	46.4	7.0
Workers provided by contract firms.....	809	81.7	50.2
With traditional arrangements.....	114,199	82.8	57.5

1 Excludes the self-employed (incorporated and unincorporated) and independent contractors.
2 Excludes the self-employed (incorporated and unincorporated); includes independent self-employed.
3 Not applicable.

NOTE: Noncontingent workers are those who do not fall into any estimate of workers with alternative arrangements; those who do not fall into any of the "alternative" categories are those who do not fall into any of the "alternative" categories.



Table of Contents



Labor Force Statistics from the Current Population Survey

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Table 10. Employed contingent workers by their preference for contingent or noncontingent work arrangements, February 1997

Table 10. Employed contingent workers by their preference for contingent or non February 1997

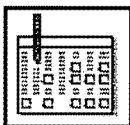
(Percent distribution)

Preference	Contingent worke	
	Estimate 1	Estimate 2
Total, 16 years and over		
(thousands).....	2,385	3,096
Percent.....	100.0	100.0
Prefer noncontingent employment....	60.2	56.7
Prefer contingent employment.....	34.1	35.8
It depends.....	4.9	5.2
Not available.....	.9	2.3

NOTE: Noncontingent workers are those who do not fall into any estimate of may not sum to totals due to rounding.



[Table of Contents](#)



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Table 11. Employed workers with alternative work arrangements by their preference for a traditional work arrangement, February 1997

Table 11. Employed workers with alternative work arrangements by their preference for a traditional work arrangement, February 1997

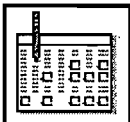
(Percent distribution)

Preference	Independent contractors	On-call worker
Total, 16 years and over		
(thousands).....	8,456	1,996
Percent.....	100.0	100.0
Prefer traditional arrangement.....	9.3	50.0
Prefer indirect or alternative arrangement.....	83.6	40.0
It depends.....	4.6	6.4
Not available.....	2.5	3.5

NOTE: Detail may not sum to totals due to rounding.



[Table of Contents](#)



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Table 12. Employed workers with alternative and traditional work arrangements by contingent and noncontingent employment, February 1997

Table 12. Employed workers with alternative and traditional work arrangements by contingent and noncontingent employment, February 1997

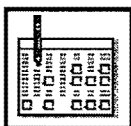
Arrangement	Total (thousands)	Percent of Contingent workers	
		Estimate 1	Estimate 2
With alternative arrangements:			
Independent contractors.....	8,456	(1)	3.5
On-call workers.....	1,996	13.9	14.2
Temporary help agency workers....	1,300	27.7	42.5
Workers provided by contract firms.....	809	5.3	12.0
With traditional arrangements.....	114,199	1.5	1.6

1 Not applicable. Excludes independent contractors and the self-employed (inco

NOTE: Noncontingent workers are those who do not fall into any estimate of "with traditional arrangements are those who do not fall into any of the "alterna



[Table of Contents](#)



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Labor Force Statistics from the Current Population Survey

Table 13. Median usual weekly earnings of full- and part-time contingent and noncontingent wage and salary workers and those with alternative and traditional work arrangements by sex, age, race, and Hispanic origin, February 1997

Table 13. Median usual weekly earnings of full- and part-time contingent and noncontingent wage and salary workers and those with alternative and traditional work arrangements by sex, age, race, and Hispanic origin, February 1997

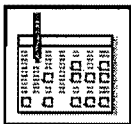
Characteristic	Contingent workers			Workers with alternative and traditional work arrangements	
	Estimate 1	Estimate 2	Estimate 3	Noncontingent workers	Independent contractors
Full-time workers					
Total, 16 years and over.....	\$356	\$368	\$417	\$510	\$523
Men.....	406	424	486	579	592
Women.....	298	307	354	449	400
White.....	362	371	427	523	574
Black.....	320	376	377	426	383
Hispanic origin.....	277	284	278	359	425
Part-time workers					
Total, 16 years and over.....	102	105	111	146	189
Men.....	102	104	111	129	227
Women.....	103	105	110	153	163
White.....	100	102	110	145	191
Black.....	103	108	107	150	159
Hispanic origin.....	104	104	101	142	175

1 Data not shown where base is less than 75,000.

NOTE: Noncontingent workers are those who do not fall into any estimate of traditional arrangements are those who do not fall into any of the "alternative for contingent and noncontingent workers exclude the incorporated self-employed independent contractors include the incorporated and unincorporated self-employed from the data for workers with other arrangements.



Table of Contents



Labor Force Statistics from the Current Population Survey

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URL: </news.release/conemp.t13.htm>

Flexible labor: restructuring the American work force

Trends in employment, occupations, output, and input provide evidence that firms have increased their purchases of services relative to directly hiring labor

Angela Clinton

Many businesses are redefining the structure of their firms by moving toward flexible staffing. In these firms, persons who formerly were hired directly are being replaced with purchases of services. Such market-mediated arrangements could include outsourcing or contracting out of various functions, utilizing temporary workers, or even leasing an entire work force to meet all labor needs. To the extent that this is happening, some employment that, in the past, was counted in the industry of the business site is now being counted in the services industry. The result distorts time series and can lead to faulty analysis about job trends in an industry. This has been of particular concern in the manufacturing industries.

Much research has been done to explain the shift from direct hires of permanent workers to contingent workers. Flexible work arrangements have been used as a means to meet fluctuations in demand for the firm's product, to supplement staff due to absences from work, and to reduce labor costs.¹ Some studies indicate that firms purchase services to avoid unionism.² Other studies cite increased competition and profit maximization as factors that lead to increased use of flexible staffing arrangements.³ Still others show that more companies are taking advantage of greater economies of scale achieved by service firms or the specialized skills they offer.⁴

This article focuses on business services and engineering and management services, two industry groups that provide flexible labor services and have been adding employees more

rapidly than the overall U.S. nonfarm economy.⁵ (See table 1.) Occupational employment and output of these service industries, as well as inputs of business services and engineering and management services to the production process of other industries, will be analyzed to see whether their trends provide information that might be of value in future research regarding the causal factors in the shift toward market-mediated work arrangements.

Employment trends

Employment in business services has grown by an astounding 6.9 percent annually since 1972 and by 5.8 percent per year since 1988.⁶ Although jobs in engineering and management services expanded at about half that pace, 3.1 percent, this was still twice as fast as in all industries combined. In fact, of the nearly 14.3 million jobs added to the economy from 1988 to 1996, more than 22 percent were in the business services and engineering and management industry groups. Table 2 shows employment levels and growth rates for the total nonfarm economy, these major industry groups, and their component industries. Nearly all of the industries in business and engineering and management services have experienced employment gains that were stronger than that of the total U.S. economy.

Employment in business services. Business services is composed of eight industries; four of these account for more than 85 percent of total

Angela Clinton is an economist in the Division of Monthly Industry Employment Statistics, Bureau of Labor Statistics.

Table 1. Employment growth in business services and engineering and management services as a percent of the total nonfarm economy, 1972-96

Industry group	Percent of employment			Percent of job growth	
	1972	1988	1996	1972- 88	1988- 96
Business services	2.0	4.4	6.1	10.0	18.3
Personnel supply	.3	1.3	2.2	3.6	9.1
Engineering and management	(¹)	2.1	2.4	(¹)	4.3

¹ Series not available.

employment in this major group. (See chart 1.) Employment in each of the business services industries grew more rapidly than that of the total nonfarm economy, with the exception of advertising. Expanding at more than 5 times the pace of the total economy since 1972, personnel supply services (11.4 percent) and computer services (10.7 percent) achieved the strongest average annual growth rates in business services. (See chart 2 and table 2.)

Personnel supply services employed 2.6 million workers at the close of 1996 and is the largest employer in business services. Help supply services, which includes temporary help and the staff of employee leasing establishments, accounts for nearly 90 percent of the employment in personnel supply services, as well as for virtually all of the employment growth.⁷ This was the most rapidly expanding industry in both business services and engineering and management services between 1972 and 1996.

Growth in computer services was spurred on by new and changing technology.⁸ Although it grew more rapidly prior to 1988, employment in this business services industry increased at a rate second only to personnel supply services between 1972 and 1996.

Three computer services industries—computer programming, prepackaged software, and miscellaneous computer services, which includes computer services that are not classified elsewhere by the Standard Industrial Classification system, such as computer consulting—account for about three-fourths of this growth over the 1988-96 period and expanded their share of employment from 42 percent to 56 percent of all industries in computer services. In fact, employment in each of these three computer services industries grew by more than 10 percent annually over the 1988-96 period, while employment in computer integrated systems design and in information retrieval services grew about half this pace. The latter industry, which includes services to access the internet, expanded in 1995 with an astounding 18.5-percent employment increase over the prior year, followed by a 20.2-percent in-

crease the next year.⁹ By the close of 1996, there were more than 1.2 million employees working in the computer services industries.

Miscellaneous business services establishments, which provide services such as guards, security systems, news syndication, and photofinishing, contributed almost 60,000 jobs per year to nonfarm payrolls since 1988. Since 1972, two other business services industries—services to buildings and mailing, reproduction, and stenographic services—added to worker totals at more than twice the rate of the nonfarm economy. However, since 1988, the average number of jobs added per year was 15,000 in services to buildings and 11,000 in mailing, reproduction, and stenographic services.

Employment in engineering and management. Engineering and management services employed about 2.9 million people, in four industries, at the close of 1996. (See chart 3.) Employment in this major industry group has grown at a pace about 2 times that for all nonfarm establishments since 1988. And, like business services, employment trends vary by industry.

Management and public relations services stands out in terms of its rate of employment growth and the number of jobs added per year. This industry accounted for nearly 60 percent of all the jobs added by engineering and management services since 1988, and expanded at over 4 times the rate of the nonfarm economy. (See chart 4.) Three component industries—management services (SIC 8741), management consulting services (SIC 8742), and business consulting, not elsewhere classified (SIC 8748)—accounted for 90 percent of employment growth in management and public relations.

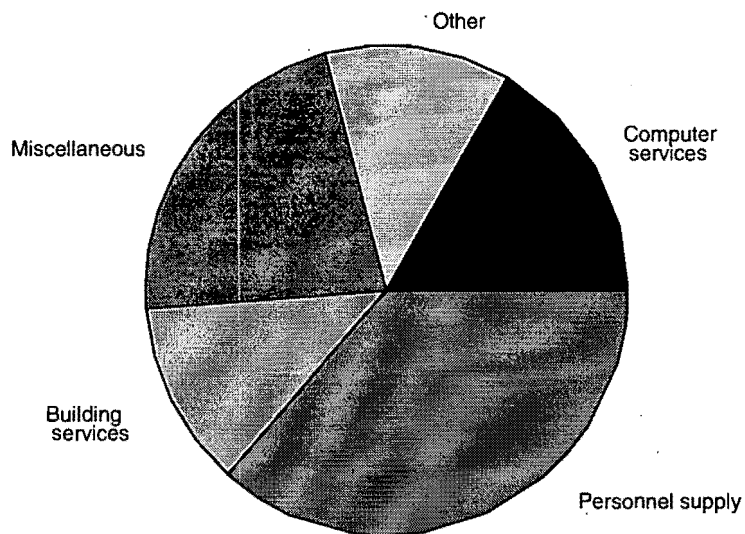
Engineering and architectural services, as well as accounting, auditing, and bookkeeping services added jobs at about twice the pace of the economy between 1972 and 1996. However, the rapid growth occurred during the early years of this period and, since 1988, employment growth in these industries has slowed to about the same rate as that for all nonfarm establishments.

Employment in business services and engineering and management services grew more rapidly than that of the total nonfarm economy. Logically, one might expect that industries which purchase services rather than hire employees would be losing workers in those occupations that are employed intensively by the service industries. And, conversely, the proportion of all workers in occupations employed intensively in the service industries would be rising in those industries. The next section closely examines these industries by analyzing occupational trends:

Occupational employment trends

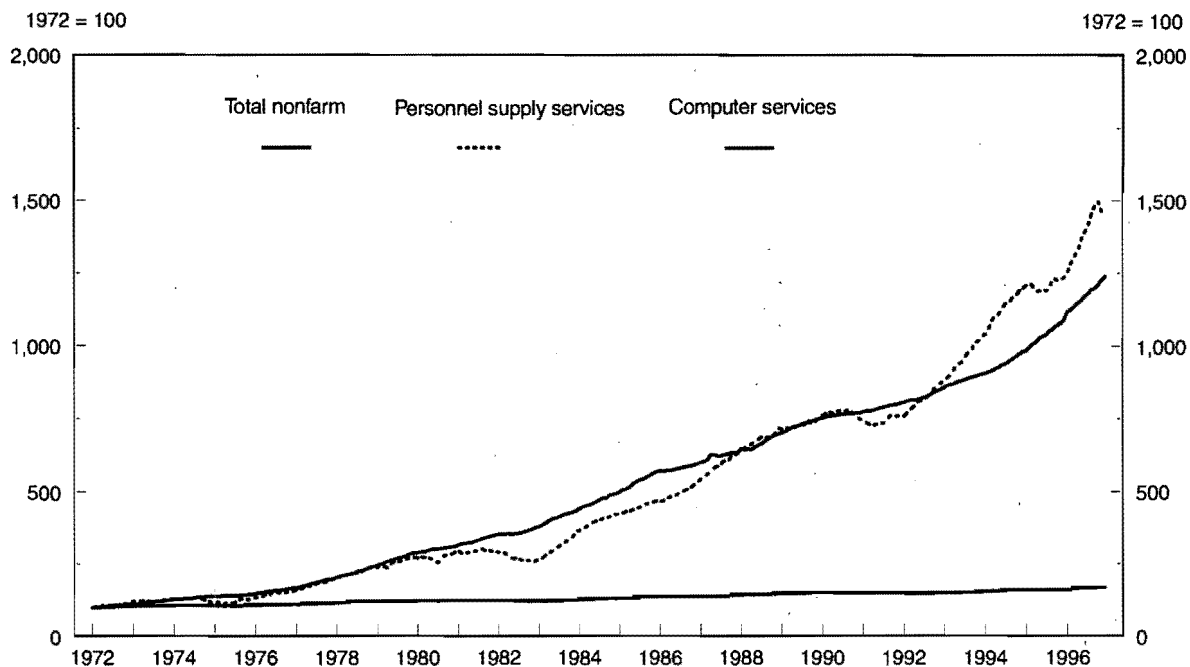
Occupational shifts became apparent in business services and engineering and management services as employment growth

Chart 1. Employment distribution in business services, 1996 annual averages



NOTE: "Other" includes advertising services, consumer credit and collection, mailing and related services, and miscellaneous equipment rental.

Chart 2. Employment index of total nonfarm, personnel supply, and computer services, 1972 to 1996



in the two industry groups outpaced that of the total nonfarm economy.¹⁰

Occupational trends in business services. Approximately one-fifth of all wage and salary workers in the economy were employed in administrative support occupations, including clerical, in 1995. While employment in this occupational group increased at a rate slightly below that of all wage and salary workers, business services hired about 1 in every 4 new administrative support workers and increased its share of these employees from 5 percent in 1983 to about 9 percent or 2.1 million in 1995. (See table 3.) Personnel supply establishments employed nearly half of the workers in administrative support occupations within this industry group.

Similar trends are evident in the helpers, laborers, and material movers, hand (helpers) occupational group, which accounted for about 4 percent of all wage and salary workers in 1995. Business services hired about 44 percent of all new helpers since 1983 and more than doubled its share of these workers to nearly 11 percent. More than three-fourths of these helpers in business services were employed by personnel supply establishments toward the end of the period.

Employment of cleaning and building services occupations,

except private household workers (cleaners), increased at about the same rate as that for all wage and salary workers from 1983 to 1995. However, half of the net employment gains were in business services, which increased its portion of cleaners by 7 percentage points over this time. More than 90 percent of the cleaners in business services were employed through establishments which provide services to dwellings and other buildings.

The dependence of business on personnel supply firms for lower skilled workers such as administrative support workers and helpers is demonstrated by Katharine G. Abraham who found that firms rely more heavily on temporary help supply workers in occupations such as office and clerical workers, for which firm-specific skills are generally not required.¹¹

Two highly skilled occupational groups, computer engineers, scientists, and systems analysts (systems analysts) and computer programmers, had strong gains in wage and salary employment growth from 1983 to 1995. Employment of systems analysts increased by 34 percent and that of programmers increased by almost 300 percent over the same period. Business services accounted for more than 1 in 3 systems analysts and more than 8 in 10 programmers added since 1983. In 1995, about 80 percent of the systems analysts and pro-

Table 2. Employment levels and growth in the total nonfarm economy, business services, and engineering and management services, 1972-96

Industry	Employment (thousands)			Average annual growth			
	1972	1988	1996	1972-96		1988-96	
				Number	Percent	Number	Percent
Total nonfarm	73,675	105,209	119,523	1,910	2.1	1,789	1.6
Business services	1,491	4,638	7,254	240	6.9	327	5.8
Advertising	122	229	242	5	3.0	2	.7
Credit and collection	76	93	127	2	2.2	4	4.0
Mailing and related services	82	208	297	9	5.6	11	4.6
Services to buildings	336	780	897	23	4.2	15	1.8
Miscellaneous equipment rental	(¹)	180	238	(¹)	(¹)	7	3.6
Personnel supply	214	1,350	2,646	101	11.4	162	9.0
Help supply	(¹)	1,126	2,341	(¹)	(¹)	152	9.8
Computer services	107	673	1,208	46	10.7	67	7.6
Miscellaneous business services	(¹)	1,125	1,600	(¹)	(¹)	59	4.5
Engineering and management	(¹)	2,230	2,846	(¹)	(¹)	77	3.1
Engineering and architectural	339	730	839	21	3.9	14	1.8
Accounting	204	500	566	15	4.4	8	1.6
Research, development, and testing	(¹)	492	569	(¹)	(¹)	10	1.8
Management and public relations	(¹)	508	873	(¹)	(¹)	46	7.1

¹ Not available.

Note: Employment levels and average annual numbers for growth are in thousands.

Average annual number growth is the difference between the beginning and

the end of the period divided by the number of years.

$$\text{Average annual percent growth} = \frac{\sum_{i=1}^n \left(\frac{x_{i+1}}{x_i} - 1 \right)}{n - i} \times 100$$

Chart 3. Employment distribution in engineering and management services, 1996 annual averages

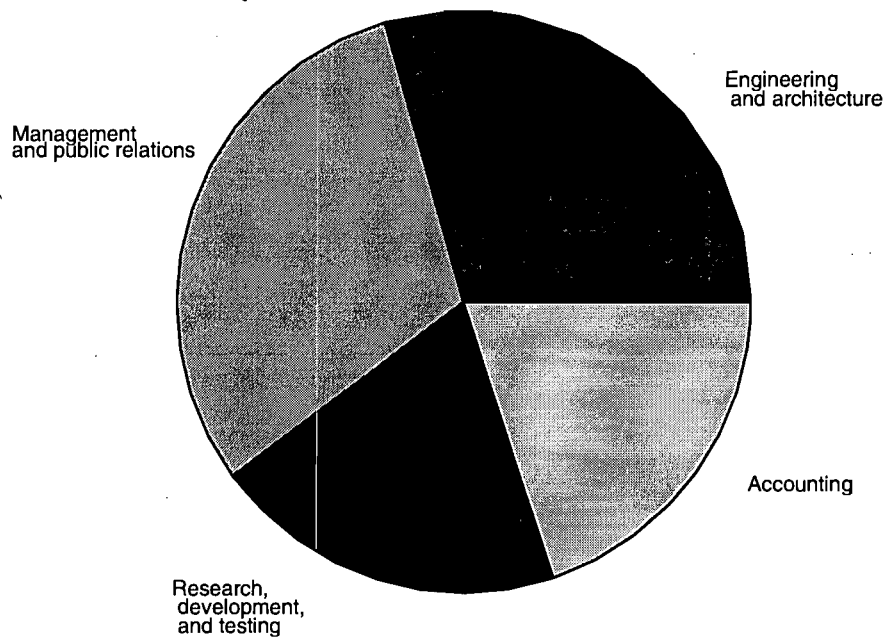


Chart 4. Employment indexes for total nonfarm and management and public relations services, 1988-96

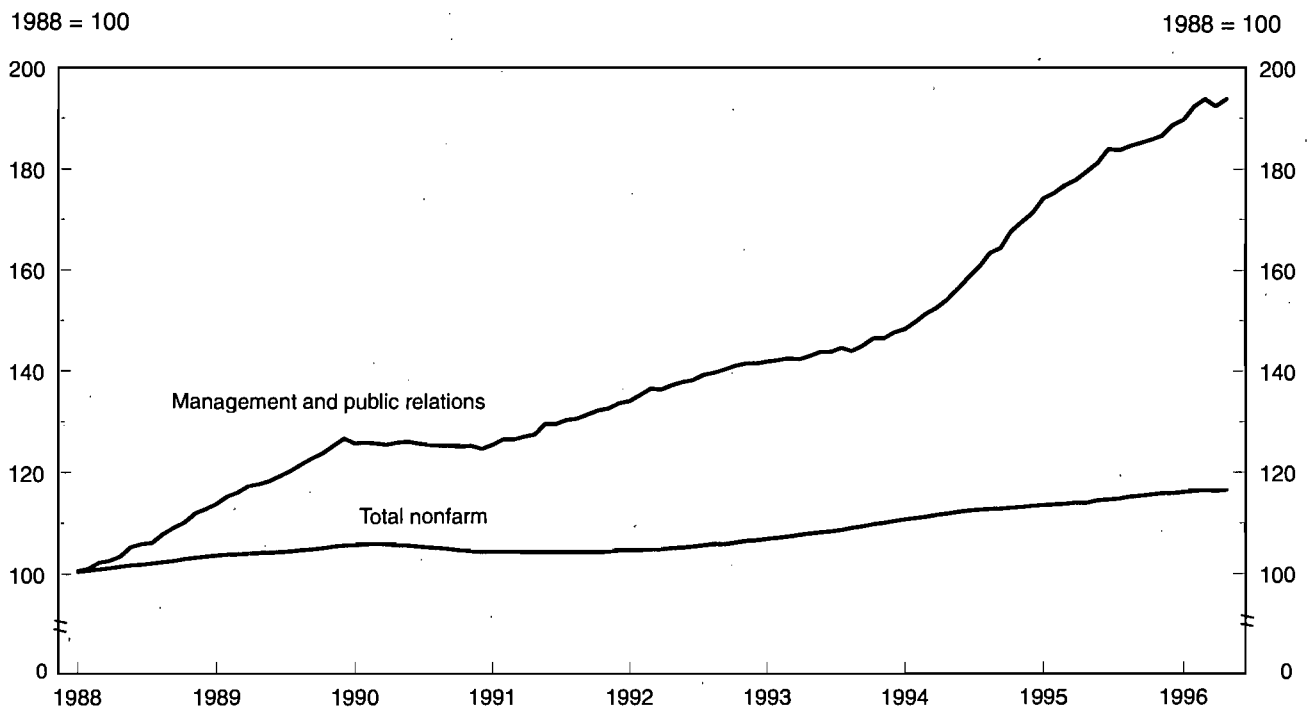


Table 3. Percent of workers in various business-support occupations, employed in business services industry, 1983 and 1995

Occupational group	1995 employment	Percent	
		1983	1995
Administrative support, including clerical	2,135,266	5	9
Communications equipment operators	62,607	13	19
Computer operators and peripheral equipment operators	66,258	15	23
Mail clerks and messengers	56,333	16	22
Records processing occupations	300,274	4	9
Secretaries	321,587	5	10
Typists and word processors	154,453	11	24
Helpers, laborers, and material movers, hand	525,082	4	11
Cleaning and building services occupations	801,476	17	24
Computer engineers, scientists, and systems analysts	233,558	18	29
Computer programmers	212,946	24	40

NOTE: Data are for wage and salary workers only.

grammers in business services worked in the computer services industry.

While occupational evidence shows that business services added proportionately more workers in occupations key to personnel supply services, computer and data processing services, and services to buildings, occupational data for key occupations in other business services industries—artists and commercial artists, bill and account collectors, and photographers and camera operators—do not exhibit this transition.

Occupational trends in engineering and management services. Nearly 3 percent of all wage and salary workers were employed in managerial and administrative occupations (managers) in 1995, up from 2 percent in 1983. (See table 4.) Employment of managers in the engineering and management industry grew at more than 3 times the rate of all wage and salary managers, expanding by about 6.5 percent per year from 1983 to 1995. About two-thirds of the managers in the engineering and management industry were specifically in management and public relations businesses at the end of this period.

Engineering and management services employed about 18 percent of all engineers in 1995, with nearly all of these workers in two component industries—engineering and architectural services (74 percent) and research, development, and testing services (25 percent). The engineering and management industries increased their share of engineers by 5 percentage points since 1983. In fact, the increase of 70,000 engineers in

engineering and management services more than compensated for a net loss of 6,000 engineers in other industries. Similar trends are evident for engineering and science technicians and technologists, with engineering and management services accounting for 4 out of every 5 new engineering positions.

Industry shifts in occupational employment

While occupational data show that business services and engineering and management services increased their use of several key occupations more rapidly than did all industries combined, the data also can be used to show which industries may be giving up these occupations. Shift-share analysis will be utilized to examine changing employment trends by industry group.¹²

This application of the shift-share technique breaks industry employment into three components—national wage and salary share, occupational mix, and occupational share. Table 5 shows wage and salary employment change in each industry division along with the division's shift-share components.¹³ The national share shows what employment would have been had the industry grown at the rate of all industries combined. Employment in an industry is growing more rapidly than the national average when wage and salary employment change is greater than the corresponding national share. Business services, for example, would have increased by only one-fifth of the actual employment gain from 1983 to 1995.

The occupational mix shows how industry employment was affected by the overall change in occupations, relative to the average change for all occupations. A negative occupational mix implies an industry with higher concentrations of declining occupations. The occupational mix statistics in table 5 show that the goods-producing industries, along with transportation and public utilities, government, and engineering and management services, had relatively more workers employed in occupations that were decreasing across all industries. Most of the service-producing industries, including business services, had higher concentrations of expanding occupations. However, the occupational mix effects were quite small when compared to total wage and salary employment change in the corresponding industry.

Table 4. Percent of various professional and managerial occupations employed in the engineering and management services industry, 1983 and 1995

Occupational group	1995 employment	Percent	
		1983	1995
Managerial and administrative	210,783	2	3
Engineers	232,058	13	18
Engineering and science technicians	126,821	9	14

Table 5. Components of change in wage and salary employment by industry groups, 1983-95

[Numbers in thousands]

Industry division	Wage and salary employment change	Components		
		National share	Occupational mix	Occupational share
Business services	4,420	961	51	3,408
Engineering and management services	606	382	-36	260
Agriculture	277	480	4	-207
Mining	-372	275	-1	-646
Construction	1,211	1,139	-37	109
Manufacturing ¹	38	5,318	-146	-5,134
Industrial machinery and equipment	7	592	-9	-576
Electronic and other electrical equipment, instruments and related products	-233	777	-46	-964
Transportation equipment	54	499	-25	-420
Transportation and public utilities	1,207	1,431	-19	-205
Wholesale trade	1,128	1,525	4	-400
Retail trade	5,585	4,498	61	1,026
Finance, insurance, and real estate ¹	1,364	1,577	50	-263
Depository and nondepository institutions	192	663	13	-484
Services, except business services and engineering and management	9,736	6,793	52	2,892
Health services	3,231	2,049	22	1,160
Government	1,535	2,357	-3	-819

¹ Includes other industries not shown separately.

The occupational share component shows industry employment change due to the difference between an industry's occupational changes and the growth or decline of those occupations across all industries. Positive occupational shares indicate that the industry had larger concentrations of occupations that were increasing more rapidly than the corresponding national occupational levels. Changes in the number of administrative support workers in business services best illustrates this point. The growth of occupational share in business services (3,408 workers) resulted, in part, from a 124-percent increase in the number of administrative support workers in business services, compared with only a 26-percent increase for those workers across all industries, along with a high concentration of those workers.

The rapid rise in employment for both business services and engineering and management services coincides with a greater share of the occupations they employ. More than three-fourths of employment change in business and 43 percent of job growth in engineering and management services represent increasing occupational shares. Three other industry groups—construction, retail trade, and services, excluding business services and engineering and management services—had relatively small increases in employment that were related to their occupational shares, while the remaining industries had negative shares. Manufacturing stands out, with the largest negative impact due to occupational share. In other words, employment in occupational groups in manufacturing was not rising as rapidly or was falling more rapidly than the

corresponding national averages.

Share indexes based on occupational ratios for the different occupations and industries may identify occupations that have had a negative impact on employment and, therefore, explain which industries may be replacing employees with the purchase of services.¹⁴ Table 6 shows share indexes for selected occupational groups and industries. Share indexes greater than 1 indicate an occupational group growing faster in the selected industry than the national average for that occupation, while those less than 1 are growing at a slower rate than average.

Occupational shifts like those of cleaning and building services workers are exactly what one would expect when businesses subcontract for the services that those workers perform. Business services, which includes services to buildings and other dwellings, increased its number of cleaners more rapidly than the national average from 1983 to 1995. Every other industry group had share indexes less than 1, indicating that their change in wage and salary cleaning personnel was below the average for all industries.

Occupational employment in business services was growing more rapidly in 5 of the 8 specific occupational groups as well as the "all other" category. The greatest strengths for this industry were in the lower skilled occupations—administrative support, cleaning, and helpers—in which all or nearly all other industries had slower than average growth.

Engineering and management services had better than average growth in all but two of the occupations studied and

tended to show stronger performance in the higher skilled occupations.

Results are mixed in the other industries shown in table 6. Nearly all of the divisions added lower skilled occupations at slower rates than the national average, while the trends were mixed in the higher skilled occupations. Services, excluding business services and engineering and management, appeared to be the anomaly and had stronger than average growth in most of the occupational groups. Nevertheless, its share index was substantially lower than business services for 7 of the 9 occupational groups, and was lower than that for engineering and management services for managerial and computer occupations.

Industry output

Industry output trends reflect employment growth, especially in business services and engineering and management ser-

vices. Output increased at a more rapid pace in these industries than it did for all industries. (See table 7.) Real industry output for the total economy grew, on average, 2.4 percent annually from 1972 to 1994; over the same period, business services and engineering and management services grew more quickly.¹⁵

Business services output. Averaging 5.8 percent annually, the rate of change for output in the business services industry group was more than twice that for the total economy. The more rapid advances occurred in the late 1970's and late 1980's. Four industry groups were responsible for the strong output growth in this major group: computer services, personnel supply services, services to buildings, and miscellaneous business services combined with consumer credit and collection services and mailing, reproduction, and stenographic services.

Output in computer services, with annual increases of 11

Table 6. Wage and salary employment share indexes by industry division and occupational group, 1983-95

Occupation	Administrative support, including clerical	Cleaning and building services occupations	Computer engineers, scientists, and systems analysts	Computer programmers	Engineering and science technicians	Engineers	Helpers, laborers, and material movers	Managerial and administrative	All other occupations
Business services	1.78	1.43	1.60	1.62	1.06	1.39	2.52	1.83	1.88
Engineering and management services	1.10	.64	1.68	1.25	1.48	1.36	1.00	1.51	1.03
Agriculture	1.29	.83	.15	.28	.52	1.96	.71	1.07	.89
Mining	.45	.54	.24	.46	.75	.53	.46	.45	.48
Construction	1.06	.48	.62	.55	1.33	.75	.97	1.36	1.00
Manufacturing ¹	.75	.59	1.01	.66	.93	.89	.80	.81	.78
Industrial machinery and equipment	.69	.54	1.40	.58	.82	.78	.91	.84	.78
Electronic and other electrical equipment, instruments and related products	.66	.50	1.34	.57	.96	.86	.67	.80	.69
Transportation equipment	.70	.53	.87	.72	.84	.98	.94	.77	.81
Transportation and public utilities	.91	.89	.82	.70	.82	.84	1.15	.99	.98
Wholesale trade	.90	.75	.68	.63	1.16	1.56	.95	.89	.97
Retail trade	.94	.88	1.66	1.27	1.17	1.24	.96	.75	1.11
Finance, insurance, and real estate ¹	.93	.91	.82	.98	.80	1.13	.62	1.03	1.00
Depository and nondepository institutions	.82	.63	.66	.71	.70	1.26	.56	.74	1.02
Services, except business services and engineering and management ..	1.16	.98	1.03	.83	1.80	1.37	1.40	1.22	1.07
Health services	1.22	.85	1.16	1.07	1.02	1.30	.95	1.27	1.12
Government	.89	.97	.65	.76	.98	1.01	.91	.98	.92

¹ Includes other industries not shown separately.

NOTE: An occupational share index greater than 1 represents faster than av-

erage occupational growth; a value less than 1 represents slower than average growth.

Table 7. Output growth in business services and engineering and management services, 1972-94

[In million of 1987 dollars]

Industry	1972 output	1994 output	Percent annual growth
All industries	\$5,615,793	\$9,443,929	2.4
Business services	82,663	283,160	5.8
Advertising services	13,095	14,763	.5
Services to buildings	8,945	18,019	3.2
Miscellaneous equipment rental and leasing	14,652	16,585	.6
Personnel supply services	5,616	41,661	9.5
Computer and data processing services	8,943	88,628	11.0
Miscellaneous business services, consumer credit and collection services, and mailing and related services	31,413	103,502	5.6
Engineering and management services	88,470	202,822	3.8
Engineering and architectural services	23,043	64,625	4.8
Accounting, auditing, and other services	31,246	36,753	.8
Research and testing services	16,504	39,139	4.0
Management and public relations ..	17,678	62,305	5.9

percent, was the most rapidly growing industry in business services from 1972 through 1994. While changes in output indicate that more computer services were being purchased, output growth has slowed over time.¹⁶

Personnel supply services, which has help supply services as its major component industry, follows computer services in terms of output growth, with an average 9.5-percent annual rate of expansion. This industry differs slightly from computer services, in that the 1980s was the period of the most rapid growth, averaging 14 percent per year with an astounding 45-percent increase from 1982 to 1983—the first year of recovery from the 1982 recession. Demand for employee leasing services and alternative work arrangements helped spur output as firms responded to the Employee Retirement Income Security Act of 1974 (ERISA) and the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA).¹⁷

Three combined industries—miscellaneous business services, consumer credit and collection services, and mailing, reproduction, and stenographic services—experienced continuous gains in output since 1972, except during recessionary periods. And, these industries tended to expand more rapidly than the total U.S. economy.

Services to buildings also had faster output expansion than the overall economy, 3.2 percent annually from 1972 through 1994. This industry, like miscellaneous business services, enjoyed its strongest performance during the 1980s, yet was weaker than the overall economy in the 1990s.

Output trends of five business services industries—computer

services, personnel supply services, miscellaneous business services, consumer credit and collection, and mailing and related services—indicate expanded use of those services because their output grew more rapidly than the U.S. economy throughout the study period. Output trends of services to buildings are less clear due to recent weakness.

Engineering and management services output. Real output of the engineering and management services industries also grew faster than that of the overall economy, averaging 3.8 percent per year from 1972 to 1994. The greatest gains occurred during the first half of this period. Three industries helped boost output: management and public relations services, engineering and architectural services, and research and testing services.

Management and public relations services exhibited the strongest output trend, averaging 5.9 percent annually. Annual changes in output varied widely in this industry, from declines of as much as 12 percent to increases of up to 27 percent. (See chart 5.)

The output trend in engineering and architectural services was quite strong during the 1970s, while its performance was more similar to that of the total economy during the 1980-94 period. (See chart 6.) Output in this industry expanded at more than 5 times the pace of that in the construction sector, an industry often associated with engineering services.

Research and testing services experienced erratic changes in real output, but managed to average 4-percent annual growth from 1972 to 1994.

Output grew faster than total U.S. output in two industries within engineering and management services—management and public relations services and research, development, and testing. These differences indicate increasing reliance on producers of these services, while output trends in engineering and architectural services are less clear due to recent slowing.

Logically, one would expect output to increase faster in the services industries if firms are procuring these services instead of directly hiring staff to perform the work. Likewise, the percent of these services as inputs to production should be increasing in industries that utilize these services in place of employees.

Inputs to production

As output of business services and engineering and management services expanded faster than that of the whole economy, so too did the use of these services as inputs to production for all industries. In an employer survey, Katharine Abraham found that more than half of all respondents contracted for at least one type of business or administrative support service.¹⁸ Over the 1977-93 period, U.S. firms from nearly all industrial divisions increased their consumption of these services

Chart 5. Percent change in real output in management and public relations services, 1972-1994

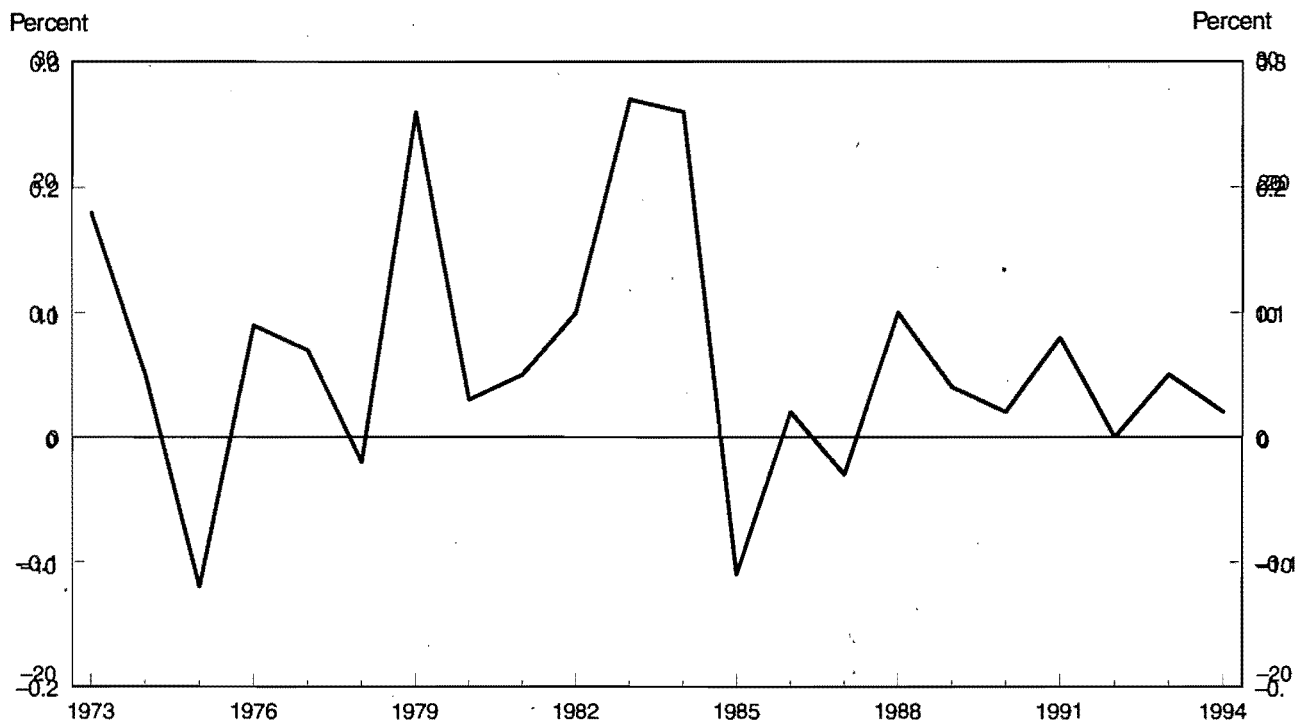
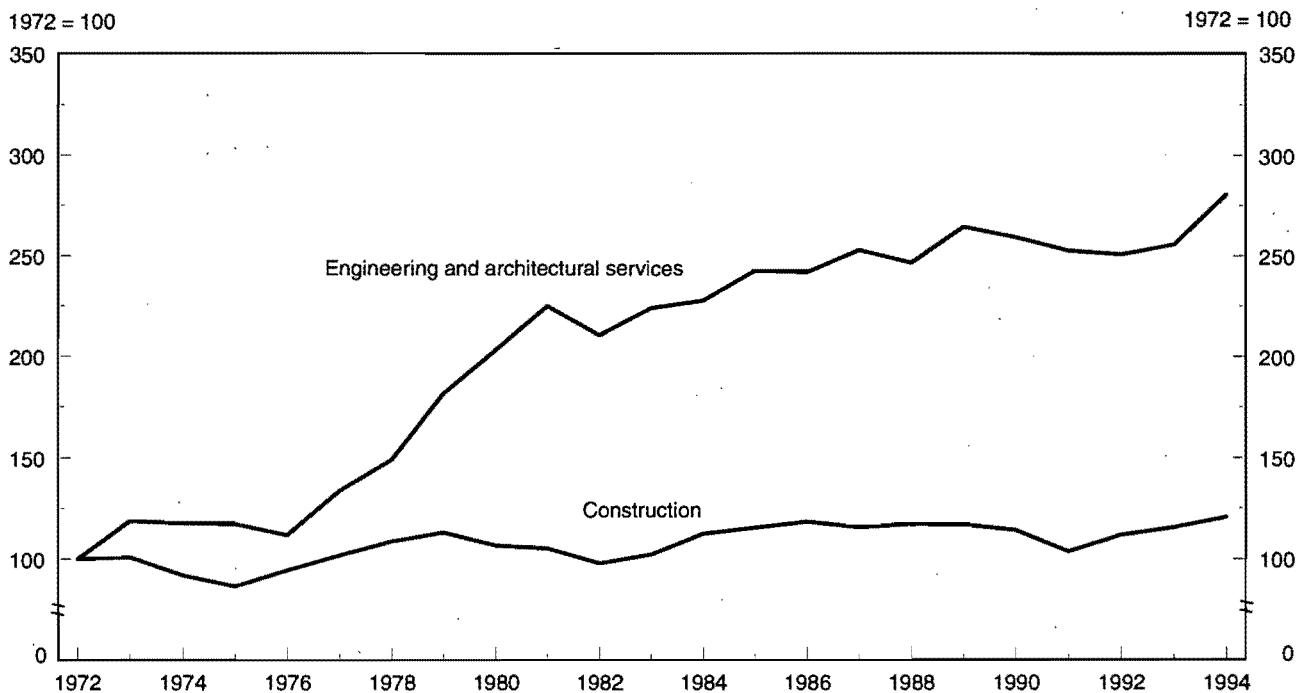


Chart 6. Indexes of real output in engineering and architectural services and construction, 1972-1994



as a percent of all production inputs and as a percent of value added, which includes compensation of employees, indirect business tax and nontax liability, and other value added, except intermediate commodity inputs.¹⁹

Trends in Federal contract actions illustrate the growing dependence on business services and engineering and management services as inputs to production. The U.S. Government is the largest purchaser of goods and services in the world. The total number of contract actions increased by more than a third since 1989, while the total dollar value of contracts was up only slightly. Business services and engineering and management services, combined, accounted for nearly 30 percent of the 446,121 contract actions and captured nearly 31 percent of total contract dollars in 1995, up from 25 percent and 23 percent, respectively, in 1989. (See table 8.) Thus, at least one major purchaser of goods and services, the U.S. Government, relies heavily on contracting arrangements, and that use is growing.

Business services inputs to production. In 1993, inputs of business services accounted for 6.5 percent of value added for all industries, up more than 2 percentage points from 1977. (See table 9.) In other words, inputs of these services were expanding more rapidly than total value added, which includes employee compensation. The largest consumer of business services in 1993 was the services division, and business services were utilized more intensively, relative to value added, by this division than by any other industry division. Nevertheless, finance, insurance, and real estate; transportation and public utilities; and government had more than doubled their use of business services inputs relative to value added from 1977 to 1993. Business services inputs to depository and nondepository institutions, holding, and investment offices rose to nearly 60 percent of value added by 1993, with computer services accounting for about half of those inputs.

Seven of the eight business services were used more intensively across all industries over this period: personnel supply

services, computer services, miscellaneous business services, consumer credit and collection services, mailing and related services, advertising services, and services to buildings.

Personnel supply services inputs as a percent of value added to all industries expanded by a factor of 4 from 1977 to 1993. All of the major industry divisions and nearly every industry within each division increased their use of personnel supply as a percent of value added over this time frame. In her 1988 study, Abraham found that 77 percent of respondents in a survey of firms utilized workers from temporary help agencies.²⁰ The largest relative increase took place in finance, insurance, and real estate, with an eightfold increase of personnel supply services as a percent of value added.

Total inputs of computer services as a percent of value added increased for most of the industrial divisions from 1977 to 1993. The finance, insurance, and real estate industries exhibited the greatest increase in intensive use of these inputs over this time. In fact, computer services inputs represented more than 18 percent of value added in the finance industries.

All of the major divisions except agriculture increased their relative dependence on miscellaneous business services, consumer credit reporting and collection services, and mailing and related services; this was especially true of the finance and insurance industries, which increased these service inputs by 6 times and 9 times the 1977 percentages of value added, respectively.

Input trends for advertising services vary across industries. Since 1977 manufacturing reduced its dependence on advertising inputs relative to value added, while retail trade increased its relative use of this service only slightly. By contrast, transportation and public utilities and finance, insurance, and real estate industries doubled their use of advertising services relative to value added over the same period.

The use of services to buildings inputs as a percentage of value added increased only slightly from 1977 to 1993. In addition, relative utilization of this service expanded more rapidly in finance, insurance, and real estate industries than in

Table 8. Federal procurement actions and dollars for selected industries, 1989-95

Year	Total actions (thousands)	Business services	Engineering and management	Total dollars (million)	Business services	Engineering and management
		Percent of total actions			Percent of total dollars	
1989	326	7.4	17.5	168,695	3.6	19.2
1990	368	7.6	17.4	171,301	3.8	19.7
1991	438	7.8	16.6	189,602	4.2	20.0
1992	502	7.2	16.3	177,786	5.0	22.6
1993	445	8.4	18.7	178,367	5.1	24.1
1994	430	9.5	19.2	174,688	5.5	24.9
1995	446	9.7	19.8	180,852	5.8	25.1

SOURCE: Federal Procurement Report, issues 1989-95 (Washington, U.S. General Services Administration).

Table 9. Business services and engineering management inputs to production for major industry divisions as a percent of value added, 1977 and 1993

Industry division	1977		1993	
	Business services	Engineering and management services	Business services	Engineering and management services
All industries	4.4	2.1	6.5	2.8
Agriculture	1.2	1.6	.7	.5
Mining	.7	.5	.7	.7
Construction	2.3	8.6	2.8	13.4
Manufacturing ¹	5.2	1.3	5.5	1.5
Industrial machinery and equipment	3.4	.3	3.1	.8
Electronic and other electrical equipment, instruments and related products	5.9	.2	5.1	1.1
Transportation equipment	5.5	.2	6.9	.9
Transportation and public utilities	1.8	.9	3.6	1.5
Wholesale trade	10.2	2.1	9.2	1.5
Retail trade	8.2	1.6	9.9	1.8
Finance, insurance, and real estate ¹	2.8	.9	7.8	2.4
Depository and nondepository institutions, holding, and investment offices	8.5	.2	59.8	20.0
Services	8.3	5.2	11.6	5.3
Health services	4.3	.1	10.1	1.5
Government	.1	.2	.3	.6

¹ Includes other industries not shown separately.

all other industrial sectors.

The analysis of inputs to production shows that firms increased their dependence on business services across most of the industries. Although not always the largest consumer of these services, finance, insurance, and real estate increased its use of the various business services relative to value added more than did any other industry division.

Engineering and management inputs to production. Engineering and management services, accounting for 2.1 percent of total value added in 1977, increased its share to 2.8 percent in 1993. Although services consumed the greatest amount of engineering and management services inputs, construction, which was the second largest consumer, utilized these inputs more intensively than all other industries, 13.4 percent of value added in 1993. (See table 9.) Total industry inputs of three services in this major group increased as a percent of value added: engineering and architectural services, management services, and research and development.

Engineering and architectural services were used more intensively in nearly all of the major industry divisions from 1977 to 1993. At the end of this period, engineering and architectural inputs amounted to 12.3 percent of value added in construction, up from 7.7 percent in 1977.

Use of management services as inputs to total production nearly doubled as a percentage of value added from

1977 to 1993, and nearly all industry divisions saw this ratio rise for these services. Finance, insurance, and real estate, which consumes over one-fifth of all management services inputs, more than tripled its use of these services as a percent of value added over this period. Increased demand was mainly in the finance and insurance sectors.

Inputs of research and development increased slightly as a share of value added from 1977 to 1993, and more intensive use was apparent in most of the major divisions. In terms of value added, the services division increased its share of research and development proportionately more than the other industrial divisions.

Thus, use of the professional services in engineering and management services increased relative to value added by most of the industrial sectors. The construction industry exhibited the strongest gains in use of engineering and architectural services, while finance, insurance, and real estate demonstrated similar increases in management and public relations services. Although changing usage was less intense, services showed signs of heightened use of research and development services.

Analogous to the rapidly expanding employment and output trends in business services and engineering and management services, more intensive use of these services as inputs to the production process shows that firms increasingly are purchasing services instead of directly employing labor.

Who's hiring contingent workers?

Trends in employment, occupations, output, and input can shed light on the shift toward contingent workers and away from direct hire of permanent workers. Four industries within business services experienced positive changes in all four of these factors: personnel supply services, computer services, mailing and related services, and services to buildings. (See exhibit 1.) Positive trends in all four factors also occurred in engineering and architectural services (for which occupational data most strongly suggest substitution), management and public relations services, and research, development, and testing services.

Data on occupations and inputs to production indicate which industries may be purchasing services in place of hiring workers directly. (See exhibit 2.) All industries, except the services division, have reduced their direct employment of at least half of the five key business services occupations. In fact, growth in all of the key business services occupations for wholesale trade; finance, insurance, and real estate; and government were slower than the national average (share indexes less than 1). Results from the occupational information are not quite as strong for the engineering and management occupations. Only mining, manufacturing, transportation and public utilities, and government reduced their demand below the U.S. average for at least 2 of the 3 occupations key to engineering and management services.

Input trends suggest that 7 of the 10 divisions increased their

use of business services inputs relative to value added from 1977 to 1993. Two industry divisions stand out—services and finance, insurance, and real estate. The services division, which was the largest user of business services, inputs to production at the end of this period, had increased its use of business services, relative to value added, by 3.5 percentage points. Following services in terms of total business services inputs to production, finance, insurance, and real estate increased its usage, relative to value added, by more than 5 percentage points. Although the manufacturing division used the third greatest amount of business services inputs, it increased its use of these services, relative to value added, by only 0.3 percentage points.

Eight industry divisions increased inputs of engineering and management services. The construction division used about two-thirds of all engineering and architectural services inputs in 1993, and increased its use of these services by 4.6 percentage points of value added since 1977. The services division utilized the largest share of management and public relations inputs. However, while services used these inputs more intensively relative to value added than any other industry division, there was little change in intensity since 1977. Finance, insurance, and real estate, which used the second greatest amount of management and public relations inputs, nearly tripled its use relative to value added. The services division also was the largest user of all research, development, and testing inputs, purchasing about half of them, and services increased their usage, as a percent of value added, more than the other industry divisions.

Exhibit 1. Evidence of substitution of service for direct labor

Industry	Employment ¹	Occupations ²	Output ³	Production ⁴
Business services:				
Advertising services	Yes	No	No	Yes
Consumer credit and reporting	Yes	No	Yes	Yes
Mailing and related services	Yes	Yes	Yes	Yes
Services to buildings	Yes	Yes	Yes	Yes
Miscellaneous equipment rental and leasing	Yes	—	No	No
Personnel supply services	Yes	Yes	Yes	Yes
Computer services	Yes	Yes	Yes	Yes
Miscellaneous business services	Yes	—	Yes	Yes
Engineering and management services:				
Engineering and architectural services	Yes	Yes	Yes	Yes
Accounting services	Yes	—	No	No
Research, development, and testing services	Yes	Yes	Yes	Yes
Management and public relations services	Yes	Yes	Yes	Yes

¹ Employment grew faster than in all industries for time spans analyzed.

² The given services employed a greater percentage of key occupations over the time spans analyzed.

³ Output grew faster in the given services than in all industries.

⁴ Inputs to production of the given services grew as a percent of value added.

NOTE: Dash indicates that sufficient data were not available to draw a conclusion.

Exhibit 2. Evidence of industries that could be purchasing services over direct hires

Industry	Occupation ¹		Inputs ²	
	Business service	Engineering and management	Business service	Engineering and management
Agriculture.....	Yes	No	No	No
Mining.....	Yes	Yes	Unchanged	Yes
Construction.....	Yes	No	Yes	Yes
Manufacturing.....	Yes	Yes	Yes	Yes
Transportation and public utilities.....	Yes	Yes	Yes	Yes
Wholesale trade.....	Yes	No	No	No
Retail trade.....	Yes	No	Yes	Yes
Finance, insurance, and real estate.....	Yes	No	Yes	Yes
Services ³	No	No	Yes	Yes
Government.....	Yes	Yes	Yes	Yes

¹ A "yes" in this column indicates that at least half of key occupations had share indexes less than 1.

² A "yes" in this column indicates that the service input as a percent of value

added increased from 1977 to 1995.

³ Excludes business services and engineering and management services in occupation columns.

TRENDS IN THE FOUR FACTORS explored in this article—employment, occupations, output, and input—provide evidence that firms increased their purchases of services relative

to directly hiring labor. Further research is needed to explore the causal factors behind the shift toward market-mediated work arrangements. □

Footnotes

¹ See for example: Katharine G. Abraham, "Restructuring the Employment Relationship: The Growth of Market-Mediated Work Arrangements," in Katharine G. Abraham and Robert B. McKersie, eds., *New Developments in the Labor Market: Toward a new Institutional paradigm* (Cambridge, MA, The MIT Press, 1990); Katharine G. Abraham, *Flexible staffing arrangements and employers' short-term adjustment strategies*, NBER Working Paper No. 2617 (Cambridge, MA, National Bureau of Economic Research, June 1988); Katharine G. Abraham and Susan K. Taylor, "Firms' use of outside contractors: Theory and Evidence," *Journal of Labor Economics*, July 1996, pp. 394-424; Richard S. Belous, *The Contingent Economy: The Growth of the Temporary, Part-Time and Subcontracted Workforce*, (Washington, National Planning Association, 1989); Sharon R. Cohany, "Workers in alternative employment arrangements," *Monthly Labor Review*, October 1996, pp. 31-45; Susan N. Houseman, "New institute survey on flexible staffing arrangements," *Employment Research* (W.E. Upjohn Institute), Spring 1997, pp. 1-4; Garth Mangum, Donald Mayall, and Kristin Nelson, "The temporary help industry: a response to the dual internal labor market," *Industrial and Labor Relations Review*, (Cornell University), July 1985, pp. 599-611; and Lewis M. Segal and Daniel G. Sullivan, "The temporary labor force," *Economic Perspectives* (Federal Reserve Bank of Chicago), March/April 1995, pp. 2-19;

² See Abraham, *Flexible staffing arrangements*; Belous, *The Contingent Economy*; and Thomas A. Kochan, Harry C. Katz, and Robert B. McKersie, *The Transformation of American Industrial Relations* (Basic Books, 1986).

³ See Belous, *The Contingent Economy*; Cohany, "Workers in alternative employment arrangements"; Audrey Freedman, *Human Resources Outlook 1992*, Report No. 985 (Washington, The Conference Board); and Mangum and others, "The temporary help industry."

⁴ See Abraham, "Restructuring the Employment Relationship"; Abraham and Taylor, "Firm's use of outside contractors"; Cohany, "Workers in alternative employment"; Mangum and others, "The temporary help industry"; and Segal and Sullivan "The temporary labor force."

⁵ *Standard Industrial Classification Manual, 1987* (Executive Office of the President, Office of Management and Budget, 1987). Industries are grouped according to standard industrial classification codes (SIC). Services is composed of all 2-digit industries from 70 through 89. Business services, major group 73, is composed of eight basic industries: Advertising (SIC 731); credit reporting and collection (SIC 732); mailing, reproduction, and stenographic services (SIC 733); services to buildings (SIC 734); miscellaneous equipment rental and leasing (SIC 735); personnel supply services (SIC 736); computer and data processing services (SIC 737); and miscellaneous business services (SIC 738). Engineering and management services, major group 87, is composed of four basic industries: engineering and architectural services (SIC 871); accounting, auditing, and bookkeeping services (SIC 872); research and testing services (SIC 873); and management and public relations services (SIC 874).

⁶ Employment data used in this article are from the Current Employment Statistics program, Bureau of Labor Statistics. Not all of the services industries selected for this study have employment history back to 1972 because of industry reclassification, but all have at least 1988 forward. Trends are reviewed using all available years of data from 1972 through 1996. For example, the Engineering and management services time series begins in 1988, but two of the component industries have data at earlier dates.

⁷ There are two component industries in personnel supply services: employment agencies and help supply services, which is composed of two basic types of staffing services, temporary help and employee leasing services. Temporary help establishments provide their employees to clients on a temporary basis. Employees of the temporary help firm may work at multiple client sites and are generally not restricted to one client. Employee leasing establishments lease their employees to meet all or part of their clients' staffing needs. Leased workers typically perform their duties for one client only.

⁸ Computer services is composed of nine component industries. While the series for computer services (SIC 737) is available from 1972 forward, these nine components were not broken out until 1988. Also, see William C.

Goodman, "Software and engineering industries: threatened by technological change?" *Monthly Labor Review*, August 1996, pp. 37-45.

⁹ For more information about the information retrieval industry, see Laura Freeman, "Job creation and the emerging home computer market," *Monthly Labor Review*, August 1996, pp. 46-56.

¹⁰ From the 1994 BLS Occupational employment matrix, occupations were selected for review if at least 5 percent of all workers in that occupation were employed in a business service or engineering and management services industry, except for occupations in personnel supply services, in which 3 percent was set as a minimum. Based on these selections, occupational employment trends from *The National Industry—Occupation Employment 1983-1995 Time Series* produced by BLS were analyzed. These changes should be interpreted with caution as changes in occupational and industry classification systems, as well as improvements in the occupational surveys, may give misleading impressions.

¹¹ Abraham, *Flexible staffing arrangements*. Results of this study were based on a survey of 799 firms and a 55-percent usable response rate.

¹² For examples of regional employment analysis using the shift-share analysis technique, see: Philip L. Rones, "An analysis of regional employment growth, 1973-85," *Monthly Labor Review*, July 1986, pp. 3-14; and William G. Deming, "A decade of economic change and population shifts in U.S. regions," *Monthly Labor Review*, November 1996, pp. 3-13.

¹³ The components of employment change for industries is defined as follows:

$$\begin{aligned} \Delta E_i^{83,95} &= E_i^{83} ((E_n^{95} / E_n^{83}) - 1) \text{ (National share)} \\ &+ \sum_o E_o^{83} ((E_{on}^{95} / E_{on}^{83}) - (E_n^{95} / E_n^{83})) \text{ (Occupational mix)} \\ &+ \sum_o E_o^{83} ((E_o^{95} / E_o^{83}) - (E_{on}^{95} / E_{on}^{83})) \text{ (Occupational share)} \end{aligned}$$

where E_i is total employment in industry division i ,
 E_o is employment for occupation o for each industry division,
 E_{on} is total national employment for occupation o ,
 E_n is total national employment.

Occupational employment data for this analysis are from *The National Industry—Occupation Employment 1983-1995 Time Series*.

¹⁴ The share index is defined as follows:

$$S = (E_{oi}^{95} / E_{oi}^{83}) / (E_{on}^{95} / E_{on}^{83})$$

Where E_{oi}^t is employment in occupation o in industry i for year t ,
 E_{on}^t is employment in occupation o in all industries for year t .

¹⁵ Values of output are from BLS input-output tables from the Office of Employment Projections.

¹⁶ Two articles may help explain this recent slowing. William C. Goodman, "Software, engineering industries" and Jacqueline Warnke, "Computer manufacturing: change and competition," *Monthly Labor Review*, August 1996, pp. 18-29.

¹⁷ The Employee Retirement Income Security Act (ERISA) determines minimum standards for pensions, such as participation requirements and employee rights. For additional information on ERISA, see *A Guide to the Employee Retirement Income Security Act of 1974, as Amended by the Retirement Equity Act of 1984, and the Tax Reform Act of 1986* (U.S. Department of Labor, Pension and Welfare Benefits Administration, May 1988). Section 414(n) of the Tax Equity and Fiscal Responsibility Act (TEFRA) requires employers to treat all workers who are providing services on a long-term basis as "leased" employees and to count those leased workers as employees when applying coverage tests for pension and other benefits purposes unless such employees are covered by a qualifying plan through the leasing firm. For analyses of TEFRA, see: L.E. Irish and Richard M. Lent, "TEFRA Brings Sweeping Changes to Pension Plans," *Legal Times*, Sept. 27, 1982; and Leon E. Irish and others, "Tax Act Makes Important Changes in Benefit Area," *Legal Times*, July 23, 1984.

¹⁸ Abraham, "Restructuring the Employment Relationship."

¹⁹ Value added is defined by the Bureau of Economic Analysis as gross output (sales or receipts and other operating income, plus inventory change) minus intermediate inputs (consumption of goods and services purchased from other industries or imported). See *Benchmark Input-Output Accounts of the United States, 1987* (U.S. Department of Commerce, Bureau of Economic Analysis, November 1994).

²⁰ Abraham, *Flexible staffing arrangements*.

Employment levels and growth in the total nonfarm economy, business services, and engineering and management services, 1972-96

Industry	Employment (thousands)			Average annual growth			
	1972	1988	1996	1972-96		1988-96	
				Number	Percent	Number	Percent
Total nonfarm	73,675	105,209	119,523	1,910	2.1	1,789	1.6
Business services	1,491	4,638	7,254	240	6.9	327	5.8
Advertising	122	229	242	5	3.0	2	0.7
Credit and collection	76	93	127	2	2.2	4	4.0
Mailing and related services	82	208	297	9	5.6	11	4.6
Services to buildings	336	780	897	23	4.2	15	1.8
Miscellaneous equipment rental	(¹)	180	238	(¹)	(¹)	7	3.6
Personnel supply	214	1,350	2,646	101	11.4	162	9.0
Help supply	(¹)	1,126	2,341	(¹)	(¹)	152	9.8
Computer services	107	673	1,208	46	10.7	67	7.6
Miscellaneous business services	(¹)	1,125	1,600	(¹)	(¹)	59	4.5
Engineering and management	(¹)	2,230	2846	(¹)	(¹)	77	3.1
Engineering and architectural	339	730	839	21	3.9	14	1.8
Accounting	204	500	566	15	4.4	8	1.6
Research, development, and testing ..	(¹)	492	569	(¹)	(¹)	10	1.8
Management and public relations	(¹)	508	873	(¹)	(¹)	46	7.1

¹ Not available.

Note: Employment levels and average annual numbers for growth are in thousands.

Average annual number growth is the difference between the beginning and the end of the period divided by the number of years.

$$\text{Average annual percent growth} = \frac{\sum_{i=1}^n \left(\frac{x_{i+1}}{x_i} - 1 \right)}{n-1} * 100$$

Table 3. Percent of workers in various business-support occupations, employed in business services industry, 1983 and 1995

**Percent of workers in various business-
support occupations, employed in business
services industry, 1983 and 1995**

Occupational group	1995 employment	Percent	
		1983	1995
Administrative support, including clerical	2,135,266	5	9
Communications equipment operators	62,607	13	19
Computer operators and peripheral equipment operators	66,258	15	23
Mail clerks and messengers	56,333	16	22
Records processing occupations	300,274	4	9
Secretaries	321,587	5	10
Typists and word processors	154,453	11	24
Helpers, laborers, and material movers, hand	525,082	4	11
Cleaning and building services occupations	801,476	17	24
Computer engineers, scientists, and systems analysts	233,558	18	29
Computer programmers	212,946	24	40

NOTE: Data are for wage and salary workers only.

Table 4. Percent of various professional and managerial occupations employed in the engineering and management services industry, 1983 and 1995

Occupational group	1995 employment	Percent	
		1983	1995
Managerial and administrative	210,783	2	3
Engineers	232,058	13	18
Engineering and science technicians	126,821	9	14

Employment growth in business services and engineering and management services as a percent of the total nonfarm economy, 1972-96

Industry group	Percent of employment			Percent of job growth	
	1972	1988	1996 ¹	1972- 88	1988- 96
Business services	2.0	4.4	6.1	10.0	18.3
Personnel supply	.3	1.3	2.2	3.6	9.1
Engineering and management	(¹)	2.1	2.4	(¹)	4.3

¹ Series not available.

**Components of change in wage and salary employment by industry groups,
1983-95**

[Numbers in thousands]

Industry division	Wage and salary employment change	National share	Components	
			Occupational mix	Occupational share
Business services	4,420	961	51	3,408
Engineering and management services	606	382	-36	260
Agriculture	277	480	4	-207
Mining	-372	275	-1	-646
Construction	1,211	1,139	-37	109
Manufacturing ¹	38	5,318	-146	-5134
Industrial machinery and equipment	7	592	-9	-576
Electronic and other electrical equipment, instruments and related products	-233	777	-46	-964
Transportation equipment	54	499	-25	-420
Transportation and public utilities	1,207	1,431	-19	-205
Wholesale trade	1,128	1,525	4	-400
Retail trade	5,585	4,498	61	1,026
Finance, insurance, and real estate ¹	1,364	1,577	50	-263
Depository and nondepository institutions	192	663	13	-484
Services, except business services and engineering and management	9,736	6,793	52	2,892
Health services	3,231	2,049	22	1,160
Government	1,535	2,357	-3	-819

¹ Includes other industries not shown separately.

Table 6. Wage and salary employment share indexes by industry division and occupational group, 1983-95

Occupation	Administrative support, including analysts	Cleaning and building services	Computer engineers, scientists, and technicians	Computer programmers	Engineering and science	Engineers	Helpers, labors, and material movers, hand	Managerial and Administrative	all other occupation
Business services	1.78	1.43	1.60	1.62	1.06	1.39	2.52	1.83	1.88
Engineering and management services	1.10	.64	1.68	1.25	1.48	1.36	1.00	1.51	1.03
Agriculture	1.29	.83	.15	.28	.52	1.96	.71	1.07	.89
Mining	.45	.54	.24	.46	.75	.53	.46	.45	.48
Construction	1.06	.48	.62	.55	1.33	.75	.97	1.36	1.00
Manufacturing ¹	.75	.59	1.01	.66	.93	.89	.80	.81	.78
Industrial machinery and equipment	.69	.54	1.40	.58	.82	.78	.91	.84	.78
Electronic and other electrical equipment, instruments and related products	.66	.50	1.34	.57	.96	.86	.67	.80	.69
Transportation equipment	.70	.53	.87	.72	.84	.98	.94	.77	.81
Transportation and public utilities	.91	.89	.82	.70	.82	.84	1.15	.99	.98
Wholesale trade	.90	.75	.68	.63	1.16	1.56	.95	.89	.97
Retail trade	.94	.88	1.66	1.27	1.17	1.24	.96	.75	1.11
Finance, insurance, and real estate ¹	.93	.91	.82	.98	.80	1.13	.62	1.03	1.00
Depository and nondepository institutions	.82	.63	.66	.71	.70	1.26	.56	.74	1.02
Services, except business services and engineering and management	1.16	.98	1.03	.83	1.80	1.37	1.40	1.22	1.07
Health services	1.22	.85	1.16	1.07	1.02	1.30	.95	1.27	1.12
Government	.89	.97	.65	.76	.98	1.01	.91	.98	.92

¹ Includes other industries not shown separately.

NOTE: An occupational share index greater than 1 represents faster than average occupational growth; a value less than 1 represents slower than average growth.

Table 7. Output growth in business services and engineering and management services, 1972-94

[In million of 1987 dollars]

Industry	1972 output	1994 output	Percent annual growth
Business services	82,663	283,160	5.8
Advertising services	13,095	14,763	.5
Services to buildings	8,945	18,019	3.2
Miscellaneous equipment rental and leasing	14,652	16,585	.6
Personnel supply services	5,616	41,661	9.5
Computer and data processing services	8,943	88,628	11.0
Miscellaneous business services, consumer credit and collection services, and mailing and related services	31,413	103,502	5.6
Engineering and management services	88,470	202,822	3.8
Engineering and architectural services	23,043	64,625	4.8
Accounting, auditing, and other services	31,246	36,753	.8
Research and testing services	16,504	39,139	4.0
Management and public relations	17,678	62,305	5.9

Table 8. Federal procurement actions and dollars for selected industries, 1989-95

Year	Total actions (thousands)	Business services	Engineering and management	Total dollars (millions)	Business Services	Engineering and management
		Percent of total actions			Percent of total dollars	
1989	326	7.4	17.5	168,695	3.6	19.2
1990	368	7.6	17.4	171,301	3.8	19.7
1991	438	7.8	16.6	189,602	4.2	20.0
1992	502	7.2	16.3	177,786	5.0	22.6
1993	445	8.4	18.7	178,367	5.1	24.1
1994	430	9.5	19.2	174,688	5.5	24.9
1995	446	9.7	19.8	180,852	5.8	25.1

Source: Federal Procurement Report, issues 1989-95 (Washington, U.S. General Services Administration).

**Business services and engineering management inputs to production
for major industry divisions as a percent of value added, 1977 and 1993**

Industry division	1977		1993	
	Business services	Engineering and management services	Business services	Engineering and management services
All industries	4.4	2.1	6.5	2.8
Agriculture	1.2	1.6	.7	.5
Mining	.7	.5	.7	.7
Construction	2.3	8.6	2.8	13.4
Manufacturing ¹	5.2	1.3	5.5	1.5
Industrial machinery and equipment	3.4	.3	3.1	.8
Electronic and other electrical equipment, instruments and related products	5.9	.2	5.1	1.1
Transportation equipment	5.5	.2	6.9	.9
Transportation and public utilities	1.8	.9	3.6	1.5
Wholesale trade	10.2	2.1	9.2	1.5
Retail trade	8.2	1.6	9.9	1.8
Finance, insurance, and real estate ¹	2.8	.9	7.8	2.4
Depository and nondepository institutions, holding, and investment offices	8.5	.2	59.8	20.0
Services	8.3	5.2	11.6	5.3
Health services	4.3	.1	10.1	1.5
Government	.1	.2	.3	.6

¹ Includes other industries not shown separately.

Exhibit 1. Evidence of substitution of service for direct labor

Industry	Employment ¹	Occupations ²	Output ³	production ⁴
Business services				
Advertising services	Yes	No	No	Yes
Consumer credit and reporting	Yes	No	Yes	Yes
Mailing and related services	Yes	Yes	Yes	Yes
Services to buildings	Yes	Yes	Yes	Yes
Miscellaneous equipment rental and leasing	Yes	—	No	No
Personnel supply services	Yes	Yes	Yes	Yes
Computer services	Yes	Yes	Yes	Yes
Miscellaneous business services	Yes	—	Yes	Yes
Engineering and management services				
Engineering and architectural services	Yes	Yes	Yes	Yes
Accounting services	Yes	—	No	No
Research, development, and testing services	Yes	Yes	Yes	Yes
Management and public relations services	Yes	Yes	Yes	Yes

¹ Employment grew faster than all industries for time spans analyzed.

² The given services employed a greater percentage of key occupations over the time spans analyzed.

³ Output grew faster in the given services than in all industries.

⁴ Inputs to production of the given services grew as a percent of value added.

Note: Dash indicates that sufficient data were not available to draw a conclusion.

**Exhibit 2. Evidence of industries that could be purchasing services
over direct hires**

Industry services	Occupation¹		Inputs²		Business
	Business services	Engineering and management	Engineering and management		
Agriculture	Yes		No	No	No
Mining	Yes		Yes	Unchanged	Yes
Construction	Yes		No	Yes	Yes
Manufacturing	Yes		Yes	Yes	Yes
Transportation and public utilities	Yes		Yes	Yes	Yes
Wholesale trade	Yes		No	No	No
Retail trade	Yes		No	Yes	Yes
Finance, insurance, and real estate	Yes		No	Yes	Yes
Services ³	No		No	Yes	Yes
Government	Yes		Yes	Yes	Yes

¹ A "yes" in this column indicates that at least half of key occupations had share indexes less than 1.

² A "yes" in this column indicates that the service input as a percent of value added increased from 1977 to 1995.

³ Exclude business services and engineering and management services in occupation columns.