

## Flexible schedules and shift work: replacing the '9-to-5' workday?

*Flexible work hours have gained in prominence, as more than a quarter of all workers can now vary their schedules; however, there has been little change in the proportion who work a shift other than a regular daytime shift*

Thomas M. Beers

Traditionally, much of the American labor force has worked in a structured environment, with the work schedule following a set pattern—what many people have termed the “9-to-5” workday. Recent studies show that employers are beginning to recognize that many workers prefer schedules that allow greater flexibility in choosing the times they begin and end their workday. Consequently, increasing numbers and proportions of full-time workers in the United States are able to opt for flexible work hours, allowing workers to vary the actual times they arrive and leave the work place. For some workers, however, the nature of their jobs requires that they work a schedule other than a regular day shift, what may be termed an “alternative shift.”<sup>1</sup> Examples of such alternative shift workers are police officers, emergency room physicians, and assembly-line workers at a factory.

In contrast to the increasing proportion of workers with flexible work schedules, the incidence of shift work has not changed since the mid-1980s. If not for the sizable job gains in service occupations, the overall proportion of workers on shift work would have edged down in recent years.

Recent data on flexible work hours and shift work are from information collected in the May 1997 supplement to the Current Population Sur-

vey (CPS).<sup>2</sup> This article uses that supplement to examine both the incidence and trends in flexible work hours and alternative shift work and, also, the relationship between the jobs in which people work and the prevalence of these digressions from the more traditional “9-to-5” workday.

### Flexible work schedules

In 1997, more than 25 million workers, or 27.6 percent of all full-time wage and salary workers varied their work hours to some degree. Note that flexible schedule arrangements for many workers are probably informal, as indicated by data from the Bureau of Labor Statistics Employee Benefits Survey (EBS), in which employers provide information about employee access to various types of work-related benefits. The latest EBS data, from 1994–97, show that less than 6 percent of employees have *formal* flexible work schedule arrangements.<sup>3</sup>

CPS data show that the proportion of workers on flexible work schedules—either formal or informal—has more than doubled since 1985, when such data were first collected.<sup>4</sup> The increase in flexible work schedules since then has been widespread across demographic groups. The following tabulation shows the percent of workers, by age and race and Hispanic origin, who work flexible schedules:

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	1985	1991	1997
Total, 16 years and older ....	12.4	15.1	27.6
Men .....	13.1	15.5	28.7
Women .....	11.3	14.5	26.2
Hispanic origin .....	8.9	10.6	18.4
Race and Hispanic origin:			
White .....	12.8	15.5	28.7
Black .....	9.1	12.1	20.1
Hispanic origin .....	8.9	10.6	18.4

Although there has been relatively little difference in the proportions of men and women with flexible schedules during the 1985–97 period, whites have been more likely than blacks or Hispanics to have flexible work schedules. (See table 1.)

*Occupations.* To some degree, these differences reflect the varying occupational distributions of each of the worker groups. Generally, jobs with higher frequencies of flexible hours are those in which work can be conducted efficiently, regardless of the workers' start and end times. For instance, flexible work hours are most common among workers in executive, administrative, and managerial occupations, and for those in sales occupations—42.4 percent and 41.0 percent, respectively. (See table 2.) The incidence of flexible work hours is lower for groups of workers in occupations in which the nature of the work dictates that it begin and end at set times, for example, nurses, teachers, police, firefighters, and certain manufacturing operations.

As stated, the unique occupational distributions of the various demographic groups affect the overall proportion of workers on flexible work schedules within these respective groups. For example, as can be seen above, flexible work hours are considerably more prevalent among whites than either blacks or Hispanics. At first glance, this is not surprising because whites are most likely to be in managerial and professional specialty occupations, in which flexible hours are most common. Furthermore, blacks and Hispanics are highly represented in the category of operators, fabricators, and laborers. Because of the nature of the work, historically,

this category is one that fails to lend itself to the practice of flexible schedules.

Because flexible schedules appear to be closely associated with particular occupations, it is worth investigating whether the recent increases in the proportion of workers with flexible work schedules reflect an increase in employment in occupations with high occurrences of flexible work schedules or an increase in the availability of flexible work hours across occupations. A shift-share analysis was applied to determine the portion of the increase that was due to changes in occupational employment and the portion that was due simply to an increased incidence of flexible work hours. Less than 3 percentage points of the total increase were a result of shifts in occupational employment. This suggests, therefore, that the majority of the increase was spurred by the increased incidence of flexible work schedules within occupations; indeed, this phenomenon occurred in nearly every occupational category.

*Race.* In order to estimate how much of the difference in the rate of flexible work schedules between blacks and whites is accounted for by differences in occupations, a standardization was performed. This process showed that if blacks had the same occupational distribution as whites (at the most detailed level of occupational classification), then the rate of black workers on flexible work schedules would have been 20.5 percent, instead of 20.1 percent; the difference between the rates for whites and blacks would have been 7.9 percentage points instead of 8.6 percentage points. A similar analysis was performed in which the white rates of flexible work by occupation were applied to the black occupational distribution. Results show that, in each job category, if blacks were as likely as whites to be able to vary hours, then the overall black rate would rise to 24.4 percent, or 4.3 percentage points higher. This would have reduced the overall difference between blacks and whites to 4.3 percentage points. While even at the detailed level there may be differences in jobs held by blacks and whites, these findings suggest that factors other than occupational employment contribute to the disparity in access to flexible schedules.

### A brief description of flexible work arrangements

There are several types of formal flexible work arrangements. One type is a "gliding schedule" that requires a specified number of hours of work each day but allows employees to vary the time of their arrival and departure, usually around an established set of mandatory "core hours." Other types of flexible work arrangements include variable-day and variable-week schedules that usually require a specified number of hours per pay period. These types of work schedules frequently are grouped under the umbrella term "flexitime." Under these plans, employees are permitted to choose the number of hours they

wish to work each day or each week. Credit or compensatory time arrangements allow employees who accumulate overtime hours to apply those hours to future time off from work, rather than receiving the overtime rate for those hours. The presence of one or more of these arrangements in the workplace does not necessarily exclude the others; many can be used in conjunction with other flexible work arrangements. (For more information, see Atefah Sadri McCampbell, "Benefits Achieved Through Alternative Work Schedules," *Human Resource Planning*, 1996, Vol. 19.3.)

**Table 1. Flexible schedules of full-time wage and salary workers by selected characteristics, May 1997**

Characteristic	All workers			Men			Women		
	Total	With flexible schedules		Total	With flexible schedules		Total	With flexible schedules	
		Number	Percent		Number	Percent		Number	Percent
<b>Age</b>									
Total 16 years and older .....	90,549	25,031	27.6	52,073	14,952	28.7	38,476	10,079	26.2
16 to 19 years .....	1,640	339	20.7	1,050	177	16.9	590	161	27.4
20 years and older .....	88,909	24,692	27.8	51,023	14,774	29.0	37,886	9,918	26.2
20 to 24 years .....	8,462	1,923	22.7	4,968	1,111	22.4	3,494	812	23.2
25 to 34 years .....	25,208	7,161	28.4	14,721	4,231	28.7	10,486	2,931	27.9
35 to 44 years .....	26,755	7,781	29.1	15,434	4,730	30.6	11,321	3,051	26.9
45 to 54 years .....	19,596	5,355	27.3	10,806	3,118	28.9	8,790	2,237	25.4
55 to 64 years .....	7,778	2,129	27.4	4,431	1,334	30.1	3,347	796	23.8
65 years and older .....	1,110	344	31.0	662	251	38.0	448	93	20.7
16 to 24 years .....	10,102	2,262	22.4	6,018	1,288	21.4	4,084	973	23.8
25 to 54 years .....	71,559	20,296	28.4	40,961	12,078	29.5	30,598	8,218	26.9
55 years and older .....	8,888	2,473	27.8	5,094	1,585	31.1	3,794	888	23.4
<b>Race and Hispanic origin</b>									
White .....	75,683	21,698	28.7	44,495	13,186	29.6	31,188	8,512	27.3
Black .....	10,884	2,191	20.1	5,323	1,068	20.1	5,561	1,123	20.2
Hispanic origin .....	9,635	1,769	18.4	6,283	1,147	18.3	3,352	622	18.5
<b>Marital status</b>									
Never married .....	21,721	5,523	25.4	12,746	3,180	24.9	8,975	2,343	26.1
Married, spouse present .....	53,369	15,358	28.8	32,756	10,077	30.8	20,613	5,281	25.6
Other marital status .....	15,459	4,150	26.8	6,571	1,695	25.8	8,888	2,456	27.6
<b>Presence and age of children</b>									
Without own children under 18 ....	55,251	14,824	26.8	31,266	8,596	27.5	23,985	6,228	26.0
With own children under 18 .....	35,298	10,208	28.9	20,807	6,356	30.5	14,491	3,851	26.6
With own children 6 to 17 .....	19,852	5,542	27.9	10,820	3,211	29.7	9,032	2,331	25.8
With own children under 6 .....	15,446	4,666	30.2	9,986	3,146	31.5	5,459	1,520	27.8

NOTE: Data relate to the sole or principal job of full-time wage and salary workers who were at work during the survey reference week and exclude all self-employed persons, regardless of whether or not their businesses were

incorporated. Data reflect revised population controls used in the Current Population Survey effective with the January 1997 estimates.

**Industry.** To a lesser degree, the prevalence of flexible work schedules also varied by industry. These schedules were more common among private sector employees than among those in the public sector (28.8 percent versus 21.7 percent) in 1997. In the public sector, Federal government employees (34.5 percent) were more likely than their counterparts in State government (29.4 percent) or local government (13.1 percent) to have a flexible schedule. The rate for local government workers reflects the fact that local governments provide services that are often rigidly scheduled. More than half of those employed in local governments work in the field of education, in which the nature of the work for most employees prohibits flexibility (only 7.6 percent of workers in education, the largest component of local government employment, could vary work hours). Within private industry, the proportion of workers with flexible schedules was higher in service-producing industries (31.7 percent) than in goods-producing industries (23.3 percent), reflecting the more rigid work hours in manufacturing, construction, and mining.

## Shift work

Although most workers report usually working between the hours of 6 a.m. and 6 p.m., more than 15 million, or 16.8 percent of all full-time wage and salary workers, worked alternative shifts. The most prevalent alternative shifts were the evening shift (accounting for 4.6 percent of all full-time wage and salary workers), for which work hours typically fall between 2 p.m. and midnight, and irregular shifts (3.9 percent) for which employers schedule shifts to fit the needs of the business for a particular time. Other shifts worked included night shifts (3.5 percent) for which work hours fall between 9 p.m. and 8 a.m., and rotating shifts (2.9 percent) that change periodically from days to evenings or nights. (See table 3.)

As with flexible work schedules, the nature of the work is a major determinant of whether the worker is scheduled on an alternative shift. Hence, shift work is highly prevalent within certain occupations and industries and almost entirely absent from others. Alternative shifts were most common among

**Table 2.** Flexible schedules of full-time wage and salary workers by occupation and industry, May 1997

[Numbers in thousands]

Occupation and Industry	All workers			Men			Women		
	Total	With flexible schedules		Total	With flexible schedules		Total	With flexible schedules	
		Number	Percent		Number	Percent		Number	Percent
<b>Occupation</b>									
Managerial and professional specialty .....	27,384	10,651	38.9	13,882	6,407	46.2	13,502	4,245	31.4
Executive, administrative, and managerial .....	13,469	5,705	42.4	7,213	3,251	45.1	6,255	2,454	39.2
Professional specialty .....	13,915	4,947	35.5	6,668	3,156	47.3	7,247	1,791	24.7
Mathematical and computer scientists .....	1,308	772	59.0	887	549	61.9	421	223	53.0
Natural scientists .....	507	327	64.5	353	240	68.0	154	87	56.2
Teachers, college and university .....	494	320	64.7	330	224	68.0	164	95	58.2
Technical, sales, and administrative support ...	25,779	7,828	30.4	9,992	3,613	36.2	15,787	4,215	26.7
Technicians and related support .....	3,376	1,040	30.8	1,724	611	35.4	1,651	429	26.0
Sales occupations .....	9,001	3,687	41.0	5,106	2,315	45.3	3,895	1,372	35.2
Sales workers, retail and personal services ..	3,165	951	30.0	1,428	464	32.5	1,737	487	28.0
Administrative support, including clerical .....	13,402	3,101	23.1	3,162	687	21.7	10,240	2,414	23.6
Service occupations .....	9,313	1,906	20.5	4,754	831	17.5	4,559	1,075	23.6
Private household .....	308	125	40.5	21	16	<sup>1</sup>	287	109	37.8
Protective service .....	1,891	314	16.6	1,619	254	15.7	272	60	22.2
Service, except private household and protective .....	8,855	1,934	21.8	4,665	986	21.1	4,190	947	22.6
Food service .....	2,777	630	22.7	1,441	263	18.3	1,336	366	27.4
Health service .....	1,466	258	17.6	205	26	12.9	1,261	232	18.4
Cleaning and building service .....	2,000	326	16.3	1,252	208	16.6	749	117	15.7
Personal service .....	871	254	29.1	216	63	29.0	655	191	29.2
Precision production, craft, and repair .....	11,519	2,023	17.6	10,506	1,861	17.7	1,013	162	16.0
Mechanics and repairers .....	3,863	708	18.3	3,672	658	17.9	192	50	26.3
Construction trades .....	4,069	718	17.7	3,996	707	17.7	74	12	<sup>1</sup>
Other precision production, craft, and repair ..	3,587	596	16.6	2,839	497	17.5	748	99	13.3
Operators, fabricators, and laborers .....	14,812	2,156	14.6	11,388	1,815	15.9	3,424	342	10.0
Machine operators, assemblers, and inspectors .....	6,813	702	10.3	4,359	521	12.0	2,454	181	7.4
Transportation and material moving .....	4,351	961	22.1	4,064	914	22.5	287	47	16.3
Handlers, equipment cleaners, helpers, and laborers .....	3,648	494	13.5	2,965	379	12.8	683	114	16.7
Farming, forestry, and fishing .....	1,742	466	26.8	1,552	426	27.4	190	41	21.6
<b>Industry</b>									
Private sector .....	75,612	21,795	28.8	45,023	13,284	29.5	30,589	8,511	27.8
Goods-producing industries .....	25,925	6,033	23.3	19,458	4,640	23.8	6,466	1,393	21.5
Agriculture .....	1,492	448	30.0	1,265	373	29.5	227	74	32.8
Mining .....	541	122	22.6	473	106	22.4	68	16	<sup>1</sup>
Construction .....	5,389	1,218	22.6	4,974	1,086	21.8	415	132	31.8
Manufacturing .....	18,503	4,245	22.9	12,747	3,074	24.1	5,756	1,170	20.3
Durable goods .....	11,179	2,572	23.0	8,148	1,944	23.9	3,031	629	20.7
Nondurable goods .....	7,324	1,673	22.8	4,599	1,131	24.6	2,725	542	19.9
Service producing industries .....	49,687	15,763	31.7	25,565	8,644	33.8	24,122	7,118	29.5
Transportation and public utilities .....	6,088	1,669	27.4	4,518	1,215	26.9	1,570	454	28.9
Wholesale trade .....	3,969	1,281	32.3	2,854	979	34.3	1,115	302	27.1
Retail trade .....	12,111	3,745	30.9	6,812	1,988	29.2	5,299	1,757	33.2
Eating and drinking places .....	3,135	987	31.5	1,758	497	28.2	1,377	490	35.6
Finance, insurance, and real estate .....	5,857	2,096	35.8	2,288	1,028	44.9	3,569	1,068	29.9
Services .....	21,662	6,971	32.2	9,094	3,434	37.8	12,568	3,537	28.1
Private households .....	391	148	37.7	42	27	<sup>1</sup>	350	120	34.4
Business, automobile, and repair .....	5,060	1,607	31.8	3,319	1,118	33.7	1,740	489	28.1
Personal, except private household .....	1,627	522	32.1	749	227	30.3	878	295	33.7
Entertainment and recreation .....	1,051	397	37.8	619	231	37.3	432	167	38.5
Professional services .....	13,497	4,286	31.8	4,336	1,820	42.0	9,161	2,465	26.9
Forestry and fisheries .....	36	11	<sup>1</sup>	29	11	<sup>1</sup>	7	-	-
Government .....	14,937	3,236	21.7	7,050	1,668	23.7	7,887	1,568	19.9
Federal .....	2,828	977	34.5	1,621	535	33.0	1,208	442	36.6
State .....	4,125	1,214	29.4	1,856	606	32.7	2,270	608	26.8
Local .....	7,983	1,046	13.1	3,573	527	14.8	4,410	519	11.8

<sup>1</sup> Percent not shown where base is less than 75,000.

NOTE: Data relate to the sole or principal job of full-time wage and salary workers who were at work during the survey reference week and exclude all self-employed persons, regardless of whether or not their businesses were

incorporated. Data reflect revised population controls used in the Current Population Survey effective with the January 1997 estimates. Dashes represent zero.

**Table 3. Shift usually worked by full-time wage and salary workers by selected characteristics, May 1997**

[Percent distribution]

Characteristic	Total workers (in thousands)	Regular daytime schedule	Alternative shift workers						
			Total	Evening shift	Night shift	Rotating shift	Split shift	Employer- arranged irregular schedules	Other shifts
<b>Age and sex</b>									
Total 16 years and older .....	90,549	82.9	16.8	4.6	3.5	2.9	0.4	3.9	1.4
16 to 19 years .....	1,640	66.4	32.9	12.5	5.0	4.0	.9	8.8	1.6
20 years and older .....	88,909	83.2	16.5	4.5	3.5	2.9	.4	3.8	1.4
20 to 24 years .....	8,462	75.7	23.7	7.6	5.3	3.3	.3	6.3	.9
25 to 34 years .....	25,208	82.8	16.7	4.7	3.5	3.2	.4	3.6	1.3
35 to 44 years .....	26,755	84.0	15.8	3.9	3.4	2.9	.4	3.7	1.4
45 to 54 years .....	19,596	85.2	14.6	3.9	3.1	2.6	.3	3.3	1.4
55 to 64 years .....	7,778	84.8	15.0	3.8	2.7	2.5	.6	3.3	2.1
65 years and older .....	1,110	83.8	16.2	3.8	2.1	2.0	.3	4.7	3.3
16 to 24 years .....	10,102	74.2	25.2	8.4	5.3	3.4	.4	6.7	1.0
25 to 54 years .....	71,559	83.9	15.8	4.2	3.3	2.9	.4	3.6	1.4
55 years and older .....	8,888	84.7	15.1	3.8	2.6	2.4	.6	3.5	2.2
Men .....	52,073	80.5	19.1	5.0	4.0	3.5	.4	4.4	1.7
Women .....	38,476	86.1	13.7	4.1	2.8	2.2	.3	3.1	1.0
<b>Race and Hispanic origin</b>									
White .....	75,683	83.6	16.1	4.3	3.2	2.9	.4	3.9	1.4
Black .....	10,884	78.5	20.9	6.5	5.5	3.2	.4	4.0	1.4
Hispanic origin .....	9,635	83.6	16.0	5.4	3.2	2.1	.3	3.8	1.2
<b>Marital status and presence and age of children</b>									
<b>Men:</b>									
Never married .....	12,746	77.1	21.9	7.0	4.4	3.2	.4	5.9	1.1
Married, spouse present .....	32,756	82.5	17.3	3.9	3.6	3.6	.4	3.9	1.9
Other marital status .....	6,571	77.3	22.1	6.6	5.1	3.6	.5	4.2	2.0
Without own children under 18 .....	31,266	79.8	19.6	5.5	4.0	3.3	.4	4.6	1.6
With own children under 18 .....	20,807	81.6	18.3	4.2	4.0	3.7	.5	4.1	1.8
With own children 6 to 17 .....	10,820	82.8	17.1	3.5	3.7	3.9	.3	3.8	1.8
With own children under 6 .....	9,986	80.3	19.7	5.0	4.3	3.5	.6	4.5	1.8
<b>Women:</b>									
Never married .....	8,975	79.8	19.8	6.2	4.0	3.2	.2	4.6	1.3
Married, spouse present .....	20,613	89.2	10.7	3.1	2.3	1.8	.3	2.3	.9
Other marital status .....	8,888	85.4	14.5	4.5	2.9	2.0	.3	3.6	1.1
Without own children under 18 .....	23,985	85.0	14.7	4.6	2.6	2.4	.3	3.6	1.2
With own children under 18 .....	14,491	87.9	12.0	3.4	3.2	1.8	.4	2.4	.8
With own children 6 to 17 .....	9,032	88.4	11.4	2.7	3.4	1.9	.4	2.3	.7
With own children under 6 .....	5,459	87.1	12.9	4.5	2.8	1.6	.3	2.6	1.0

NOTE: Data relate to the sole or principal job of full-time wage and salary workers who were at work during the survey reference week and exclude all self-employed persons, regardless of whether or not their businesses were

incorporated. Data reflect revised population controls used in the Current Population Survey effective with the January 1997 estimates.

occupations that provide services that are needed at all hours—such as protective service (55.1 percent) and food service (42.0 percent)—and among those employed as operators, fabricators and laborers (27.0 percent). (See table 4.) In contrast, teachers, construction workers, and executives and administrators were among the least likely to work an alternative shift.

Similarly, the incidence of shift work was much greater among industries providing services used at all hours of the day as opposed to “9-to-5” industries. For instance, about 47.2 percent of the total labor force employed in eating and drinking places worked an alternative shift, as did 35.9 percent in transportation, and 25.8 percent in hospitals. Conversely, shift work was much less common in industries such

as finance, insurance, real estate, construction, and agriculture—industries in which most work is done during the daytime.

Some goods-producing industries operate on extended production schedules and therefore had high proportions of workers on alternative shifts. In many of these industries, it is more costly to shut down the production process at the end of the day and restart the next morning than it is to simply operate on extended, and in some cases, around-the-clock production cycles.<sup>4</sup> Among industries with a high frequency of shift work were paper products (33.3 percent), automobiles (31.3 percent), and mining (24.8 percent).

Shift work occurred less frequently in the public sector than in the private sector, and varied little across Federal,

**Table 4. Shift usually worked by full-time wage and salary workers by occupation and industry, May 1997**

[Percent distribution]

Occupation and Industry	Total workers (in thousands)	Regular daytime schedule	Alternative shift workers						
			Total	Evening shift	Night shift	Rotating shift	Split shift	Employer- arranged irregular schedules	Other shifts
<b>Occupation</b>									
Managerial and professional specialty .....	27,384	90.4	9.4	1.7	1.3	1.7	0.3	2.9	1.6
Executive, administrative, and managerial .....	13,469	91.7	8.1	1.4	.7	1.7	.2	2.7	1.3
Professional specialty .....	13,915	89.1	10.7	2.0	1.7	1.6	.4	3.0	1.9
Mathematical and computer scientists .....	1,308	94.9	4.6	.2	.3	.6	—	1.8	1.6
Natural scientists .....	507	94.0	6.0	.9	1.0	—	—	1.5	2.5
Teachers, college and university .....	494	86.1	13.9	.6	.5	1.0	2.9	4.0	4.9
Technical, sales, and administrative support .....	25,779	86.2	13.5	3.5	2.1	2.6	.3	3.8	1.1
Technicians and related support .....	3,376	80.4	19.2	5.6	3.8	3.7	.2	4.2	1.5
Sales occupations .....	9,001	81.4	18.4	3.6	1.1	4.4	.3	7.0	1.9
Sales workers, retail and personal services .....	3,165	70.9	28.5	6.7	1.7	7.3	.6	10.6	1.5
Administrative support, including clerical ..	13,402	91.0	8.8	3.0	2.3	1.0	.2	1.6	.6
Service occupations .....	9,313	62.1	37.1	10.8	6.5	5.4	1.0	6.3	2.2
Private household .....	308	83.2	16.8	1.4	.8	.7	1.5	8.2	4.3
Protective service .....	1,891	44.4	55.1	11.3	13.2	16.3	.9	7.9	5.6
Service, except private household and protective .....	8,855	71.4	28.0	11.0	5.3	3.3	1.0	5.9	1.4
Food service .....	2,777	57.3	42.0	17.1	5.0	6.2	1.8	10.4	1.3
Health service .....	1,466	69.5	30.1	10.8	9.4	3.3	.6	4.6	1.1
Cleaning and building service .....	2,000	72.2	27.1	14.9	7.3	1.2	.6	2.2	.7
Personal service .....	871	73.2	26.4	5.1	5	4.7	.8	6.3	4.5
Precision production, craft, and repair .....	11,519	86.2	13.4	4.1	4.0	2.4	.2	2.1	.6
Mechanics and repairers .....	3,863	85.3	14.2	4.2	4.7	2.7	3	1.6	.6
Construction trades .....	4,069	95.3	4.4	.6	.9	.8	—	1.8	.3
Other precision production, craft, and repair .....	3,587	77.0	22.8	7.9	6.7	4.0	.2	3.0	1.0
Operators, fabricators, and laborers .....	14,812	72.5	27.0	7.7	7.4	4.3	.5	5.4	1.7
Machine operators, assemblers, and inspectors .....	6,813	73.4	26.2	10.1	8.4	4.6	.2	2.0	.7
Transportation and material moving .....	4,351	69.2	30.4	4.6	4.1	4.7	.9	12.3	3.9
Handlers, equipment cleaners, helpers, and laborers .....	3,648	74.8	24.6	7.0	9.3	3.4	.3	3.7	.8
Farming, forestry, and fishing .....	1,742	93.8	5.9	—	—	—	.6	4.1	.8
<b>Industry</b>									
Private sector .....	75,612	82.3	17.4	4.7	3.5	2.9	.4	4.3	1.4
Goods-producing industries .....	25,925	84.1	15.6	5.1	4.5	2.6	.2	2.1	.9
Agriculture .....	1,492	93.1	6.7	.3	.3	.7	.5	4.1	.8
Mining .....	541	74.6	25.4	4.8	2.3	12.5	.2	5	.5
Construction .....	5,389	95.9	3.7	.4	.2	.3	.1	2.1	.6
Manufacturing .....	18,503	80.2	19.4	6.9	6.2	3.2	.3	1.9	1
Durable goods .....	11,179	83.0	16.8	6.9	5	2.3	.2	1.6	.7
Nondurable goods .....	7,324	76.0	23.5	6.9	7.9	4.5	.3	2.4	1.5
Service producing industries .....	49,687	81.3	18.3	4.5	3.0	3.1	.5	5.4	1.7
Transportation and public utilities .....	6,088	73.8	25.8	4.2	3.3	4.5	.6	10.3	2.8
Wholesale trade .....	3,969	89.7	10.1	2.3	2.6	1.1	.1	2.7	1.3
Retail trade .....	12,111	71.1	28.4	7.5	3.6	5.9	.8	8.8	1.6
Eating and drinking places .....	3,135	51.9	47.2	16.3	5.4	8.7	2.0	12.6	1.8
Finance, insurance, and real estate .....	5,857	94.8	5.1	1.0	.7	.5	.0	1.5	1.4
Services .....	21,662	83.9	15.6	4.3	3.3	2.1	.5	3.7	1.6
Private households .....	391	78.9	21.1	1.9	2.2	2.3	1.1	10.2	3.4
Business, automobile, and repair .....	5,060	86.0	13.3	4.0	3.6	1.5	.2	2.7	1.3
Personal, except private household .....	1,627	74.9	24.3	7.7	4.1	3.4	.4	6.6	2.2
Entertainment and recreation .....	1,051	63.9	35.1	9.7	2.8	4.4	1.4	13.8	3.1
Professional services .....	13,497	86.0	13.7	3.6	3.3	2.0	.6	2.7	1.6
Forestry and fisheries .....	36	1	1	1	1	1	1	1	1
Government .....	14,937	86.1	13.8	4.2	3.2	3.0	.3	1.9	1.3
Federal .....	2,828	85.4	14.4	4.3	5.3	1.8	.2	1.8	1.1
State .....	4,125	86.1	13.7	4.7	3.1	2.6	.3	1.8	1.2
Local .....	7,983	86.4	13.6	3.9	2.4	3.5	.3	1.9	1.5

<sup>1</sup> Percent not shown where base is less than 75,000.

self-employed persons, regardless of whether or not their businesses were incorporated. Data reflect revised population controls used in the Current Population Survey effective with the January 1997 estimates. Dashes represent zero.

NOTE: Data relate to the sole or principal job of full-time wage and salary workers who were at work during the survey reference week and exclude all

**Table 5.** Shift usually worked on principal job by usual full-time wage and salary workers, by reason for working shift, May 1997

[Numbers in thousands]

Reason for working shift	Total	Shift worked					
		Evening shift	Night shift	Rotating shift	Split shift	Employer arranged irregular shift	Other shift
Total shift workers .....	15,183	4,192	3,156	2,649	350	3,523	1,313
Better child care arrangements .....	633	279	257	31	3	35	28
Better pay .....	920	350	330	81	14	105	41
Better arrangements for care of family members .....	423	114	214	17	5	38	34
Allows time for school .....	435	201	62	56	11	86	19
Easier commute, less traffic .....	109	51	27	4	2	12	13
Could not get any other job .....	866	383	237	75	12	138	20
Mandated by employer to meet transportation/ pollution program requirements .....	1,967	397	326	561	55	524	103
Nature of the job .....	7,767	1,710	1,084	1,610	204	2,354	805
Other reasons .....	1,912	661	581	195	41	224	211
Not reporting reasons .....	151	46	37	19	3	7	38

NOTE: Data relate to the sole or principal job of full-time wage and salary workers who were at work during the survey reference week and exclude all self-employed persons, regardless of whether or not their businesses were

incorporated. Data reflect revised population controls used in the Current Population Survey effective with the January 1997 estimates.

State, and local governments. Within local government, however, the incidence of shift work varies widely by function. Nearly half of the local government employees in justice, public order, and safety functions worked alternative shifts; but only 4.5 percent of those employed in educational services worked an alternative shift.

The CPS supplement included a question intended to derive workers' main reason for working an alternative shift; the results support the notion that the occurrence of shift work is highly correlated with particular industries and occupations.<sup>5</sup> More than half of all full-time employees who worked an alternative shift did so because it was the "nature of the job." It is also apparent that very few of these workers chose to work one of these shifts for the purpose of obtaining greater monetary compensation or to alleviate nonwork conflicts. Only 6.1 percent of all alternative shiftworkers reported working a shift for better pay. About 4.1 percent worked an alternative shift for better childcare arrangements; and only a small fraction did so for an easier commute (0.7 percent) or because it allowed time for school (2.9 percent). Roughly 13.0 percent reported that they were on one of these shifts specifically because alternative shifts were mandated by their employer to meet transportation demand, management, or pollution abatement program requirements. A small percentage of shiftworkers (5.7 percent) worked an alternative shift because they were unable to find another job. (See table 5.)

As is the case with differences in flexible work schedules among workers, a portion of the differences among demographic groups in the incidence of shift work can be traced to the occupational distributions of the groups. As indicated in table 2 for example, men were more likely than women to work

on an alternative shift: 19.1 percent versus 13.7 percent, respectively; a difference of 5.4 percentage points. A standardization analysis shows that if women had the same occupational distribution as men, then the overall proportion of women on alternative shifts would be 16.3 percent, reducing the difference between men and women to 2.8 percentage points. If the rates of alternative shift work by occupation for men are applied to the occupational distribution of women, then the difference in shift work rates falls to 1.5 percentage points. Thus, shift work is more common among men for two reasons: first, men are more likely than women to choose occupations in which shift work is common; and, on the same job, men are typically more likely than women to work an alternative shift.

Among other major groups, workers who had never been married were employed on one of these shifts more often than married workers (21.0 percent versus 14.8 percent, respectively), and a greater proportion of blacks (20.9 percent) worked alternative shifts than either whites (16.1 percent) or Hispanics (16.0 percent). Another shift-share analysis shows that only a small proportion of the disparity in alternative shift work between blacks and whites can be explained by different occupational groupings; on the same jobs, it is usually the case that more blacks than whites work an alternative shift. In addition, the incidence of alternative shift work varied to some degree by age: nearly one-third of employed teenagers worked an alternative shift. This is not surprising as daytime school commitments prevent many teenagers from working during normal business hours. The prevalence of shift work declines with age to a low of 14.6 percent for workers aged 45 to 54 years. (See table 3.)

In general, the proportion of workers on alternative shifts has changed very little for all of the major demographic groups over the last 12 years. The following tabulation shows the percent working alternative shifts, 1985–97:

	1985	1991	1997
Total, 16 years and older ....	15.9	17.8	16.8
Men .....	17.8	20.1	19.1
Women .....	13.0	14.6	13.7
Race and Hispanic origin:			
White .....	15.3	17.1	16.1
Black .....	19.9	23.3	20.9
Hispanic origin .....	15.5	19.1	16.0

*Part-time workers.* Alternative shift work was much more common among workers who usually worked part time than among full-time workers. Of the 20.3 million part-time wage and salary workers, roughly 7.3 million, or 36.0 percent, usually worked an alternative shift on their primary job. The majority of these workers usually worked an evening shift or an irregularly scheduled shift. In many cases, part-timers are students, parents, or persons with other daytime commitments that conflict with a regular “9-to-5” schedule.<sup>6</sup> Another explanation for the high rates of shift work among part-timers is that a sizable proportion of businesses maintain operating hours

that extend past the traditional 8-hour day; part-time workers are needed to fill this gap. While the proportion of full-time wage and salary workers who worked alternative shifts was unchanged between May 1991 and May 1997, the proportion of part-timers on alternative shifts fell from 45.6 percent to 36.0 percent over the period.

THE “9-TO-5” WORKDAY does not appear to be in jeopardy of fading from its prominence in U.S. workplaces; yet the data do suggest that the rigidity of those hours continues to relax. In May 1997, about one-fourth of all full-time wage and salary workers could vary the times they began or ended work, nearly double the proportion in May 1985. In contrast, the proportions working alternative shifts—something other than a regular daytime shift—have not increased over the period.

Clearly, the prevalence of both flexible work schedules and alternative shifts is linked to the nature of the work involved in a particular job or industry. However, this explains only a portion of the variation in the frequency of these types of work schedules across demographic groups. Even within the most detailed occupational groupings, sizable differences remain, in both the rates of alternative shift work and flexible work hours among the various demographic groups, differences that the available data do not completely explain. □

## Notes

<sup>1</sup> Throughout this article the two terms “alternative shift” and “shift work” refer to all work schedules that do not conform to the regular daytime schedule, for which work hours typically fall between 6 a.m. and 6 p.m.

<sup>2</sup> The source of the data used in this article is the May 1997 supplement to the Current Population Survey (CPS). The CPS is a monthly survey of about 50,000 households, conducted by the Bureau of the Census for the Bureau of Labor Statistics. The employment estimates for the period under study have been affected by a number of factors. Official data for 1990 and later years incorporate 1990 census-based population controls, adjusted for the estimated undercount, whereas prior data are based on 1980 census-based population controls, for which no such adjustment has been made.

In addition, data for January 1994 and forward are not strictly comparable with data for earlier years because of the introduction of a major redesign of the CPS questionnaire and collection methodology. For additional information on the redesign, see “Revisions in the Current Population Survey Effective January 1994,” in the February 1994 issue of the BLS periodical *Employment and Earnings*.

<sup>3</sup> U.S. Bureau of Labor Statistics, *Employee Benefits Survey*, Bulletins 2517 (1999); 2507 (1999); and 2477 (1996).

<sup>4</sup> The actual wording of the question on flexible work schedules was altered on the most recent May supplement to the Survey. Specifically, the word “flexitime” was removed in the description of flexible work hours.

<sup>4</sup> Earl F. Mellor, “Shift work and flexitime: how prevalent are they?” *Monthly Labor Review*, November 1986, pp. 14–20.

<sup>5</sup> Those who responded that they work a schedule other than a regular daytime schedule were asked, “What is the main reason why you work this type of shift?”

<sup>6</sup> Data from the Current Population Survey show that among workers who usually work part time, roughly 55.9 percent work part time due to one of the following reasons: 1) childcare problems; 2) other family or personal obligations; 3) attending school or training. These data are 1997 annual averages and appear in table 20 of the January 1998 issue of the BLS periodical *Employment and Earnings*.