Work Schedules in the National Compensation Survey

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Work schedules in the United States are generally viewed as consisting of an 8-hour day and a 40-hour week. But the National Compensation Survey (NCS) covers many occupations that have different types of work schedules: fire fighters, for example, who often work 24 straight hours followed by 48 hours off; truck drivers, many of whom spend days at a time on the road; waiters and waitresses, whose schedules may vary every week; and school teachers, who tend to work many hours at home. Fitting all of these different schedules into a common form for data publication can be challenging.

The National Compensation Survey (NCS) produces data on occupational earnings, compensation cost trends--the Employment Cost Index (ECI) and the Employer Cost for Employee Compensation (ECEC) series--and benefits. The wage and benefit data collected from NCS respondents come in several time frames: hourly, weekly, biweekly, monthly, or annually. Converting the raw data into a common format requires accurate work schedules. This article explains how the NCS calculates these work schedules and the role that they play in the calculation of the published data series.

Definition Of The Work Schedule

The NCS work schedule is defined as, "The number of daily hours, weekly hours, and annual weeks that employees in an occupation are scheduled and do work." The work schedule is the standard schedule for the occupation; short-term fluctuations and one-time events are not considered unless the change becomes permanent. For example, paid or unpaid time off due to a snowstorm would not result in the adjustment of the work schedule because this would not represent a permanent change. Paid lunch periods are included in the work schedule, as is incidental time off, such as coffee breaks, or wash-up time. Vacation, holidays, sick leave, and other kinds of leave hours are included in the work schedule, but they are subtracted when calculating the number of hours worked in a year.

Overtime hours are hours worked beyond the normal work schedule and are collected separately for nonexempt employees and any exempt employees the employer chooses to pay for overtime.[1] Nonexempt employees must be paid a premium for all time worked beyond 40 hours during a week.[2] Overtime pay for nonexempt employees is reported separately in the premium pay category; overtime hours are included in the calculation of annual hours worked, but they are not part of the work schedule. For exempt employees who are not paid a premium for work beyond 40 hours, "hours scheduled and worked" would include any time normally worked beyond 40 hours. Hours worked beyond the normal work schedules are not reported separately for exempt employees unless the employer chooses to compensate them for those hours.

The number of weeks worked per year is 52 in most cases. For employees of seasonal establishments, the NCS collects the number of weeks actually worked. For example, an amusement park in a cold weather environment might close between November and April. If employees in a job worked 8 hours per day, 40 hours per week, when the park was open, the work schedule is 8 hours per day, 40 hours per week, 26 weeks per year.[3] The job is considered full-time and seasonal. Any jobs at the park that required 52 weeks of work per year have a 52-week work schedule.

Annual scheduled hours and annual hours worked. The work schedule is used to calculate both "annual scheduled hours," which is a measure of the annual hours an employee is scheduled to work, and "annual hours worked," which is the number of hours actually worked during the year. Annual scheduled hours are calculated by multiplying scheduled weekly hours by scheduled annual weeks. Annual hours worked are calculated by adding any overtime hours worked to the annual scheduled hours and subtracting all leave hours taken. For example, consider a job in which the employees work 8 hours per day, 5 days per week, 52 weeks per year; and they work 60 hours of overtime (paid at time and one-half) and receive 3 weeks vacation, 7 paid holidays, 4 sick days and 2 personal days per year.[4] The calculation of annual hours worked is as follows:

Scheduled annual hours (40 hours × 52 weeks):	*2,080 hours*
+ Overtime hours:	*60 hours*
- Vacation time (40 hours × 3 weeks):	*120 hours*
- Holidays (8 hours × 7 days):	*56 hours*
- Sick days (8 hours × 4 days):	*32 hours*
- Personal days (8 hours × 2 days):	*16 hours*
= Annual hours worked:	***1,916 hours***

Calculating Wage And Benefit Costs Using Work Schedules

Wages and salaries. Wage and salary data are collected separately from work schedule data. The straight-time average hourly earnings are calculated from actual earnings and matching actual hours worked or paid in the collection reference period. If the hourly rate is available, no additional calculations are needed. The hours for a collection reference period may vary from what is normally scheduled. The calculation of straight-time hourly earnings for the reference period reflects short-term fluctuations in the work schedule; the calculation of the "permanent" work schedule does not reflect such fluctuations. For example, a sales worker who receives only commissions and had a biweekly commission of $600 but worked only 1 week during the period would receive straight-time average hourly earnings of $15.00 per hour ($600 ÷ 40 hours). If the $600 was divided by the normal work schedule, the straight-time average hourly earnings would be $7.50 ($600 ÷ 80 hours), which would be an understatement of the actual hourly earnings.[5]

Benefit costs. The ECI and ECEC publish data for a wide variety of benefits. The costs for these benefits may take different forms, such as monthly premiums, percent of gross earnings, or days of paid leave. These costs must be converted to a common cost form to allow for the calculation of individual benefit and total benefit costs across occupations, industries, and other publication categories in the survey. The NCS uses a cost-per-hour-worked concept as the common cost form. To convert all costs to a per-hour-worked basis, the cost of each benefit is converted to an annual cost and then divided by the number of annual hours worked.

The work schedule is used to calculate the annual cost of the benefits, annual gross earnings, and the annual hours worked for the job. Calculation of the annual benefit cost varies by the way the benefit is paid. In the work schedule for the example shown in which annual hours worked equal 1,916, assume the employer pays a premium for health insurance of $300 per month. The annual cost would be $3,600 ($300 × 12 months), and the cost per hour worked would be $1.88 ($3,600 ÷ 1,916 annual hours worked). If the job had a wage rate of $10 per hour, the total cost of 3 weeks of vacation would be $1,200 ($10.00 × 40 hours per week × 3 weeks per year) and the cost per hour worked would be $0.63 ($1,200 ÷ 1,916 annual hours worked). The annual cost of Medicare (1.45 percent × gross earnings[6]) is $ 314.65 and the cost per hour worked would be $0.164 ($314.65 ÷ 1916 annual hours worked).

Types Of Work Schedules

Work schedules fall into one of four types: fixed, flexible, rotating, and nonfixed. The various types of work schedules are discussed in the paragraphs that follow.

Fixed work schedules. Employees who work the same schedule on an ongoing basis are considered to be on a fixed schedule. For example, employees who work from 9:00 A.M. to 5:30 P.M. each day, with 30 minutes unpaid lunch, and who work Monday through Friday each week are on a fixed schedule. Their schedule is 8 hours per day, 40 hours per week (8 hours × 5 days) and 52 weeks per year.

Flexible work schedules. Flexible work schedules are very similar to fixed work schedules. Under a flexible work schedule, employees set their own hours, generally within guidelines and with a fixed number of total hours. For example, an individual

worker might be permitted to arrive and leave work at various times provided she or he works 40 hours between Monday and Friday and is at work during certain core hours. An individual might work 9 hours one day, 7 hours one day, and 8 hours the other three days. For NCS purposes, these short-term fluctuations are ignored and would be treated as an 8-hour day and a 40-hour week.

Rotating work schedules. Rotating work schedules have a fixed number of hours and time off over a period of more than 1 week but not a set weekly schedule. Rotating schedules are most common among occupations in establishments that operate 24 hours per day, 7 days per week, such as nurses, police officers, and firefighters. Calculation of these types of work schedules is complicated by the overtime provisions of the Fair Labor Standards Act.[7] For example, a common work schedule for firefighters is 24 hours on duty followed by 48 hours off duty. Over a 3-week period, they work 3 days in one week and 2 days in the other two weeks. Every 3 weeks, the rotation starts again. The total hours worked would be 168 over the 3-week cycle, which is an average of 56 hours per week.

In this example, the work schedule would actually be recorded in the NCS as 53 hours per week, because that is the maximum number of straight-time hours allowed for firefighters under the Fair Labor Standards Act. For nonexempt firefighters, the other 3 hours would be considered overtime, and the cost would be recorded as premium pay; the hours would be added to "annual hours worked," but not to the work schedule. This schedule would be 24 hours per day, 53 hours per week, and 52 weeks per year.

Nonfixed work schedules. Nonfixed work schedules are found in situations in which one job has multiple work schedules. In such cases, the varying schedules are often due to particular traits of individual workers or because the work required varies by individual. For the purposes of the NCS, the nonfixed work schedule recorded is often an average of the work schedules of the employees in the job and therefore may not reflect the actual work schedules of particular individuals in the job. The nonfixed schedules are grouped into three broad subcategories: multiple fixed schedules for a job, individualized schedules for each employee, and schedules based on additional requirements of the job.

1. *Multiple fixed schedules for a job*. This type of schedule is most common when there is a mixture of full-time and part-time employees in a job. An example would be a retail establishment that has full-time sales clerks who work 40 hours per week and part-time clerks who work 20 hours per week. The NCS does not mix part-time and full-time workers in the same job; full-time and part-time workers are classified in separate jobs in the NCS. If all of the full-time workers or all of the part-time workers have the same schedule, the schedule is treated as if it were a fixed schedule. If multiple schedules are present for the selected group, the NCS calculates an average work schedule.
2. *Individualized schedules for each employee*. Individualized schedules are based on employer need or on individual preferences. This type of scheduling occurs most frequently in food service and retail trade establishments, and for some occupations within the transportation industry. For example, a restaurant may have a given number of waiters and waitresses whose total hours and times of work may vary each week. Assignment of weekly hours would depend on the needs of the restaurant and employee preferences. It is possible in these situations that each employee in the occupation could have a different work schedule. Because the NCS does not mix full- and part-time employees in one job, if the job contained a mix of full- and part-time workers, the NCS would define it as two different jobs, one part-time and one full-time. The NCS would then calculate an average work schedule for all of the full-time employees or all of the part-time employees separately. For example, if a restaurant had five part-time waiters and waitresses who worked 24, 22, 20, 16, and 12 hours per week, respectively, the average work schedule would be 18.8 hours per week.[9] The daily number of hours would be the average weekly hours divided by the average number of days worked.

   Work schedules for over-the-road truck drivers may vary between individual drivers, as well as from week to week for individual drivers, based on transportation schedules and legal limits on the amount of time worked per day or week. Over-the-road truck drivers are generally paid by mileage, not hours worked, and it is difficult to collect the actual hours worked. If NCS is unable to collect the driver's actual hours worked, it uses the employer's best estimate instead, subject to the limits of Federal Highway Administration (FHA) regulations.[10] FHA regulations limit drivers to no

more than 60 hours per week if the company does not operate every day, 70 hours in any 8 consecutive days, and no more than 10 hours a day.

Work schedules for individual members of flight crews might vary every month, depending on flight assignments. These workers are paid an hourly rate when flying, but they also receive pay for time spent in other activities, such as training or ground travel between flights. Collection of pay data for these nonflying periods and the hours associated with this pay has been attempted in a field test and proven not to be feasible for regular collection.[11] In many cases, the hourly flight pay begins when the plane leaves the departure gate and ends when the plane pulls into the arrival gate. In these cases, time spent on pre- and post-flight activities is not compensated and is difficult to collect. As a result of these collection problems, the NCS collects only the hourly flight rate and the flight hours for flight crews.

3. *Additional requirements of the job*. Professional and managerial employees often work beyond the established work schedule of the employer due to the requirements of their jobs. Because such workers are exempt from the overtime provisions of the Fair Labor Standards Act, employers are not required to compensate them for the additional hours. If the hours worked are not compensated for, then they usually are not recorded. Collection of the actual hours normally worked would be the preferred way of determining the work schedule, but records of hours worked by exempt employees are usually not available. In most cases, the NCS collects the employer's best estimate of the hours normally worked by exempt employees. If the respondent is unwilling or unable to estimate the hours, then the normal work hours of other employees in the establishment are used.

   The actual hours worked by elementary and secondary school teachers (who are exempt) are often not available. Time spent in lesson preparation, test construction and grading, providing additional help to students, and other nonclassroom activities are not available and therefore not recorded. The NCS uses contract hours for teachers in determining the work schedule.[12] Contracts usually specify the length of the school day, the number of teaching and required nonteaching days, and the amount of time, if any, teachers are required to be in the school before and after school hours. These hours are used to construct the work schedule. For example, it is common for teacher contracts to specify that teachers will work 185 days per year. In these cases, the daily work schedule would be the length of the school day plus any time teachers are required to be in school before or after the school day, and the weekly work schedule would be the daily schedule multiplied by 5 days (Monday through Friday). The number of weeks would be 37 (185 days ÷ 5 days per week). The time not worked during summer, Christmas break, and spring break would be excluded from the work schedule and would not be considered vacation or holiday. Jobs in schools are not considered to be seasonal.

Summary

The work schedule is intended to reflect the hours of work performed in a particular job. In most cases, the actual schedule can be collected. There are times, however, when actual data are not available for a job. In those cases, the NCS attempts to collect the employer's best estimate of the work schedule. If the employer is unable or unwilling to make an estimate, the work schedule used is that of other similarly situated employees in the establishment, if available; if such a work schedule is not available, the job is not included in the calculation of NCS estimates.

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Notes

1 The Fair Labor Standards Act (FLSA) mandates that employers in covered establishments pay time and one-half for time worked beyond 40 hours in a week. Exempt employees, who are salaried and meet specified job content and weekly pay guidelines, are exempt from the overtime provisions. Exempt employees are generally supervisors or professional employees. Nonexempt employees are covered by the overtime provisions. They are hourly, nonsupervisory employees who make less than a specified weekly income (currently $455 per week).

Nonsupervisory salaried employees who make less than $455 per week may also be nonexempt. For more information on exemptions, see the U.S. Department of Labor's "Fair Labor Standards Act Advisor," on the Internet at http://www.dol.gov/elaws/esa/flsa/screen75.asp.

2 The 40-hour standard applies to most occupations, but there are specific occupations that may have different standards. For example, overtime is required for nonexempt police officers after 42 hours and nonexempt firefighters after 53 hours.

3 The number of weeks is calculated by multiplying the months open (6) by the number of weeks per month, 4.333: 6 × 4.333 = 25.999 (or 26) weeks. The number of weeks per month is calculated by dividing the total number of weeks (52) by the total number of months (12): 52 ÷ 12 = 4.333.

4 The NCS assumes that all vacation, holiday, and personal days are used during the year, but it collects the average number of sick days actually used by the employees in the year. The number of sick days used is held constant over time unless there is a change in the sick leave plan. It is assumed that employees have an opportunity to use all vacation, holiday, and personal days during the year, but they use sick days only when they are actually sick and may not have the opportunity to use them if they are healthy during the year.

5 It is not necessary to adjust for leave taken if the employee is paid for the leave at the same rate as regular pay. For example, an employee whose salary is $1,000 per week would be paid $2,000 biweekly. If the employee worked 1 week and was on vacation for 1 week (employee works 40 hours per week), the payment of $2,000 could be divided by 80 hours paid to get a straight-time average hourly earnings rate of $25 per hour. It would not be necessary to subtract the $1,000 of vacation pay and the 40 hours of vacation time taken from the calculation because the resulting calculation ($1,000 divided by 40 hours worked) would also yield a straight-time average hourly earnings rate of $25.

6 The calculation of gross earnings would be as follows: hours paid × straight-time average hourly earnings. Hours paid would be the sum of scheduled annual hours, overtime hours (1.0 × the number of overtime hours), and the premium (0.5 × the number of overtime hours).

7 See note 1.

8 For example, if there were three part-time workers who worked 3 days per week, five who worked 2 days per week, and two who worked 1 day per week (all worked an 8-hour day) the weighted weekly average of the three schedules would be 16.8 hours, calculated as follows: {[(3 × 3 × 8) + (5 × 2 × 8) + (2 × 1 × 8)] ÷ (3 + 5 + 2)} = 168 ÷ 10 = 16.8.

9 The average would be calculated by adding all of the hours worked and dividing by the number of employees. In this case, calculation would be as follows: (24 + 22 + 20 + 16 + 12) ÷ 5 = 18.8. The average number of days worked would be calculated in the same way. The daily work schedule would be the number of hours per week divided by the average days worked per week. In this example, if the average number of days worked were 4, and the weeks worked were 52, the work schedule would be 4.7 hours per day (18.8 ÷ 4), 18.8 hours per week, 52 weeks per year.

10 The straight-time average hourly earnings would not be affected if an estimate were used for the work schedule. The straight-time average hourly earnings would be calculated by dividing actual straight-time earnings for the pay period by the straight-time hours reported for that pay period. The straight-time pay would include any add-ons, such as pay for carrying hazardous cargo.

11 Collection of "only flight" pay can distort the average hourly rate for flight crew members by understating both income and hours worked. For example, payments received and hours associated with training and ground transportation are not included. Flight pay may also exclude add-ons such as additional pay for flying at night or carrying hazardous cargo.

12 Because actual hours for teachers are not available, contract hours are used for both the work schedule and the calculation of straight-time average hourly earnings. Because contract hours are less than the actual hours worked, the straight-time average hourly earnings for teachers are often higher than those for occupations that have higher annual earnings. For more information about teachers' actual hours worked, see Rachel Krantz-Kent, "Teachers' work patterns: when, where, and how much do U.S. teachers work?" *Monthly Labor Review*, March 2008, pp. 52-5; available on the Internet at http://www.bls.gov/opub/mlr/2008/03/art4full.pdf.
