

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: The Service Economy

Volume Author/Editor: Victor R. Fuchs, assisted by Irving F. Leveson

Volume Publisher: NBER

Volume ISBN: 0-87014-475-8

Volume URL: <http://www.nber.org/books/fuch68-1>

Publication Date: 1968

Chapter Title: Appendix F: Reliability of Hours Data in 1/1,000 Sample

Chapter Author: Victor R. Fuchs

Chapter URL: <http://www.nber.org/chapters/c1168>

Chapter pages in book: (p. 225 - 228)

APPENDIX F

RELIABILITY OF HOURS
DATA IN 1/1,000 SAMPLE

One way of determining the reliability of hours data in the 1/1,000 sample is to compare them with hours data from other sources. Table F-1 compares the sample with the Current Population Survey data for the same month (April 1960). The distributions are similar, and the means, which are calculated from more detailed but noncomparable distributions, are also similar. The CPS shows a lower mean, a smaller concentration in the 35-40 hours class, and a greater concentration in the 15-34 hours class. This is probably due to the inclusion of Good Friday in the CPS survey week. The 1/1,000 sample is less sensitive to this bias be-

TABLE F-1

Comparison of Means and Distribution of Hours in the 1/1,000 Sample and Current Population Survey, Nonagricultural Employed Persons, 1959 and April 1960

	Hours Worked Per Week (per cent)				Average Hours
	1-14	15-34	35-40	41 and Over	
1/1,000 Sample					
April 1960	3.7	10.7	52.7	32.0	40.7 ^a
Current Population Survey					
April 1960	5.7	17.8	47.5	29.0	39.5 ^a
1959	5.6	15.0	48.8	30.6	40.0 ^b

Source: CPS data from U.S. Bureau of Labor Statistics, *Labor Force and Employment in 1960*, Special Labor Force Report No. 14, by Robert Stein and Herman Travis, Table D-1.

^a Average computed from more detailed distribution.

^b Computed from distributions by single hours.

cause, whereas each person is asked his hours in a single week, different workers are enumerated for different weeks in April 1960.

The 1/1,000 sample hours data do not differ greatly from establishment reports either. The April 1960 average hours of all employed persons in manufacturing with some earnings and weeks worked in 1959 in the 1/1,000 sample is 40.3; the average hours of manufacturing production workers for April 1960 in the BLS series is 39.4.¹

There is a question as to how much inaccuracy is introduced by using hours for a single month in 1960 to estimate hours in 1959. Table F-1 indicates that the distribution and mean for 1959 were very similar to those for April 1960. The BLS series for manufacturing production workers shows a mean of 40.3 hours for 1959. It was possible to compare the average weekly hours worked by production workers in April 1960 with the 1959 annual average for 80 of the 138 *Census of Population* industries used in the regression analysis in Chapter 6. The differences, typically 1 or 2 per cent, were small relative to interindustry variation in hourly earnings.

An important source of inaccuracy at the individual level is the tendency of persons to report regular or standard hours rather than hours actually worked. However, since persons working either more or less than usual hours will tend to report regular hours, average hours for groups may not be seriously affected. The Monthly Labor Survey found that when this source of error was substantially reduced, by additional probing, average hours were only .4 below the average in the Current Population Survey for all nonagricultural employed persons in the first half of 1965.²

In the absence of reliable hours data, weekly earnings might be studied in place of hourly earnings. If there were no correlation between hours and weeks worked across individuals, weeks worked would give a good indication of time spent at work. However, as Table F-2 indicates, there is a clear tendency for persons working many weeks per year to work long hours per week also. Therefore, if we know that one person worked more weeks than another, we would expect that he worked more man-hours per year by a greater relative amount than indicated, by the relative number of weeks worked. Information on hours, therefore, adds

¹ U.S. Bureau of Labor Statistics, *Employment and Earnings Statistics for the United States, 1909-64*, Bulletin No. 1312-3, Washington, 1964, p. 42.

² Robert L. Stein and Daniel B. Levine, "Research in Labor Force Concepts," *Proceedings of the Social Statistics Section of the American Statistical Association*, 1965, pp. 218-226.

TABLE F-2

Average Weeks Worked in 1959, by Hours Worked Per Week in April 1960, for Color-Sex Groups, Employed Persons, 1960

	Hours Worked Per Week, April 1960								Total
	1-14	15-29	30-34	35-39	40	41-48	49-59	60+	
	<i>Average Weeks Worked, 1959</i>								
White males	34.3	36.6	42.0	46.2	47.6	48.2	48.7	49.3	46.6
White females	30.3	34.6	38.7	43.1	44.1	43.4	42.9	44.8	41.1
Nonwhite males	34.2	34.9	38.5	40.7	45.7	46.2	46.4	46.7	43.8
Nonwhite females	31.4	33.9	40.6	41.2	43.4	42.5	43.8	46.1	39.8

Note: Excludes persons with zero weeks worked or zero earnings in 1959.

Source: *U.S. Censuses of Population and Housing: 1960, 1/1,000 Sample*.

to our knowledge of differences among groups in time spent at work, and hence improves our estimate of earnings per unit of time worked.

The use of hours data is particularly important because of our interest in distinguishing workers by color and sex. Table F-3 shows that average hours per week are considerably lower for females than for males and lower for nonwhites than for whites within each sex. Table F-3 also shows that the color-sex differences in hours derived from the 1/1,000 sample correspond very closely to the color-sex differences reported in the Current Population Survey in 1959. Since we are using the 1/1,000 sample (April 1960) as a proxy for the 1959 annual average, this strong correlation is reassuring.

In summary, it appears that the use of the hours data from the 1/1,000 sample adds to our understanding of earnings differentials and, while the errors for any individual may be large, there is no evidence of important systematic biases for groups.

TABLE F-3

Comparison of Means and Distribution of Hours in the 1/1,000 Sample and Current Population Survey, by Sex and Color of Nonagricultural Employed Persons, 1959 and April 1960

	Hours Worked Per Week			Average ^a Hours
	1-34	35-40	41 and Over	
<i>Per Cent of Total</i>				
1/1,000 Sample (April 1960)				
White male	11.9	47.7	40.4	41.9
White female	26.9	56.7	16.4	35.2
Nonwhite male	17.4	56.7	25.9	38.8
Nonwhite female	36.3	47.1	16.5	33.2
Current Population Survey (1959 Average)				
White male	14.7	47.8	37.4	42.5
White female	29.6	51.1	19.2	36.1
Nonwhite male	21.8	53.4	24.8	38.9
Nonwhite female	38.6	41.6	19.8	33.9

Source: CPS data from U.S. Bureau of Labor Statistics, *Labor Force and Employment in 1959*, Special Labor Force Report No. 4, by Joseph S. Zeisel, Table D-7.

^a For the 1/1,000 sample, averages are computed from more detailed distributions; for the Current Population Survey, averages are computed from distributions by single hours.