Tenure as a factor in the male-female earnings gap

New data from the CPS indicate that women
have fewer years in their current occupations
than men, a factor which affects
the earnings disparity

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While numerous studies have attempted to account for the male-female earnings differential, results generally show that a substantial portion of the disparity remains after controlling for sex differences in education, job experience, and other factors affecting productivity. Among the reasons cited for the inability to explain more of the differential are inadequate data and other problems in measuring the variables selected for analysis.

One controversial measurement issue pertains to the effects of work experience on pay. The fact that women average fewer years in the work force than men is considered by many researchers to be an important factor in the wage gap between the sexes. However, reliable measures of work experience are not often available. The Current Population Survey (CPS)—the principal source of demographically oriented earnings data—does not elicit information from individuals regarding the number of years they have worked, the various jobs they have held, or the amount of time they held those jobs. Although questions on job tenure have been asked at least every 5 years as part of special CPS supplements, these questions have traditionally referred only to the length of tenure in one's current job. They have provided no information on the total number of years spent in the labor force or in one's current occupation.

It has therefore become common practice to use an indirect estimate of general experience, defined by: years of age minus years of school completed minus 6.[1] This yields a measure of a worker's potential years of work experience. It is considered a reliable estimate of the actual number of years of experience for workers who have been employed continuously in each year since leaving school. And this is generally the case for men. But, because women typically spend some time out of the labor force, an estimate of their potential years of experience will tend to overstate actual years of experience and understate the impact of work experience on earnings.[2] Thus, potential experience is not very useful for studies of male-female earnings differences.

Occasionally information is obtained in the CPS which may be used to improve the measurement of work experience, especially for women. In the January 1981 CPS supplement, data were obtained for the first time on "occupational" tenure.[3] Workers employed in the same 3-digit census occupation in both January 1980 and January 1981 were asked to report the total number of years they had spent in that occupation, net of any intervening years spent in another occupation or not working. For one-quarter of the January sample, information was also obtained from workers on hours worked per week and usual weekly earnings, making it possible to examine the influence of occupational tenure on hourly earnings.

A year of experience in the current job or line of work should generally have more effect on current earn-

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ings than a year of experience et other jobs. For workers who switch fields entirely, experience in the previous field would very often have no bearing on current earnings. Accordingly, compared to potential experience, tenure in the current occupation should provide a much better indication of the portion of total work experience which is relevant to the current job and the earnings from that job. This is particularly true for women, who generally have fewer years of experience than men in the same occupation, as indicated by the distribution of tenure shown in table 1.

Method of the study. The new occupational tenure data from the January 1981 CPS were used in regression analyses, and the results were compared with those based on potential experience as a measure of the effect of work experience on men's and women's earnings.

For wage and salary workers age 25 and over, the following model was estimated by sex:

$$\text{(1)}\ \text{LnHE} = a + b_2\,\text{Educ} + b_2\,\text{Black} + b_3\,\text{GExp} \\ + b_4\,\text{GExp}^2 + b_5\,\text{Occten} \\ + \sum_{i=6}^{23} b\ \text{OPers Char} + e$$

LnHE is the natural logarithm of hourly earnings. For workers paid by the hour it is the reported hourly wage. For other workers, usual weekly earnings were divided by usual weekly hours. Education (Educ) is single years of school completed, and Black is a dummy variable for nonwhite races. Two experience measures were included in the analysis.[4] General experience (GExp) is years of potential labor market exposure and is defined as age minus years of education minus 6. Its square (GExp^2) was included to allow for nonlinear effects. A second experience measure is the "years in the current occupation" variable, Occten. Because occupational tenure was coded as a categorical variable in the CPS, dummy variables were constructed for each category, excluding that for less than 1 year of tenure. Other personal characteristics (OPersChar) that influence earn-

ings include dummy variables for marital status, part-time employment, metropolitan residence, region, occupation, and industry.

Regression estimates of equation 1 using unweighted data are presented in table 2. For each sex, two specifications of the earnings equation were estimated. In the first, potential experience and its square were the only experience measures (column 1). The second specification added occupational tenure to the set of explanatory variables (column 2).[5] Comparisons between the two specifications were used to examine the effects of occupational tenure on men's and women's earnings.

An overview of the results. The estimates in column 1 of table 2 indicate that an additional year of potential experience (evaluated at the mean) increases men's earnings by 2 percent, and women's, by 1 percent. However, one should not conclude from these results that the return to potential work experience is greater for men than for women. The estimate for women is subject to a great deal of measurement error associated with using potential experience to approximate actual experience. Column 1 estimates also indicate that for both sexes a year of potential experience has a smaller effect on earnings than education. While race does not significantly affect women's earnings, black men's earnings are 8.9 percent below those of white men.[6]

When years spent in the current occupation are included as a measure of work experience, the results demonstrate a number of important points. First, tenure in the occupation affects both men's and women's earnings over and above potential experience and all other personal characteristics. The rise in R^2's between columns 1 and 2 of .317 to .352 for men and .326 to .353 for women are both statistically significant.

Second, earnings of both sexes rise with occupational tenure. Relative to the earnings of workers with less than a year in the occupation, the earnings of men are 4.9 percent greater after 1 to 2 years in the occupation, and 21.7 percent more after 25 years. Similarly, for women, 1 to 2 years in the occupation is associated with a 6.9-percent increase in earnings and 25 years or more yields a 24.5-percent premium.

Third, with the addition of occupational tenure to the regression specification in column 2, the effects of potential experience are reduced, while race and education coefficients remain virtually unchanged.[7] Measurement error in using potential for actual experience partially accounts for the reduced effects. Compared with the larger increases in earnings associated with additional years actually spent in the current occupation, an extra year of potential experience (at the mean) increases men's earnings just 0.4 percent and leaves women's earnings unchanged. For men, therefore, potential experience retains an effect on earnings apart from the larger

Table 1. Distribution of wage and salary workers by sex and tenure in current occupation, January 1981

[In percent]

Years of tenure	Men	Women
Total	100.0	100.0
Less than 1 year[1]	13.2	17.9
1 to 1.9 years	7.8	10.6
2 to 2.9 years	8.0	9.9
3 to 3.9 years	6.1	7.0
4 to 4.9 years	6.8	7.5
5 to 9.9 years	20.4	20.5
10 to 24.9 years	28.7	22.0
25 years or more	9.3	4.6

[1]Includes workers whose detailed occupation in January 1980 differed from their current occupation in January 1981 as well as those who were unemployed or not in the labor force in January 1980.

Table 2. Regression estimates of the determinants of the log of hourly earnings, by sex, January 1981

Explanatory variable[1]	Men		Women	
	(1)	(2)	(1)	(2)
Education	.043	.041	.028	.026
Black	−.086	−.084	[2].015	[2].009
Potential experience	.021	.016	.011	.006
(Potential experience)^2/100	−.032	−.027	−.020	−.016
Tenure in current occupation:				
1 to 1.9 years	—	.046	—	.067
2 to 2.9 years	—	.061	—	.072
3 to 3.9 years	—	.099	—	.117
4 to 4.9 years	—	.100	—	.124
5 to 9.9 years	—	.146	—	.178
10 to 24.9 years	—	.185	—	.229
25 years or more	—	.196	—	.219
R^2	.317	.352	.326	.353
Sample size	6,679	6,679	5,263	5,263

[1] Also included in regressions were dummy variables for marital status, part-time employment, metropolitan residence, region, and major occupation and industry.
[2] Not significant at the .05 level.

NOTE: Unless otherwise indicated, entries were significant at the .01 level.

effects of occupational tenure. But for women, actual tenure in the occupation emerges as a stronger predictor of earnings.

Fourth, part of the wage gap between the sexes is due to the lower occupational tenure of women. Average hourly earnings were $8.00 for men and $5.29 for women, a difference of $2.71. Women's hourly earnings would be $5.39 if they had the same distribution of occupational tenure as men.[8] Thus, 4 percent of the earnings gap reflects sex differences in the distribution of occupational tenure. However, it should also be noted that, even if women had the same mean levels on all variables in the column 2 regressions as men, their earnings would rise to only $5.98, leaving 75 percent of the wage gap to be explained.

TWO BASIC CONCLUSIONS may be drawn from this analysis. First, when occupational tenure is included along with potential experience as a measure of work experience, not surprisingly some of the earnings differential between men and women reflects the lower tenure of women. Second, and consistent with past research, a substantial portion of the total wage gap remains unaccounted for.[9] Whether this remainder may be attributed to worker and job characteristics not included in this analysis, or simply to pay discrimination, is a subject for further research. □

——— FOOTNOTES ———

[1] See Jacob Mincer, *Schooling, Experience, and Earnings* (New York, Columbia University Press, 1974).

[2] See exchange in *Journal of Human Resources*, Winter 1976, by Mark R. Rosenzweig and Jack Morgan, "Wage Discrimination: A Comment," pp. 1–7, and Alan S. Blinder, "On Dogmatism in Human Capital Theory," pp. 8–22.

[3] Data were also collected on years with current employer during the May 1979 and the January 1981 CPS. The influence of this tenure variable on earnings has been examined in a number of other studies. See, for example, Wesley S. Mellow, "Employer Size and Wages," *Review of Economics and Statistics*, forthcoming.

[4] Specialized experience is skills and knowledge accumulated in a particular line of work and useful only in that job. General experience includes nonspecific or other experience acquired during employment.

[5] Because experience includes both specialized and other experience, potential experience and its square are included as estimates of other experience in the second regression to avoid specification bias. However, the inclusion of these variables introduces measurement bias in the regression for women.

[6] For dummy variables, the proportionate impact on log earnings is computed by taking the antilog of the coefficient and subtracting 1.

[7] Estimates for occupation and industry variables declined.

[8] From column 2 regressions, $5.39 is women's expected earnings if they had the same mean values as men for the occupational tenure categories, but retained the female intercept and female means and coefficients on all other independent variables. Computation is based on regression standardization. See, for example, Otis Dudley Duncan, "The Inheritance of Poverty or the Inheritance of Race," in Daniel P. Moynihan, ed., *On Understanding Poverty* (New York, Basic Books, 1967), pp. 85–110.

[9] See, for example, Mary Corcoran and Greg J. Duncan, "Work History: Labor Force Attachment, and Earnings Differences Between the Races and Sexes," *Journal of Human Resources*, Vol. 1, 1979, pp. 1–20. Using data from the Panel Study of Income Dynamics, which included detailed work history and labor force attachment variables, they were able to account for less than half of the earnings differential between white men and black and white women.