MALE-FEMALE PAY DIFFERENTIALS
IN PROFESSIONAL EMPLOYMENT

by

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Male-Female Pay Differentials in Professional Employment

1. Introduction

This study reports on an analysis of salary differentials among a sample of 272 professional employees of a single corporation. While there are obvious dangers in generalizing from the practices of a single employer, there are several advantages of such a microeconomic case-study approach. Firstly, because the employer in question hires large numbers of men and women doing the same range of jobs, a measure of the extent of sex discrimination can be obtained, holding occupation constant. It has been almost impossible to obtain such estimates in the past, since as Fuchs has indicated, few—if any—men are employed in most of the occupations employing large numbers of women, and vice versa. Secondly, because the study has been confined to a group of highly educated professional employees, it is possible to obtain a sample of men and women who are relatively homogeneous with respect to their career interests and attachment to the labor force. Other studies of sex discrimination have usually failed to distinguish between two very different groups of women employees: those who have a long-run career interest in their occupation and those whose attachment to the labor force is a temporary one. Thirdly, since the employer was willing to open its full personnel records to examination, it was possible to obtain precise and detailed information on the previous experience and various personal characteristics influencing salary differentials.¹ Such information has generally been unavailable in

¹ We are extremely grateful to the organization, which wished to remain anonymous, for its generosity in providing us with all the personnel information available to it.
previous studies. Finally, because the employees in the sample have invested a considerable number of years in higher education (college and graduate training) and in post-schooling investments, an analysis of the salary differentials of this particular sample should provide information on the relevance of various recent explanatory models of wage differentials in the human-capital tradition at a level of aggregation never used before.

After a brief review of the post-schooling investment model as an explanation of salary differentials, estimates of the model as applied to men and women employees separately are presented in Section 3. A somewhat expanded model, including productivity measures relevant to the employing organization, is estimated in Section 4. In Section 5, the concept of discrimination is examined and estimates of the extent of any discrimination against women are presented. In Section 6, a "job level" variable is added to the equations and an analysis of the assignment of men and women to job levels is presented. We conclude in Section 7 that the source of discrimination against women in the organization is in job assignments rather than in pay differentials between the sexes for the same job.

2. The Post-Schooling Investment Model

According to the human-capital approach developed by Becker and Mincer, an individual's gross annual earnings can be related to past investments as follows:

\[ W_t = V_0 + r \sum_{i=1}^{t-1} C_i \]  

where
$W_t$ is the gross annual wage in period $t$; $C_i$ is the cost of human capital investment during period $i$, $r$ is the rate of return (assumed to be constant over time) to human capital investment, and $W_0$ is the annual wage that would be received in the absence of any human capital investments.

If formal education is the only capital investment and if the costs of schooling can be assumed to be simply the earnings foregone during the years of schooling, Becker and Chiswick as well as Mincer have shown that equation (1) may be rewritten as

$$\ln(W_t) = \ln(W_0) + rS,$$

where $S$ represents the number of years of formal education in which the individual has specialized in human capital formation. The model can also be expanded to include investment in on-the-job training. Letting $k_o$ stand for the fraction of time invested in on-the-job training at the start of work experience, and assuming that such investments decline linearly over time (as by the relationship $k_j = k_o - (k_o/T)_j$, where $T$ stands for the years of work experience when on-the-job training ends), we may modify equation (2) as follows:

$$\ln(W_t) = \ln(W_0) + rS + r_ek_o^j - r_e^2\frac{k_o}{CT} j^2.$$

Such formulations may be found in Mincer and Johnson.

In (3), the subscripts $s$ and $e$ allow the rates of return for schooling ($s$) and experience ($e$) to differ, and $j$ stands for the number of years of work experience. It is seen that the log of wages is related linearly to the number of years of schooling ($s$) and in a quadratic fashion to the number of years of work experience ($j$). We call this the narrow form of the post-schooling investment model.
The wage equation may be further expanded to include various personal characteristics, productivity and institutional factors, bearing on the employment situation. Letting $\phi$ stand for the vector of other characteristics influencing the distribution of labor incomes and $\alpha$ for the vector of coefficients, and assuming these factors do not affect the rate of return to schooling, the expanded model becomes:

$$\ln(W_t) = \ln(W_0) + r_s S + r_e k_0 l - r_e \frac{e^2}{2t} l^2 + \phi$$

3. Estimation of the Narrow Post-Schooling Investment Model.

In this section we present cross-sectional estimates of the narrow form of the post-schooling investment model. The dependent variable was measured as the employee's annual salary (or the full-time equivalent annual salary for the few part-time workers in the sample), adjusted for the expected absence rate over the next year. Data were available on the number of days each employee was absent due to illness or any other reason in each year. On the basis of the average absence rate over the preceding four years and the average number of working days per year, these data were converted to a presence rate, $P$, the percentage of working days (excluding vacation time) the employee was on the job. Since the employer might reasonably estimate future absence rates on the basis of past experience, we assumed that the gross full-time equivalent wage, $W_S$, was related to the nominal annual salary received by the employee, $W_n$, as follows:

$$W_S = W_n / P$$
The gross or adjusted wage, rather than the nominal wage in the personnel records, was used as the dependent variable in the study.²

The number of years of schooling was measured as the years of education beyond high school. It was necessary in many cases to divide some of the years of graduate training into partial years of schooling and partial years of experience, as, for example, when the student took on a part-time research or teaching job. Such a division was possible because of the detail in the individual personnel folders. Experience (outside of the present organization) was broken down into two categories: related (to the present job) work experience and unrelated experience. An example will illustrate how the division was made.

Suppose a man came to work as a research scientist with two years of experience at a university or research organization. Clearly his experience is related to the present job and undoubtedly considerable on-the-job training investments were undertaken during that period. On the other hand, if the individual came to work as a research scientist with two years' experience after graduate school spent as a busboy on a cruise ship, the experience was coded as unrelated to the present job. Experience was coded as unrelated only if it was quite clear that such experience had no relevance whatsoever to the present occupation. Experience in the present

²This wage is still net of any post-schooling investment in the current year. According to equations (1) to (4), however, it is the gross wage (before investment) rather than the net wage paid that is the correct dependent variable. It is likely that the discrepancy is very small, however, especially for the year 1971. The sample was chosen from a detailed organizational chart drawn up in 1968. Thus, only workers in the organization during 1966 are included in the 1971 sample. Presumably these employees have completed a considerable part of their apprenticeship period during which most of the post-schooling investment takes place.
organization, that is, seniority, was taken to be the number of years employed. As will be explained below, related work experience outside the organization and work experience within the organization were combined into one experience variable.

The sample was chosen from a detailed organizational chart drawn up in 1968 for the 1969 fiscal year. 272 employees (159 men and 113 women) in six divisions were identified as doing "professional" work according to personnel classifications. This work generally consisted of technical and/or scientific work for which some degree of advanced training was usually a requirement. Salary and other information on these employees was available backward in time to 1966 and forward in time through 1971. The sample numbers, however, decline in both directions (particularly going backward in time) since some of the employees at work in 1969 were not employed in 1966 and some of the 1969 employees subsequently left the organization or retired.

Cross-sectional estimates of equation (3), the narrow form of the post-schooling investment model, for 1969, the year for which our sample is largest, are presented in Table 1 (page 7).
TABLE 1

Estimates of Narrow Form of the Post-Schooling Investment Model*

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Constant Term</th>
<th>Coefficient of S (Yrs. of Schooling)</th>
<th>Coefficient of j (Yrs. of Seniority and Rel. Work Experience)</th>
<th>Coefficient of $j^2$</th>
<th>$R^2$</th>
<th>F-Value (and degrees of freedom)</th>
<th>Standard Error of Est. (adj. for degrees of freedom)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men 1969</td>
<td>8.715</td>
<td>+0.080 (9.95)</td>
<td>+0.054 (11.34)</td>
<td>-0.001 0.71</td>
<td></td>
<td>129.24 (3,153)</td>
<td>0.166</td>
</tr>
<tr>
<td>Women 1969</td>
<td>8.529</td>
<td>+0.065 (6.71)</td>
<td>+0.060 (9.42)</td>
<td>-0.001 0.71</td>
<td></td>
<td>87.38 (3,109)</td>
<td>0.183</td>
</tr>
</tbody>
</table>

*Numbers in parentheses below the coefficients are t-values.

As Equation (3) makes clear, the coefficient of $S$ may be interpreted as the rate of return to schooling. According to our estimates, men received a rate of return of 8.0 per cent while the return to schooling for women was only 6.5 per cent. While the rate of return to on-the-job training ($r_e$) is not identified, our estimates would suggest that it is at least as high as that attributable to schooling. For example, assuming

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3 Equation (3) was also estimated under the assumption that the schooling variable might enter the equation as a quadratic. The estimated coefficient of the quadratic term was always negative, suggesting diminishing returns to schooling. Nevertheless, the standard error of the estimate for the equation, adjusted for degrees of freedom, was never improved by the quadratic specification and therefore the linear specification was retained in this study.
that \( k_o \), the fraction of time invested in on-the-job training at the start of work experience is one half, one obtains an estimate of \( r_e \) in the men's equation of over 10 per cent, since the coefficient of \( j \) is the product \( r_e k_o \). \( T \), the number of years during which on-the-job training takes place, may be estimated as the ratio of the coefficients of \( j^2 \) (the experience variable) and \( j^2 \). In the men's equation, the ratio of the coefficients is 27, a fairly long period, but not unreasonable in view of the very technical nature of the work involved.

In Table 1, related work experience outside the organization and work experience within the organization (that is, seniority) were combined into one experience variable. This was done since the estimated coefficients of the two types of on-the-job training were very similar when they were allowed to enter the equation separately.\(^4\) On the other hand, nonrelated work experience was dropped from the equation entirely since estimates of

\[\text{Coefficient of Related Work Experience} \quad \text{Coefficient of (Related Work Experience)}^2 \quad \text{Coefficient of Seniority} \quad \text{Coefficient of (Seniority)}^2\]

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Coefficient</th>
<th>Coefficient</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>of Related Work Experience</td>
<td>of (Related Work Experience)(^2)</td>
<td>of Seniority</td>
<td>of (Seniority)(^2)</td>
</tr>
<tr>
<td>Men</td>
<td>+0.041</td>
<td>-0.001</td>
<td>+0.051</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(5.14)</td>
<td>(3.89)</td>
<td>(4.91)</td>
<td>(3.03)</td>
</tr>
<tr>
<td>Women</td>
<td>+0.043</td>
<td>-0.001</td>
<td>+0.049</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(4.57)</td>
<td>(2.15)</td>
<td>(3.85)</td>
<td>(1.83)</td>
</tr>
</tbody>
</table>

It should be also noted that the standard error of estimate (adjusted for degrees of freedom) for the equation was higher when seniority and related experience were allowed to enter the equations separately.
the coefficient of such experience were never significantly different from zero. As will be indicated later, we also tested whether the pay-structure relationships were different for men and women and were able to reject the hypothesis that the salaries of the two groups were generated by the same structure.

Most previous empirical studies in the human-capital tradition have not had available precise information on the amount of (related) work experience for each employee in the sample. Such experience has usually been estimated by an equation like the following:

\[ j' = \text{Age} - (18 + S). \]

It was assumed that all years since the completion of formal schooling were spent obtaining work experience. In order to compare the results of such an approximation with the estimates reported in Table 1 above, we reestimated the narrow form of the post-schooling investment model using the estimate \( j' \) for actual work experience. The results are presented in Table 2'(page 10).

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5 For example, for the year 1969 when the number of years of non-related work experience was added (as a separate independent variable) to equation (3), the estimated coefficients for men and women were +0.003 with standard errors of (0.004).
TABLE 2

Estimates of Narrow Form of the Post-Schooling Investment Model
Using Approximation for Work Experience*

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Constant Term</th>
<th>Coefficient of S (Yrs. of Schooling)</th>
<th>Coefficient of ( j' ) (Yrs. of Seniority and Rel. Work Experience)</th>
<th>Coefficient of ( \lambda_{12} )</th>
<th>( R^2 )</th>
<th>F-Value (and degrees of freedom)</th>
<th>Standard Error of Est. (adj. for degrees of freedom)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men 1969</td>
<td>8.609</td>
<td>+0.091 (10.70)</td>
<td>+0.044 (8.85)</td>
<td>-0.001</td>
<td>0.67</td>
<td>104.85 (3.155)</td>
<td>0.178</td>
</tr>
<tr>
<td>Women 1969</td>
<td>8.602</td>
<td>+0.077 (6.08)</td>
<td>+0.037 (5.34)</td>
<td>-0.001</td>
<td>0.48</td>
<td>33.29 (3.109)</td>
<td>0.244</td>
</tr>
</tbody>
</table>

*Numbers in parentheses below the coefficients are t-values.

Comparison of the two tables indicates that the approximation of experience by "age minus year of age when schooling completed" seems to work well for the sample of men. The coefficient of determination in Table 2 is only slightly lower than that shown in Table 1 and the coefficient estimates are quite similar in the two tables. There is, however, a much greater difference in the results for the women's equations and the \( R^2 \) falls sharply when the approximation is used. As might be anticipated, the approximation worked less well for women since many of the women in the sample spent several years after the completion of schooling either out of the labor force or, as will be indicated later, in nonrelated work activities.

We also attempted to add age variables to the basic equation (3), which included only schooling and experience. Perhaps there is a maturation process with age that affects salaries apart from the post-schooling
investments associated with work experience. To test this hypothesis we amended (3) and estimated the following equation:

\[
(5) \quad \ln(Y_e) = \ln(Y_0) + r_S S + r_k k_o j - \frac{r_k}{2T} j^2 + a_1 \text{Age} + a_2 \text{Age}^2 + \nu.
\]

On the basis of the estimates of (5) we were unable to reject the hypothesis that the coefficients of the age variables were jointly significantly different from zero. This result held in both the men's equation and the women's equation, where the collinearity between the age and experience variables was less severe. The addition of age variables to the equation does not contribute significantly to the explanation of salary differentials.

4. An Expanded Wage Model

Thus far the wage for an individual employee is assumed to be fully explained on the basis of schooling and post-schooling investments. Perhaps the major missing elements in our explanation of salary differentials concern the various personal and productivity characteristics that influence the employment situation. It is, of course, very difficult to measure an individual's productivity to the organization independently of the salary decision. Nevertheless, there are certain proxy variables that may be employed to estimate the individual's productivity and his or her opportunities for alternative employment.

\footnote{The hypothesis was tested by calculating the ratio \( F = \frac{R^2(5) - R^2(3)}{[1 - R^2(5)]/n - 6} \), where \( R^2(5) \) and \( R^2(3) \) are the coefficients of determination obtained from the estimates of equations (5) and (3) respectively, and \( n \) is the number of observations.}
Given the scientific and technical nature of the output of the particular divisions of the corporation chosen for study, a variable measuring the extent of the individual's publications may serve as a useful proxy of his or her productivity. It seems reasonable to assume that the individual's value to the organization, and certainly his or her ability to generate outside job offers, is related to the employee's professional reputation. The main way that individuals get outside reputations in scientific fields is through their published work. Consequently it seemed desirable to add a variable indicating the extent to which the individual had made important scientific contributions through his writing.

It may well be doubted, however, that a cardinal measure of the individual's publications is in any way indicative of the extent to which the employee has achieved a professional reputation or has benefited the corporation. Consequently, we rejected the idea of introducing a variable measuring the number of publications. Instead, we chose a dummy variable approach where the variable would take on the value '1' if the individual had made significant contributions and '0' if he had not. Several methods were tried to code the dummy variable. First, we gave a code of '1' to any individual who had two or more publications (books, monographs, or articles in professional journals). More satisfactory was a variable that took on the value unity only if the individual had four or more such professional publications. Better still, in capturing the extent to which the individual was outstandingly productive and had achieved an outside reputation, was the variable we actually employed. The variable took on the value '1' if the individual had 15 publications or more or, if his
publications numbered less than 15, it was the opinion of other professionals in the individual's field that the person's publications were of outstanding quality and so well known in the literature that he or she had achieved a distinguished outside reputation.

As an additional proxy to help capture the employee's productivity, we utilized a variable indicating whether or not the individual had received the Ph.D. degree. Consider two individuals who spend four years each in graduate school. The first manages to obtain only a masters degree during the period while the second completes a dissertation and receives the Ph.D. degree. We suggest that the second individual is likely to be a more productive worker who is more valuable to the organization (as well as to any other employers) and will tend to command a higher salary. Thus, an additional dummy variable was added to the wage equation that took on the value of '1' if the individual had received the Ph.D. degree and '0' if he had not.

Another variable was added to indicate the individual's marital status. The variable was coded '1' if the individual was married and '0' if the individual was single. It has been argued by Bowen and Finegan that employers may regard an individual's marital status as a proxy for personal traits relating to success in the work environment. According to this argument, family and marital responsibilities make married men more stable than single men and, therefore, married men get the better-paying jobs. It may also be argued that the employer may rationalize the payment of higher wages to married men because their financial requirements are greater. The effect on married females, however, may be just the opposite. Employers may expect married women to have higher absence and turnover rates,
that is they are 'less stable' employees. For example, it is generally presumed by employers that a working wife will quit her job when the husband's job prospects change so as to require the family to move. 7

In addition, it may be doubted whether the actual number of years of schooling and on-the-job training adequately capture the quality of the investment made. The area in which an individual has undertaken his college and especially his graduate study may have an important bearing on his ability to command a relatively high salary after the completion of his formal schooling as well as later in life. For example, an individual with training in mathematics, statistics, and operations research would find a plethora of high-paying opportunities available to him with universities, the government, or corporations. Another individual trained in English literature might find only relatively low-paying jobs available at universities or, perhaps, with a publishing firm or similar type of employer. In other words, people with training in various "critical" skills have a much higher opportunity cost and need larger salaries to be attracted to and retained by the organization.

In coding the employees with respect to the criticalness of their areas of study, we made use of a study, prepared for the American Economic Association, of median salaries for Ph.D.s in alternative fields. The highest of these were regarded as 'critical' areas of study. For the

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7In fact, as will be shown below, the absence rate was much higher for women than for men, although marital status itself was not related to absence. A previous study of the organization was unable to isolate differences in turnover among men and women. It is for this reason we suggested earlier that the sample was relatively homogeneous with respect to the employee's attachment to the job.
purposes of the present study, the fields of mathematics, statistics, and several of the physical sciences were all coded as critical.

A dummy variable, $D_c$, was employed which took on the value unity if the individual's area of study was a critical one, and zero otherwise.

Finally, each individual's absence rate, which had already been used to adjust the salary data used in the regressions, was added as an independent variable. Our argument was that absence might have two effects on salaries. First, annual salaries for workers with a history of absence would likely be lowered to reflect the expectation that such employees would work fewer days per year. This effect has already been taken care of, since we have adjusted annual salaries upward through dividing by $P$, the presence rate. Thus, all salaries are, in effect, adjusted to reflect the wages paid for an equivalent time period. But absence may have a second effect on wages that has not already been captured. Absence may be related to looser work habits and may thus serve as a proxy for worker productivity. Workers who are frequently absent may also frequently be less productive even when they are on the job.

The variable used in the regression was defined as simply the number of days absent per year other than vacation time, averaged over the preceding four years (or over the number of years employed for those employed fewer than four years).

As an expanded wage model, we, therefore, add to equation (5), the personal and productivity factors noted above. The broadened equation was

\[
(6) \ln(W_{g,t}) = a_0 + a_1 S + a_2 J + a_3 J^2 + a_4 \text{PHD} + a_5 \text{PUB} + a_6 \text{M} \\
+ a_7 D_c + a_8 A + \eta
\]

Such an approach is similar to that employed by Rees and Shultz.
where $D_{\text{PhD}}$, $D_{\text{PUB}}$, $D_{M}$ and $D_{C}$ stand for the Ph.D., publications, marital status, and critical area-of-study dummies respectively, and $A$ stands for the absence rate. Estimates of equation (6) for the years 1966, 1969, 1970, and 1971 are shown in Table 3.

Table 3 indicates that the additional "productivity" proxy variables do help to improve our ability to predict salary levels for men and women in the organization. In most cases more than 3/4 of the variance in men's salary levels is explained by the regressions, while over 80 per cent of the variance in women's salaries is explained. The coefficient of the dummy variable associated with publications always had the correct sign and usually was highly significant. Similarly, the receipt of the Ph.D. degree and study in a "critical" area were typically associated with higher salary levels. Finally, the marital-status dummies took on their expected signs. Other things equal, married men tended to earn more than single men, whereas the opposite relationship was found for female employees, although the coefficients for women were never significant. The coefficient of the absence rate was typically negative and especially significant for women.

9 Utilizing an F-test similar to that described in footnote 6, we verified that the addition of the "productivity" variables was highly significant in all years.

10 It should be noted that we were unsuccessful in finding a relationship between several other variables and the structure of salaries within the organization. We tried, for example, to measure the quality of education by obtaining the quality rating of the institution at which the education was received, and also by looking at whether or not the individual received academic honors during his or her years of schooling. We could find no relationship between either variable and the structure of salaries. In addition, as indicated above, we found essentially no relationship between years of nonrelated experience and salaries. Our general procedure was to add explanatory variables to the salary structure equations until further additions failed to reduce the standard error of the estimate adjusted for degrees of freedom.
TABLE 3

Estimates of Equation (6)

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Constant Term</th>
<th>S</th>
<th>j</th>
<th>j²</th>
<th>D&lt;P&gt;HD</th>
<th>D&lt;P&gt;UB</th>
<th>D&lt;H&gt;</th>
<th>D&lt;D&gt;</th>
<th>A</th>
<th>R²</th>
<th>F-Value (and degrees of freedom)</th>
<th>Stand. Error of Estimate (Adjusted for degrees of freedom)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men 1971</td>
<td>9.007</td>
<td>+0.036</td>
<td>+0.044</td>
<td>-0.001</td>
<td>+0.117</td>
<td>+0.145</td>
<td>+0.144</td>
<td>+0.065</td>
<td>-0.001</td>
<td>0.68</td>
<td>32.37 (8,120)</td>
<td>0.161</td>
</tr>
<tr>
<td>Women 1971</td>
<td>8.721</td>
<td>+0.044</td>
<td>+0.061</td>
<td>-0.001</td>
<td>+0.049</td>
<td>+0.356</td>
<td>-0.015</td>
<td>+0.218</td>
<td>-0.011</td>
<td>0.83</td>
<td>49.83 (8,84)</td>
<td>0.155</td>
</tr>
<tr>
<td>Men 1970</td>
<td>8.789</td>
<td>+0.042</td>
<td>+0.052</td>
<td>-0.001</td>
<td>+0.120</td>
<td>+0.109</td>
<td>+0.183</td>
<td>+0.076</td>
<td>-0.001</td>
<td>0.77</td>
<td>54.89 (8,133)</td>
<td>0.155</td>
</tr>
<tr>
<td>Women 1970</td>
<td>8.693</td>
<td>+0.046</td>
<td>+0.058</td>
<td>-0.001</td>
<td>+0.046</td>
<td>+0.337</td>
<td>-0.010</td>
<td>+0.203</td>
<td>-0.011</td>
<td>0.84</td>
<td>60.16 (8,93)</td>
<td>0.143</td>
</tr>
<tr>
<td>Men 1969</td>
<td>8.766</td>
<td>+0.041</td>
<td>+0.048</td>
<td>-0.001</td>
<td>+0.140</td>
<td>+0.072</td>
<td>+0.162</td>
<td>+0.083</td>
<td>+0.000</td>
<td>0.78</td>
<td>66.64 (8,150)</td>
<td>0.148</td>
</tr>
<tr>
<td>Women 1969</td>
<td>8.693</td>
<td>+0.043</td>
<td>+0.054</td>
<td>-0.001</td>
<td>+0.079</td>
<td>+0.318</td>
<td>-0.013</td>
<td>+0.183</td>
<td>-0.010</td>
<td>0.82</td>
<td>57.45 (8,104)</td>
<td>0.149</td>
</tr>
<tr>
<td>Men 1966</td>
<td>8.827</td>
<td>+0.034</td>
<td>+0.050</td>
<td>-0.001</td>
<td>+0.104</td>
<td>+0.096</td>
<td>+0.033</td>
<td>+0.107</td>
<td>-0.004</td>
<td>0.78</td>
<td>30.14 (8,70)</td>
<td>0.148</td>
</tr>
<tr>
<td>Women 1966</td>
<td>8.362</td>
<td>+0.059</td>
<td>+0.074</td>
<td>-0.002</td>
<td>-0.012</td>
<td>+0.320</td>
<td>-0.028</td>
<td>+0.140</td>
<td>-0.008</td>
<td>0.83</td>
<td>33.99 (8,55)</td>
<td>0.160</td>
</tr>
</tbody>
</table>

The numbers underneath the coefficients are the related t-statistics.
There exists a standard test, developed by Chow, to determine whether the structural salary relationships estimated for men and women are the same. The hypothesis that the same structure generated the observations for men and women may be tested by calculating the F-ratio

\[ F = \frac{Q_D/k}{Q_M/(M+N-2k)} \]

(7)

with \((k, M+N-2k)\) degrees of freedom. In equation (7), \(k\) is the number of coefficients to be estimated, \(M\) is the number of men in the sample, \(N\) is the number of women, \(Q_M\) is the sum of the squared residuals from the least-squares estimate of the coefficients fitted to the men's equation and \(Q_D = Q_T - Q_M\), where \(Q_T\) is the sum of the squared residuals from the fitted function to the total sample of men and women. As Table 4 indicates, we can reject in all years the hypothesis that men's and women's salaries were generated by the same structure.

### TABLE 4

<table>
<thead>
<tr>
<th>Period</th>
<th>Computed F</th>
<th>Critical F</th>
<th>Significance Level (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(L)</td>
<td>(5)</td>
</tr>
<tr>
<td>1971</td>
<td>13.29 (8,206)</td>
<td>2.60</td>
<td>1.98</td>
</tr>
<tr>
<td>1970</td>
<td>12.24 (8,228)</td>
<td>2.60</td>
<td>1.98</td>
</tr>
<tr>
<td>1969</td>
<td>14.03 (8,256)</td>
<td>2.59</td>
<td>1.97</td>
</tr>
<tr>
<td>1966</td>
<td>10.48 (8,127)</td>
<td>2.65</td>
<td>2.01</td>
</tr>
</tbody>
</table>
5. Adjusted Salary Differentials or Discrimination Measures

Gross differences in average salaries between men and women (i.e., \( \bar{W}_m - \bar{W}_w \)) cannot be taken to indicate the presence of discrimination. If, for example, women, on average, have undertaken less investment in education and less post-schooling investments than men, we should anticipate that their average salaries would be lower. Discrimination can be said to exist only if women with the same characteristics as men tend to receive lower salaries.

The basic technique involved in estimating salary differentials adjusted for differences in personal and productivity characteristics is to compare the average wages that would be received by the two groups if they were paid according to the same salary structure. Two different types of assumptions are possible. We could assume that in the absence of discrimination, both men and women would face the salary structure applicable for men, or that both sexes would face the salary structure applicable for women.

Let us define \( \hat{W}_w \) as the average salary that women would receive if they were paid according to the salary structure applicable for men. We may estimate \( \hat{W}_w \) by the following relationship.

\[
(8) \quad \hat{W}_w = f_m(\bar{S}_w, \bar{X}_w, \bar{Y}_w)
\]

where \( f_m \) stands for the pay-structure relationship estimated for men.

It will be noted that equation (8) evaluates the function at the mean values of the schooling, experience, and vector of other variables applicable to the women in the sample. We then may decompose the gross difference in average salaries between men and women, that is, \( \bar{W}_m - \bar{W}_w \), into two
component parts: 1) the difference in salaries due to the different characteristics, which may be estimated as \( \bar{w}_m - \bar{w}_w \), and 2) the salary differential remaining after adjustment for differing characteristics, that is, \( \bar{w}_m - \bar{w}_w \), which may be interpreted as a measure of sex discrimination.\(^{11}\)

Alternatively, we may define \( \bar{w}_m \) as the average salary that men would receive if they were paid according to the salary structure applicable for women. \( \bar{w}_m \) may be estimated by

\[
\bar{w}_m = f_w(S_m, J_m, \phi_m),
\]

where \( f_w \), the pay-structure function estimated for women, is evaluated at the mean values of the characteristics variables. As before, we can decompose the gross difference in wages into that component due to differing characteristics, \( \bar{w}_m - \bar{w}_w \), and the adjusted difference remaining, \( \bar{w}_m - \bar{w}_m \).

Tables 5 and 6 present the average salaries for men and women for the periods covered by the regressions, together with a decomposition of the gross differentials. Table 5 is based on the regressions estimating the narrow form of the post-schooling investment model (equation (3)). Table 6 is based on the expanded model of equation (6) which included productivity characteristics. It will be noted that women's salaries have consistently averaged only about two-thirds as large as the salaries for men. The gross difference in salaries in 1971 was almost $7,000. This entire difference should not be attributed to discrimination, however. As the second row of the Table 6 indicates, even if women were paid according to the same salary relationship existing for men, they would still be making less than 80 percent of the salary of men (except in 1966).

\(^{11}\)This approach is similar to the one employed by Oaxaca.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MEN</td>
<td></td>
<td>20602</td>
<td>16695</td>
<td>18340</td>
<td>12370</td>
</tr>
<tr>
<td>WOMEN</td>
<td></td>
<td>13620</td>
<td>18340</td>
<td>14606</td>
<td>16646</td>
</tr>
<tr>
<td>Average Salary</td>
<td></td>
<td>20602</td>
<td>16695</td>
<td>18340</td>
<td>14606</td>
</tr>
</tbody>
</table>

Salary if Men and Women were paid according to relationship for men:
- 20602 16695 81.04% 18340 14606 79.64% 16646 13305 79.93% 14932 12396 83.02%

Salary if Men and Women were paid according to relationship for women:
- 15521 13620 87.75% 13868 12370 89.20% 12439 11235 90.32% 10688 9940 93.00%

Gross Difference: $\bar{W}_m - \bar{W}_w$
- $\bar{W}_m = 6982$ $100.00\%$ $5970$ $100.00\%$ $5411$ $100.00\%$ $4992$ $100.00\%$

Difference due to different characteristics: $\bar{W}_m - \bar{W}_w$
- $\bar{W}_m = 3907$ $55.96\%$ $3734$ $62.55\%$ $3341$ $61.74\%$ $2536$ $50.80\%$

Adjusted Difference Remaining: $\bar{W}_m - \bar{W}_w$
- $\bar{W}_m = 3075$ $44.04\%$ $2236$ $37.45\%$ $2070$ $38.26\%$ $2456$ $49.20\%$
<table>
<thead>
<tr>
<th>Year</th>
<th>Men</th>
<th>Women</th>
<th>Avg Salary</th>
<th>Men</th>
<th>Women</th>
<th>Avg Salary</th>
<th>Men</th>
<th>Women</th>
<th>Avg Salary</th>
<th>Men</th>
<th>Women</th>
<th>Avg Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971</td>
<td>20602</td>
<td>13620</td>
<td>66.11%</td>
<td>18340</td>
<td>12370</td>
<td>67.45%</td>
<td>16646</td>
<td>11235</td>
<td>67.49%</td>
<td>14932</td>
<td>9940</td>
<td>66.57%</td>
</tr>
<tr>
<td>1970</td>
<td>20602</td>
<td>16148</td>
<td>78.38%</td>
<td>18340</td>
<td>13993</td>
<td>76.30%</td>
<td>16646</td>
<td>12803</td>
<td>76.91%</td>
<td>14932</td>
<td>12221</td>
<td>81.84%</td>
</tr>
<tr>
<td>1969</td>
<td>15992</td>
<td>13620</td>
<td>85.17%</td>
<td>14441</td>
<td>12370</td>
<td>85.66%</td>
<td>13019</td>
<td>11235</td>
<td>86.30%</td>
<td>11091</td>
<td>9940</td>
<td>89.62%</td>
</tr>
<tr>
<td>1966</td>
<td>6982</td>
<td>100.00%</td>
<td>5970</td>
<td>100.00%</td>
<td>5411</td>
<td>100.00%</td>
<td>4992</td>
<td>100.00%</td>
<td>4594</td>
<td>63.79%</td>
<td>4347</td>
<td>72.81%</td>
</tr>
<tr>
<td></td>
<td>2528</td>
<td>36.21%</td>
<td>1623</td>
<td>27.19%</td>
<td>1568</td>
<td>28.98%</td>
<td>2281</td>
<td>45.69%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
We see that large salary differentials would remain even if the same salary structure prevailed for men and women. The reasons are indicated in Table 7, which shows, for men and women, the mean values for the independent variables of the wage-structure equation. It is clear that women are less endowed with the worker characteristics particularly favored by the organization. The women in the sample had about one and one-half years less of education than the men. They also had less related work experience and seniority than the men and more unrelated experience. In addition, a smaller percentage of women pursued studies in so-called critical areas, which tended to command larger salaries for the economy in general. Moreover, fewer women had gained the Ph.D. degree or had published significantly. Finally, women tended to have considerably higher absence rates than men. As the bottom rows of Table 6 show, the major part of the gross difference in wages can be attributed to the differential training and other job characteristics women bring to the employment situation. The adjusted differential, therefore, was only approximately one third of the total. It will be noted that estimates of discrimination tended to be somewhat higher in Table 5, when the salary structures were based on the narrow post-schooling investment model. This is so because women were less endowed than men with qualities we have suggested may proxy for worker productivity.

---

12 Of course, culture, tradition, and even overt discrimination may explain why women do not have the same training and experience as men. Women may have been discouraged from graduate training and from particular fields of study such as mathematics and physics. They may, by choice, have devoted a number of years of their working lives to child-bearing and household activities.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Wage (adjusted for absence)</td>
<td>20602.34</td>
<td>13619.82</td>
<td>18340.25</td>
<td>12369.53</td>
<td>16645.89</td>
<td>11234.56</td>
<td>14932.06</td>
<td>9940.39</td>
</tr>
<tr>
<td>Level Code</td>
<td>9.38</td>
<td>6.58</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>40.83</td>
<td>38.91</td>
<td>39.19</td>
<td>37.34</td>
<td>37.76</td>
<td>36.59</td>
<td>38.84</td>
<td>37.52</td>
</tr>
<tr>
<td>Years of Seniority and Related Experience</td>
<td>14.86</td>
<td>11.86</td>
<td>13.53</td>
<td>10.62</td>
<td>12.03</td>
<td>9.76</td>
<td>13.06</td>
<td>10.41</td>
</tr>
<tr>
<td>Years of Non-Related Experience</td>
<td>1.20</td>
<td>1.34</td>
<td>1.11</td>
<td>1.47</td>
<td>1.03</td>
<td>1.42</td>
<td>1.06</td>
<td>1.63</td>
</tr>
<tr>
<td>Years of Higher Education</td>
<td>6.73</td>
<td>5.07</td>
<td>6.66</td>
<td>5.11</td>
<td>6.70</td>
<td>5.12</td>
<td>6.89</td>
<td>5.20</td>
</tr>
<tr>
<td>Percent of Sample with PhD Degree</td>
<td>0.53</td>
<td>0.20</td>
<td>0.52</td>
<td>0.19</td>
<td>0.53</td>
<td>0.18</td>
<td>0.53</td>
<td>0.19</td>
</tr>
<tr>
<td>Percent of Sample Classified as Having Publications</td>
<td>0.12</td>
<td>0.03</td>
<td>0.12</td>
<td>0.03</td>
<td>0.11</td>
<td>0.03</td>
<td>0.15</td>
<td>0.03</td>
</tr>
<tr>
<td>Percent of Sample Having Critical Areas of Study</td>
<td>0.26</td>
<td>0.23</td>
<td>0.25</td>
<td>0.22</td>
<td>0.26</td>
<td>0.20</td>
<td>0.25</td>
<td>0.23</td>
</tr>
<tr>
<td>Number of Days Absent (Average of Past 4 Years)</td>
<td>3.69</td>
<td>6.42</td>
<td>3.86</td>
<td>6.54</td>
<td>3.94</td>
<td>6.43</td>
<td>5.03</td>
<td>7.13</td>
</tr>
<tr>
<td>Percent of Sample Married</td>
<td>0.91</td>
<td>0.62</td>
<td>0.89</td>
<td>0.62</td>
<td>0.89</td>
<td>0.61</td>
<td>0.92</td>
<td>0.61</td>
</tr>
</tbody>
</table>
Tables 5 and 6 indicate that, in percentage terms, the adjusted salary differential in the organization has decreased since 1966 although it rose in 1970, compared with the preceding two years. In dollar terms, however, the difference was larger in 1971 than it was in 1966. It should be noted, however, that our estimates of discrimination, while substantial, are somewhat lower than those found by other investigators, who have studied mainly the less skilled occupations. Fuchs finds that even after adjusting for education, women's salaries tend to be about 60 percent of those for men, and indicates that such a 60 per cent figure can be found in the Bible, the code of Hammurabi, and in data on the price of slaves in the ante bellum south. Oaxaca, using a human-capital approach and survey data collected in February 1967, found somewhat greater adjusted salary differentials than those reported here for 1966.¹³ These comparisons suggest that estimates of discrimination are likely to be less for a relatively homogeneous sample such as utilized here.

¹³Oaxaca defined the discrimination coefficient, D, as the proportionate difference between the currently observed male-female wage ratio and the wage ratio that would prevail in the absence of discrimination. That is,

\[ D = \frac{\bar{w}_m/\bar{w}_w - (w'_m/w'_w)^0}{(w'_m/w'_w)^0} \]

where \( \bar{w}_m/\bar{w}_w \) is the observed wage ratio and \( w'_m/w'_w)^0 \) is the wage ratio in the absence of discrimination. The ratio in the absence of discrimination was estimated by assuming either that the wage structure currently faced by women also applies to men or that the wage structure for men also applies to women. These two discrimination ratios may be called \( D_1 \) and \( D_2 \) respectively. Calculating the midpoint of \( D_1 \) and \( D_2 \), Oaxaca obtains an "average discrimination coefficient" of 0.40. The average discrimination coefficient similarly calculated for our data during 1966 was 0.29, on the basis of the narrow form of the post-schooling investment model. The relevant figures for 1969, 1970, and 1971 were 0.21, 0.20, and 0.24 respectively.
6. Analysis of Regression Results Using a "Job Level" Variable

The corporation that provided the basic salary information also provided a thirteen-point ranking of "job levels." The job levels were designed to indicate the individual's level of responsibility. Employees assigned higher levels were assumed to be engaged in more responsible work. Such level designations were available for only the year 1971.

Since job levels had salary ranges associated with them, it can be expected that the salary and level variables would be highly correlated. Indeed, the simple correlation between the two variables was about 0.8. Consequently, when level was added as an independent variable to equation (6), many of the t-values associated with the independent variables became insignificant. Nevertheless, it was possible to include some of the independent variables from (6) together with level to explain the structure of salaries for men and women in 1971. The equation estimated was of the form

\[
\ln(W_{g,t}) = a_0 + a_1 s + a_2 d + a_3 j + a_4 j^2 + a_5 pub + a_6 l + \xi
\]

where L stands for the job level code assigned to the worker. The estimates of equation (9) are shown in the top half of Table 8. As would be expected, the coefficients of determination improve considerably compared with those reported in previous tables.

The bottom half of Table 8 presents an analysis of the related salary differentials, as was shown in Tables 5 and 6. It will be noted that essentially the entire amount of adjusted salary difference or "discrimination," seems to disappear. The gross salary differentials can now fully be explained by differences in worker characteristics, including job level as
### TABLE 8

Estimates of Equation (9) with Job-Level Variable

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Constant Term</th>
<th>S</th>
<th>j</th>
<th>j²</th>
<th>D_PUB</th>
<th>D_L</th>
<th>L</th>
<th>R²</th>
<th>F-Value (and degrees of freedom)</th>
<th>Standard Error of Est. (adj. for degrees of freedom)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men 1971</td>
<td>8.578</td>
<td>+0.017</td>
<td>+0.017</td>
<td>-0.0003</td>
<td>+0.126</td>
<td>+0.337</td>
<td>+0.109</td>
<td>0.91</td>
<td>200.86 (6,122)</td>
<td>0.086</td>
</tr>
<tr>
<td>Women 1971</td>
<td>8.550</td>
<td>+0.018</td>
<td>+0.027</td>
<td>-0.0005</td>
<td>+0.287</td>
<td>+0.147</td>
<td>+0.083</td>
<td>0.93</td>
<td>176.90 (6,86)</td>
<td>0.101</td>
</tr>
</tbody>
</table>

**ANALYSIS OF RELATED SALARY DIFFERENTIALS (1971)**

- **Average Salary**
  - **MEN**: 20602
  - **WOMEN**: 13620
  - **SALARY**: 66.11%

- **Salary if Men and Women were paid according to relationship for men**
  - **MEN**: 20602
  - **WOMEN**: 13821
  - **SALARY**: 67.09%

- **Salary if Men and Women were paid according to relationship for women**
  - **MEN**: 17636
  - **WOMEN**: 13620
  - **SALARY**: 77.23%

- **Gross Difference \( \bar{w}_m - \bar{w}_w \)**
  - **6982**
  - **Per Cent**: 100.00%

- **Difference due to different characteristics \( \bar{w}_m - \bar{w}_w \)**
  - **6781**
  - **Per Cent**: 97.12%

- **Adjusted difference remaining \( \bar{w}_m - \bar{w}_w \)**
  - **201**
  - **Per Cent**: 2.88%
one of those characteristics. What has happened is that women, on average, have a considerably lower job level than the men. Given the job levels to which women are assigned, there appears to be little or no discrimination against them. Holding job level and other characteristics constant, women and men tend to make about the same salaries.

The question immediately arises, however, why women are assigned to much lower job levels than men. Can this be explained by their lower levels of training and education, or does the organization discriminate in assigning men and women to particular job levels? This question can be analyzed by the same techniques we have employed above. We can first try to explain assignment to job levels on the basis of the same types of employee characteristics previously used to explain salary differentials.

The specific equation employed was

(10) \[ L = a_0 + a_1 S + a_2 D_C + a_3 J + a_4 J^2 + a_5 D_{PHD} + a_6 A + a_7 D_{PROD} + a_8 D_M + \nu \]

where \( A \) stands for the average number of days the employee was absent

and \( D_{PROD} \) was a dummy variable, which took on the value unity if an individual employee worked in the "production" division of the organization, where job-level assignments tended to be lower than those in other divisions.

The results of this exercise are shown in the top half of Table 9. It will be noted that education, experience, and other characteristics can be used to make reasonably good predictions of an employee's job level.\(^{14}\)

\(^{14}\)Equation 10 was re-estimated under an assumption that the relationship between absence rate and level was a simultaneous one. We assumed that the absence rate affects level, but that the level assignment also affects the absence rate, particularly for women. We hypothesized that women
### TABLE 9

Estimates of Equation (10) Predicting Job Levels

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Constant Term</th>
<th>Coefficient of</th>
<th>F-Value (and degrees of freedom)</th>
<th>Standard Err. of Estimate (adjusted for degrees of freedom)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men 1971</td>
<td>4.025</td>
<td>S: +0.259</td>
<td>j: +0.255</td>
<td>17.06 (8,120)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>j2: -0.004</td>
<td>D_{PHD}: +0.668</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A: -0.010</td>
<td>D_{PROD}: -0.533</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D_{N}: +0.924</td>
<td>D_{c}: +0.233</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>R^2: 0.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women 1971</td>
<td>1.741</td>
<td>S: +0.349</td>
<td>j: +0.428</td>
<td>23.38 (8,84)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>j2: -0.008</td>
<td>D_{PHD}: +0.701</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A: -0.115</td>
<td>D_{PROD}: -0.341</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D_{N}: -0.012</td>
<td>D_{c}: +0.808</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>R^2: 0.69</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### ANALYSIS OF LEVEL DIFFERENTIALS (1971)

<table>
<thead>
<tr>
<th></th>
<th>MEN</th>
<th>WOMEN</th>
<th>WOMEN'S LEVEL AS PER CENT OF MEN'S LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Level</td>
<td>9.38</td>
<td>6.58</td>
<td>70.15%</td>
</tr>
<tr>
<td>Level if men and women were assigned job levels according to relationship for men</td>
<td>9.38</td>
<td>8.07</td>
<td>86.03%</td>
</tr>
<tr>
<td>Level if men and women were assigned job levels according to relationship for women</td>
<td>8.24</td>
<td>6.58</td>
<td>79.85%</td>
</tr>
<tr>
<td>Gross Difference in Levels</td>
<td>2.80</td>
<td></td>
<td>100.00%</td>
</tr>
<tr>
<td>Difference due to differing characteristics of men and women in sample (assuming men and women were assigned levels according to the relationship for men)</td>
<td>1.31</td>
<td></td>
<td>46.79%</td>
</tr>
<tr>
<td>Difference remaining</td>
<td>1.49</td>
<td></td>
<td>53.21%</td>
</tr>
</tbody>
</table>
The bottom half of Table 9 presents an analysis of the differences in levels. The analysis is exactly the same as that previously carried out for salary differences. On average, the level for men employees was 2.8 level steps higher than for women. Level steps were numbered from 1 (the lowest professional level) to 13 (the highest). Almost one-half of this gross difference can be attributed to the different characteristics of the men and women in the sample. Women can be expected to be 1.31 level steps lower than men because of their lower level of education, experience, etc. The remaining half of the difference may be attributed to discrimination against women. Consequently, while there appears to be no discrimination against women when differential salaries are explained on the basis of job level and other characteristics, discrimination does exist in the assignment of women to job levels.

Assigned to low job levels (inappropriate to their training) might well be bored with their assignments and, therefore, be absent more. Thus, the absence rate, \( A \), was hypothesized to depend upon age and level, \( L \), in the following fashion:

\[ A = \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Age}^2 - \beta_3 L + \delta \]

When equation 10 was re-estimated with a two-stage least squares technique, the coefficient estimates were essentially the same as those reported above. Moreover, we found that the estimated coefficient, \( \beta_3 \), of the absence-rate equation above was not significantly different from zero. We did find, however, that the coefficients of \( \beta_1 \) and \( \beta_2 \) were both positive and (barely) significantly different from zero. The older a person got the more he or she was likely to be absent from work. The age variables explain only a small part of the variance in absence rates however. Absence was found to be completely unrelated to such plausible explanatory variables as marital status and presence of children under six years of age for women.
8. Conclusion

This study has attempted to provide answers to two distinct questions.
1) Can the structure of salaries in an individual organization be explained by such variables as education, experience, and productivity proxies?
2) Is there discrimination against women; that is, to the extent we are able to measure the characteristics, do men and women with equal job characteristics get the same pay?

We have been quite successful in providing an answer to the first question. Experience, education, and productivity variables are able to explain over three quarters of the variance in salaries for both men and women over a long period of time. The answer to the second question depends upon how narrowly or broadly one wishes to perceive the problem. If the question is posed, "Do men and women in equal job levels, with the same characteristics, get equal pay?" the answer is "Yes." If, on the other hand, the question is posed, "Do men and women, with equal characteristics, get equal pay?" the answer is "No." The reason for the difference in answers is that men and women with equal characteristics, (that is to say, equal training and experience) are not assigned to the same job levels. Women tend to be assigned to lower job levels than are men.

It is, of course, possible that such a pattern of job assignment does not reflect discrimination on the part of the employing organization. Other explanations may be preferences of men and women for more or less responsibility or biases resulting from our culture and tradition which may affect productivity characteristics of men and women other than those that we were able to measure and include in the study. It seems highly improbable, however, that such missing variables would fully account for the apparent
discrimination in the pattern of job-level assignments. We suggest that it is very difficult for a discriminating organization to give male and female employees exactly the same titles and yet pay them different amounts. It is far easier simply to assign women, on average, the titles associated with lower job levels and then set up a pay structure by level that is the same for both sexes. Thus, our analysis of salary differentials including job levels should not be interpreted as indicating an absence of discrimination. The assignments to job levels can most plausibly be interpreted as the mechanism by which the discrimination takes place.
REFERENCES


