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Author(s): Barry Gerhart
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GENDER DIFFERENCES IN CURRENT AND STARTING SALARIES: THE ROLE OF PERFORMANCE, COLLEGE MAJOR, AND JOB TITLE

BARRY GERHART*

This study examines starting and current salaries of exempt employees hired between 1976 and 1986 by a large, private firm. In 1986 the ratio of women's salaries to men's was 88%. With controls for year of hire, potential experience, degree, college major, firm tenure, performance, and job title, the ratio is 94–95% for the full sample and 97–98% for college graduates. Women's 1986 salary disadvantage can be traced largely to their salary disadvantage at the time of hire: with an adjustment for starting salary, the 1986 salary ratio rises to 96–99% for the full sample and 98–100% for college graduates. The apparently greater female disadvantage in starting salary than in subsequent salary growth may stem from the smaller amount of job-relevant information available on applicants than on current employees.

STUDIES comparing the earnings of men and women have persistently found a pay differential favoring men. Adjusting for both supply- and demand-side factors reduces the observed differential but does not eliminate it. (Research reviews reporting these findings are Treiman and Hartmann 1981 and Cain 1986.) This residual differential is interpreted as evidence of (a) labor market discrimination against women, (b) researchers' inability to identify, measure, and control for all aspects of worker productivity, or (c) a combination of (a) and (b).

Several problems, however, characterize much of this research. First, key factors on both the supply and demand side have been neglected. On the supply side, for example, men and women are unequally distributed across fields of study in college (Polachek 1978) that have different average starting salaries. Consistent with that fact, Daymont and Andrisiani (1984) found that differences between men and women in college major significantly contribute to the earnings gap. Their study, however, used a sample of new entrants to the labor market. Some question remains as to whether college major plays such a key role among cohorts having more labor market experience (Blau and Ferber 1986).

On the demand side, work content is an important but neglected factor. Sanborn (1964) and Fuchs (1971) were among the first to stress the importance of the unequal distribution of men and women across occupations and jobs in explaining

* The author is Professor at the Center for Advanced Human Resource Studies, New York State School of Industrial and Labor Relations, Cornell University. He thanks the National Research Council and the National Academy of Sciences for funding an earlier stage of this study, and George Milkovich for generously providing access to the data.

The firm that provided the data for this study was guaranteed confidentiality. Interested readers should contact the author for further information.

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pay differences. Research on the role of work content has, however, been hampered by the lack of firm-level data. When national survey data are used, the most precise occupational classification is usually at the 3-digit Census level. However, evidence suggests that the actual work content of jobs varies widely within 3-digit occupations (see Gerhart 1988 for a review). Firm-level data have the potential to provide more precise control for differences in job content.

A final neglected factor is the performance of men and women in specific jobs in specific firms. This performance is likely to be a result of the quality of the match between the person (supply characteristics) and the job (demand characteristics). Most firms rely heavily on performance ratings in making pay allocation decisions.[1] Therefore, a consideration of performance measures would appear to be an important prerequisite to understanding the pay-setting process for men and women.

A second general problem with existing research on the pay gap has been the lack of attention to the role of specific human resource activities in generating pay differentials between men and women. Because most of the data sets are based on a single cross-section, researchers may be missing key elements of what is, in fact, a dynamic pay-setting process. Further, most empirical research has used data on workers in many different and unknown firms. Yet, as Milkovich and Newman (1987:498) have argued, such research "must [instead] be performed at the level at which wages are set." Similarly, Hartmann, Roos, and Treiman (1985:7) emphasized that "we need to understand better how wages are set within enterprises and how they are affected by other employer practices."

The purpose of the present paper is to use firm-level data to examine the process by which gender differences in pay are generated. I build on my earlier firm-level study with George Milkovich (1989). We found an advantage for men in current pay *levels,* consistent with much previous research. In contrast, however, we found that women experienced an advantage in both the number of promotions and percentage pay *increases.* As such, we speculated that if discrimination does operate in pay-setting, it may do so at the time of entry into the firm. I hypothesize that because firms rely on signals (Spence 1973) to assess the likely productivity of applicants, differential treatment in salary-setting is more likely for new hires than for longer-tenure employees, for whom observation of actual performance is possible.

Theoretical Framework

Given evidence of a preference against women in hiring decisions (Olian, Schwab, Haberfeld 1988), lower starting salaries for women seem plausible. This disadvantage, however, seems likely to decline over time. Neoclassical economic models suggest that employer discrimination is eliminated in the market in the long run through the competitive advantage realized by firms that hire equally qualified employees from the disadvantaged group at lower salaries in the short run. One reason to expect a larger disadvantage for women in starting rather than current salary is that less productivity information is available for applicants than for current employees. Nieva and Gutek (1980), for example, argued that different human resource evaluations require different degrees of inference and that "the greater the amount of inference required . . . the more likely it is that evaluation bias will be found":

> Of these areas, the evaluation of past performance requires the lowest level of inference from the evaluator, since the assessment is confined to the behavior or product exhibited, and no further speculation is required. In contrast, situations that call for judgments regarding a person's qualifications for a job

[1] Based on a survey of personnel and industrial relations executives, the Bureau of National Affairs (1983) concluded that performance appraisal results were used by 86% of firms for making salary increase decisions and by 79% of firms for making promotion decisions concerning their white-collar workers.

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require the evaluator to make an assessment for the future, about which little information is available. (p. 270)

Thus, hiring decisions typically require greater degrees of inference than do performance evaluations due to the relative lack of job-related productivity information. The result may be a greater reliance on group stereotypes when making hiring and starting pay decisions than when making decisions about current employees. Consistent with this notion, research reviews have found evidence of discrimination against women in hiring (Olian et al. 1988) but not in performance appraisals (Dipboye 1985). (Both reviews focused on laboratory research, where actual qualifications or productivity could be controlled.) Moreover, a meta-analysis (Tosi and Einbender 1985) found that the greater the amount of job-relevant information available on applicants, the less likely there would be a statistically significant finding of discrimination against female applicants.

Aigner and Cain's (1977) work on statistical discrimination also emphasized the key role of information. In their model, risk-averse employers make hiring decisions based not only on the mean of expected productivity, but also on its variance. Specifically, risk-averse employers will prefer to hire from the group for which predictions of productivity are most accurate.[2] For example, employers may believe that low turnover enhances productivity because of fixed hiring and training costs. If they also believe that turnover rates vary more for women than for men (conditional on screening device predictions), risk-averse employers will prefer to hire men, even if the mean expected turnover rates of men and women are the same.

Under such circumstances, Aigner and Cain (1977) suggest that a woman who knows her productivity is being underestimated may temporarily accept a lower salary than a comparable man in order to obtain the opportunity to undergo a trial work period and demonstrate her true productivity. Based on this new and perhaps more directly job-relevant information, salaries for such women may rise to correspond to revised productivity judgments.

In this study I use firm-level data to examine the magnitude and possible causes of differences in starting and current salaries of newly hired men and women. Because the data are collected at the firm level, measures of key supply- and demand-side factors are available. On the supply side, standard measures of the amount (for example, educational attainment) and *kind* (for example, college major) of human capital (Polachek 1981) are used. On the demand side, job content is controlled in some equations through the use of job titles. Finally, performance level is controlled through the inclusion of average performance rating since time of hire.

The model to be tested distinguishes between attributes that can be measured prior to firm entry and those that can be measured only after an applicant becomes an employee. The structural model is as follows:

(1) Current Salary = f(starting salary, firm tenure, performance, job title)

(2) Starting Salary = f(year of hire, general experience, education degree, college major)

The reduced-form equation for current salary is then:

(3) Current Salary = f(year of hire, general experience, education degree, college major, firm tenure, performance, job title)

Because the parameters for these equations may differ according to gender, separate equations are estimated for men and women.

[2] Accuracy refers to less dispersion of observed productivity about the prediction line or surface. Thus, one index of accuracy is the R^2. As Kahn (1981) has argued, however, a more appropriate measure may be the conditional variance about the regression line, estimated using the mean square error.

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Institutional Setting

The data apply to exempt employees of a firm that produces a diversified set of industrial and consumer products.[3] Compensation policies and practices of the firm are typical of those in the Fortune 500. For example, the firm participates in over six annual salary surveys for jobs included in the present study. Some of the surveys focus on selected product market competitors and others focus on labor market competitors. Although statistical methods are used to combine the results of surveys, considerable judgment is also exercised because of different degrees of confidence placed on the results of the various surveys. This strong subjective element is consistent with Rynes and Milkovich's (1986) argument that ad hoc judgments are typically made throughout the process of deciding on compensation policies and practices.

The firm has an explicit pay-for-performance policy for determining individual pay increases, implemented through the use of annual merit increase guides (see Milkovich and Newman 1987 for some examples). Performance is assessed through a formal, annual performance appraisal process.[4] The immediate supervisor rates each employee on a 4-point scale, with 4 being the highest performance level. The numerical rating is supplemented by a written description of the subordinate's performance during the year. The complete appraisal is typically reviewed by a higher-level manager.

Like most large firms, this firm's standard training for its managers includes materials on equal employment opportunity (EEO) compliance with respect to staffing, access to training, compensation, and performance appraisal.[5] Corporate personnel monitor managers' actions for EEO compliance and encourage change where there is evidence of subpar performance.[6]

Method and Analyses

Exempt employees hired between 1976 and 1986 are the focus of the present study.[7] Some exempt employees at the highest levels are excluded because of a lack of information.[8] Note that this exclusion may lead to a slight overestimate of the ratio of women's salaries to men's salaries. The final sample includes 4,617 employees (3,564 men and 1,053 women). Of these, 2,895 employees (2,280 men and 625 women) held a degree at the Bachelor's level or higher. Professional, managerial, sales, and technical jobs are the major broad categories. Examples of common job titles include engineer, customer representative, technologist, office supervisor, and production supervisor.

Current salary (1986) and starting salary (in 1986 dollars) are the endogenous variables. In both cases, the natural logarithm transformation is used. The first set of exogenous variables, referred to as human capital (HC) variables in this study, are potential labor market experience (age − years of schooling − 6),[9] its square, and

[3] Some of these data were also used by Gerhart and Milkovich (1989) in our study of promotions and salary growth.

[4] Cain (1986) has argued that supervisory ratings of performance are not "admissible" because they "might reflect discrimination." The empirical evidence does not, however, support this hypothesis, despite the fact that a large amount of both laboratory and field research has been devoted to this question (see Dipboye 1985 for a review).

[5] A Bureau of National Affairs (1985) survey found that among firms with over 1,000 employees, over 60% included EEO in their manager training programs. Further, EEO was the fourth most commonly included issue (among 19 issues) in such programs.

[6] More on the institutional setting can be found in Gerhart and Milkovich (1989).

[7] The necessary detailed historical data were not available prior to 1976.

[8] The job levels for which complete data were available represented approximately 84% of exempt men and 97% of exempt women. Since this study is restricted to recent hires (who are less likely than other employees to be at the top levels), however, these percentages should be even higher in this sample.

[9] This measure is an imperfect proxy for persons with intermittent labor force attachment (for example, women who leave the labor force to bear and raise children). Gerhart and Milkovich (1989), however, found evidence that the measure was not a

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education dummies for highest degree. These measures are taken at the time of first entry to the firm. Dummy variables are used for year of hire to capture differences in labor market conditions across different years.

The second set of factors are 65 dummy variables for college major. These are based on the person's highest degree at the time of entry to the firm. Of course, as discussed earlier, college major can be thought of as a measure of the kind of human capital.

The third set of exogenous variables are those measured within the firm, such as tenure and its square.[10] To measure differences in job content, 60 dummy variables corresponding to job titles are used. Performance history is measured by including the average of performance ratings received since commencing employment with the firm.

Ordinary least squares is used to estimate the reduced-form equation for current salary. In estimating the structural model, however, two-stage least squares is used to account for any correlation between starting salary and the error term in the current salary equation. This correlation would arise if the same omitted variables influenced both starting and current salary.

Equation estimates are obtained separately for men and women and used to decompose salary differentials into two components (Blinder 1973; Jones 1983): (a) differences in mean levels of endowments, and (b) differences in coefficients or prices received for these endowments. Because the result of a decomposition varies as a function of which group is used as the standard (Cain 1986), we report decompositions alternately using the advantaged group and disadvantaged group as the standard. For ease of exposition, however, and because any adjustment in pay would probably result in an increase in women's pay rather than a decrease in men's pay (Cotton 1988), the focus is on the results obtained using men's coefficients as the standard. In addition, we report corresponding "adjusted ratios"—the salary ratio that would exist if men and women had equal levels of endowments (Cain 1986:746).

As discussed by Blinder (1973), Oaxaca (1973), Cain (1986), Blau and Ferber (1987), and others, the results of such decompositions may over- or underestimate the actual level of discrimination for several reasons. First, if men and women differ on unmeasured productivity factors, estimated discrimination will be influenced. For example, if men have higher levels of the unmeasured factors, discrimination against women will be overestimated. Second, right-hand-side variables may be influenced by (or endogenous to) discrimination. As one example, Blau and Ferber note that if women are discriminated against in gaining access to training, controlling for training will underestimate discrimination against women. Third, a different type of endogeneity problem may arise from feedback effects of the market on women's preferences or human capital investment decisions. Thus, if women believe that certain occupations have entry barriers to them or if they do not receive an equal payoff to investments in training, they will be less likely to undertake such investments. Controlling for such investment variables would again underestimate discrimination against women.

In recognition of these problems, I employ two procedures to facilitate interpretation. First, the structural model explicitly recognizes the endogeneity of starting salary in the current salary equation. Second, where estimating an additional equation is not feasible, I follow the Blinder and Oaxaca approach of estimating a series of reduced-form equations, introducing right-hand side variables of

problem in a similar sample, perhaps because of the strong labor force attachment of professional and managerial women. (See also footnote 10, below.)

[10] Year of hire and firm tenure are both included because they are not identical. Firm tenure is based on the date used for calculating benefits. The latter date can differ from the original hire date. Firm tenure, then, should give an accurate indication of the amount of actual time spent with the firm even for persons not continuously employed with the firm.

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more questionable endogeneity (such as job title) in steps. This strategy permits an examination of how the decomposition results change in response to different model specifications. I then proceed to estimation of the structural model to obtain information on the process of pay-setting.

Results

Table 1 reports mean current and starting salaries for men and women. In the full sample, the female:male salary ratio was lower for starting salary (.84) than for current salary (.88). In the case of college graduates, the starting (.89) and current raw salary ratios (.89) were the same. These raw ratios, of course, do not control for the fact that men and women may have different mean levels of the factors that influence salaries.

Reduced Form

To determine the sensitivity of adjusted salary ratios to equation specification, a series of reduced-form equations was estimated, beginning with variables measured prior to entry to the firm, then adding information available only on employees.[11] (Regression coefficients for these equations appear in Appendixes A and B.) The decomposition results reported in Table 2 suggest that although the specification does matter, the adjusted salary ratios stay within a fairly narrow range in both the full sample and the college graduates sample. Based on the final equation, women's salaries would be 94–95% of men's salaries in the full sample, and 97–98% of men's salaries in the college graduates sample, given comparable levels of human capital, college major, tenure, performance ratings, and job title. Thus, for example, in the full sample, where the mean salary for men is $39,340, a comparable woman would be expected to have a salary of $36,980, or $2,360 less.[12]

In view of the comprehensive list of control variables, $2,360 is a substantial difference and may suggest the existence of unequal pay for equal work in this firm. Moreover, if one believes that variables such as job title are themselves tainted by discrimination, then a more appropriate model would exclude job title (and perhaps tenure and performance rating as well). When job title, tenure, and performance rating are excluded, a woman's expected salary would be 92% of a comparable man's: $36,193, or $3,147 less.

Table 3 provides information on the specific factors contributing to current salary differentials between men and women based on the final equation. In the full sample, performance rating and job title contribute most to the salary gap. Men receive significantly greater returns to performance ratings. Men are also more likely to be employed in higher-paying job titles. In addition, men receive greater salary returns than women in the same job title. This latter finding again suggests unequal pay for equal work. In the sample of college graduates, job title and performance ratings play similarly key roles. Although tenure appears to play a key role in the sample of college graduates, it is difficult to place much weight on this finding because the regression coefficients on the tenure variables are statistically insignificant for both men and women.[13]

[11] Chow tests suggest that separate equations should be used for the men's and women's data ($F_{142,4333} = 3.57$, $p < .001$ in the full sample; $F_{141,2613} = 1.94$, $p < .001$ in the college graduates sample). In addition, a comparison of women's mean salary with the predicted salary obtained by applying the men's equation to women's means also revealed a statistically significant difference. In the full sample, the 95% confidence interval for women's mean salary was 10.438 to 10.464 versus 10.508 to 10.527 for the predicted value obtained by applying the men's equation to the women's means. Similarly, in the college graduates sample, the 95% confidence interval for women's mean salary was 10.506 to 10.530 versus 10.542 to 10.562 for the predicted value. The formula for computing the standard errors of the predicted values can be found in Neter and Wasserman (1974:233).

[12] As discussed earlier, I focus on the estimates based on men's coefficients as the standard.

[13] The year-of-hire variables are used here to

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Table 1. Mean Starting and Current (1986) Salaries of Exempt Employees Hired Between 1976 and 1986 by a Large Firm.

	Full Sample			*College Graduates Sample*		
Variable	*Women*	*Men*	*W/M*	*Women*	*Men*	*W/M*
Current Salary (1986)						
Natural logarithm	10.45	10.58		10.52	10.63	
Antilog	34,544	39,340	.88	37,049	41,357	.89
Starting Salary						
Natural logarithm	10.03	10.21		10.16	10.28	
Antilog	22,697	27,174	.84	25,848	29,144	.89
N	1,053	3,564		615	2,280	

Structural Model

The main focus of this study is on the process that generated the observed current salary differentials. Tables 4 and 5 report parameter estimates for the current and starting salary equations, respectively, of the structural model. Looking at Table 4 first, we see that starting salary had a large impact on current salaries for both men and women. Of greater interest is the fact that the coefficients on starting salary are larger for women than for men, indicating that women had greater salary growth than men within the firm, consistent with Gerhart and Milkovich's (1989) finding.

In contrast, men received greater salary returns to performance ratings than women, especially in the full sample, where each additional average performance rating point was worth a 16% higher current salary for men, compared to 10% for women. The addition of job title dummy variables to the model increases the explanatory power by a substantial amount. Moreover, controlling for job title reduced the magnitude of the coefficients on the other variables (such as performance rating), suggesting that job title may to some extent mediate the impact of other variables on current salary.

Table 5 provides estimates for the starting salary equation. Education degree level had a large impact on starting salaries for both men and women. In the full sample, there is no clear pattern of advantage to either men or women. In contrast, however, among college graduates, men appear generally to have received higher returns to degree level.[14] In both samples, men also appear to have realized greater starting salary returns to potential experience.

Table 6 reports salary decomposition results. The most important result shown is the finding that the adjusted salary ratio is higher for current salary than for starting salary. This result is consistent with the conjecture that because less information is available on new hires than on current employees, the hiring process is more apt to be influenced by group stereotyping and discrimination.[15] Note also that the adjusted current salary ratios

facilitate comparison with the starting salary results reported below. Because year of hire is collinear with tenure, however, the equations were re-estimated without the year-of-hire dummies to better determine the role of the tenure variables. The tenure variables became statistically significant and accounted for 1% (roughly the sum of the amounts attributable to tenure and year of hire combined in the original specification) of the salary differential.

[14] Note that the coefficients on the degree dummy variables are smaller in the sample of college graduates because the omitted category is Bachelor of Arts degree instead of high school diploma.

[15] One might argue that the difference in adjusted salary ratios occurs because the starting salary equation has fewer control variables than the current salary equation. This difference, however, accurately reflects the fact that more complete information is, in fact, available on current employees (versus applicants), as argued in the introduction. If, however, one wishes to compare similar specifications, the first current salary equation in Table 2 and the starting salary equation in Table 6 demonstrate that a larger salary differential existed at the time of hire. Finally, note that the inclusion of job title has no significant effect on the adjusted salary ratios in the structural model.

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Table 2. Decomposition of Current Salary Differentials, Reduced Form.

	Full Sample						College Graduates					
	R^2		Endowments[a]	Coeff.[b]	Salary Ratio		R^2		Endowments[a]	Coeff.[b]	Salary Ratio	
Model	Men	Women	(%)	(%)	Raw	Adjusted	Men	Women	(%)	(%)	Raw	Adjusted
Human Capital, Major	.38	.38	36 (32)	64 (68)	.88	.92 (.92)	.47	.48	59 (52)	41 (48)	.89	.95 (.95)
Human Capital, Major, Tenure, Perf. Rating	.46	.41	33 (30)	67 (70)		.92 (.92)	.56	.53	65 (59)	35 (41)		.96 (.95)
Human Capital, Major, Tenure, Perf. Rating, Title	.68	.66	49 (62)	51 (38)		.94 (.95)	.76	.78	70 (78)	30 (22)		.97 (.98)

Note: Men's coefficients are used as the decomposition standard. Results based on using women's coefficients as the standard appear in parentheses.
[a] Proportion of salary differential due to unequal endowments of explanatory variables.
[b] Proportion of salary differential due to unequal coefficients of explanatory variables.

in Table 6 are slightly higher than those in Table 2 because of the adjustment for starting salary differences.

A comparison of the results across the two samples in Table 6 suggests that the difference in adjusted current and starting salary ratios is somewhat smaller among college graduates than among non–college graduates. One explanation for this pattern may be that the greater standardization of credentials among newly minted college graduates leaves less room for subjectivity and possible discrimination.

Table 7 lends further support to the hypothesis that current salary differentials are largely a result of starting salary differentials. Specifically, 34% of the difference in current salaries between men and women in the full sample and 31% in the college graduates sample are due to differences in starting salaries. On the other hand, women received much greater returns to starting salary. Again, the general implication of these findings seems to be that the bulk of women's current salary disadvantage is due to a one-time salary shortfall realized at the time of entry into the firm. Once within the firm, women may actually fare better than comparable men in terms of salary growth.

Important sources of men's higher starting salaries in the full sample are their higher degree attainment and concentration in different college majors. In addition, men received higher returns to potential experience. Among college graduates, some of the same factors are evident. In that sample, however, differences in the distribution of college majors take on greater importance, accounting for 43% of differences in starting salaries. Table 8 displays the percentage of the pay

Table 3. Decomposition of Current Salary Differentials, Specific Factors, Reduced Form.

	Full Sample			College Graduates		
Variable	Coeff.	Endowments	Total	Coeff.	Endowments	Total
Intercept	−39(−39)%	0(0)%	−39%	11(11)%	0(0)%	11%
Year of Hire	8(12)%	4(0)%	12%	29(35)%	8(2)%	37%
Education Degree	−23(−28)%	6(10)%	−18%	9(6)%	6(8)%	15%
Potential Exp.	12(12)%	2(1)%	14%	1(1)%	2(1)%	2%
Tenure	−11(−12)%	0(1)%	−11%	−48(−48)%	2(3)%	−45%
Performance Rating	65(65)%	0(0)%	65%	22(23)%	3(3)%	25%
College Major	−1(1)%	6(4)%	5%	−11(−13)%	17(19)%	6%
Job Title Dummies	40(27)%	33(45)%	73%	16(8)%	33(41)%	49%
Total	51(38)%	49(62)%	100%	30(22)%	70(78)%	100%

Note: Men's coefficients are used as the decomposition standard. Results based on using women's coefficients as the standard appear in parentheses.

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Table 4. Current Salary Equation, Two-Stage Least Squares. (Standard Errors in Parentheses)

	Full Sample				*College Graduates*			
Variable	*(1) Men*	*(1) Women*	*(2) Men*	*(2) Women*	*(1) Men*	*(1) Women*	*(2) Men*	*(2) Women*
Intercept	4.852**	4.578**	7.859**	7.054**	4.360**	3.686**	7.285**	6.212**
	(.124)	(.209)	(.115)	(.211)	(.151)	(.297)	(.154)	(.337)
Starting Salary (pred)[a]	.504**	.539**	.244**	.332**	.550**	.614**	.299**	.405**
	(.012)	(.020)	(.011)	(.020)	(.014)	(.029)	(.014)	(.032)
Tenure	.045**	.067**	.021**	.034**	.053**	.075**	.024**	.035**
	(.002)	(.004)	(.001)	(.004)	(.002)	(.007)	(.002)	(.001)
Tenure Squared	−.002**	−.003**	−.001**	−.002**	−.002**	−.003**	−.001**	−.0013**
	(.0001)	(.0003)	(.0001)	(.0003)	(.0001)	(.001)	(.0001)	(.0006)
Performance rating	.162**	.100**	.099**	.056**	.161**	.140**	.093**	.074**
	(.007)	(.011)	(.005)	(.010)	(.007)	(.013)	(.006)	(.012)
Job Title Dummies	No	No	Yes	Yes	No	No	Yes	Yes
R^2	.440	.458	.702	.694	.550	.580	.765	.780
Sample Size	3,564	1,053	3,564	1,053	2,280	615	2,280	615

Note: Each starting salary equation includes year of hire dummy variables, education degree dummy variables, potential experience (and its square), and college major dummy variables.
[a] Predicted value for starting salary using variables described in above note.
* Significant at the 5% level; ** at the 1% level.

gap accounted for by the 10 college majors having the most men and women. Two majors, mechanical engineering and electrical engineering, account for most of the effect of college major.

Selection Bias

The preceding estimates are based on a sample that is a result of selection processes governing both entry to and exit from the firm. Although no data on applicants were available, some supplemental data were available on former employees. To examine the robustness of the findings to a correction for the exit selection process, an approach described by Heckman (1976) was followed. First, selection equations were estimated separately for men and women to model the probability of being included in the sample (versus having separated from the firm). Second, the men and women's substantive equations were re-estimated after the addition of correction terms derived from their selection equation estimates.[16] Third, following Reimers (1983) and Blau and Beller (1988), the selection bias term (that is, the coefficient multiplied by the mean) was fixed at zero for both groups. Note that this method ordinarily changes both the adjusted and unadjusted salary ratios.

Briefly, the correction for sample selection resulted in a general widening of pay differentials between men and women, consistent with Blau and Beller's findings (1988). Most important, perhaps, the structural model results continued to indicate (more strongly, in fact) that women's current salary disadvantage stemmed largely from their starting salary disadvantage.[17]

[16] Age, age squared, starting salary, and average performance rating were used to estimate the probit equation. For both men and women, lower performers were more likely to have separated, consistent with previous research (McEvoy and Cascio 1987; Bishop 1988). Among women only, however, those with higher starting salaries were also more likely to have separated.

[17] The corrected results are not emphasized here because several factors tend to reduce their reliability. First, the supplemental data used to estimate the selection equation covered the period 1976–84 rather than the entire period of the study (1976–86). Second, no information was available on several key variables (for example, education and potential labor

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Table 5. Starting Salary Equation.
(Standard Errors in Parentheses)

	Full Sample		*College Graduates*	
Variable	*Men*	*Women*	*Men*	*Women*
Intercept	9.654**	9.566**	9.921**	9.952**
	(.019)	(.031)	(.022)	(.004)
Potential Exp.	.031**	.023**	.025**	.023**
	(.002)	(.003)	(.002)	(.004)
Potential Exp. Squared	−.0005**	−.0005**	−.0004**	−.0006**
	(.0001)	(.0001)	(.0001)	(.0002)
B.A.	.187**	.281**	—	—
	(.020)	(.031)		
B.S.	.189**	.254**	.007	−.018
	(.016)	(.028)	(.013)	(.025)
M.A.	.305**	.257**	.137**	−.029
	(.047)	(.068)	(.035)	(.062)
M.B.A.	.327**	.315**	.138**	.030
	(.055)	.077	(.040)	.070
M.S.	.270**	.379**	.099**	.113**
	(.022)	(.039)	(.017)	(.037)
PhD.	.529**	.598**	.359**	.345**
	(.024)	(.052)	(.018)	(.048)
College Major Dummies	Yes	Yes	Yes	Yes
Year of Hire Dummies	Yes	Yes	Yes	Yes
R^2	.452	.530	.529	.465
Sample Size	3,564	1,053	2,280	615

* Significant at the 5% level; ** at the 1% level.

Discussion

This firm-level study provides two key findings. First, even with a comprehensive group of control variables, the analysis shows that women had significantly lower starting and current salaries than men. Second, the current salary disadvantage was largely a result of a one-time salary shortfall for women occurring at the time of hire. Not only did the salary differential between men and women not widen after hiring, it actually narrowed over time. These findings provide direct support for recent suggestions (Gerhart and Milkovich 1989; Megdal and Ransom 1985) that starting salary differences play a major role in current salary differentials between men and women. Additional supportive empirical evidence has also begun to appear for this view (for example, a study of University of Pittsburgh MBA graduates by Olson, Frieze, and Good [1987]). One explanation for these results is that the opportunity to observe the actual

market experience) in this supplemental data set. Recall that the coefficient on the correction term in the substantive equation(s) is a function of the covariance between the disturbances of the substantive and selection equations. Thus, with a more fully specified selection equation (including, for example, education degree, college major, and potential experience), the estimated covariance could change significantly. Any such change would similarly have a significant impact on both the adjusted and unadjusted salary ratios. Third, the raw starting salary ratio among active employees (.86) was actually lower than that among inactive employees (.92). This finding suggests that including inactive employees would have raised the salary ratios, not lowered them. Fourth, these data, of course, provided no information on the selection process governing entry to the firm. In any case, the complete results of the partial sample selection bias correction are available upon request.

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Table 6. Decomposition of Salary Differentials, Structural Model.

	Full Sample						College Graduates					
	R^2		Endowments	Coeff.	Salary Ratio		R^2		Endowments	Coeff.	Salary Ratio	
Model	*Men*	*Women*	*(%)*	*(%)*	*Raw*	*Adjusted*	*Men*	*Women*	*(%)*	*(%)*	*Raw*	*Adjusted*
Current Salary												
Starting Salary, Tenure, Perf.	.44	.46	77	23	.88	.97	.55	.58	86	14	.89	.98
Rating			(82)	(18)		(.98)			(94)	(06)		(.99)
Starting Salary, Tenure, Perf.	.70	.69	68	32		.96	.77	.78	78	22		.98
Rating, Title			(94)	(06)		(.99)			(98)	(02)		(1.0)
Starting Salary												
Human Capital, Major	.45	.53	324	66	.84	.89	.53	.47	58	42	.89	.96
			(31)	(69)		(.89)			(53)	(47)		(.95)

Note: Men's coefficients are used as the decomposition standard. Results based on using women's coefficients as the standard appear in parentheses.

productivity of employees (versus general qualifications in the case of applicants) tends to reduce the role of discrimination in salary-setting.

College major was found to be a key determinant of differences between men and women in starting salaries, consistent with results obtained by Daymont and Andrisiani (1984). In the college graduates sample, differences in college major held by men and women accounted for 43% of starting salary differences.[18] From the perspective of the firm, an applicant's previous choice of college major is a given. In the labor market as a whole, however, this choice could reflect perceived or real employment discrimination, if, for example, access to certain occupations is seen as limited.

Also assessed in this study was the effect of key firm-level variables on current salaries. Average performance rating, for example, had a substantial impact on current salaries. Controlling for job title reduced this effect (and that of other variables) and significantly increased the R^2. Nevertheless, the adjusted current salary ratios changed very little.

A limitation of this study is that the use of a single firm misses the part of the pay gap that may arise from between-firm differences in employment practices. As just one example, one could speculate that the percentage of women among new hires is likely to be higher in low-paying firms in an industry than in high-paying firms. In addition, multiple-firm studies facilitate identification of factors associated with narrower or wider pay differentials between men and women. On the other hand, the use of a single firm eliminates the possibility that pay differentials compensate for between-firm differences in working conditions. The availability of job title information also helped control for differences in job content in this study.

A second and related limitation has to do with the extent to which findings based on a single firm can be generalized to other firms. One apparent unusual aspect of the firm studied here was the unadjusted salary ratio of .88, which is considerably larger than the ratio (.70) for the market as a whole. In addition, although to my knowledge none of the exempt employees of the firm (who have been my focus) filed suit against it for unfair

[18] College major, however, was less important in explaining current salary differences. For example, an additional decomposition using only human capital and college major variables indicated that college major accounted for 18% (versus 43%) of the current salary gap among college graduates. This decline in importance is consistent with Blau and Ferber's hypothesis that college major differences are most important among new labor market entrants.

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Table 7. Decomposition of Salary Differentials, Specific Factors, Structural Model.

	Full Sample			*College Graduates*		
Variable	*Coeff.*	*Endowments*	*Total*	*Coeff.*	*Endowments*	*Total*
Current Salary						
Intercept	616(616)%	0(0)%	616%	949(949)%	00(00)%	949%
Starting Salary	−668(−681)%	34(46)%	−634%	−956(−967)%	31(42)%	−925%
Tenure	−27(−28)%	4(5)%	−23%	−26(−28)%	11(13%	−15%
Performance Rating	81(81)%	0(0)%	81%	41(42)%	03(02)%	44%
Job Title Dummies	30(18)%	31(43)%	61%	14(07)%	34(41)%	47%
Total	32(06)%	68(94)%	100%	22(02)%	78(98)%	100%
Starting Salary						
Intercept	49(49)%	0(0)%	49%	−06(−06)%	0(0)%	−06%
Year of Hire	13(18)%	−3(−8)%	10%	35(43)%	−5(−12)%	31%
Education Degree	−23(−26)%	13(15)%	−11%	11(10)%	14(15)%	25%
Potential Experience	35(37)%	4(3)%	40%	14(16)%	06(04)%	20%
College Major	−8(−9)%	20(21)%	12%	−12(−15)%	43(46)%	30%
Total	66(69)%	34(31)%	100%	41(48)%	59(52)%	100%

Note: Men's coefficients are used as the decomposition standard. Results based on using women's coefficients as the standard appear in parentheses.

employment practices during the years studied, an out-of-court settlement was reached with a small subset of the firm's hourly employees. One could argue that this experience may have resulted in a greater concern for fair employment practices than at other firms.

There are good reasons, however, to believe that the firm studied was typical of large firms in many respects. First, given that only recent hires (average age = 33) and only exempt employees were studied, the female:male salary ratio would be expected to be higher than market-wide estimates. Second, it is clear that many (perhaps most) large firms experienced fair employment practice litigation during the time period of this study.[19] Third, the findings pertaining to human capital are consistent with research using national survey data (see Cain 1986). Fourth, the firm studied is typical of other large firms in its human resource practices (see Gerhart and Milkovich 1989). Fifth, other studies have also found that within firms, women's pay appears to grow as fast as (Hartmann 1987) or faster than (Olson and Becker 1983; Tsui and Gutek 1984; Megdal and Ransom 1985; Gerhart and Milkovich 1989) men's pay.[20] This finding is consistent with Blau and Beller's (1988) market-wide finding that the female-male earnings ratio rose during the 1970s.

Future research of the following types would be helpful. First, the best way to establish the generalizability of the findings reported here is through replications in other organizations. Where findings differ, the richness of firm-level data will often facilitate the search for an explanation. Second, more complete information is needed on selection processes that govern entry to and exit from firms. In the present study, I was able to examine only the latter. Male and female applicants

[19] For example, EEOC statistics show that the agency litigated 1,506 cases between 1980 and 1985. An additional 9,618 out-of-court settlements were reached during the same period. Finally, note that these measures exclude the following: cases for which the EEOC found probable cause but did not pursue (although the claimant may have), OFCCP enforcement, and state and local enforcement.

[20] Cabral, Ferber, and Green's (1981) study of three fiduciary institutions is an exception. In contrast to the present study's sample, their sample was employed largely in blue-collar and clerical occupations. Perhaps the distinction between treatment of exempt and nonexempt female employees is important. Second, judging from Cabral et al.'s statement that their information "became available [after it] had been supplied to a government agency" (p. 574), it may be that the data were required to investigate a discrimination claim.

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Table 8. Proportion of Male-Female Salary Differential Explained by Selected College Majors.

Major	*Total*[a]	*Edowments*[b]	*Coeff.*
Mechanical Engineering	12%	13%	−1%
Electrical Engineering	8%	8%	−1%
Education	3%	4%	−1%
Computer Science	1%	0%	1%
Chemical Engineering	1%	5%	−4%
Industrial Engineering	1%	2%	−1%
Business Administration	0%	0%	0%
Chemistry	−1%	−3%	2%
Math	−1%	0%	−1%
Biology	−1%	1%	−2%

[a] Total is the proportion of the salary differential due to differences in endowments and differences in coefficients.
[b] Using men's coefficients as standard.

with similar qualifications may, however, have different probabilities of being hired. If so, it is important to assess the consequences of studying only the subset of applicants who became employees.

Third, we need to better understand why women's starting salaries are lower even after adjustments have been made for gender differences in educational attainment, field of study, and potential experience. Although fuller specification of the starting salary equation (to include, for example, factors such as preferences and kind of past work experience) could reduce the adjusted starting salary gap, as discussed earlier, the amount of job-relevant information available to employers is generally less complete for applicants than for current employees. Thus, hiring and compensation decisions regarding individual applicants may be especially susceptible to the effect of group stereotypes (Nieva and Gutek 1980; Tosi and Einbender 1985).

Some research also suggests that women may have lower pay expectations than men for the same inputs (Major, McFarlin, and Gagnin 1984). If so, women may be less willing than men to bargain for a higher starting salary. Of course, if, as some evidence indicates (Olian et al. 1988), discrimination against women in hiring does exist, temporary acceptance of lower starting salaries by women could be viewed as a rational strategy to gain access to the firm and an opportunity to demonstrate their true productivity (Aigner and Cain 1977; Cain 1986).

Information also plays an important role on the supply side. For example, differing amounts and types of information held by applicants (versus current employees) may contribute to the use of different comparison standards by the two groups. Search costs constrain the amount of information applicants can gather on job attributes (Stigler 1962). In particular, much information on any given job is difficult for an applicant to obtain until he or she has actually worked at the job for a time, making many types of social comparisons difficult. In contrast, since personnel practices tend to be highly standardized within a large firm, once one has gained employment in such a firm it is comparatively easy to draw comparisons between one's own pay and the pay of others with similar perceived relevant inputs (such as job title, education, and performance). Any disparity is likely to produce feelings of inequity and pressure for change (see, for example, Adams 1963). Combined with legal pressures for affirmative action, this increased access to and visibility of information may contribute to less persistence of unexplained pay shortfalls for women once they are within the firm.

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Appendix A

Reduced-Form Current Salary Equations, Full Sample
(Standard Errors in Parentheses)

	Means		*Regression Coefficients*					
Variable	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*
Intercept	1.000	1.000	10.427**	10.342**	10.007**	10.061**	10.340**	10.391**
			(.013)	(.023)	(.030)	(.073)	(.025)	(.064)
Potential Exp.	7.323	6.981	.014**	.014**	.013**	.013**	.008**	.008**
			(.001)	(.002)	(.001)	(.002)	(.001)	(.002)
Potential Exp. Squared	106.425	100.589	−.0002**	−.0004**	−.0002**	−.0004**	−.0001**	−.0002*
			(.00003)	.0001	(.00004)	(.0001)	(.00003)	(.0001)
H.S.	.359	.417	—	—	—	—	—	—
B.A.	.098	.147	.112**	.165**	.118**	.167**	.080**	.129**
			(.013)	(.022)	(.013)	(.022)	(.011)	(.019)
B.S.	.384	.314	.117**	.142**	.123**	.144**	.066**	.105**
			(.011)	(.020)	(.010)	(.020)	(.009)	(.017)
M.A.	.009	.016	.160**	.170**	.171**	.181**	.084**	.083**
			(.032)	(.049)	(.030)	(.048)	(.023)	(.039)
M.B.A.	.007	.011	.188**	.218**	.174**	.183**	.098**	.125**
			(.037)	(.056)	(.035)	(.055)	(.027)	(.044)
M.S.	.066	.056	.182**	.251**	.181**	.251**	.083**	.166**
			(.014)	(.028)	(.014)	(.028)	(.011)	(.024)
Ph.D.	.077	.039	.368**	.460**	.372**	.455**	.185**	.325**
			(.016)	(.038)	(.015)	(.037)	(.013)	(.032)
Tenure	5.507	5.090			.005	.012	.001	.006
					(.003)	(.012)	(.003)	(.010)
Tenure Squared	40.736	35.575			−.0001	−.004**	−.00001	−.0003
					(.0001)	(.001)	(.0001)	(.001)
Performance Rating	2.459	2.462			.158**	.105**	.099**	.064**
					(.007)	(.015)	(.006)	(.012)
College Major Dummies			Yes	Yes	Yes	Yes	Yes	Yes
Job Title Dummies			No	No	No	No	Yes	Yes
R^2			.382	.380	.456	.412	.683	.664

Note: Each equation includes year of hire dummy variables. N = 3,564 men, 1,053 women.
* Significant at the 5% level; ** at the 1% level.

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Appendix B

Reduced-Form Current Salary Equations, College Graduates Sample
(Standard Errors in Parentheses)

	Means		*Regression Coefficients*					
Variable	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*
Intercept	1.000	1.000	10.621**	10.586**	10.099**	10.046**	10.407**	10.394**
			(.018)	(.040)	(.040)	(.073)	(.032)	(.111)
Potential Exp.	5.128	4.774	.013**	.003**	.013**	.018**	.007**	.009**
			(.001)	(.0001)	(.001)	(.003)	(.001)	(.002)
Potential Exp. Squared	58.219	52.657	−.0002*	−.001**	−.0002**	−.001**	−.0001**	−.0003**
			(.0001)	(.0001)	(.00004)	(.0001)	(.00004)	(.0001)
B.A.	.152	.251	—	—	—	—	—	—
B.S.	.600	.538	.007	−.018	.005	−.020	−.004	−.027*
			(.010)	(.019)	(.009)	(.018)	(.007)	(.014)
M.A.	.014	.028	.056*	−.016	.061*	−.004	.013	−.046
			(.028)	(.046)	(.025)	(.044)	(.019)	(.033)
M.B.A.	.011	.020	.082**	.059	.064*	.011	.043*	−.021
			(.032)	(.052)	(.029)	(.050)	(.022)	(.037)
M.S.	.103	.096	.077**	.096**	.070**	.087**	.023*	.042*
			(.014)	(.028)	(.013)	(.026)	(.010)	(.021)
Ph.D.	.120	.067	.271**	.315**	.267**	.302**	.136**	.187**
			(.014)	(.036)	(.013)	(.034)	(.012)	(.028)
Tenure	5.226	4.481			.018**	.027	.005	.030
					(.005)	(.033)	(.003)	(.025)
Tenure Squared	35.482	27.220			−.0004*	−.001	−.0001	−.002
					(.0002)	(.002)	(.0001)	(.002)
Performance Rating	2.465	2.429			.159	.142	.094	.084
					(.008)	(.018)	(.006)	(.014)
College Major Dummies			Yes	Yes	Yes	Yes	Yes	Yes
Job Title Dummies			No	No	No	No	Yes	Yes
R^2	.529	.465	.369	.345	.556	.530	.759	.783

Note: Each equation includes year of hire dummy variables. N = 2,280 men, 615 women.
* Significant at the 5% level; ** at the 1% level.

REFERENCES

Adams, J. S. 1963. "Toward an Understanding of Inequity." *Journal of Abnormal and Social Psychology,* Vol. 67, pp. 422–36.

Aigner, D. J., and G. G. Cain. 1977. "Statistical Theories of Discrimination in the Labor Market." *Industrial and Labor Relations Review,* Vol. 30, pp. 175–87.

Bishop, J. H. 1988. "Match Quality, Turnover, and Wage Growth." Working paper No. 88-03, Center for Advanced Human Resource Studies, Cornell University.

Blau, F. D., and A. H. Beller. 1988. "Trends in Earnings Differentials by Gender, 1971–1981." *Industrial and Labor Relations Review,* Vol. 41, pp. 513–29.

Blau, F. D., and M. A. Ferber. 1987. "Discrimination: Empirical Evidence from the United States." *American Economic Association Papers and Proceedings,* Vol. 77, pp. 316–20.

Blau, F. D., and M. A. Ferber. 1986. *The Economics of Women, Men, and Work.* Englewood Cliffs, N.J.: Prentice-Hall.

Blinder, A. S. 1973. "Wage Discrimination: Reduced Form and Structural Estimates." *Journal of Human Resources,* Vol. 8, pp. 436–55.

Bureau of National Affairs. 1983. "Performance Appraisal Programs." *Personnel Policies Forum,* No. 135.

Bureau of National Affairs. 1985. "Training and Development Programs." *Personnel Policies Forum,* No. 140.

Cabral, R., M. A. Ferber, and C. A. Green. 1981. "Men and Women in Fiduciary Institutions: A Study of Sex Differences in Career Development."

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Review of Economics and Statistics, Vol. 63, pp. 573–80.

Cain, G. G. 1986. "The Economic Analysis of Labor Market Discrimination: A Survey." In O. Ashenfelter and R. Layard, eds., *Handbook of Labor Economics.* Amsterdam: North-Holland.

Cotton, J. 1988. "On the Decomposition of Wage Differentials." *Review of Economics and Statistics,* Vol. 70, pp. 236–43.

Daymont, T. N., and P. J. Andrisiani. 1984. "Job Preferences, College Major, and the Gender Gap in Earnings." *Journal of Human Resources,* Vol. 19, pp. 408–34.

Dipboye, R. L. 1985. "Some Neglected Variables in Research on Discrimination in Appraisals." *Academy of Management Review,* Vol. 10, pp. 116–27.

Fuchs, V. 1971. "Differences in Hourly Earnings Between Men and Women." *Monthly Labor Review,* Vol. 94, pp. 9–15.

Gerhart, B. 1988. "Sources of Variance in Incumbent Perceptions of Job Complexity." *Journal of Applied Psychology,* Vol. 73, pp. 154–62.

Gerhart, B., and G. T. Milkovich. 1989. "Salaries, Salary Growth, and Promotions of Men and Women in a Large, Private Firm." In R. T. Michael and H. Hartmann, eds. *Pay Equity: Empirical Inquiries.* Washington, D.C.: National Academy Press.

Hartmann, H. I. 1987. "Internal Labor Markets and Gender: A Case Study of Promotion." In C. Brown and J. A. Pecham, eds., *Gender in the Workplace.* Washington, D.C.: Brookings Institution.

Hartmann, H. I., P. A. Roos, and D. J. Treiman. 1985. "An Agenda for Basic Research on Comparable Worth." In H. I. Hartmann, ed., *Comparable Worth: New Directions for Research.* Washington, D.C.: National Academy Press.

Heckman, J. J. 1976. "The Common Structure of Statistical Models of Truncation, Sample Selection and Limited Dependent Variables and a Simple Estimator for Such Models." *Annals of Economic and Social Measurement,* Vol. 5, pp. 475–92.

Jones, F. L. 1983. "On Decomposing the Wage Gap: A Critical Comment on Blinder's Method." *Journal of Human Resources,* Vol. 18, pp. 126–30.

Kahn, L. 1981. "Comment." *Industrial and Labor Relations Review,* Vol. 34, pp. 273–76.

Major, B., D. B. McFarlin, and D. Gagnon. 1984. "Overworked and Underpaid: On the Nature of Gender Differences in Personal Entitlement." *Journal of Personality and Social Psychology,* Vol. 47, pp. 1399–1412.

McEvoy, G. M., and W. F. Cascio. 1987. "Do Good or Poor Performers Leave? A Meta-Analysis of the Relationship Between Performance and Turnover." *Academy of Management Journal,* Vol. 30, pp. 744–62.

Megdal, S. B., and M. R. Ransom. 1985. "Longitudinal Changes in Salary at a Large Public University: What Response to Equal Pay Legislation?" *American Economic Review,* Vol. 75, pp. 271–74.

Milkovich, G. T., and J. M. Newman. 1987. *Compensation.* Plano, Tex.: Business Publications.

Neter, J., and W. Wasserman. 1974. *Applied Linear Statistical Models.* Homewood, Ill.: Richard D. Irwin.

Nieva, V. F., and B. A. Gutek. 1980. "Sex Effects on Evaluation." *Academy of Management Review,* Vol. 5, pp. 267–76.

Oaxaca, R. L. 1973. "Male-female Wage Differentials in Urban Labor Markets." *International Economic Review,* Vol. 14, 693–709.

Olian, J. D., D. P. Schwab, and Y. H. Haberfeld. 1988. "The Impact of Applicant Gender Compared to Qualifications on Hiring Recommendations: A Meta Analysis of Experimental Studies." *Organizational Behavior and Human Decision Processes,* Vol. 41, pp. 180–95.

Olson, C. A., and B. E. Becker. 1983. "Sex Discrimination in the Promotion Process." *Industrial and Labor Relations Review,* Vol. 36, pp. 624–41.

Olson, J. E., I. H. Frieze, and D. C. Good. 1987. "The Effects of Job Type and Industry on the Income of Male and Female MBAs." *Journal of Human Resources,* Vol. 22, pp. 532–41.

Polachek, S. W. 1978. "Sex Differences in College Major." *Industrial and Labor Relations Review,* Vol. 31, pp. 498–508.

Polachek, S. W. 1981. "Occupational Self-selection: A Human Capital Approach to Sex Differences in Occupational Structure." *Review of Economics and Statistics,* Vol. 63, pp. 60–69.

Reimers, C. W. 1983. "Labor Market Discrimination Against Hispanic and Black Men." *Review of Economics and Statistics,* Vol. 65, pp. 570–79.

Rynes, S. L., and G. T. Milkovich. 1986. "Wage Surveys: Dispelling Some Myths About the 'Market Wage.' " *Personnel Psychology,* Vol. 39, pp. 71–90.

Sanborn, H. 1964. "Pay Differences Between Men and Women." *Industrial and Labor Relations Review,* Vol. 17, pp. 534–50.

Spence, M. 1973. "Job Market Signaling." *Quarterly Journal of Economics,* Vol. 87, pp. 355–74.

Stigler, G. J. 1962. "Information in the Labor Market." *Journal of Political Economy,* Vol. 70, pp. 94–105.

Tosi, H. L., and S. W. Einbender. 1985. "The Effects of the Type and Amount of Information in Sex Discrimination Research: A Meta-analysis." *Academy of Management Journal,* Vol. 28, pp. 712–23.

Treiman, D. J., and H. I. Hartmann. 1981. *Women, Work, and Wages: Equal Pay for Jobs of Equal Value.* Washington, D.C.: National Academy Press.

Tsui, A. S., and B. A. Gutek. 1984. "A Role Set Analysis of Gender Differences in Performance, Affective Relationships, and Career Success of Industrial Middle Managers." *Academy of Management Journal,* Vol. 27, pp. 619–35.

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