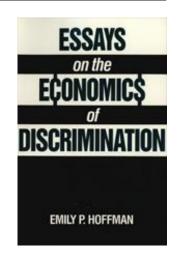


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# Occupational Segregation and the Earnings Gap: Further Evidence

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# Occupational Segregation and the Earnings Gap

# **Further Evidence**

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Though the earnings gap between women and men has been narrowing in recent years, it remains substantial. Hence it is not surprising to find that there is continued concern about the inability of even the most meticulous studies using differences in a large number of productivity-related characteristics of workers to explain more than half of the differential. It has, however, also been found that adding detailed occupational categories succeeds in accounting for a substantially larger share (Treiman and Hartmann 1981). Since a good deal of occupational segregation remains even within these categories (Blau and Ferber 1987), it may be assumed that there would be a further reduction if an even finer breakdown were used. On this basis, some argue that most of the male-female earnings gap could be explained without introducing discrimination.

The problem with this line of reasoning is the tacit assumption that people's occupations and the differences in earnings between occupations are not themselves tainted by discrimination. The question remains controversial. A number of researchers (Mincer and Polachek 1974; Zellner 1975; Landes 1977; Polachek 1979, 1981) focus on women's "household responsibilities" as the chief explanation for lower earnings in female occupations. Women expect only intermittent labor force participation. Hence they will opt for jobs requiring less investment in human capital and not subject to as much depreciation of skills

during periods of absence. Similarly, employers will be less inclined to hire women for jobs that involve a great deal of investment in their training. As a result, women will be concentrated in occupations with flat earnings profiles, relatively high early on, but rising little at later stages. It has also been argued that women expend less energy on their market work, simply because they put more effort into housework even when they are employed full time (Becker 1985).

Little empirical support has been found for either of these hypotheses. Some of the implications with respect to intermittent labor force participation have been successfully challenged, especially by England (1982, 1984), and Bielby and Bielby (1988) have actually provided evidence (albeit based on self-reporting) that women put more effort into their paid work than do men. The possibility that discrimination may play a part in reducing wages in predominantly female occupations can therefore not be ignored.<sup>1</sup>

Some earlier work supports this view by showing that there is a negative correlation between earnings of both men and women and the proportion of workers in an occupation who are female (Stevenson 1975; Ferber and Lowry 1976; Jusenius 1980; Treiman and Hartmann 1981; England, Chassie and McCormack 1982). These studies, however, though they take into account one or more of such variables as education, skill demands, and age, lack information on such crucial factors as general and job-specific experience of individuals, hours and weeks worked, and size of firm, not to mention the level of authority attained by each worker. Critics argue that the omission of these and other possibly relevant variables is likely to vitiate these estimates. This issue deserves attention. It is addressed in this paper, utilizing a unique data set that includes a great deal of detailed information about the human capital individual workers have accumulated, about various aspects of the job, including the extent to which it involves control over resources, and about a number of characteristics of the employer, including size as well as type of industry.

Building on earlier work (Ferber and Spaeth 1984; Ferber, Green, and Spaeth 1986), this paper begins by determining which of the attributes of workers, jobs, and employers have a significant effect on

earnings, then goes on to investigate whether women have the same opportunity for attaining valuable control over money and supervisory authority as do men with comparable qualifications. Last, we examine whether even after all these factors are accounted for, and the chance that omitted variables would bias the results has been considerably reduced, the proportion of women in an occupation nonetheless remains significant. A recent study concluded "that men experience no loss in autonomy and decisionmaking authority as the female sex composition increases while females suffer substantially by virtue of holding femaledominated occupations" (Jaffee 1989, p. 387). To the extent such effects exist, we conclude they constitute another aspect of discrimination.

Because the sample employed in this study has a disproportionate representation of individuals in managerial positions, we have extensive information on at least a small number of a "rare population," namely women in "top management." We take advantage of this to also briefly examine how this group fares, though the sample size precludes going much beyond raising questions for further exploration.

#### Data

The data set used in Ferber and Spaeth (1984) and in Ferber, Green, and Spaeth (1986) was collected in 1982 as part of a practicum in survey research methods by carefully trained and supervised students. A more thorough description of the data collection and construction of variables in provided in Spaeth (1985).

Telephone interviews were conducted with 245 women and 312 men living in the State of Illinois in Spring 1982 who were employed at least 20 hours a week on a single job. The numbers for Chicago were obtained by random digit dialing, because unlisted numbers are very common in that city. Systematic sampling from directories was used for the rest of the state, where nonlisting is infrequent (Sudman 1976). In order to increase the number of female respondents, interviewers were instructed to ask for a woman first, and to interview another eligible

respondent only if no such woman was available. The N for this sample was 557.

Indicators designed to measure six dimensions of "work authority" were collected. They are (a) control over monetary resources, (b) supervisory authority, (c) subordinate's discretion, (d) respondent's discretion, (e) control over organizational structure, and (f) control over information. Of these, only the first two are found to add to the explanatory power of the earnings regression.

The index for control over monetary resources is based on answers to the following three questions: (1) About how much money was involved in the largest monetary decision in which you participated last year? (2) What was the largest monetary decision in which you had the final say? (3) How much money can you ordinarily spend without getting authorization from higher up? The first step toward producing a single number was to standardize the mean and standard deviations of the answers to the first and third question to the second one. If they answered questions (1) and (2), these were averaged. If they answered question (1) but not (2), that was used. If neither (1) nor (2) were answered, the response to question (3) was used. At each stage of this procedure the correlations with earnings were compared with the original correlation, and they did not change. Supervisory authority is simply equal to the answer to the question, "how many people are responsible to you both directly and indirectly?"

More recently, a "multiplicity" sample, based on the original sample, has been added. It was designed so as to achieve a disproportionate representation of workers in high-level positions who have achieved a good deal of the control over resources emphasized in this study. The approach was to attempt to interview the supervisor of every person in the original sample who had one, then interview the supervisor of that person, and so on until the topmost organizational level was reached.<sup>2</sup> Each respondent was then asked how many persons could have nominated him or her. This number represents that person's "multiplicity," which is proportional to the probability that the nominee will fall into the sample. The resulting total sample (of the two together) consists of 1,313 men and 404 women. Fifty-nine percent of these are

managers and executives; among them are 360 men and 39 women who identify themselves as being members of "top management." The actual sample sizes for the regressions are somewhat smaller because not all the variables are available for all individuals.

Two earlier studies (Ferber and Spaeth 1984; Ferber, Green, and Spaeth 1986) utilizing only the first sample, examined the effect of the wide variety of variables collected on earnings. Because we found one of these, control over financial resources, to be highly significant, we also investigated what differences there might be in the extent to which different variables influenced the attainment of such control. The results showed that women did not attain as much financial authority as men with the same characteristics. These findings are consistent with the results of other research that showed unequal access to training and jobs such as Cabral, Ferber, and Green (1979), Duncan and Hoffman (1979), Halaby (1979), and Olson and Becker (1983).

The random sample of workers used in earlier studies was not, however, ideally suited to an investigation of the role of workers' control over resources, because so few women had any such authority. The present research is based on the larger sample which includes a disproportionate number of high-level employees, better suited for an investigation that specifically focuses on the contribution control over resources makes to the earnings of women and men, and on the question whether the sex composition of occupations influences earnings not only directly, but also indirectly via differences in the attainment both of control over money and supervisory authority. The extent to which this is the case, when so many different attributes of workers and of jobs are accounted for, would suggest that sex bias helps to explain lower wages in women's occupations.

# **Analysis**

Table 1 presents an overall view of selected variables for "male" vs. "female" occupations. To generate this table we separated the 3-digit Census occupations into those with more than 40 percent women, and those with 40 percent or fewer women using 2-digit categories from

the 1980 Census. This division was chosen in part because it approximates the proportion of the total labor force that is female, and also because it enabled us to obtain a reasonable representation in each group, as seen in table 1. Nonetheless, such a division is somewhat arbitrary; for further analysis we use the percent female in individual occupations.

The table shows that the means for many of the variables differ not only as between men and women, but also among individual men and women depending on whether they are in primarily male or primarily female occupations.3 These differences, including the substantially greater supervisory authority and control over money men have, help to account for the higher earnings of men as compared to women, and of workers in predominantly male as compared to predominantly female occupations, without invoking discrimination. But they do not explain the whole earnings gap. Table 2 shows regressions with earnings of men and women as the dependent variable, and the percent of women in each occupation as an independent variable included in addition to all the ones used in the earlier studies. They are comprised of the standard measures of education and experience, plus weeks and hours worked, and a dummy for marital status, variables generally relied on in human capital explanations of earnings. To these were added "core industry" and number of employees of the organization, to control for type of employer, and finally whether the worker had a supervisor, and two indices of control over resources, both of which were found to influence earnings.

With all these variables, we go well beyond the standard regressions current in the literature in taking account of characteristics of workers and jobs that would help to explain the earnings gap between women and men. Therefore, finding that the proportion of workers in an occupation who are women nonetheless has a significant effect on earnings may be seen as strongly suggesting discrimination. Not only do we find this to be the case, but the effect is quite substantial. For instance, given the mean proportion of women in the female and male occupations in our sample, the difference in this variable represents a difference of 15 percent in earnings. Thus it is clear that the gender composition of occupations itself plays an important role as a determinant of earnings.

Table 1
Means of Selected Variables for Men and Women in Male and Female Occupations

	Occupations 40 perce	Occupations with more than	Occupations or fewer	Occupations with 40 percent or fewer women
	Men (99)	Women (188)	Men (957)	Women (116)
Years of education	15.37	13.81	15.34	14.56
Years of experience before current employer	4.46	5.40	6.30	5.60
Years in previous job with current employer	6.15	2.16	9.95	5.83
Years in current job	7.50	5.89	6.26	5.34
Weeks worked	48.27	45.92	49.93	48.28
Hours worked	47.57	39.50	51.60	45.59
Proportion married	0.76	0.51	0.88	0.57
Core industry	0.85	0.84	0.82	0.72
In number of employees of organization	7.85	5.92	7.65	7.19
No supervisor	0.05	0.01	0.03	0.05
Sex of supervisor, $M=1$ , $F=0$	98.0	0.57	0.95	0.74
Supervisory authority	60.40	44.14	73.46	65.10
Control over money	55.92	37.73	66.82	47.39
Percent women in occupation	53.56	74.25	22.74	26.67
Annual earnings	\$39,899	\$17,884	\$67,335	\$31,416

Table 2 Determinants of In Earnings of Men and Women (standard errors in parentheses)

	Men (1,056)	Women (304)
Years of education	0.072***	0.046***
	(.007)	(.013)
Years of experience before current employer	0.029***	0.020***
•	(.005)	(.009)
Years of experience before current	-0.0004***	-0.001**
employer, squared	( 00016)	(.0003)
Years in previous job with current employer	0.026***	0.032***
	(.0046)	(.013)
Years in previous job with current	-0.0002*	-0.001*
employer, squared	(.00014)	(.0005)
Years in current job	0.016***	0.019***
•	(.002)	(.004)
Weeks worked	0.006***	0.010***
	(.0019)	(.003)
Hours worked	0.008***	0.008**
	(0016)	(.0035)
Married	0.093***	-0.081
	(.045)	(.057)
Core industry	-0 023	0.046
	(.037)	(.072)
In number of employees of organization	0.031***	0.046***
	(.006)	(.011)
No supervisor	0.254***	0.287
	(.106)	(.201)
Sex of supervisor, $M=1$ , $F=0$	0.074	0.147***
	(.063)	( 062)
Supervisory authority	0.007***	0.006***
	(8000)	(.002)
Control over money	0.004***	0 007***
	(.0004)	(002)
Percent women in occupation	-0.003***	-0.003**
	(.0011)	(.0012)
Constant	0 600***	0 356
	(157)	(.250)
Adjusted R <sup>2</sup>	0.600	0 607

<sup>\*</sup>Significant at the 10 level \*\*Significant at the 05 level \*\*\*Significant at the 01 level

With all these variables, we go well beyond the standard regressions current in the literature in taking account of characteristics of workers and jobs that would help to explain the earnings gap between women and men. Therefore, finding that the proportion of workers in an occupation who are women nonetheless has a significant effect on earnings may be seen as strongly suggesting discrimination. Not only do we find this to be the case, but the effect is quite substantial. For instance, given the mean proportion of women in the female and male occupations in our sample, the difference in this variable represents a difference of 15 percent in earnings. Thus it is clear that the gender composition of occupations itself plays an important role as a determinant of earnings.

Another variable in this regression also deserves attention. Having a male supervisor has a significant positive effect on the earnings of women. The coefficient is positive for the earnings of men as well, though it is not significant. Because there is a widespread belief that both women and men tend to prefer male supervisors, this might be interpreted to show that workers perform more efficiently when their boss is a man. However, a study which investigated how employees actually rated their supervisors—as opposed to merely expressing an abstract preference for men or women—found that female bosses received higher ratings (Ferber, Huber, and Spitze 1979). Therefore we are more inclined toward the view that there may be a tendency to devalue women's work more when even the supervisor is a woman, and perhaps at times sex of the supervisor may be a proxy for the sex-type of job (a category considerably more detailed than occupation).

The regression for earnings does not, however, tell the whole story. So far we have taken supervisory authority and control over money as given. Similar to Jaffee (1989), the results of Tobit regressions in tables 3 and 4 show that a higher percent female has a significant negative effect on attainment of supervisory authority and control over money by women. On the other hand, the coefficient for this variable is positive for both the regressions for men and significant for attainment of supervisory authority. Thus men appear to have an advantage as compared to women, at least in attaining supervisory authority as the occupation they are in becomes increasingly female, but women are at a disadvantage in attaining both types of authority.

It may be that in women's occupations, supervisory authority is more often over persons in the same occupation, such as a nurse supervising other nurses, or a social worker supervising other social workers, as opposed to being in charge of persons in another occupation, such as a manager supervising a secretary. This would be expected to reduce the opportunity for attaining such authority, as is apparently the case for women. For men, however, this is likely to be offset by their heavy concentration at higher levels of the hierarchy as the proportion of women in occupations rises. This possibility has also been suggested in OECD (1985). Perhaps the more traditional women who tend to enter the traditionally female fields are less willing to compete for these jobs, and possibly are less willing to accept other women in a supervisory role. Frequently, women in these occupations also believe that having a male supervisor is likely to raise their status—a view which receives some support from our research. It should be noted this does not imply that men constitute a larger proportion of supervisors in female than in male occupations, but only that a disproportionate share of the few men in female occupations are likely to be in such positions.

Overall, our findings show that the proportion of workers who are women influences earnings both directly and, to some extent indirectly, even when a large number of other factors are accounted for. They are consistent both with the "overcrowding" model (Bergmann 1974) and with the proposition that women are hired in fields abandoned by men when they can get higher pay elsewhere (Reskin and Roos, 1990; Strober and Arnold 1984), as well as various other segmented labor market theories (reviewed in Cain 1976). Discrimination is an integral part, implicitly or explicitly, of each of these hypotheses. Hence to the extent that they are applicable, they support our conclusion that occupations themselves are tainted as an explanation of the earnings gap.

This study does not itself answer, or even address the question why so many women continue to enter occupations where rewards are lower, perhaps because of "overcrowding." Traditional attitudes, social pressures, discrimination in education, training, and hiring have all been suggested as possible contributing factors. The recent influx of women into male occupations may be regarded as evidence that as some of these

Table 3 Determinants of Supervisory Authority of Men and Women Tobit Analysis (standard errors in parentheses)

	Man	Warran
	Men (1,083)	Women (317)
Years of education	3.442***	3.663***
	(0.290)	(0.179)
Years of experience before current employer	0.905***	1.643***
	(0.202)	(0.560)
Years of experience before current		
employer, squared	-0.016***	-0.049**
	(0.007)	(0.023)
Years in previous job with current employer	1.343***	2.386***
	(0.199)	(0.679)
Years in previous job with current		
employer, squared	-0.022***	-0.058**
	(0.006)	(0.028)
Years in current job	055	0.212
	(0.099)	(0.235)
Weeks worked	0.209***	0.485***
	(0.084)	(0.171)
Hours worked	0.797***	0.862***
	(0.066)	(0.194)
Married	6.836***	7.400**
	(1.983)	(3.249)
Core industry	-3.079*	5.382
·	(1.621)	(4.171)
In number of employees of organization	0.296	-0.282
	(0.262)	(0.634)
No supervisor	2.667	6.946
•	(4.569)	(11.149)
Sex of supervisor, $M=1$ , $F=0$	0.605	0.654
• , ,	(2.756)	(3.617)
Percent women in occupation	0.160***	-0.397***
•	(0.049)	(0.066)
Constant	-55.421***	-63.755***
	(6.859)	(15.213)
-2 x log likelihood	8,673	1,968

<sup>\*</sup>Significant at the .10 level. \*\*Significant at the .05 level \*\*\*Significant at the .01 level.

Table 4 **Determinants of Control Over Money** Tobit Analysis (standard errors in parentheses)

	Men (1,195)	Women (355)
Years of education	7.642***	5.224***
	(0.662)	(0.762)
Years of experience before current employer	1.372***	2.317***
,	(0.440)	(0.657)
Years of experience before current		
employer, squared	-0.009	-0.079***
	(0.015)	(0.029)
Years in previous job with current employer	2.087***	1.360**
	(0.428)	(0.693)
Years in previous job with current		
employer, squared	-0.027**	-0.036*
	(0.013)	(0.027)
Years in current job	0.403**	0.461**
•	(0.220)	(0.240)
Weeks worked	-0.015	-0 091
	(0.183)	(0.168)
Hours worked	1 134***	0.906***
	(0.139)	(0.196)
Married	6.472*	5.635*
	(4.448)	(3.446)
Core industry	-0.517	-4.998
•	(3.474)	(4.140)
In number of employees of organization	2 185**	-0.525
1 , 5	(0.561)	(0.635)
No supervisor	23.148***	15.410*
•	(9.557)	(10.318)
Sex of supervisor, $M=1$ , $F=0$	7.375	6.003*
	(5.862)	(3.874)
Percent women in occupation	0 163	-0.157**
<b></b>	(0 114)	(0.068)
Constant	-175 742***	-83.410***
	(15.737)	(16.330)
-2 x log likelihood	10,138	1,852
Z A 105 Intellitou	10,130	1,052

<sup>\*</sup>Significant at the 10 level \*\*Significant at the 05 level \*\*\*Significant at the 01 level

barriers have been crumbling, so is women's willingness to take poorly paid jobs declining. As yet, however, there is no agreement on the answer.

#### Women in A Male Domain

The analysis up to this point shows that women will tend to do better as their proportion in an occupation declines. An interesting question is whether this will hold in an environment that is entirely dominated by members of the opposite sex. This issue is particularly important because so many of the most prestigious, and all the most highly paid occupations have been, and to a considerable extent continue to be, male preserves.

Empirical evidence on this subject is rather scarce, since clearly the number of women in such situations tends to be extremely small. Because of the way our sample was chosen, we have a somewhat larger than usual representation in a particularly interesting occupational category, namely "top management." It is still too small to rely on for an authoritative interpretation, but the results of our analysis are suggestive.

Members of this group are clearly an elite in terms of their characteristics and their rewards, as can be seen in table 5. These data are consistent with the findings of Diploy (1987) that the traits of managerial women differ markedly from those of the "typical" female: they score higher on measures of masculine personality traits than do women in traditionally female occupations. Table 5 also shows that the differences between the characteristics of men and women in this group are, for the most part, not as great as among other workers. Accordingly, it is not surprising that there is also less of a differential in earnings. Women's earnings are 54 percent of those of men among top managers, as compared to 42 percent among other workers.

Turning next to the earnings regressions, the small sample size may explain why for women only two coefficients are statistically significant at the 10 percent level or better<sup>9</sup> despite an adjusted R<sup>2</sup> of .76, considerably higher than for the other regressions. Nonetheless, the fact

Table 5
Means of Selected Variables for Men and Women
In "Top Management" and Among Other Workers

	Top management	agement	Other workers	vorkers
Variables	Men (N=360)	Women (N = 28)	Men (N=696)	Women (N = 276)
Age	49.63	48.54	43.92	39.64
Years of experience before current employer	7.54	7.73	5.84	5.56
Years of previous experience with				
current employer	11.48	5.42	8.65	2.84
Years in current job	60.9	6.87	7.04	5.76
Hours per week worked	55.34	50.89	48.83	40.80
Weeks per year worked	50.49	49.79	49.33	46.44
Years of education	16.19	15.33	14.76	13.85
Index of control over money	85.74	89.79	52.85	38.25
Index of supervisory authority	85.75	82.28	63.81	46.93
Proportion married	.93	.67	.84	.56
Annual earnings	\$97,994	\$53,146	\$47,575	\$19,936

Table 6
Determinants of In Earnings of Women and Men

	Top mar	Top management	Other workers	orkers
	Men	Women	Men	Women
Variables	(N=360)	(N = 28)	(969 = N)	(N = 276)
Years of education	0.0363**	-0.0145	0.0686***	0.0384***
Years of experience before current employer	0.0201**	0.0049	0.0257***	0.0175**
Years of experience before current				
employer, squared	0.000	-0.0003	-0.0004***	-0.0005*
Years with current employer, previous job	0.0334***	0.0121	0.0182***	0 0356***
Years with current employer, previous				
job, squared	-0.0005*	0.0005	-0 0001	**6000.0-
Years in current job	0.0180***	-0.0026	0.0134***	0.0204***
Weeks worked	0.0070*	-0.0043	0 0050***	0.0101***
Hours worked	0.0005	-0.0225	0.0118***	0.0092***
Married	-0.0168	-0 1426	0.1366***	-0.0885
Core industry	-0.0520	-0 0482	0.0183	0.0537
In number of employees of organization	0.0544***	0.1921**	0.0354***	0.0486***
Control over monetary resources	0.0038***	0.0049	0.0030***	0.0075***
Supervisory authority	0.0032*	0.0047	0.0052***	0.0064***
No supervisor	0.1128	-0.1147	0.6091***	0.2018
Sex of supervisor (male $= 1$ )	0.0177	-0.2640	0.1222*	0.1778***
Constant	1.8925***	4.1569***	0 4568***	0.1402
Adjusted R <sup>2</sup>	0.4055	0.7560	0.5868	0.5474

\*Significant at .10 level
\*\*Significant at .05 level
\*\*\*Significant at 01 level

that the coefficients in the women's regression for education, years of experience before current employer, years of previous experience with current employer, years in current job, weeks worked, hours worked, and "no supervisor," are either very much smaller (and in some cases even have a negative sign) than in the men's regression, deserves attention. Combined with a very much larger constant for women than men in the case of top managers, while the opposite is true for other workers, these data point to the conclusion that the reward structure represented by the two regressions really is quite different. These results differ from such earlier ones as Corcoran and Duncan (1979), but are consistent with the views of Doeringer and Piore (1971) and Bridges and Berk (1978), for instance, that it is not the characteristics of the individual but the job that tend to determine earnings.

The extent of the difference in reward structures of women and men is suggested by the fact that men in top management who actually earn \$97,992 on average, would earn only \$72,079 if they were rewarded as women are, and that women who actually earn \$53,147 would earn \$74,280 if they were rewarded as men are.<sup>10</sup>

One interpretation, consistent with Kanter's (1977) hypothesis, is that members of this extremely small minority tend to be treated not as individuals, but as "tokens." What the majority notices about them is not the particular characteristics that differentiate one from another, but rather that they all belong to a group of outsiders. This would account for the fact that human capital differences have virtually no effect on their earnings. Whether or not one accepts this interpretation, the case of top executives reinforces doubts about unmeasured characteristics as the sole explanation of earnings differences and confirms that some form of discrimination is likely to be the explanation for at least part of the earnings gap. 13

#### **Conclusions**

In this study we investigated the effects of the proportion of persons in an occupation who are women on the earnings of workers. In regressions including not only the standard human capital and employer variables, but also the extent to which individuals have achieved control over human and financial resources, we found that this factor nonetheless had a significant negative impact. Furthermore, women, though not men, also achieved less supervisory authority as the percent of women in the occupation increased, which in turn further reduced their earnings. Thus there appear to be penalties for being in female occupations beyond those that are warranted by existing differences in human capital or in the job characteristics accounted for in this research. We conclude that these results create at least a presumption that the existence of discrimination cannot be explained away by introducing occupations as an explanatory variable.

We also examined the qualifications and rewards of men and women in a very prominent, prestigious occupation with a very small minority of women. These highly qualified women are not only paid substantially less than their male counterparts, but they are, for the most part, all paid about the same, regardless of their individual characteristics. As noted before, the sample is too small to warrant firm conclusions. But it may be that women who expect to avoid the disadvantages of female occupations by going to the opposite extreme, also encounter problems.

### **NOTES**

- 1. It is often argued that discriminatory wage differentials could not persist in competitive labor markets. Recent work by Krueger and Summers (1986, 1988) on interindustry wage differentials, which led them to reject classical competitive theories of wage determination because they found persistent differences in wages for equally skilled workers, helps to undermine this contention
- 2. Evidence for the success of this design is provided by the fact that among the respondents are a number of heads of large corporations and the Governor of the State of Illinois.
- 3 The descriptive data are shown to provide additional information about characteristics of this sample, which is clearly not representative of the population, because high-level workers are overrepresented.
- 4. The definition of "core" and "peripheral" industries is taken from Hodson (1983). It is based on a factor analysis of a large number of characteristics, which initially results in 16 separate classifications, but is further reduced to 6. For our purposes, we reduced this to the two categories of "core" and "periphery". Averitt (1968) defines core firms as those that are powerful enough to protect themselves from the vagaries of local and single-product markets by selling a variety of products in national and international markets, while periphery firms tend to be small and local and produce a limited product line

- 5. As we shall see later in table 4, the same is true for attainment of control over money
- 6. We also ran the same regressions, without percent female, separately for men and women in occupations with more than 40 percent women and in occupations with 40 percent or fewer women, to determine whether any consistent patterns could be found. Contrary to what might be expected, being married had a significant negative effect in male but not in female occupations. Consistent with usual beliefs that experience is more important in male occupations, years of work before current employer and in previous jobs with current employer have a greater effect on earnings for both men and women in male occupations. On the other hand, this is not true of years in current jobs, nor of level of education attained
- 7. Tobit analysis was used for these dependent variables because there were many individuals with no supervisory authority or control over money. Chow tests on the regressions in table 2 and on OLS versions of the Tobit runs showed the male and female equations to be significantly different at the 1-percent level.
- 8. Respondents were placed in this category if their responses were positive to the following questions. (1) Would you say you are in a management position? and (2) Would you say you are top management? Obviously such people include high-level managers in small organizations, not only CEOs in Fortune 500 companies or chief executives of large state agencies
- 9. Moreover, it is size of the organization where the woman is employed, not one of her own characteristics, that has the most significant effect on earnings. This may be because laws are more likely to be enforced in large firms, as is for instance suggested by Leonard (1987).
- 10. It is also interesting that men in top management would earn substantially more, \$78,446, if they were rewarded as are men not in top management, than if they were rewarded as are women in top management. To obtain the coefficients necessary to calculate these dollar figures, we reran the regressions shown in table 6 using actual earnings, rather than "In earnings" as the dependent variable
- 11 Bartlett and Miller's (1985) finding that there is no evidence of a statistically significant relationship between leaves of absence and earnings for women executives points toward the same conclusion. Whether an individual woman does or does not take leaves appears to make little difference as compared to the perception that women tend to take leaves more than men
- 12 The fact that the standard deviation of earnings of these top management women, who resemble their male peers far more than other women workers do, nonetheless is just as much lower as compared to the standard deviation of earnings of men, further supports this conclusion

Mean Earnings	Standard Deviation
\$47,575	\$(42,718)
19,936	(13,236)
97,994	(82,130)
53,146	(39,038)
	19,936 97,994

13. Given the small sample size and the attendant uncertainty about the significance of the differences in the regressions for male and female top managers, we also examined a combined regression, with sex as a dummy variable. As would be expected in view of their representation in the sample, the results are similar to those for men only. The R<sup>2</sup> is, however, higher. 450 rather than .406, and sex is significant at the 1-percent level, suggesting, once again, that rewards for women are not the same as for men.

## REFERENCES

- Averitt, Richard T. The Dual Economy: The Dynamics of American Industry Structure. New York: Norton, 1968.
- Bartlett, Robin L. and Timothy I. Miller. "Executive Compensation: Female Executives and Networking." *American Economic Review* 75, 2 (May 1985): 266-270.
- Becker, Gary S. "Human Capital, Effort, and the Sexual Division of Labor." *Journal of Labor Economics* 3, 1, Par. 2 (January 1985): 533-58.
- Bergmann, Barbara R. "Occupational Segregation, Wages and Profits When Employers Discriminate by Race or Sex." *Eastern Economic Journal* 1, 1-2 (April-July 1974): 103-10.
- Bielby, Denise D. and William T. Bielby. "She Works Hard for the Money: Household Responsibilities and the Allocation of Work Effort." *American Journal of Sociology* 93, 5 (March 1988): 1031-59.
- Blau, Francine D. and Marianne A. Ferber. "Occupations and Earnings of Women Workers." In Working Women: Past, Present, Future, eds. Karen S. Koziara, Michael H. Moskow and Lucretia D. Tanner. Washington, D.C.: The Bureau of National Affairs. 1987.
- Bridges, William P. and Richard A. Berk. "Sex, Earnings and the Nature of Work: A Job-Level Analysis of Male-Female Income Differences." Social Science Quarterly 58, 4 (March 1978): 553-65.
- Cabral, Robert, Marianne A. Ferber and Carole A. Green. "Men and Women in Fiduciary Institutions: A Study of Sex Differences in Career Development." *Review of Economics and Statistics* 32, 4 (July 1979): 451-64.
- Cain, Glen C. "The Challenge of Segmented Labor Market Theories to Orthodox Theory: A Survey." Journal of Economic Literature 14, 4 (December 1976): 1215-57.
- Corcoran, Mary and Greg J. Duncan "Work History, Labor Force Attachment, and Earnings Differences Between the Races and Sexes." *Journal of Human Resources* 14, 1 (Winter 1979). 3-20.
- Diploy, Robert L. "Problems and Progress of Women in Management." In Working Women Past, Present, Future, eds Karen S. Koziara, Michael H. Moskow and Lucretia D. Tanner. Washington, D.C.: The Bureau of National Affairs, 1987.
- Doeringer, Peter B. and Michael J. Piore. Internal Labor Markets and Manpower Analysis. Lexington, MA: D.C. Heath, 1971.
- Duncan, Greg J. and Saul D. Hoffman. "On-the-Job Training and Earnings Differences by Race and Sex." *Review of Economics and Statistics* 61, 4 (November 1979): 594-603.
- England, Paula. "The Failure of Human Capital Theory to Explain Occupational Sex Segregation." *Journal of Human Resources* 17, 3 (Summer 1982): 358-70.
- . "Socioeconomic Explanations of Job Segregation." in Comparable Worth and Wage Discrimination: Technical Possibilities and Political Realities, ed. Helen Remick. Philadelphia: Temple University Press, 1984.

- England, Paula, Marilyn Chassie, and Linda McCormack. "Skill Demands and Earnings in Female and Male Occupations." *Sociology and Social Research* 66, 2 (January 1982): 147-68.
- Ferber, Marianne A., Carole A. Green and Joe L. Spaeth. "Work Power and Earnings of Women and Men." American Economic Review 76, 2 (May 1986): 53-56.
- Ferber, Marianne A. and Helen M. Lowry. "The Sex Differential in Earnings: A Reappraisal." Industrial and Labor Relations Review 29, 3 (April 1976): 377-87.
- Ferber, Marianne A., Joan A. Huber, and Glenna Spitze. "Preferences for Men as Bosses and Professionals." *Social Forces* 58, 2 (December 1979): 466-76.
- Ferber, Marianne A. and Joe L. Spaeth. "Work Characteristics and the Male-Female Earnings Gap." *American Economic Review* 74, 2 (May 1984): 260-64.
- Halaby, Charles N. "Sexual Inequality in the Workplace: An Employee-Specific Analysis of Pay Differences." Sociology and Social Research 8, 1 (March 1979): 79-104.
- Hodson, Randy. Workers' Earnings and Corporate Economic Structure. New York: Academic Press, 1983.
- Jaffee, David. "Gender Inequality in Workplace Autonomy and Authority." Social Science Quarterly 70, 2 (June 1989): 375-90.
- Jusenius, Carol L. "The Influence of Work Experience, Skill Requirement, and Occupational Segregation on Women's Earnings." Journal of Economics and Business 29, 2 (Winter 1980): 107-15.
- Kanter, Rosabeth M. Men and Women of the Corporation. New York Basic Books, 1977.
- Krueger, Alan B. and Lawrence H. Summers. "Reflections on the Inter-Industry Wage Structure." In *Unemployment and the Structure of Labor Markets*, eds. Kevin Long and Jonathan Leonard. London: Basil Blackwell, 1986: 17-47.
- \_\_\_\_\_\_. "Efficiency Wages and the Inter-Industry Wage Structure." *Econometrica* 56, 2 (March 1988): 259-93.
- Landes, Elizabeth M. "Sex Differences in Wages and Employment: A Test of the Specific Capital Hypothesis." *Economic Inquiry* 15, 4 (October 1977): 525-38.
- Leonard, Jonathan S. "Affirmative Action." NBER Reporter (Spring 1987): 9-12.
- Mincer, Jacob and Solomon W. Polachek. "Family Investments in Human Capital: Earnings of Women." *Journal of Political Economy* 82, 2 (March-April 1974): S76-S108.
- OECD. The Integration of Women Into the Economy. Paris, 1985.
- Olson, Craig A. and Brian E. Becker. "Sex Discrimination in the Promotion Process." Industrial and Labor Relations Review 36, 4 (July 1983): 624-41.
- Polachek, Solomon W. "Occupational Segregation Among Women: Theory, Evidence and Prognosis." In Women in the Labor Market, eds. Cynthia B. Lloyd, Emily S. Andrews and Curtis L. Gilroy. New York. Columbia University Press, 1979, 137-57.
- ...Occupational Self-Selection: A Human Capital Approach to Sex Differences in Occupational Structure. *Review of Economics and Statistics* 63, 1 (February 1981): 60-69.

- Reskin, Barbara and Patricia A. Roos. *Job Queues, Gender Queues. Explaining Women's Inroads Into Male Occupations*. Philadelphia: Temple University Press, 1990.
- Spaeth, Joe L. "Job Power and Earnings." *American Sociological Review* 50, 5 (October 1985): 603-17.
- Stevenson, Mary H. "Relative Wages and Sex Segregation by Occupation." In Sex, Discrimination and the Division of Labor, ed. Cynthia B. Lloyd. New York: Columbia University Press, 1975: 175-200.
- Strober, Myra H. and Carolyn L. Arnold. "The Dynamics of Occupational Segregation By Gender: Bank Tellers (1950-80)," prepared for the Conference on Gender in the Workplace, sponsored by the Committee on the Status of Women in Economics and the Brookings Institution, 1984.
- Sudman, Seymour. Applied Sampling. New York: Academic Press, 1976.
- Treiman, Donald J. and Heidi I. Hartmann, eds. Women, Work and Wages: Equal Pay for Jobs of Equal Value. Washington, D.C.: National Academy Press, 1981.
- Zellner, Harriett. "The Determinants of Occupational Segregation." In Sex, Discrimination and the Division of Labor, ed. Cynthia B. Lloyd. New York: Columbia University Press, 1975, 125-45.