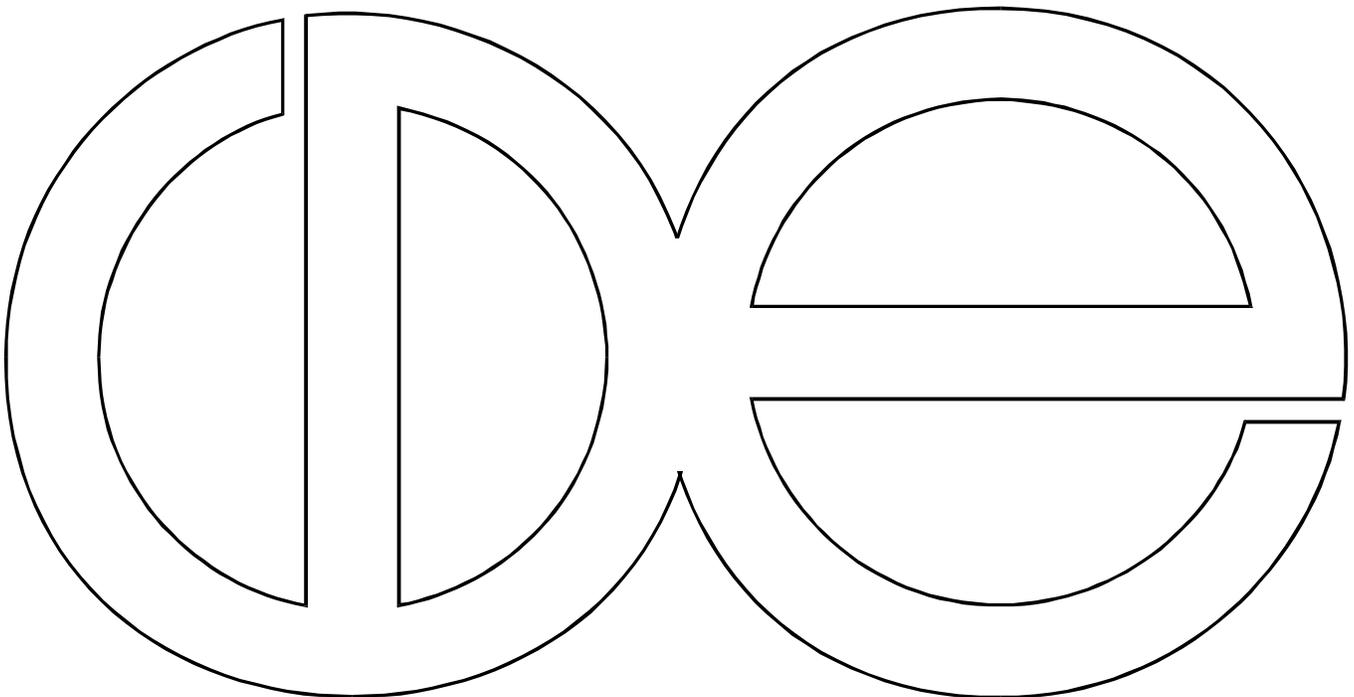


**Center for Demography and Ecology
University of Wisconsin-Madison**

**Changes in Occupational Sex Segregation
During the 1980s and 1990s**

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ABSTRACT

This research note investigates trends in occupational sex segregation between 1980 and 1997. Using PUMS data from the 1980 and the 1990 censuses as well as microdata from the March 1990 and March 1997 CPS, I compute unstandardized and standardized indexes of dissimilarity as measures of occupational segregation. The results indicate that levels of segregation declined in the 1980s and 1990s, but that declines were smaller between 1990 and 1997. During the 1980s, sex segregation declined primarily as a result of the changing sex composition within occupations. During the 1990s, these compositional changes were shown to be of a smaller magnitude, contributing to smaller declines in sex segregation.

BACKGROUND

In American society, the occupational structure constitutes an important foundation for social stratification and connects people to other “institutions and spheres of social life” (Blau and Duncan, 1967:6). Occupational segregation is important since the distribution of occupations has implications for the unequal distribution of economic and social rewards such as income, material assets, standard of living, class standing, prestige, and deference from others. For instance, Treiman and Hartmann (1981) found that occupational sex segregation could explain up to 41% of the hourly earnings disparity between men and women in 1970. However, the Census Bureau (1987) reported an estimate of 17-30% for 1984, Sorensen (1990) presented an estimate of 20-23% for the mid-1980s, and Cotter et al. (1995a) arrived at a figure of 14-15% for 1979 and 1989.

Previous research on occupational sex segregation has shown that sex segregation declined very little between 1900 and 1960 (Gross, 1968; Jacobs, 1989). Declines did begin to take place during the 1960s, although the pace was quite slow (Blau and Hendricks, 1979). Sex segregation declined rapidly in the 1970s (Bianchi and Rytina, 1986; Jacobs, 1989) and continued to decline throughout the 1980s, but at a slower pace (Jacobs, 1989; Bianchi, 1995; Cotter et al., 1995b). Although declines may have slowed during the 1980s, significant reductions in the amount of segregation continued to take place.

In this research note, I utilize the 5% Public Use Microdata Samples from the 1980 and the 1990 censuses as well as microdata from the March 1990 and 1997 Current Population Surveys to review trends in the distribution of occupations and trends in occupational sex segregation up to 1997, to consider trends in occupational sex segregation among whites, blacks, and Hispanics,¹ and to explicate the sources of change over time.

EXPLANATIONS OF OCCUPATIONAL SEX SEGREGATION

Observed patterns of occupational sex segregation have been attributed to differential human capital characteristics, sex role socialization, and discrimination (for extensive reviews and discussions, see Reskin, 1993; Blau, Ferber, and Winkler, 1998).

Human capital explanations tend to emphasize sex differentials in family responsibilities, educational attainment, and labor force experience. For instance, Mincer and Polachek (1974) argue that given child-care responsibilities, women anticipate work interruptions and shorter working careers, and thus, have a smaller incentive to invest in education and training (given less time to recoup the benefits of the investment). Sex differentials in human capital investments leads, in turn, to occupational sex segregation.

Along the same line, Polachek (1979) argues that women are attracted to jobs which allow for career interruptions and do not penalize them for time spent at home and outside of the labor force, during which skill atrophy occurs. These jobs tend to be dominated by women.

However, empirical evidence has not lent support to some of these assertions. Beller (1982) found that women raising children are more likely to be working in sex-atypical occupations. Furthermore, England et al. (1988) found that female occupations do not penalize discontinuous work less than male occupations.

Nonetheless, the case remains that men and women differ in terms of educational credentials, training, and accumulated labor force experience. However, several authors have documented an increasing similarity between men and women over time in college majors selected, the number of college degrees obtained, postgraduate fields of study, and the number of postgraduate degrees obtained (Goldin, 1990; Bianchi, 1995; Mare, 1995; Blau et al., 1998). In addition, Blau et al. (1998) find evidence of declining differentials in labor force experience between men and women. Given increasing similarities over time, it is not surprising to witness a

corresponding decline in occupational sex segregation.

The sex-role socialization argument posits that boys and girls are taught, directly and indirectly, that certain jobs and certain attributes of jobs are appropriate or important for one sex or another, based on the “proper” roles of males and females. As a consequence, men and women develop different tastes and preferences for certain types of work. England (1992) summarizes several studies which indicate that men place more value on status, money, and autonomy, whereas women place more value on working with people, helping others, and being creative. Given different preferences, men and women gravitate towards sex-typical occupations and away from sex-atypical occupations. Although differences persist, Marini and Brinton (1984) found evidence that occupational preferences among men and women have changed over time and have become less sex-typical, consistent with declines in the degree of sex segregation.

Discrimination is also used to explain occupational sex segregation. The statistical discrimination argument posits that employers, faced with imperfect information, use group-level characteristics (workers’ sex) as an indicator of stability, productivity, and specialized aptitudes and as an inexpensive screening mechanism to fill jobs. As a consequence, employers may statistically discriminate against women based on the presumption that they will eventually withdraw from the labor market. In addition, employers may steer men towards jobs they are presumed to be capable of fulfilling and women towards jobs which they are presumed to be able to fulfill. Bielby and Baron (1986) did find evidence of statistical discrimination in employer policies and practices. They found that men were selected for jobs requiring physical strength while women were favored for jobs requiring finger dexterity or jobs involving routine, repetitive work.

Of course, discrimination may exist in several forms such as glass ceilings, denial of access to training, or placement in career tracks with short job ladders. Reskin (1993), however notes

that assessing the impact of discrimination is difficult since it is illegal and difficult to measure.

The consideration of each of the aforementioned explanations is important, as they each contribute to observed patterns of occupational sex segregation. The explanations are not mutually exclusive and are not always easy to disentangle from one another. For instance, as mentioned by Blau et al. (1998), labor market discrimination can have indirect, feedback effects and can adversely affect decisions to invest in human capital. If women are aware of or perceive discrimination and anticipate smaller returns to human capital, then their incentive to acquire additional education or training is reduced and they may respond by deciding not to further invest in human capital. In addition, there is the possibility that sex-role socialization is salient among employers, who may have notions regarding which jobs are appropriate for men and women, and may make assignments accordingly (Reskin, 1993).

Although alternative explanations for occupational segregation have been considered, the current analysis does not directly address the salience or relative importance of these particular explanations. The current analysis is a descriptive analysis of trends in occupational sex segregation over time and is not intended to test hypotheses corresponding to the competing explanations.

TRENDS IN THE DISTRIBUTION OF OCCUPATIONS

Table 1 documents temporal changes in the distribution of occupations among men and women. The data refer to employed persons, age 16 and over, who reported an occupation during the census or survey week.

[Table 1 about here]

Between 1980 and 1997, the distribution of occupations has undergone minor but distinctive changes. During the 1980s, the occupational distribution of women shifted towards

the executive and professional categories and away from the clerical and operative categories. Men showed a proportional increase in the sales category and a decline in the operator category, however, less change was seen among men over this period; the occupational distribution of men in 1990 was quite similar to that of men in 1980.

According to the CPS data, during the 1990s, women continued to move into executive and professional positions and out of clerical positions. Once again, the occupational distribution of men shows less change over time. Small proportional increases are seen in the executive and professional categories.

At the level of thirteen major occupational categories, the 1990 CPS data are quite comparable to the 1990 census data. Discrepancies in the 1990 data are no larger than 1.2 percentage points. Nonetheless, cross-time comparisons are best limited to sets of data which are similar in coverage and size, consistent with the work of Bianchi and Rytina (1986). Thus, trends during the 1980s are assessed with decennial census data while trends during the 1990s are best assessed using CPS sample data, at least until data from the 2000 census are available.

TRENDS IN OCCUPATIONAL SEX SEGREGATION

Table 2 contains indexes of dissimilarity between the occupational distributions of men and women. Following Cotter et al. (1995a), I recoded occupational categories in order to obtain 497 detailed occupational categories which were comparable across all three sets of data. In addition, I excluded twenty occupational categories that did not contain any individuals. Thus, my analysis is confined to the 477 detailed occupational categories² which contain incumbents in each data set and for each group. The index is computed among all men and women as well as separately among whites, blacks, and Hispanics.

[Table 2 about here]

The top panel of Table 2 contains (unstandardized) indexes of dissimilarity (D).³ The index of dissimilarity is a common measure of occupational segregation and can range from 0 (denoting complete integration) to 100 (denoting complete segregation). The numerical value of the index represents the percentage of employed men (or women) that would have to change occupations in order for complete integration to be achieved. Consistent with previous research (Bianchi, 1995; Cotter et al., 1995b), the figures in the top panel of Table 2 demonstrate that occupational sex segregation declined during the 1980s. This is true for whites, blacks, and Hispanics. The index of dissimilarity declined by about five percentage points for all men and women as well as among whites and blacks. During the 1980s, Hispanics experienced a more modest decline of 2.7 percentage points. Overall, occupational sex segregation among blacks and Hispanics is shown to be smaller than among whites, which reflects the less-advantaged position of minority men relative to their female counterparts.

During the 1990s, sex segregation continued to decline, although the amount of change appears to be smaller. Between 1990 and 1997, the index of dissimilarity dropped 2.7 percentage points for all men and women as well as among whites. Unfortunately, CPS data cannot produce reliable results for blacks and Hispanics due to small sample sizes, thus, I am unable to assess trends among blacks and Hispanics during the 1990s.

As demonstrated in Jacobsen's work (1994, 1997), indexes of dissimilarity generated from CPS data are biased upwards relative to census estimates due to small sample sizes in many of the occupational categories. Jacobsen reveals that 1990 CPS data bias the index of dissimilarity upwards by 1-2 percentage points for all men and women and for whites. Upward bias is shown to be more severe for non-whites (about 6 percentage points). In the top panel of Table 2, the index of dissimilarity derived from the 1990 CPS is shown to be slightly more than one percentage point larger than the figure derived from the 1990 census. For white men and women, the

difference is exactly one percentage point.

In order to test the robustness of these findings, a standardized index of dissimilarity (D_s)⁴ is computed. The standardized measure allows one to assess the amount of sex segregation occurring within occupational categories while effectively controlling for shifts in the distribution of occupations over time, which is an important consideration given that the distribution of occupations has undergone changes over time, as displayed in Table 1.

Results obtained using the standardized index of dissimilarity are displayed in the bottom panel of Table 2. The results yield similar findings: declines in sex segregation were witnessed in the 1980s as well as in the 1990s, but the change experienced in the 1990s is somewhat smaller.

In the bottom panel of Table 2, we see that the index declined during the 1980s, falling from 58.6 to 54.7. This is a more modest decline than that revealed using D , but is expected given that we have eliminated any contribution made by changes in the occupational structure over time. According to the standardized measure, sex segregation among whites, blacks, and Hispanics declined between 1980 and 1990, although, once again, the decline was more modest among Hispanics.

Between 1990 and 1997, sex segregation declined by roughly half the amount that it declined by between 1980 and 1990. During the 1990s, the standardized index of dissimilarity dropped by roughly 1.5 points among all men and women and among whites.

In order to adjudicate between sources of change in levels of sex segregation over time, a decomposition is performed. As formulated by Das Gupta (1987), the difference between two indexes of dissimilarity can be decomposed into two components: a component which reflects changes in the shape of the occupational distribution over time and a component which reflects sex composition changes within categories over time.⁵

Table 3 contains the results from the decomposition. Between 1980 and 1990, the

majority of the decline in sex segregation can be attributed to desegregation within occupational categories, consistent with the findings of Bianchi (1995) and Cotter et al. (1995b). Changes in the relative sizes of occupations also contributed to declines in segregation, but the contribution was much smaller. This pattern applies to whites, blacks, and Hispanics, although some variation in magnitude is shown to exist among groups.

[Table 3 about here]

Between 1990 and 1997, shifts in the occupational structure made a small contribution to declines in sex segregation, as they did between 1980 and 1990. However, changes in levels of segregation that are attributable to desegregation within occupations -- the major source of decline in segregation during the 1980s -- are shown to be much smaller. Thus, it appears that the slower decline in levels of sex segregation during the first seven years of the 1990s can be traced to more modest declines in desegregation within occupations.

Finally, following the work of Cotter et al. (1995b), indexes of dissimilarity are calculated across time in order to assess whether changes in segregation over time are attributable primarily to changes in the occupational distribution of men or to changes in occupational distribution of women. Women in 1990 were less segregated from men in 1980 ($D=55.7$) than were women in 1980 ($D=59.4$). However, men in 1990 were only slightly less segregated from women in 1980 ($D=58.8$) than were men in 1980 ($D=59.4$). As displayed in Table 4, the shift in women's occupational distribution to resemble that of men was of a greater magnitude (3.7 percentage points) than was the shift in men's occupational distribution to resemble that of women (.6 percentage points). Thus, during the 1980s, changes in the occupational distribution of women made a larger contribution to the decline in sex segregation than did changes in the occupational distribution of men, consistent with the findings of Cotter et al. (1995b).

[Table 4 about here]

The same pattern applies for whites, however, this pattern was reversed among blacks. During the 1980s, shifts in men's occupational distribution to resemble that of women played a larger role in reducing levels of segregation among blacks than did shifts in women's occupational distribution to resemble that of men.

Among Hispanics, a different pattern emerges. Hispanic women in 1990 were less segregated from Hispanic men in 1980 ($D=56.0$) than Hispanic women were in 1980 ($D=54.7$). However, Hispanic men in 1990 were more segregated from Hispanic women in 1980 ($D=56.9$) than were Hispanic men in 1980 ($D=56.0$). Among Hispanics, shifts in women's occupational distribution to resemble that of men led to a reduction in sex segregation, but was partially offset by shifts in men's occupational distribution not to resemble women's occupational distribution.

For all men and women and for whites, patterns during the 1990s reflected patterns uncovered during the 1980s. During the 1990s, changes in the occupational distribution of women made a larger contribution to declines in sex segregation than did changes in the occupational distribution of men, however, the magnitude of net shifts were about 50% smaller than in the 1980s.

DISCUSSION

Although levels of occupational sex segregation continued to decline during the 1990s, the pace of change was slower than that witnessed during the 1980s. This finding is obtained using both an unstandardized index of dissimilarity as well as a standardized index of dissimilarity.

During the 1980s, levels of sex segregation were shown to decline among whites, blacks, and Hispanics, primarily as a result of desegregation within occupational categories. However, during the 1990s, sex segregation among all men and women and among whites declined modestly as desegregation within occupations was shown to be a smaller contributing factor.

Shifts in the occupational distribution of women to resemble the distribution of men were shown to reduce levels of segregation much more than shifts in the occupational distribution of men to resemble the distribution of women. However, the magnitude of net shifts were shown to be smaller in the 1990s than in the 1980s, a pattern consistent with the temporal patterns mentioned above and consistent with the smaller decline in occupational segregation during the 1990s.

Although the CPS has a much smaller sample size, CPS data and census data appear to be quite comparable. Bianchi and Rytina (1986) found that census data and CPS data yielded consistent results with respect to occupational distributions and produced similar amounts of change in occupational sex segregation over time. More recently, Jacobsen (1994, 1997) found census data and CPS data to provide roughly comparable values for indexes of dissimilarity, although a small bias was acknowledged.

The results presented here, based on CPS and census data, indicate that declines in occupational sex segregation lost momentum during the 1990s. However, this will bear confirmation (or disconfirmation) with data from the 2000 census. Analyses using data from the 2000 census are at least five years away, but will offer the advantages of a much larger sample size, more reliable results (especially for minorities), and a complete observation of the 1990s. Data from the 2000 census will determine definitively whether the preliminary findings for the 1990s are ultimately accurate.

NOTES

1. Hispanics may be of any race. Although referred to in the text simply as “whites” and “blacks”, whites are specified to be non-Hispanic whites and blacks are specified to be non-Hispanic blacks.

2. These 477 occupational categories contain at least 99.8% of those employed among each group and in each data set.

3. The index of dissimilarity is computed as:

$$D = \frac{1}{2} \sum_{i=1}^n |M_{it} - F_{it}|$$

Where M_{it} is the percentage of men employed in occupation i at time t and F_{it} is the percentage of women employed in occupation i at time t for $i=1, \dots, n$.

4. As computed by Das Gupta (1987), the standardized indexes of dissimilarity for time 1 and time 2, respectively, are:

$$D_{s1} = 50 \sum_{i=1}^n \frac{\frac{T_{i1} + T_{i2}}{T_1 T_2} \left| \frac{P_{i1}}{P_1} - \frac{Q_{i1}}{Q_1} \right|}{2} \quad D_{s2} = 50 \sum_{i=1}^n \frac{\frac{T_{i1} + T_{i2}}{T_2 T_2} \left| \frac{P_{i2}}{P_2} - \frac{Q_{i2}}{Q_2} \right|}{2}$$

Where M_{it} is the percentage of men employed in occupation i at time t , F_{it} is the percentage of women employed in occupation i at time t , and T_{it} is the percentage of people employed in occupation i at time t for $i=1, \dots, n$. $P_{it} = \frac{M_{it}}{T_{it}}$ and $Q_{it} = \frac{F_{it}}{T_{it}} = 1 - P_{it}$. Numbers in subscripts indicate time 1 or time 2.

5. The difference between standardized indexes of dissimilarity computed for time 2 and time 1 can be decomposed into two components as follows:

$$D_{s2} - D_{s1} = 50 \sum_{i=1}^n \frac{\left| \frac{P_{i1}}{P_1} - \frac{Q_{i1}}{Q_1} \right| + \left| \frac{P_{i2}}{P_2} - \frac{Q_{i2}}{Q_2} \right|}{2} \left(\frac{T_{i2}}{T_2} - \frac{T_{i1}}{T_1} \right) + 50 \sum_{i=1}^n \frac{\frac{T_{i1} + T_{i2}}{T_1 T_2}}{2} \left(\left| \frac{P_{i2}}{P_2} - \frac{Q_{i2}}{Q_2} \right| - \left| \frac{P_{i1}}{P_1} - \frac{Q_{i1}}{Q_1} \right| \right)$$

The first component (the structural shift effect) refers to the amount of change over time that is attributable to changes in the occupational structure. The second component (the composition effect) refers to the amount of change that is attributable to changes in the sex composition of occupations.

REFERENCES

- Beller, Andrea. 1982. "Occupational Segregation by Sex: Determinants and Changes." *The Journal of Human Resources*, 17:371-392.
- Bianchi, Suzanne. 1995. "Changing Economic Roles of Women and Men." Pp. 107-154 in Reynolds Farley (ed.), *State of the Union: America in the 1990s; Volume One: Economic Trends*. New York: Russell Sage Foundation.
- Bianchi, Suzanne and Nancy Rytina. 1986. "The Decline in Occupational Sex Segregation During the 1970s: Census and CPS Comparisons." *Demography*, 23:79-86.
- Bielby, William T. and James N. Baron. 1986. "Men and Women at Work: Sex Segregation and Statistical Discrimination." *American Journal of Sociology*, 91:759-799.
- Blau, Francine D., Marianne A. Ferber, and Anne E. Winkler. 1998. *The Economics of Women and Work* (Third Edition). Upper Saddle River, NJ: Prentice Hall.
- Blau, Francine D. and Wallace E. Hendricks. 1979. "Occupational Segregation by Sex: Trends and Prospects." *The Journal of Human Resources*, 14:197-210.
- Blau, Peter M. and Otis Dudley Duncan. 1967. *The American Occupational Structure*. New York: John Wiley and Sons.
- Cotter, David A., Joann M. DeFiore, Joan M. Hermsen, Brenda Marsteller Kowalewski, and Reeve Vanneman. 1995a. "Occupational Gender Segregation and the Earnings Gap: Changes in the 1980s." *Social Science Research*, 24:439-454.
- Cotter, David A., Joann M. DeFiore, Joan M. Hermsen, Brenda Marsteller Kowalewski, and Reeve Vanneman. 1995b. "Occupational Gender Desegregation in the 1980s." *Work and Occupations*, 22:3-21.
- Das Gupta, Prithwis. 1987. "Comment on Suzanne M. Bianchi and Nancy Rytina's 'The Decline in Occupational Sex Segregation During the 1970s: Census and CPS Comparisons.'" *Demography*, 24:291-295.
- England, Paula. 1992. *Comparable Worth: Theories and Evidence*. New York: Aldine De Gruyter.
- England, Paula, George Farkas, Barbara Stanek Kilbourne, and Thomas Dou. 1988. "Explaining Occupational Sex Segregation and Wages: Findings from a Model with Fixed Effects." *American Sociological Review*, 53:544-558.
- Goldin, Claudia. 1990. *Understanding the Gender Gap: An Economic History of American Women*. New York: Oxford University Press.
- Gross, Edward. 1968. "Plus ça change. . .?: The Sexual Structure of Occupations Over Time." *Social Problems*, 16:198-208.

- Jacobs, Jerry A. 1989. "Long-Term Trends in Occupational Segregation by Sex." *American Journal of Sociology*, 95:160-173.
- Jacobsen, Joyce P. 1994. "Trends in Work Force Segregation: 1960-1990." *Social Science Quarterly*, 75:204-211.
- Jacobsen, Joyce P. 1997. "Trends in Workforce Segregation: 1980 and 1990 Census Figures." *Social Science Quarterly*, 78:234-235.
- Mare, Robert D. 1995. "Changes in Educational Attainment and School Enrollment." Pp. 155-213 in R. Farley (ed.), *State of the Union: America in the 1990s; Volume One: Economic Trends*. New York: Russell Sage Foundation.
- Marini, Margaret Mooney and Mary C. Brinton. 1984. "Sex Typing in Occupational Socialization." Pp. 191-232 in B.F. Reskin (ed.), *Sex Segregation in the Workplace: Trends, Explanations, Remedies*. Washington, D.C.: National Academy Press.
- Mincer, Jacob and Solomon Polachek. 1974. "Family Investments in Human Capital: Earnings of Women." *Journal of Political Economy*, 82:S76-S108.
- Polachek, Solomon. 1979. "Occupational Segregation among Women: Theory, Evidence, and a Prognosis." Pp. 137-157 in C.B. Lloyd, E.S. Andrews, and C.L. Gilroy (eds.), *Women in the Labor Market*. New York: Columbia University Press.
- Reskin, Barbara. 1993. "Sex Segregation in the Workplace." *Annual Review of Sociology*, 19:241-270.
- Sorensen, Elaine. 1990. "The Crowding Hypothesis and Comparable Worth Issue." *The Journal of Human Resources*, 25:55-89.
- Treiman, Donald and Heidi Hartmann, (eds.). 1981. *Women, Work, and Wages: Equal Pay for Jobs of Equal Value*. Washington, D.C.: National Academy of Sciences Press.
- U.S. Bureau of the Census. 1983. "Census of Population and Housing, 1980: Public Use Microdata Samples." Machine-readable data file. Washington, D.C.: U.S. Bureau of the Census.
- U.S. Bureau of the Census. 1987. "Male-Female Differences in Work Experience, Occupation, and Earnings: 1984." *Current Population Report*, Series P-70, No. 10. Washington, D.C.: Government Printing Office.
- U.S. Bureau of the Census. 1990. "Current Population Survey, March 1990." Machine-readable data file. Washington, D.C.: U.S. Bureau of the Census.
- U.S. Bureau of the Census. 1993. "Census of Population and Housing, 1990: Public Use Microdata Samples." Machine-readable data file. Washington, D.C.: U.S. Bureau of the Census.
- U.S. Bureau of the Census. 1997. "Current Population Survey, March 1997." Machine-readable data file. Washington, D.C.: U.S. Bureau of the Census.

Table 1. Occupational Distribution of Employed Persons, 16 years and over.

	Males				Females			
	1980 Census	1990 Census	1990 CPS	1997 CPS	1980 Census	1990 Census	1990 CPS	1997 CPS
Executive, administrative, and managerial	12.6	12.8	13.7	14.8	7.4	11.0	11.2	13.6
Professional specialty	11.0	11.6	12.3	12.9	14.2	16.4	15.2	17.6
Technicians and related support	3.0	3.5	3.1	2.9	3.1	3.6	3.6	3.6
Sales	9.1	11.0	11.4	11.4	11.2	12.3	13.1	13.1
Administrative support, including clerical	6.9	6.5	6.0	5.7	31.2	27.1	28.2	24.3
Private household service	.0	.0	.1	.0	1.4	1.0	1.4	1.2
Protective service	2.3	2.6	2.7	2.6	.4	.6	.5	.7
Service, except protective and household	6.8	7.1	7.0	7.6	16.1	15.7	15.5	15.5
Farming, forestry, and fishing	4.3	4.5	4.0	3.8	1.0	1.0	1.0	1.0
Precision production, craft, and repair	20.7	19.5	19.4	18.4	2.4	2.4	2.2	2.0
Machine operators, assemblers, and inspectors	9.7	7.9	7.3	7.3	8.8	6.2	5.8	5.1
Transportation and material moving equipment	7.2	7.1	6.7	6.9	.8	.9	.8	.8
Handlers, equipment cleaners, helpers, and laborers	6.2	5.9	6.3	5.6	2.1	1.8	1.5	1.5

Table 2. Indexes of Dissimilarity.

	1980 Census	1990 Census	1990 CPS	1997 CPS
Unstandardized				
All	59.4	54.0	55.3	52.6
Whites	60.3	55.0	56.0	53.3
Blacks	56.7	51.8	a	a
Hispanics	56.0	53.3	a	a
Standardized				
All	58.6	54.7	54.6	53.1
Whites	59.5	55.8	55.3	53.9
Blacks	55.9	52.8	a	a
Hispanics	55.6	53.4	a	a

^aSample sizes are too small to yield reliable results.

Table 3. Decomposition of Changes in Indexes of Dissimilarity.

	Composition		Structural Shift		Total	
1980-1990						
All	-3.9	71.4%	-1.6	28.6%	-5.5	100%
Whites	-3.8	70.1%	-1.6	29.9%	-5.4	100%
Blacks	-3.1	63.4%	-1.8	36.6%	-4.9	100%
Hispanics	-2.3	84.6%	-.4	15.4%	-2.7	100%
1990-1997						
All	-1.5	57.5%	-1.1	42.5%	-2.7	100%
Whites	-1.4	51.3%	-1.3	48.7%	-2.7	100%

Table 4. Indexes of Dissimilarity Computed Across Time, 1980-1990 and 1990-1997.

	Women 1980- Men 1980	Women 1990- Men 1980	Difference	Women 1980- Men 1980	Women 1980- Men 1990	Difference
All	59.4	55.7	3.7	59.4	58.8	.6
Whites	60.3	56.4	3.9	60.3	60.1	.2
Blacks	56.7	56.0	.7	56.7	54.6	2.1
Hispanics	56.0	54.7	1.3	56.0	56.9	-.9
	Women 1990- Men 1990	Women 1997- Men 1990	Difference	Women 1990- Men 1990	Women 1990- Men 1997	Difference
All	55.3	53.5	1.8	55.3	55.0	.3
Whites	56.0	54.2	1.8	56.0	55.9	.1

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