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Occupational differences between recent male and female college graduates

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Abstract

Occupational difference by gender is a key feature of the labor market. While this is less true of college graduates than other groups, even among them men and women are concentrated in different occupations. While differences in occupations for college graduates are often attributed to college major, few tests of this hypothesis have been conducted. Using the National Center for Education Statistics Baccalaureate and Beyond Longitudinal Study 1993/94, this paper explores the role of gender differences in college major in accounting for occupational differences in first-jobs among recent college graduates. Key results show that gender differences in college major and selected job choice variables explain a significant portion of gender differences in engineering/computer, medical, teaching, and service occupations. Gender differences in the returns to these factors account for much of gender differences in clerical, management, labor, and service occupations. If women had the same returns to factors as men, occupational differences would be diminished by half.

JEL Classification: J240; I290; J160

Keyword: Human capital

1. Introduction

Occupational differences by gender persist as a key characteristic of the labor market. At the 2-digit occupational level, for example, Anker (1998) estimates that in 1998, 55% of American women (or men) would have to change jobs in order to reach occupational parity in the labor market. Occupational difference is attributed variously to supply-side differences in human capital, occupational preferences, and "family responsibilities", and demand-side constraints of internal labor markets, employer preferences, costs, and discrimination (Blau, Ferber, & Winkler, 1998; Hull & Nelson, 2000; Reskin, 1984). In this paper, I narrow the focus of occupational segregation analysis and examine the role of gender differences in college major and preferences for high-paying jobs in contributing to gender differences in graduates first-jobs out of college.

Several researchers have noted that the distribution of men and women across college majors has become more similar over the past 30 years (Jacobs, 1989; Wilson & Boldizar, 1990). Women today, for example, are much more likely than 20 years ago to major in business, the sciences, mathematics and engineering (National Center for Education Statistics, 2003). Jacobs (1995) estimated that between 1964 and 1984, the share of female college graduates that would have had to change majors in

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order to match men's distribution fell by almost 40%—from 51.4% to 31%. During the next 10 years, this share fell by only 1% so that by 1990 30% of female college students would have had to change majors in order to match men's distribution (see also Turner & Bowen, 1999). Remaining gender differences in college major are attributed to gender differences in mathematical interest, ability and preparation, career and family expectations, and gender norms and identity related to feminine and masculine occupations (Akerlof & Kranton, 2000; Farmer & Wardrop, 1999; Frehill, 1997; Polachek, 1978; Weinberger, 2001).

According to several reports, occupational segregation has also declined during the last 30 years (Blau, Patricia, & Anderson, 1998; Preston, 1999; Wells, 1999). Blau, Patricia, and Anderson (1998) estimated that in 1970 71% of men and 55% of women worked in jobs with no members of the same sex while in 1990 these percentages fell to about 40% of men and 30% of women. Much of the decline stemmed from women's entrance into male-dominated and integrated occupations (Wootton, 1997).[1]

Despite these changes, however, men and women still to a considerable extent are concentrated in different occupations. In 1995, women comprised 93% of all nurses, 84% of all elementary teachers and less than 1% of all engineers. In the same year, women still outnumbered men in the clerical and service occupations while men outnumbered women in labor and production occupations (Wootton, 1997; for gender segregation in the manufacturing industry see Carrington & Troske, 1998). By several estimates, this occupational segregation accounts for a large share of the male–female wage gap (Bayard, Hellerstein, & Neumark, 2003; Blau et al., 1998).

While Blau (1998) finds that the convergence in male and female college majors may be responsible for a reduction in the gender wage gap during the 1980s, the extent to which the convergence in college majors has also led to a reduction in gender differences in occupations remains untested. No studies that I know of have concentrated solely on the question of the extent to which occupational differences emerge when men and women leave college to begin their careers.[2] This research remedies this gap by examining to what extent gender differences in college major and preferences for high-paying jobs account for gender differences in first-jobs out of college.

2. Data and descriptive statistics

To conduct this analysis, I use data from the National Center for Education Statistics, Baccalaureate and Beyond Longitudinal Study 1993/94 (B&B). The data consist of a nationally representative sample of 8000 1993 college graduates (43% men and 57% women). One year later, the B&B follows the group of students into the labor force or post-graduate/professional school. In addition to information on the broad occupations of the recent college graduates, full transcript data including college major, and grades are also included. Graduates are also asked what factors they considered when choosing jobs and whether they changed states between college and their first-job.

Graduates who were unemployed or out of the labor force or who earned less than $1000 in yearly salary were excluded from the analysis. Graduates who were still students were also excluded because their occupations may be temporary and not reflective of longer-term career choices. This left a total of 5200 graduates minus those with missing values used in the data analysis.

According to these data, women were more likely than men to enter medical, teaching, clerical, and service occupations while men surpassed women in managerial, technical/sales, engineering/computer, and labor occupations (Table 1). The greatest gender differences were for teaching and engineering/computer occupations. Twelve percent more women than men entered teaching and almost 14% more men than women entered engineering/computer occupations. The gender difference in service occupations was only 1%.

Calculating the index of occupational dissimilarity[3] from these raw occupational differences shows that 58% of either the male or female graduates would have had to change occupations for there to be occupational parity by gender.

Other significant differences between the male and female graduates were that women were more likely than men to be married and were slightly more likely than men to have children (Table 2).[4] Women were more likely than men to major in education and health while men were more likely than women to major in business and law, and the sciences. Gender differences in the

[1] Bielby and Baron (1986), however, noted that occupational segregation within these occupations may be prevalent.

[2] There have, however, been several articles examining the gender gap in wages for recent college graduates (see Brown & Corcoran, 1997; Gerhart, 1990; Joy, 2003; Weinberger, 1998). According to these studies, gender differences in college major accounted for much of the wage gap in the 1980s but by the 1990s, the gender integration of college majors reduced this effect.

[3] Index of dissimilarity $= \frac{1}{2}(\sum |X_{im} - X_{if}|)$, where X_{im} is the share of men in occupation i and X_{if} is the share of women in occupation i. An index of 1 indicates perfect dissimilarity while an index of 0 indicates perfect similarity in the male/female occupational distribution.

[4] Due to the large size of the sample, all differences in means were significant at the 95% or higher level.