Examining the Gender Earnings Gap: Occupational Differences and The Life Course

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Introduction

Historically, women have earned less than their male counterparts. This earnings gap persists, though it has narrowed in the last few decades. During the post World War II period, the ratio between women's earnings and men's remained relatively stable, with women earning about 60 cents for every dollar a man did.[1] During the decade of the 1980s, this gap began to lessen as women's earnings relative to men's rose rapidly from 60.2 percent to 71.6 percent. Technological change during this decade lead to changes in the labor market favoring more educated workers.[2] At the same time, women's educational attainment increased, shrinking the gender gap in bachelor's degree attainment of women entering the labor market, which eventually disappeared by the mid 1980s.[3] This increase in women's human capital through education and work experience translated into greater earnings for women.

However, this rapid narrowing of the earnings gap did not repeat itself in the following years. By 2005, the ratio had reached only 77 percent even though the proportion of female full-time, year-round workers 25 to 64 years old with a bachelor's degree or more was at parity with men.

Researchers have addressed many possible determinants of the earnings disparity between men and women including human capital, occupational crowding and segregation, devaluing by society of women, and discriminatory practices. The latter two being difficult to measure.

O'Neill theorizes that much of the earnings gap will persist because women continue to enter occupations conducive to their dual role of wage earner and parent -- occupations that require less human capital (a combination of education and job tenure), where their skills will not atrophy while being out of the labor force, and which allow them the flexibility to combine work and family responsibilities.[4] On average, these occupations offer lower earnings.

The theory of occupational crowding suggests that limited occupational choice, leading to large supplies of workers in those fields, lowers earnings for those workers, and historically, women had little selection of occupations beyond the classic roles of secretary, nurse, or teacher.[5] Indeed, both women and men working in predominantly

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[1] US Census Bureau, *Historical Income Tables*, Table P-40 (http://www.census.gov/hhes/income/histinc/p40.html).

[2] Bamezai, A. 1989. "Rising Earnings Disparity and Technological Change." Rand Corporation.

[3] US Census Bureau, Table A-2. Percent of People 25 Years and Over Who Have Completed High School or College, by Race, Hispanic Origin and Sex: Selected Years 1940 to 2004 (http://www.census.gov/population/www/socdemo/educ-attn.html).

[4] O'Neill, J. 2003. "The Gender Gap in Wages, Circa 2000." *The American Economic Review*, Vol. 93, No. 2 Papers and Proceedings of the One Hundred Fifteenth Annual Meeting of the American Economic Association, Washington DC. pp. 309-314.

[5] Sorenson, E. 1989. "Measuring the Pay Disparity Between Typically Female Occupations and Other Jobs: A Bivariate Selectivity Approach." *Industrial and Labor Review*. Pp. 624-39.;

female occupations earn less than their counterparts in male dominated occupations. Even so, within occupations offering the highest average earnings, women experience lower average earnings than their male counterparts.[6]

Much of the gender earnings gap may be due to differences in child rearing costs. Women's and men's experiences regarding the relationship between parenthood and earnings differ sharply. The 2003 GAO report on women's earnings found that women experience an earnings decrease for having children of about 2.5 percent of their yearly earnings. In contrast, men with children experience an earnings increase of 2.1 percent.[7] Compared with their childless counterparts, Budig and England showed that women experience a 5 percent "penalty" per child.[8] Gray and Chapman estimated the lifetime cost of bearing children and found that women who had children suffered a 40 percent cut in their lifetime earnings compared with women who did not. They further found that yearly "earnings differences are greatest when the child or children are very young." [9]

The child rearing penalty may explain why the gender earnings gap varies in magnitude across the life course. Among entry level workers, the earnings gap between men and women in the same occupations and educational levels is small compared with that of older workers.[10] Entry level workers have no work experience and therefore their education represents the sum of their human capital. Over time, labor force tenure becomes increasingly important. The effect of education declines over the life course.[11]

Objective

The purpose of this analysis is to explore the earnings differences between men and women by occupation. We examine by occupation the earnings differences between men and women and the impact of parenthood on their earnings. Specifically, we question whether the presence of young children in the household is associated with increased or decreased earnings compared with the earnings of other adults of the same age who do not live with young children. These latter findings provide insights into the mechanisms through which the gender gap may continue.

Borass, S. 2003. "How does gender play a role in the earnings gap? An update: although personal choices, occupational crowding, and discrimination, contribute to the gender gap, the higher share of women in an occupation is still the largest contributor - The Earnings Gap*." Monthly Labor Review.;*
US Dept of Labor. 1993. *Earnings Differences Between Men and Women.*
(http://permanent.acess.gpo.gov/lps496666/wgegap2.htm).

[6] Weinberg, D. 2004. "Evidence from Census 2000 About Earnings by Detailed Occupation for Men and Women." *Census 2000 Special Reports,* U.S. Census Bureau, CENSR-15.

[7] General Accounting Office. 2003. *Women's Earnings: Work Patterns Partially Explain Difference between Men's and Women's Earnings.* GAO-04-35.

[8] Budig, M and P. England. 2001. "The Wage Penalty for Motherhood," *American Sociological Review,* Vol. 66, No. 2(April), pp. 204-255.

[9] Gray, M and Chapman, B. 2001. "Foregone Earnings from Child Rearing." *Family Matters,* Autumn. p. 8.

[10] Day, J. N. Graf, K. Bauman. 2003. "The Earnings Gap by Occupation and Educational Attainment: Findings from Census 2000*." Presented at the Annual Meetings of the* Population Association of America.

[11] Warren, J. R. Hauser, J. Sheridan. 2002. "Occupational Stratification Across the Life Course: Evidence from the Wisconsin Longitudinal Study." *American Sociological Review*, Vol. 67. (June: 432-455).; Hudley,G. 2000. "Male/Female Earnings Differences in Self-Employment: The Effects of Marriage, Children, and the Household Division of Labor*." Industrial and Labor Relations Review,* Vol. 54, No. 1. pp. 95-114.

By looking at earnings ratios within particular occupations, and comparing men and women with or without children in the household, this study will determine whether some occupations exact less of a child rearing penalty than others. We then ask whether those occupations that exact less of a penalty have attracted more women.

To do this we will answer the following questions:

1. How does the gender gap in median earnings vary across occupations?
2. Do child rearing penalties vary across occupations or occupation groups?
3. Does the child rearing penalty vary with the age of the child?

Data

This paper uses recently released detailed data on occupation from the fully expanded American Community Survey (ACS) for the year 2005. The ACS is an annual, nationally-representative survey of 3 million household addresses. The data collected include measures similar to the 2000 decennial census long form including employment status and earnings in the last 12 months, occupation, industry, class of worker, detailed geography, and demographics.

The universe for this analysis is the civilian population 25 to 64 years old who work full time, year round. This amounts to a sample representing 79.6 million workers, 32.3 million women and 47.3 million men. The large sample size and rich demographic detail of the ACS allows for a more in-depth analysis than may be possible with other national surveys. The large sample size of the ACS offers an opportunity to study, in fine detail, the differences earnings between men and women.

Methods

The analyses in this paper address each of the research objectives. To learn how the gender gap in earnings varies across occupations, the ratio of men's and women's median earnings are compared across all occupations and within selected groups of major occupation categories. The paper uses a descriptive technique to summarize the dispersion of the difference in men's and women's median earnings. This technique plots the deciles of earnings for men and women and the ratio of the sexes' earnings within occupational groups. A graphical representation of income disparity helps to focus further analyses within the paper.

The study then focuses on research objectives 2 and 3, the "parent penalty" that may contribute to the differences in men's and women's earnings. We expand the analysis to include indicators of children's presence in the household, to learn the effect of parenthood on women's and men's earnings. The further addition of children's age to the analysis yields additional insights into whether the parent penalty applies across the board or primarily at certain points in a parent's (and child's) life.