



JOINT ECONOMIC COMMITTEE DEMOCRATS



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BACKGROUND ANALYSIS

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AN OVERVIEW OF THE GENDER EARNINGS GAP

The typical female worker in the United States earns less than the typical male worker. While the earnings gap has narrowed somewhat over time, much of this change has resulted from the stagnation of male earnings. Part of the continuing gap can be explained by differences between men and women in such factors as work experience, training, occupation, and industry. But part of the difference generally remains unexplained after controlling for those factors. Some of the unexplained gap may be due to different career choices that women and men make to accommodate family responsibilities. But audit studies and other evidence suggest that gender-based discrimination almost certainly plays a role.

How Large is the Earnings Gap?

According to the most common measure of the earnings gap, women earn about 23 percent less than men for full-time work. This figure is based on the median annual earnings of full-time, full-year female and male workers as published by the Census Bureau. Focusing on full-time workers allows observers to examine differences in earnings not due primarily to differences in hours of work. In 2004, the female-to-male earnings ratio was 0.77 for full-time, full-year workers.¹ This ratio reflects median annual earnings of \$31,223 for full-time, year-round female workers and \$40,798 for full-time, year-round male workers.

Bureau of Labor Statistics data on median weekly earnings provide an alternative measure of the earnings gap. This measure yields a slightly higher female-to-male earnings ratio of 0.81 based on median usual weekly earnings of \$585 for female full-time workers and \$722 for male full-time workers in 2005.²

The Earnings Gap Has Narrowed Over Time

The gap between the annual earnings of female and male workers has narrowed by almost 20 percentage points over the last 25 years (**Chart 1**).³ After remaining essentially unchanged during the 1960s and 1970s, the female-to-male earnings ratio increased substantially during the 1980s. During the 1990s the ratio continued to increase but at a slower rate. Since 2001 the ratio has remained relatively constant. The measure based on weekly earnings has followed a similar pattern.⁴

The increase in the female-to-male earnings ratio occurred in large part because of the stagnation of male earnings. **Chart 2** shows how the median annual earnings of full-time, full-year male and female workers have changed over time. Between 1960 and 1973, both male and female median earnings increased steadily. Since 1973, however, while female median earnings continued to grow at about the same rate as before, male earnings have remained essentially unchanged.

The Effects of Age and Birth Cohort

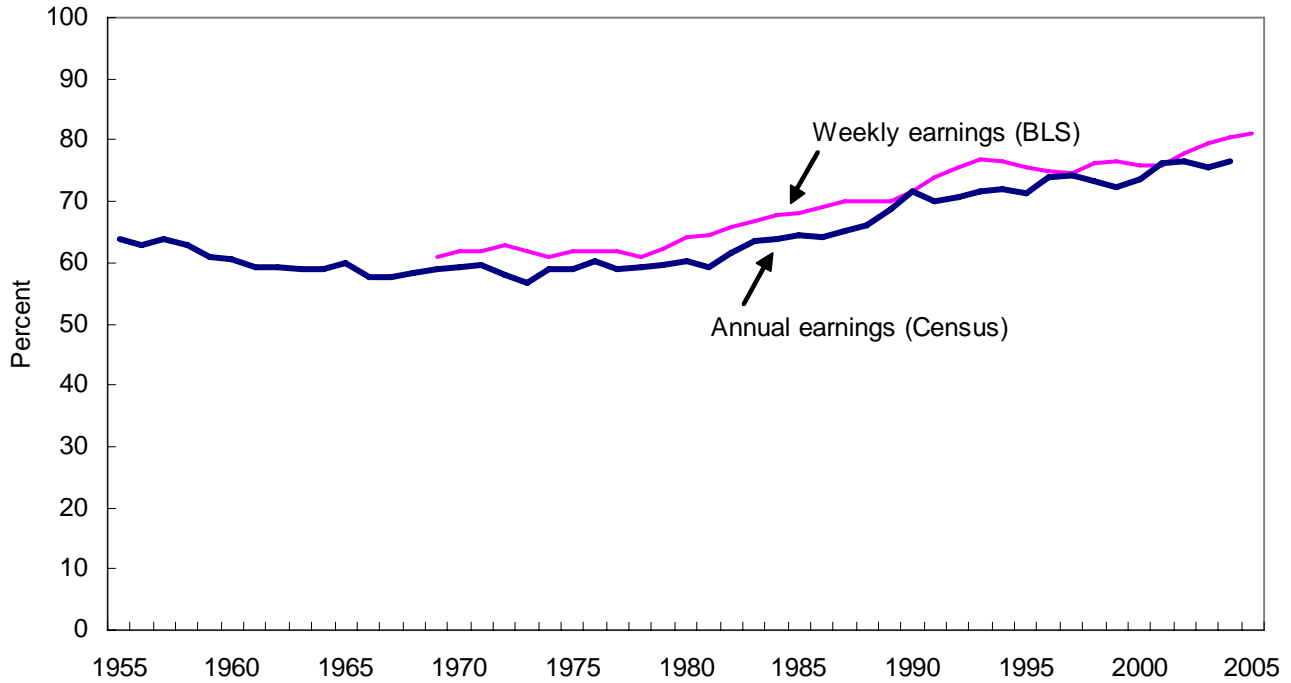
The gender gap in earnings has narrowed over time in part because younger cohorts of women with higher skills and stronger labor force attachment have entered the labor force, replacing older cohorts of women with lower skills and weaker attachment to the labor force. The female-to-male earnings ratio in almost every age group is higher for younger cohorts of women than for older cohorts of women.

If the higher earnings of younger cohorts were the sole force at work, one might expect the overall gender gap in earnings

Chart 1

The Earnings Gap Has Narrowed over Time

Women's Earnings as a Percentage of Men's Earnings for Full-Time Workers

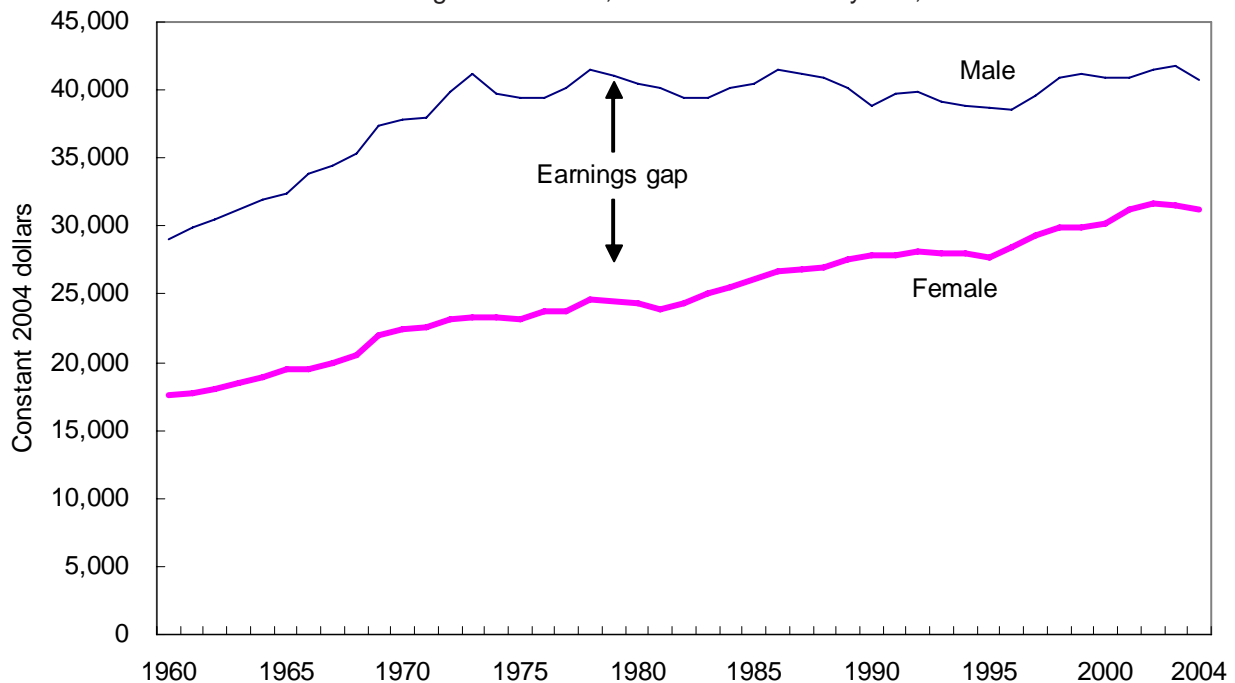


Source: U.S. Census Bureau and Bureau of Labor Statistics (BLS).

Chart 2

Women's Earnings Have Increased While Men's Earnings Have Stagnated

Median Earnings of Full-Time, Full-Year Workers by Sex, 1960-2004

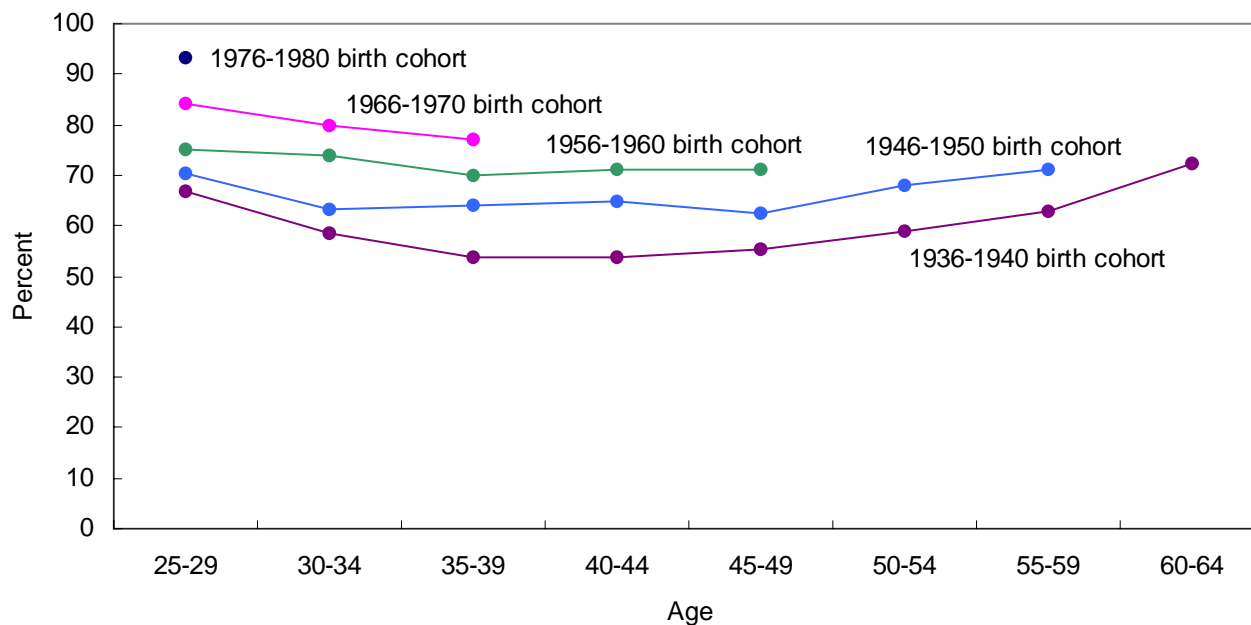


Source: U.S. Census Bureau.

Chart 3

The Earnings Gap Is Smaller for Younger Cohorts of Workers but it Grows Wider During the First Half of Workers' Careers

Women's Earnings as a Percentage of Men's Earnings for Full-Time Workers, by Birth Cohort and Age



Source: Joint Economic Committee Democrats calculations based on Current Population Survey data.

to decline steadily. That would occur if the gender gap in earnings remained relatively constant for each cohort of workers as they age.

In fact, however, the female-to-male earnings ratio exhibits a U-shaped pattern as workers age (**Chart 3**).⁵ The earnings ratio tends to decrease through the mid-to-late thirties and then level off, even for the more recent cohorts. For the older cohorts, for whom data are available for a greater number of years, the data show the earnings ratio increasing in the second half of workers' careers, after about age 50.

One explanation for the decrease in the earnings ratio for women in their thirties is the presence of children in the household. At least two theories exist for how childrearing could depress women's wages. First, women, whether through socialization or by choice, generally spend more time than men on caregiving within the family and may therefore alter their work situation to accommodate their family responsibilities. They may take less demanding jobs or pass up promotions to positions of more responsibility.

Second, employers may treat women of childbearing age differently from men, by for example shunting them into lower-paying "mommy track" positions or overlooking them for promotions because of concerns that they will not devote as much time and energy to their jobs because of their family responsibilities. These issues will be explored further below.

Theories and Evidence about the Causes of the Earnings Gap

Several theories have been offered to explain why the gender earnings gap exists, and why it has declined over time. Differences between men and women in their level of human capital (such as education, training, and work experience), occupation and industry in which they work, and differences in treatment by employers could affect wages and result in the observed difference between the typical earnings of female and male full-time workers. The main source of disagreement is over how much the observed patterns result from preferences and choices and how much they reflect limited opportunities. It is difficult to sort out this debate from the data.

Human Capital. At one time, differences in human capital could explain a substantial fraction of the earnings gap. For example, in the 1970s women were much less likely than men to have graduated from college. Ten percent of women aged 25 or over were college graduates in 1973 compared with 16 percent of men.⁶ Women were also less likely than men to stay with the same employer for a long period of time, in part because they were more likely to take time out of the labor force. In the early 1980s, 25 percent of women had been with their current employer at least 10 years compared with 38 percent of men.⁷ One representative study by Francine Blau and Lawrence Kahn found that simply accounting for differences in human capital such as educational attainment and years of work experience explained about 20 percent of the earnings gap in 1979.⁸

Differences in both education and work experience have narrowed substantially since then. In 2004, women were almost as likely as men to have 4 or more years of college (26 percent of women compared with 29 percent of men) and to have been with their current employer at least 10 years (29 percent of women compared with 32 percent of men). As a result, the importance of human capital differences in explaining the earnings gap has diminished. Blau and Kahn found that by 1998 the proportion of the earnings gap explained by differences in human capital had declined to 10 percent.⁹ They attributed 39 percent of the narrowing of the earnings gap during the 1980s and 1990s to changes in human capital characteristics.¹⁰

Occupation and Industry. Women tend to be more concentrated than men in low-paying occupations and industries. While these differences have lessened over time, they remain significant. Women have increased their representation in higher-paying managerial and professional positions over time, but they are still more likely than men to be found in service and administrative support occupations and less likely than men to be found in blue-collar occupations with relatively high pay such as precision production, craft, and repair.¹¹

Controlling for occupation and industry in analyses of the earnings gap is controversial because no consensus exists about why these differences in occupation and industry exist or why predominantly female jobs tend to pay less than predominantly male jobs.¹² It could be that the jobs women tend to choose offer non-pecuniary benefits such as greater

flexibility and less responsibility and stress, while the jobs men tend to choose require more overtime, more exposure to difficult or hazardous conditions, and more specialized skills and therefore pay more.

However, job segregation could also reflect the effects of discrimination, whether directly through the actions of employers or indirectly through women altering their career decisions based on perceived opportunities and socialization about what constitutes appropriate work for women. If this is the case, then including occupation and industry in the analysis would capture elements of discrimination by employers instead of the effects of individual choices.

For example, women are a disproportionate share of elementary school teachers. Is it a choice—teaching provides a work schedule that is compatible with family obligations and is a nurturing profession? Or are women steered into the profession?

While controlling for occupation and industry as well as human capital does substantially more to explain the earnings gap than controlling for human capital differences alone, a significant amount of the earnings gap generally remains unexplained. Blau and Kahn found that controlling for both human capital differences and differences in occupation and industry explained 56 percent of the earnings gap in 1998. Another study by Kimberly Bayard, Judith Hellerstein, David Neumark, and Kenneth Troske used very detailed records to compare men and women working in the same occupations within the same establishments. They found similar results, with only about half of the earnings gap explained by human capital, occupation, and industry differences.¹³

Blau and Kahn conclude that changes in occupation and industry were slightly less important than changes in human capital in explaining the closing of the earnings gap during the 1980s and 1990s. Occupational variables explained 29 percent of the narrowing of the earnings gap. Women shifted into higher-paying occupations and industries and men lost union jobs, which tend to be higher paying, at a higher rate than women did.¹⁴

Unexplained Gap. While a portion of the earnings gap examined in these studies can be explained by characteristics such as experience, occupation, and industry,

researchers consistently find that some amount of the earnings gap is left unexplained.¹⁵ Some observers attribute this unexplained gap to unmeasured differences in productivity that result from the choices women make to balance their work and family responsibilities. Other observers attribute the unexplained gap to discrimination. Still others suggest that the unexplained gap results from differences in unmeasured factors such as cognitive ability and quality of education.¹⁶

A large part of the debate centers around the question of the impact of children on women's earnings. Studies have found that while marriage and the presence of children tend to have a positive impact on the earnings of men, they tend to have a negative impact on the earnings of women.¹⁷

Having children could have a real impact on women's productivity and therefore on the wages that they can command. If they have a choice, they may be willing to trade higher pay for a job in a more family-friendly work environment providing greater flexibility, less stress, and less overtime. It would be difficult for the data to capture all these differences, but even when studies include variables that address this issue to some extent, a substantial unexplained earnings gap remains.¹⁸

Having children or being of child-bearing age could negatively affect wages due to discrimination by employers. For example, if employers perceive that women's skills and productivity will be negatively affected by time out of the workforce and the competing responsibilities of caregiving, they may offer women lower wages, restrict them to "mommy track" positions, or overlook them in hiring and promotion.

This discriminatory treatment of women—termed statistical discrimination—could have feedback effects on women's behavior in the labor force. For example, if a woman finds that she earns less than her husband and perceives that she has few prospects for promotion and higher pay that would make her re-entry into the labor force after childbearing attractive, then she will be more likely to spend time out of the labor force after giving birth. This in turn will reinforce employers' beliefs that women are a riskier investment than men because they are more likely than men to leave the workforce to care for a child.

Statistical discrimination by employers is only one of the ways that discrimination could act to lower women's earnings. For example, there could be overt discrimination, with employers basing hiring, pay and promotion decisions on their own preference for male or female workers or on the preferences of co-workers or customers. Such behavior could result in a "glass ceiling" with women prevented from reaching upper-level, higher-paying positions. In addition, women's exclusion from jobs held predominantly by men could result in an over-supply of workers in predominantly female jobs, depressing women's wages.

In sum, researchers are able to attribute a portion of the earnings gap to differences in observable characteristics such as education, experience, occupation, and industry. However, some portion generally remains unexplained. Substantial disagreement exists about how much of the unexplained difference—or for that matter the differences in observed characteristics—results from direct or indirect effects of discrimination and how much results from the effects of choices and unmeasured differences between men and women.

The Question of Discrimination

It is quite difficult to resolve this debate about whether the gender gap in earnings is attributable to women's choices or discrimination based on the results of statistical analyses that attempt to isolate the effects of particular characteristics. The empirical evidence from these analyses is not sufficiently robust to rule out either explanation.

However, other types of studies have found more direct evidence of discrimination. For example, audit studies assess employer reaction to candidates who are identical except for their sex. One such study found that at high-priced restaurants, women were much less likely than men to be called for an interview and ultimately to receive an offer of employment.¹⁹ In addition, a study of blind orchestra auditions, during which individual musicians are hidden from the judges by a screen, found that such a procedure increases the chance that women will advance to later rounds of auditions and eventually be hired.²⁰

Finally, court cases provide a gauge of the existence of discrimination in the workplace. In recent years, Morgan

Stanley agreed to pay \$54 million to settle a class-action sex discrimination lawsuit. The suit alleged that women were denied promotions, received unequal pay, and were discriminated against in the terms and conditions of employment.²¹ Boeing agreed to pay between \$40.6 and \$72.5 million to settle a class-action sex discrimination lawsuit. The lawsuit alleged that Boeing denied its female employees job assignments, promotional opportunities, management positions, training, equal pay, overtime, and other benefits and conditions of employment because of their gender.²² In 2005, the Equal Employment Opportunity Commission found in favor of the person bringing charges of sex discrimination in over 5,700 of the cases submitted to it, or 25 percent of the formal complaints filed.²³

Conclusion

Women typically earn less than men. The official government statistics based on annual and weekly earnings of full-time workers do not account for differences in such factors as education, work experience, occupation, industry and job requirements. Research that examines the impact of these factors indicates that they explain part of the gender earnings gap, but some portion of the earnings gap remains unexplained. While part of the gap may result from career choices women make to accommodate family responsibilities, discrimination almost certainly plays a role.

Endnotes

¹ U.S. Census Bureau, *Income, Poverty and Health Insurance Coverage in the United States: 2004*, P60-229, August 2005, p.8.

² Bureau of Labor Statistics, Employment and Earnings, January 2006, Table 37 - Median weekly earnings of full-time wage and salary workers by selected characteristics, available at <ftp://ftp.bls.gov/pub/special.requests/lf/aat37.txt>. The estimates of the earnings ratio from the Census Bureau and the BLS differ because of differences in methodology. For example, the Census Bureau measure examines the annual earnings of workers who worked full-time, year-round (that is, workers who worked at least 35 hours per week for at least 50 weeks). The BLS, in contrast, looks at the usual weekly earnings of workers who usually work 35 hours or more each week. Thus, the BLS measure captures workers who work full-time for only part of the year while the Census Bureau measure does not. In addition, the Census Bureau measure includes the earnings of the self-employed while the BLS does not. The Census Bureau likely captures bonuses since it refers to actual earnings during the course of the year, while the BLS does not since it asks about usual weekly earnings. Nancy Rytina, "Comparing Annual and Weekly Earnings from the Current Population Survey," *Monthly Labor Review*, April 1983, pp. 32-36.

³ U.S. Census Bureau, *Income, Poverty and Health Insurance Coverage in the United States: 2004*, Table A-2 and Rytina, Table 4.

⁴ Bureau of Labor Statistics, Employment and Earnings, Table 37; Bureau of Labor Statistics, *Women in the Labor Force: A Databook*, Report 985, September 2005, Table 16; and Rytina, Table 4.

⁵ These earnings ratios based on the median annual earnings of full-time, full-year workers are for synthetic birth cohorts created using Current Population Survey data for calendar years 1965, 1970, 1975, 1980, 1985, 1990, 1995, 2000, and 2004.

⁶ U.S. Census, Educational Attainment Historical Tables, Table A-1: Years of School Completed by People 25 Years and Over, by Age and Sex: Selected Years 1940 to 2004, available at <http://www.census.gov/population/socdemo/education/tabA-1.pdf>.

⁷ Bureau of Labor Statistics, *Employee Tenure in 2004*, Table 2: Percent of employed wage and salary workers 25 years and over who had 10 years or more of tenure with their current employer by age and sex, selected years, 1983-2004, available at <http://www.bls.gov/news.release/tenure.t02.htm>.

⁸ Francine D. Blau and Lawrence M. Kahn, "The U.S. Gender Pay Gap in the 1990s: Slowing Convergence," National Bureau of Economic Research Working Paper 10853, October 2004, Tables 1 and 2a.

⁹ *Ibid.*

¹⁰ *Ibid.*

¹¹ Francine D. Blau, Marianne A. Ferber, and Anne E. Winkler, *The Economics of Women, Men, and Work*, Prentice Hall: New Jersey, 2002, pp.134-135.

¹² For a discussion of why predominantly female jobs tend to pay less than predominantly male jobs see Stephanie Boraas and William M. Rodgers III, "How Does Gender Play a Role in the Earnings Gap? An Update," *Monthly Labor Review*, March 2003, pp. 9-15; Kimberly Bayard, Judith Hellerstein, David Neumark, and Kenneth Troske, "New Evidence on Sex Segregation and Sex Differences in Wages from Matched Employee-Employer Data," *Journal of Labor Economics*, Vol. 21, No. 4, October 2003, p.902. Also discussed in Joseph G. Altonji and Rebecca M. Blank, "Race and Gender in the Labor Market" in eds. Orley Ashenfelter and David Card, *Handbook of Labor Economics*, Vol. 3C, 1999, pp. 3221-3223.

¹³ Bayard, *et al.*, p.918.

¹⁴ Blau and Kahn, October 2004, p.15.

¹⁵ This finding of an unexplained gap is consistent whether the analysis is based on the entire working-age population, on narrower age groups, or on more homogeneous populations in the hopes of minimizing the effects of unmeasured characteristics. For studies based on the entire working age population, see U.S. General Accounting Office, "Women's Earnings: Work Patterns Partially Explain Difference between Men's and Women's Earnings," GAO-04-35, October 2003; Francine D. Blau and Lawrence M. Kahn, "Swimming Upstream: Trends in the Gender Wage Differential in the 1980s," *Journal of Labor Economics*, Vol. 15, No. 1, pp. 1-42; Blau and Kahn, October 2004. For studies based on narrower age groups, see June O'Neill, "Recent Trends and Current Sources of the Gender Earnings Gap," Department of Economics and Center for the Study of Business and Government, Baruch College, City University of New York, June 2003; and June E. O'Neill and Dave M. O'Neill, "What Do Wage Differentials Tell Us About Labor Market

Discrimination?,” National Bureau of Economic Research Working Paper 11240, March 2005. For studies based on more homogeneous populations, see Mary C. Noonon, Mary E. Corcoran, and Paul N. Courant, “Pay Differences Among the Highly Trained: Cohort Differences in the Sex Gap in Lawyers’ Earnings,” *Social Forces*, Vol. 84, No. 2, December 2005, pp. 853-872; Louise Marie Roth, “Selling Women Short: A Research Note on Gender Differences in Compensation on Wall Street,” *Social Forces*, Volume 82, No. 2, December 2003, pp. 783-802; Timothy J. Hoff, “Doing the Same and Earning Less: Male and Female Physicians in a New Medical Specialty,” *Inquiry-Excelsus Health Plan*, Vol. 41, Iss. 3, Fall 2004, pp.301-315; U.S. General Accounting Office, “Women in Management: Analysis of Selected Data from the Current Population Survey,” GAO-02-156, October 2001.

¹⁶ Lawrence Summers, president of Harvard University and former Treasury Secretary, touched off passionate debate when he suggested that differences in women’s and men’s representation at the highest levels of science could result from innate differences in inherent abilities.

¹⁷ For a discussion of this evidence, see Blau, *et al.*, pp. 193 and 322.

¹⁸ O’Neill and O’Neill, March 2005; U.S. General Accounting Office, October 2003; and Bayard, *et al.*, October 2003.

¹⁹ David M. Neumark, “Sex Discrimination in Restaurant Hiring: an Audit Study,” *Quarterly Journal of Economics*, Vol. 111, No. 3, 1996, pp. 915-941 as reported in Francine D. Blau and Lawrence M. Kahn, “Gender Differences in Pay,” *Journal of Economic Perspectives*, Vol. 14, No. 4, Fall 2000, p.83. Also discussed in Altonji and Blank, pp. 3193-3194.

²⁰ Claudia Goldin and Cecilia Rouse, “Orchestrating Impartiality: The Impact of ‘Blind’ Auditions on Female Musicians,” *American Economic Review*, Vol. 90, No. 4, 2000, pp. 715-41 as reported in Blau and Kahn, Fall 2000, p.83. Also discussed in Altonji and Blank, pp. 3193-3194.

²¹ EEOC v. Morgan Stanley & Company, Inc. and Morgan Stanley Dean Witter & Co. in the U.S. District Court for the Southern District of New York, settled July 14, 2004. Information obtained from <http://www.wageproject.org/sexdiscDB/sexdiscDB.php>, April 5, 2006.

²² Beck v. Boeing Company, McDonnell Douglas Corporation, and Boeing North American, Inc. in the U.S. District Court in Seattle, Washington, settled July 2004. Information obtained from <http://www.wageproject.org/sexdiscDB/sexdiscDB.php>, April 5, 2006.

²³ Equal Employment Opportunity Commission, Sex-Based Charges, FY1992-FY2005, <http://www.eeoc.gov/stats/sex.html>.