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ABSTRACT

We consider the gender pay gap in the United States. Both gender-specific factors, including gender differences in qualifications and discrimination, and overall wage structure, the rewards for skills and employment in particular sectors, importantly influence the gender pay gap. Declining gender differentials in the U.S., and the more rapid closing of the gender pay gap in the U.S. than elsewhere, appear to be primarily due to gender-specific factors. However, the relatively large gender pay gap in the U.S. compared to a number of other advanced countries seems primarily attributable to the very high level of U.S. wage inequality.

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Over the past 25 years, the gender pay gap has narrowed dramatically and women have increasingly entered traditionally male occupations. These two labor market outcomes are closely linked, since considerable research suggests that predominantly female occupations pay less, even controlling for measured personal characteristics of workers and a variety of characteristics of occupations, although the interpretation of such results remains in some dispute.[1] In this article, we describe these important gains, analyze their sources, and point to some significant remaining gender differences. We also assess where American women stand relative to women in other countries and conclude with some thoughts about future prospects for the gender pay gap.

Overview of Gender Differences and Trends

Earnings

Gender earnings disparities in the United States have shown considerable recent convergence. Figure 1 shows the trends in the female-male earnings ratio for annual earnings of year-round, full-time workers and for usual weekly earnings of full-time workers. These measures can be thought of as adjusting for the fact that women as a group tend to work fewer weeks per year and hours per week than men. (Government data are not available for wage rates over this period.) The data indicate that the gender ratio was roughly constant at about 60 percent from the late 1950s to about 1980. Indeed, as Fuchs (1971, p. 9) pointed out, this longstanding ratio had a biblical antecedent in Leviticus (27:1-4), where it is decreed that a woman is worth 30 shekels of silver and a man 50 shekels. The gender earnings ratio began to increase in the late 1970s or early 1980s. Convergence has been substantial: between 1978 and 1999 the weekly earnings of women full-time

1. See, for example, Sorensen (1990). A recent study by Macpherson and Hirsch (1995) using a 1973-93 panel of data from the Current Population Survey finds that the negative wage effect of percent female in the occupation is reduced by at least two-thirds when occupational characteristics are included and longitudinal wage change models are estimated to control for unobserved fixed effects.

workers increased from 61 percent to 76.5 percent of men's earnings. However, the ratio appears to have plateaued in the mid-1990s.[2]

This increase in the gender earnings ratio could represent either the entry of new cohorts into the labor market, each one better prepared and possibly encountering less discrimination than previous ones, or an upward progression over time in the gender ratio within given cohorts, or some combination of the two. Table 1 sheds light on this question by presenting gender ratios for hourly wages of full-time workers, disaggregated by age, from the 1979, 1989 and 1999 Annual Demographic Files of the Current Population Survey. These years span the period of greatest convergence in the gender pay gap. Since wages are calculated by dividing last year's annual wage and salary income by annual hours (i.e., usual hours per week multiplied by weeks worked), this yields data on wages for the previous calendar year.[3] We focus on full-time workers to identify a more homogeneous group of men and women workers and so that our computation of the gender pay gap is not affected by any hourly wage penalty for part-time work.

In any given year, looking down the columns of Panel A in Table 1, the gender wage ratio tends to decline with age. But over time, looking across the rows in the same panel, the gender wage ratio has increased for almost every age group. These "between cohort" changes, which are calculated in Panel B, indicate that each new cohort of women is indeed faring better than previous ones. Gains for the two youngest cohorts were heavily concentrated in the 1980s (and, to a lesser

2. Of course, money wages are an incomplete indicator of total compensation, which would take into account not only nonwage benefits but also compensating differentials for job amenities. This is far from a trivial issue. Differing job amenities may be especially important, given the likelihood of substantial differences in occupational preferences between men and women. Complex issues are also raised with respect to nonwage benefits since, in some instances, married workers may be covered under their spouses' plans, thus reducing their demand for these benefits. Unfortunately, the relevant data and prior research needed for an investigation of these issues are considerably sparser than one would like, and a full consideration of these issues would take us well beyond the scope of this paper.

3. The sample for each year includes full-time, wage and salary workers aged 18-64 who participated in the labor force at least 27 weeks. Those earning less than $2.70 or more than $241.50 in 1998 dollars, using the GDP Implicit Price Deflator for Personal Consumption Expenditures, are excluded, as are individuals with allocated wage and salary income. Results were not sensitive to these sample exclusions. Top-coded values of wage and salary income were evaluated at 1.45 times the top-coded value. All wages are weighted using the CPS sampling weights. Here and in what follows, means and associated ratios are computed based on geometric means which may differ somewhat from arithmetic means in placing less emphasis on extreme values.

extent, in the 1970s prior to our sample period; see Blau, 1998). Increases for women 35-54 were more evenly spread over the 1980s and 1990s, whereas substantial gains for women over 54 did not appear until the 1990s. Over the whole 20-year period, cumulative increases in the ratio were quite comparable for all groups under 55, ranging from 11.7 percentage points for the 18-24 age group to 17.2 percentage points for 35-44 year olds.

Since the Current Population Survey, from which these data are drawn, is nationally representative, some indication of changes over time within cohorts can be gained by comparing the gender ratio among, for example, men and women aged 25-34 in 1978 to the ratio among men and women aged 35-44 in 1988.[4] These changes may be seen by looking diagonally across entries in Panel A of Table 1 and have been computed as the "within cohort" changes in Panel B. Note that in calculating the within cohort changes, the ratio for the youngest age group, those 18-24, is compared to the ratio for those aged 28-34 ten years later (a group not shown in Panel A). For both periods, the within cohort changes for women in the two younger age groups are negative, indicating that women under 35 lost ground relative to men as they aged. The declines were relatively small in 1980s but more substantial in the 1990s. Women in the older two age groups experienced within cohort increases in their wages relative to men's, further closing the gender gap as they aged. Over the whole 1978-98 period, the cohort that was 18-24 years old in 1978 experienced a 6.9 percentage point fall in the gender earnings ratio; in contrast, the cohorts that were 25-34 and 35-44 years old in 1978 saw 1.3 and 10.4 percentage point gains, respectively, over the next twenty years.

Thus, while the narrowing of the gender gap has primarily been associated with the entry of new cohorts, each faring better than their predecessors, within cohort earnings growth has also played a role for older women. These results suggest some caution in assessing women's gains in

4. These comparisons will be affected by self-selection into employment of men and women in each year. Given the larger changes in female labor force participation, this is likely to be a greater problem for women. In addition, it is well known that one cannot simultaneously identify age, period and cohort effects. For example, an increase in the wage ratio for successive cohorts, rather than a cohort effect, could simply reflect a difference in economic conditions between the two time periods.

the labor market by focusing on the relatively small gender gap among younger cohorts in recent years (for an example, see Furchtgott-Roth and Stolba, 1999, p. xvii). The relatively high wage ratios of younger women tend to decline as they age, likely reflecting the greater tendency of women to drop out of the labor force for family reasons and also perhaps the greater barriers to their advancement at higher levels of the job hierarchy, an issue we will discuss further below.

Occupations

For many decades, one of the most salient features of women's status in the labor market was their tendency to work in a fairly small number of relatively low-paying, predominantly female jobs.[5] Women were especially concentrated in administrative support (including clerical) and service occupations. In the early 1970s, 53 percent of women workers were in such jobs, compared to only 15 percent of men. At that time, less than one in five managers were women, and women in professional positions were frequently employed in traditionally female professions, like nurse, pre-kindergarten and kindergarten teacher, elementary school teacher, dietitian, or librarian, which also tend to be relatively low-paying compared to predominantly male professional occupations. Women were also underrepresented in blue-collar jobs, including higher-paying precision production and craft occupations.

All this began to change in the 1970s and, although many of the broad outlines of these occupational differences between men and women remain, the disparities have been much reduced. Women are now less concentrated in administrative support and service occupations, with 41 percent holding such jobs in 1999 compared to (still) 15 percent of men. Women are now 45 percent of those in managerial jobs. Indeed, significant numbers of women have moved into a variety of traditionally male jobs throughout the occupational spectrum. A particularly dramatic example of desegregation can be seen in the jobs of female college graduates. Almost half of women who graduated college in 1960 became teachers, while in 1990, less than 10 percent did so

5. The following data are taken from Blau, Ferber and Winkler (1998) and the United States Bureau of Labor Statistics (BLS) Web site.

(Flyer and Rosen, 1994, p. 28).

The degree of segregation by sex across the hundreds of detailed occupations listed by the Bureau of the Census is often summarized by the Index of Segregation, which gives the percentage of women (or men) who would have to change jobs for the occupational distribution of the two groups to be the same.[6] After remaining at about two-thirds for each Census year since 1900, this index fell from 67.7 in 1970 to 59.3 in 1980 and 52.0 in 1990 (Blau, Simpson and Anderson 1998; Blau, Ferber and Winkler 1998). The principal cause of the reduction was the movement of women into predominantly male jobs, although changes in the mix of occupations toward occupations that had been more integrated by gender also played a role (Blau, Simpson and Anderson, 1998).

Some indication of trends over the 1990s may be obtained using Current Population Survey data based on a somewhat different set of occupations and workers. The Index of Segregation computed from this source decreased from 56.4 in 1990 to 53.9 in 1997 (Jacobs, 1999), yielding an annual decrease of .4 percentage points over the 1990s, compared to .8 and .6 percentage points in the 1970s and 1980s, respectively. Thus, the long-term reduction in occupational segregation by sex appears to have continued into the 1990s, but at a slower pace.

While one can find examples of significant changes in sex composition in all types of jobs, women have had considerably greater success in entering previously male white-collar and service occupations than blue-collar categories. There has also been a tendency for some jobs to switch from predominantly male to predominantly female as women enter them. For example, between 1970 and 1990, women increased their share of typesetters and compositors from 17 to 70 percent; of insurance adjusters, examiners, and investigators from 30 to 71 percent; and of public relations specialists from 27 to 59 percent (Blau, Simpson and Anderson 1998).

An additional qualification is that calculations like these, based on aggregate national data from the Census or the Current Population Survey, are likely to understate the full extent of

6. The index of segregation is calculated as $\frac{1}{2}\Sigma_i |m_i - f_i|$, where m_i = the percentage of all male workers employed in occupation i and f_i = the percentage of all female workers employed in occupation i.

employment segregation of women because employers' job categories are far more detailed than those used by the Census. Thus, some Census listings probably combine individual job categories that are predominantly male with some that are predominantly female, producing apparently integrated occupations. Moreover, even in occupations where both sexes are substantially represented, women are often concentrated in lower-paying industries and firms (Blau, 1977, Groshen, 1991; Bayard, Hellerstein, Neumark and Troske, 1999).

Explaining the Gender Pay Gap and Occupational Segregation

Traditionally, economic analyses of the gender pay gap and occupational segregation have focused on what might be termed gender-specific factors, that is, gender differences in either qualifications or labor market treatment of similarly qualified individuals. More recently, following on the work of Juhn, Murphy and Pierce (1991) on trends in race differentials, some advances have been made by considering the gender pay gap and other demographic pay differentials in the context of the overall structure of wages. Wage structure is the array of prices determined for labor market skills and the rewards to employment in particular sectors.

Gender-Specific Factors

Gender differences in qualifications have primarily been analyzed within the human capital model (Mincer and Polachek, 1974). Given the traditional division of labor by gender in the family, women tend to accumulate less labor market experience than men. Further, because women anticipate shorter and more discontinuous work lives, they have lower incentives to invest in market-oriented formal education and on-the-job training, and their resulting smaller human capital investments will lower their earnings relative to those of men. The longer hours that women spend on housework may also decrease the effort they put into their market jobs compared to men, controlling for hours worked, and hence also reduce their productivity and wages (Becker, 1985).

To the extent that women choose occupations for which on-the-job training is less important, gender differences in occupations would also be expected. Women may especially avoid jobs requiring large investments in skills which are unique to a particular enterprise, because the returns to such investments are reaped only as long as one remains with that employer. At the same time, employers may be reluctant to hire women for such jobs because the firm bears some of the costs of such firm-specific training, and fears not getting a full return on that investment.

Labor market discrimination may also affect women's wages and occupations. Discrimination can arise in a variety of ways. In Becker's (1957) model, discrimination is due to the discriminatory tastes of employers, co-workers, or customers. Alternatively, in models of "statistical discrimination," differences in the treatment of men and women arise from average differences between the two groups in the expected value of productivity (or in the reliability with which productivity may be predicted), which lead employers to discriminate on the basis of that average (for example, Aigner and Cain, 1977). Finally, discriminatory exclusion of women from "male" jobs can result in an excess supply of labor in "female" occupations, depressing wages there for otherwise equally productive workers, as in Bergmann's (1974) "overcrowding" model.

Wage Structure

Wage structure is a factor not directly related to gender which may nonetheless influence the size of the gender gap in pay. Although it has only been recognized recently, the human capital model and models of discrimination potentially imply an important role for wage structure in explaining the gender gap. If, as the human capital model suggests, women have less experience than men, on average, the higher the return to experience received by workers, regardless of sex, the larger will be the gender gap in pay. Similarly, if, due to discrimination or other factors, women tend to work in different occupations and industries than men, the higher the premium received by workers, both male and female, for working in the male sector, the

larger will be the gender pay gap.

Evidence on Human Capital, Discrimination, and the Gender Pay Gap

The typical approach to analyzing the sources of the gender pay gap is to estimate wage regressions specifying the relationship between wages and productivity-related characteristics for men and women. The gender pay gap may then be statistically decomposed into two components: one due to gender differences in measured characteristics, and the other "unexplained" and potentially due to discrimination. Such empirical studies provide evidence consistent with both human capital differences and labor market discrimination in explaining the gender pay gap.

But any approach which relies on a statistical residual will be open to question as to whether all the necessary independent variables were included in the regression. For example, even if measured human capital characteristics can explain only a portion of the wage gap between men and women, it is possible that unmeasured group differences in qualifications may explain part of the residual. If men are more highly endowed with respect to these omitted variables then we would overestimate discrimination. Alternatively, if some of the factors controlled for in such regressions -- like occupation and tenure with the employer -- themselves reflect the impact of discrimination, then discrimination will be underestimated. Moreover, if women face barriers to entry into certain occupations, they may have higher unmeasured productivity than men in the same jobs. This factor would also suggest an underestimate of discrimination if we controlled for occupation.

Using the residual from a regression to estimate the effects of discrimination will also run into trouble if feedback effects are important. Even small initial discriminatory differences in wages may cumulate to large ones as men and women make decisions about human capital investments and time allocation in the market and the home on the basis of these wage differentials.

Results of such studies may nonetheless be instructive. Representative findings from analyses of this type may be illustrated by results from Blau and Kahn (1997). Using data from the Panel Study of Income Dynamics (PSID), which contains information on actual labor market experience for a large, nationally representative sample, we found a wage differential between male and female full-time workers in 1988 of 27.6 percent. We first considered the difference after taking education, labor market experience, and race into account (the "human capital specification") and then additionally controlled for occupation, industry and unionism.

In the human capital specification, gender differences in the explanatory variables accounted for 33 percent of the total gender gap. While gender differences in educational attainment were small, the gender gap in full-time work experience was substantial, 4.6 years, on average, and accounted for virtually all of the explained portion of the gender gap in this specification. When occupation, industry and unionism were also taken into account, the explained portion of the gap rose to 62 percent of the total gender gap, suggesting that a considerable portion of the gap (62-33=29 percent) was due to wage differences between men and women with similar human capital working in different industries or occupations or in union vs. nonunion jobs. Putting these results in terms of the gender wage ratio, we found that the unadjusted ratio was 72.4 percent. Adjusting for human capital variables only increased the ratio to 80.5 percent; and adjusting for all variables raised the ratio to 88.2 percent.

While the unexplained gender gap was considerably smaller when all variables were taken into account (38 percent of the total gender gap) than when only human capital variables were considered (67 percent of the total gender gap), a substantial portion of the pay gap remained unexplained and potentially due to discrimination in both specifications. And, as we suggested above, including controls for occupation, industry, and union status may be questionable to the extent that they may be influenced by discrimination.

Nonetheless, the residual gap, however measured, may well reflect factors apart from discrimination. One that has received particular attention recently is the impact of children on women's wages, since evidence of a negative effect of children on wages has been obtained, even

in analyses which control for labor market experience (Waldfogel, 1998). The reason may be that, in the past, having a child often meant that a woman withdrew from the labor force for a substantial period, breaking her tie to her employer and forgoing the returns to any firm-specific training she might have acquired, as well as any rewards for having made an especially good job match.

Some recent studies on discrimination have taken different approaches to the question, thus avoiding some of the problems of traditional analyses. First, two studies have applied traditional econometric techniques to especially homogeneous groups and employed extensive controls for qualifications, thus minimizing the effect of gender differences in unmeasured characteristics. Wood, Corcoran, and Courant (1993) studied graduates of the University of Michigan Law School classes of 1972-1975, 15 years after graduation. The gap in pay between women and men was relatively small at the outset of their careers, but 15 years later, women graduates earned only 60 percent as much as men. Some of this difference reflected choices which workers had made, including the propensity of women lawyers to work shorter hours. But, even controlling for current hours worked, as well as an extensive list of worker qualifications and other covariates, including family status, race, location, grades while in law school, and detailed work history data, such as years practiced law, months of part-time work, and type and size of employer, a male advantage of 13 percent remained. In a similar vein, Weinberger (1998) examined wage differences among recent college graduates in 1985. Her controls included narrowly defined college major, college grade point average, and specific educational institution attended. She found an unexplained pay gap of 10 to 15 percent between men and women.

A second set of studies used an experimental approach. Neumark (1996) analyzed the results of a hiring "audit" in which male and female pseudo-job seekers were given similar résumés and sent to apply for jobs waiting on tables at the same set of Philadelphia restaurants. In high-priced restaurants, a female applicant's probability of getting an interview was 40 percentage points lower than a male's and her probability of getting an offer was 50 percentage

points lower. A second study examined the impact of the adoption of "blind" auditions by symphony orchestras in which a screen is used to conceal the identity of the candidate (Goldin and Rouse, forthcoming). The screen substantially increased the probability that a woman would advance out of preliminary rounds and be the winner in the final round. The switch to blind auditions was found to explain between 25 and 46 percent of the increase in the percentage female in the top five symphony orchestras in the United States, from less than 5 percent of all musicians in 1970 to 25 percent today.

Third, several recent studies have examined predictions of Becker's (1957) discrimination model. Becker and others have pointed out that competitive forces should reduce or eliminate discrimination in the long run because the least discriminatory firms, which hire more lower-priced female labor, would have lower costs of production and should drive the more discriminatory firms out of business. For this reason, Becker suggested that discrimination would be more severe in firms or sectors that are shielded to some extent from competitive pressures. Consistent with this reasoning, Hellerstein, Neumark and Troske (1997) found that, among plants with high levels of product market power, those employing relatively more women were more profitable. In a similar vein, Black and Strahan (1999) report that, with the deregulation of the banking industry beginning in the mid-1970s, the gender pay gap in banking declined.

Finally, additional evidence on discrimination comes from court cases. A number of employment practices which explicitly discriminated against women used to be quite prevalent; including marriage bars restricting the employment of married women (Goldin 1990), and the intentional segregation of men and women into separate job categories with associated separate and lower pay scales for women (e.g., Bowe v. Colgate-Palmolive Co., 416 F.2d 711 {7th Cir. 1969}; IUE v. Westinghouse Electric Co., 631 F.2d 1094 {3rd Cir. 1980}). While many such overt practices have receded, recent court cases suggest that employment practices still exist which produce discriminatory outcomes for women.

For example, in 1994, Lucky Stores, a major grocery chain, agreed to a settlement of

$107 million after Judge Marilyn Hall Patel found that "sex discrimination was the standard operating procedure at Lucky with respect to placement, promotion, movement to full-time positions, and the allocation of additional hours" (Stender v. Lucky Stores, Inc. 803 F. Supp. 259; {N.D. Cal. 1992}; King 1997). And, in 2000, the U.S. Information Agency agreed to pay $508 million to settle a case in which the Voice of America rejected women who applied for high-paying positions in the communications field. A lawyer representing the plaintiffs said that the women were told things like, "These jobs are only for men," or "We're looking for a male voice" (FEDHR 2000). A final example is the 1990 case against Price Waterhouse, a major accounting firm, in which the only woman considered for a partnership was denied, even though, of the 88 candidates for partner, she had brought in the most business. Her colleagues criticized her for being "overbearing, 'macho' and abrasive and said she would have a better chance of making partner if she would wear makeup and jewelry, and walk, talk and dress 'more femininely.'" The Court found that Price Waterhourse maintained a partnership evaluation system that "permitted negative sexually stereotyped comments to influence partnership selection" (BNA 1990; Lewin 1990).

Analyzing the Trends in the Gender Pay Gap

The narrowing of the gender gap in recent years has taken place in an environment of sharply rising wage inequality. This raises a paradox. Women continue to have less experience than men, on average, and continue to be located in lower-paying occupations and industries. As the rewards to higher skills and the wage premia for employment in occupations and industries where men are more heavily represented have risen, women should have been increasingly disadvantaged (Blau and Kahn, 1997). How can we explain the decrease in the gender pay gap in the face of overall shifts in labor market prices that should have worked against women as a group?

To answer this question, we summarize results from Blau and Kahn (1997), where we

made use of decomposition techniques developed by Juhn, Murphy and Pierce (1991). The study analyzed women's wage gains over the 1980s, which, as noted in Figure 1 and Table 1, was a period of exceptionally rapid closing of the gender wage gap. We found that rising inequality and higher rewards to skills did indeed retard wage convergence during this period but this was more than offset by improvements in gender-specific factors. First, the gender gap in full-time experience fell from 7.5 to 4.6 years over this period (see also O'Neill and Polachek, 1993). Second, the relative proportion of women employed as professionals and managers rose, while their relative representation in clerical and service jobs fell. Third, the declining unionization rate had a larger negative impact on male than female workers, since union membership declined more for men than women. Fourth, also working to reduce the gender pay gap was a decrease in the size of the unexplained gender gap.

The decline in the unexplained gender wage gap that occurred over the 1980s may reflect either an upgrading of women's unmeasured labor market skills, a decline in labor market discrimination against women, or a combination of the two. Both interpretations are credible during this period.

Since women improved their relative level of measured skills, as shown by the narrowing of the gap in full-time job experience, it is plausible that they also enhanced their relative level of unmeasured skills. For example, women's increasing labor force attachment may have encouraged them to acquire more on-the-job training. Evidence also indicates that gender differences in college major, which have been strongly related to the gender wage gap among college graduates (Brown and Corcoran, 1997), decreased over the 1970s and 1980s (Blau, Ferber and Winkler, 1998); the marketability of women's education has probably improved. The male-female difference in SAT math scores has also been declining, falling from 46 points in 1977 to 35 points in 1996 (Blau, 1998), which could be another sign of improved quality of women's education.

The argument that discrimination against women declined in the 1980s may seem less credible than that the unmeasured human capital characteristics of women improved, since the

federal government scaled back its anti-discrimination enforcement effort during the 1980s (Leonard, 1989). However, as women increased their commitment to the labor force and improved their job skills, the rationale for statistical discrimination against them diminished; thus it is plausible that this type of discrimination declined. And, in the presence of feedback effects, employers' revised views can generate further increases in women's earnings by raising their returns to investments in job qualifications and skills. To the extent that such qualifications are not fully controlled for in the wage regression used to decompose the change in the gender wage gap, this may also help to explain the decline in the "unexplained" gap. Another possible reason for a decline in discrimination against women is that changes in social attitudes have made such discriminatory tastes increasingly unpalatable.

Finally, the underlying labor market demand shifts which widened wage inequality over the 1980s may have favored women relative to men in certain ways, and thus contributed to a decrease in the unexplained gender gap. The impact of technological change included within-industry demand shifts that favored white collar workers in general (Berman, Bound and Griliches, 1994). Given the traditional male predominance in blue-collar jobs, this shift might be expected to benefit women relative to men, possibly off-setting the large increase in female supply that occurred during this time (Blau and Kahn 1997). In addition, increased computer use favors women both because they are more likely than men to use computers at work and because computers restructure work in ways that de-emphasize physical strength (Krueger 1993; Weinberg, 2000).

The narrowing of the gender pay gap decelerated over the 1990s, as shown in Figure 1. It will not be possible to do for this period the type of detailed decomposition reported above for the 1980s for a few more years, since data on actual labor market experience are crucial and the PSID (final release) data, which are unique in having this information for a nationally representative cross-section of individuals, are not yet available past 1993 (with 1992 wage information).

However, using data from the Current Population Surveys, we can shed some light on the

relative importance of gender-specific factors versus wage structure in explaining changes in the gender pay gap in the 1990s compared to the 1980s. The trends in the CPS data summarized in Table 2 mirror those noted from various sources. The gender wage ratio rose in both the 1980s and the 1990s, but rose more rapidly in the 1980s. The narrowing of the gender gap was accompanied by substantial real wage growth for women in comparison to little change in real wages for men. The data also show rising wage inequality over the period for both men and women, as measured by the standard deviation of the log of wages, but inequality rose faster in the 1980s than in the 1990s. Table 2 also shows that the trends in the gender ratio estimated using fixed-weight averages -- that is, holding the relative size of age and education groups at their 1979 levels -- are quite similar to those for the actual ratio.[7] This suggests that the more rapid closing of the gender gap in the 1980s cannot be explained by a change in the composition of the male and female labor forces along these dimensions.

Table 2 also indicates that women's wages moved steadily up the distribution of male wages over this period, from an average percentile of 26.0 in 1979 to 38.5 in 1999.[8] The fact that the pace of this upward movement was higher in the 1980s than the 1990s suggests that changes in gender-specific factors were more favorable for women in the 1980s than in the 1990s.

How much would the gender-specific changes have decreased the gender pay gap if the overall distribution of wages had not become more unequal over this time? The last row of Table 2 shows what the gender ratio would have been in each year if male wage inequality had remained at its 1978 levels. These ratios are computed by giving a man or woman at, say, the 25th percentile of the male wage distribution in 1988 (or 1998) a wage equal to a male at the 25th percentile of the male wage distribution in 1978. The results indicate that, as expected, the gender ratio would have increased faster over the 1978-98 period had wage inequality not risen.

7. The age groups were: 18-24, 25-34, 35-44, 45-54 and 55-65; the education groups were: less than 12 years, 12 years, 13-15 years, and 16 or more years.

8. These rankings are obtained by first finding each individual woman's percentile in the male wage distribution in each year and then finding the female mean of these percentiles. As in our descriptive statistics on wages, we use the CPS sampling weights in forming the percentiles of the male wage distribution.

Specifically, under a constant wage structure, the gender pay ratio would have risen by 15.2 percentage points, a modestly higher rate of convergence that the actual increase of 12.7 percentage points. However, the disparity between the two subperiods is actually greater for the measure which holds the distribution of wages constant, meaning that trends in wage inequality do not help to explain women's smaller gains in the 1990s.[9] Putting this somewhat differently, gender-specific factors are more than sufficient to account for the difference in convergence between the two periods. This suggests that improvements in women's qualifications must have been greater and/or the decline in discrimination against women must have been larger in the 1980s than in the 1990s.

Could differential shifts in the supply of female workers between these two periods help to explain the slower convergence in the 1990s? It has been pointed out, for example, that recent welfare reforms and other government policies spurred an increase in employment among single mothers (see, for example, Meyer and Rosenbaum 1999). Yet, despite these increases, female labor force participation overall increased considerably more slowly over the 1990s than over the 1980s, both absolutely and relative to the male rate (Costa 2000, Figure 1; and BLS Website). Thus, on its face rising female labor supply is not a plausible explanation for the difference in wage convergence in the two decades. The growth in participation among single heads, who tend on average to be less well educated than other women, could also have slowed wage convergence by shifting the composition of the female labor force toward low-wage women. But as we saw in Table 2, when trends in the gender ratio were estimated using fixed-weight averages -- that is, controlling for age and education –- the difference between the rate of convergence in the 1980s and 1990s remains.

Our identification of the relative importance of gender-specific factors and wage structure in explaining wage convergence of men and women in the 1980s and 1990s is based on some assumptions which, although not unreasonable, should be noted. This approach is based on two

9. Results were similar when the 1988 or 1998 male wage distributions were used to evaluate the current year percentiles.

complementary assumptions: 1) in each year, gender-specific factors, including differences in qualifications and the impact of labor market discrimination, determine the percentile ranking of women in the male wage distribution; and 2) overall wage structure, as measured by the magnitude of male wage inequality, determines the wage penalty associated with women's lower position in the wage distribution.

This framework assumes that male wage inequality is determined by forces outside the gender pay gap and is a useful indicator of the price of skills affecting both men and women. Consistent with this approach is evidence that widening wage inequality in the 1980s and 1990s was importantly affected by economy-wide forces, including technological change, international trade, the decline in unionism, and the falling real value of the minimum wage (Katz and Autor, 1999). And, rises in wage inequality during this period were similar for men and women. This suggests that the decomposition in the last row of Table 2 is reasonable. However, we caution the reader that, under some circumstances, the gender pay gap could influence male inequality. For example, Fortin and Lemieux (1998) present a model in which a falling gender pay gap causes rising male wage inequality, as women displace men in a fixed job hierarchy.[10]

Sources of Gender Differences in Occupations

There is considerable evidence to support the belief that gender differences in preferences play some role in gender differences in occupations (Gunderson, 1989). The claim that discrimination is also important is more controversial. It is not an easy matter to distinguish between the two empirically and, of course, both preferences and discrimination may contribute

10. The presence of discrimination can also complicate the interpretation of this decomposition (Juhn, Murphy and Pierce 1991; Blau and Kahn 1996b and 1997; Suen 1997). In particular, Suen suggests a model in which discrimination takes the form of a fixed deduction from every woman's pay, say 20 percent. This may produce a mechanical negative relationship between male wage inequality and the average female percentile: anything that increases male inequality will push more men below the average woman. However, Table 2 shows that the gender pay ratio increased as the mean female percentile rose, suggesting that the increase in the female percentile is not simply an artifact of widening male inequality, but rather contains information about women's relative qualifications and treatment.

to observed differences.

Some persuasive evidence of the importance of discrimination comes from descriptions of institutional barriers that have historically excluded women from particular pursuits or impeded their upward progression (Reskin and Hartmann, 1986). In addition many studies, although not all, have found that women are less likely to be promoted, all else equal (see, for example, Cobb-Clark and Dunlop, 1999; McCue, 1996; Hersch and Viscusi, 1996). It has also been found that a major portion of the gender difference in on-the-job training remains unexplained, even after gender differences in predicted turnover probability and other variables are taken into account, suggesting that discrimination may play a role in this respect as well (Royalty 1996).[11] Such studies of promotion and training are certainly suggestive of discrimination, but they suffer from the standard problems of this type of exercise discussed in connection with decompositions of the gender pay gap.

Is there a glass ceiling impeding women's occupational advancement, as some have alleged? Disparities at the upper levels of many professions are easy to document. In academia, for example, women constituted 44.7 percent of assistant professors in 1994-95, compared to 31.2 percent of associate and 16.2 percent of full professors (Blau, Ferber and Winkler, 1998). In business, a federal Glass Ceiling Commission (1995) found that women comprise only 3 to 5 percent of senior managers in *Fortune* 1000 companies.

While the disparities are obvious, the reasons behind them are harder to pin down. Such disparities may be due in whole or part to the more recent entry of women into these fields and the time it takes to move up the ladder. Data in each case do suggest some female gains over time. For example, women's share of associate professors in 1995 (31.2 percent) was considerably higher than their 1985 level (23.3 percent) and nearly equal to their share of *assistant* professors a decade earlier (35.8 percent). However, the female share of full professors in the mid-1990s, at 16.2 percent, although higher than the 11.6 percent of full professors who

11. For a review of evidence that women have traditionally received less on-the-job training than men, see Barron, Black and Loewenstein (1993).

were women in the mid-1980s, was still considerably below the 23.2 percent of *associate* professors who were women in 1985 (Blau, Ferber and Winkler, 1998).

Despite recent changes, there is some evidence suggesting that discrimination plays a role in academia. A recent study of faculty promotion in the economics profession found that, controlling for quality of Ph.D. training, publishing productivity, major field of specialization, current placement in a distinguished department, age and post-Ph.D. experience, female economists were still significantly less likely to be promoted from assistant to associate and from associate to full professor -- although there was also some evidence that women's promotion opportunities from associate to full professor improved in the 1980s (McDowell, Singell and Ziliak, 1999). In a similar vein, a recent report on faculty at MIT finds evidence of differential treatment of senior women and points out that it may encompass not simply differences in salary but also in space, awards, resources and responses to outside offers, "with women receiving less despite professional accomplishments equal to those of their male colleagues" (MIT, 1999, p. 4).

Even in occupations where good data exist on the availability of women in the lower ranks, as in academia, it is difficult to determine whether the degree of movement of women through the ranks is sufficient to confirm or disprove notions that women face special barriers. It is still harder in other areas where such data do not exist and where norms regarding the speed of upward movement are less well defined.

However, a recent study of executives does highlight the substantial impact on pay of gender differences in level of the job hierarchy and firm, although it does not shed light on the causes of such differences. For a sample of the five highest-paid top executives among a large group of firms, Bertrand and Hallock (1999) found that the 2.5 percent of the executives who were women earned 45 percent less than their male counterparts. Three-quarters of this gap was due to the fact that women managed smaller companies and were less likely to be the CEO, chair or president of their company. Only 20 percent was attributable to female executives being younger and having less seniority. Female executives made some gains over the 1992-97 sample period: the fraction of women in these top-level jobs rose from 1.29 to 3.39 percent; their relative

compensation increased from 52 to 73 percent; and their representation at larger corporations rose. There was, however, no increase in women's representation in the top occupations of CEO, chair, vice-chair, or president.

The role of occupational upgrading in narrowing the gender pay gap, as well as the evidence that the glass ceiling may be showing some hairline cracks, raises the question of why occupational differences between men and women have declined. Both the human capital and the discrimination models potentially provide viable explanations.[12] On the one hand, it may be that as women anticipated remaining in the labor force for longer periods it became profitable for them to invest in the larger amount of career-oriented formal education and on-the-job training often required in traditionally male occupations. On the other hand, women may have entered these areas in response to declining barriers to their participation. And, the rise in women's acquisition of career-oriented formal education may reflect, not only changes in women's preferences and their response to greater market opportunities, but also changes in the admission practices of educational institutions with the passage of Title IX in 1972 banning sex discrimination in education and other social pressures. The increase in women's representation in professional schools has been truly remarkable. Between 1966 and 1993, women's share of degrees rose from 6.7 to 37.7 percent in medicine, 3.8 to 42.5 percent in law, 3.2 to 34.6 percent in business, and 1.1 to 33.9 percent in dentistry (Blau, Ferber and Winkler 1998). While it is likely that both changes in women's behavior and changes in the amount of discrimination they faced played a role in women's occupational shifts, we are not aware of any research unraveling this complex causation.

The U.S. Gender Pay Gap in International Perspective

12. England (1982) provides the strongest critique of the human capital explanation for occupational segregation. Some particularly interesting recent evidence implicitly supporting the human capital model is Macpherson and Hirsch's (1995) finding of a substantial effect of skills in explaining the lower pay in predominantly female jobs. Their estimates are among the higher ones; for a review of past evidence, see Sorensen (1990).

How does the pay gap faced by U.S. women compare to that faced by women in other countries? Table 3 shows female-male weekly earnings ratios of full-time workers for the United States and a number of other advanced countries over the 1979-98 period, based on unpublished OECD tabulations from nationally-representative microdata sets. In 1979-81, the U.S. gender pay ratio was 62.5 percent, nearly 9 percentage points below the 71.2 percent average for the other countries listed here. However, the U.S. gender pay ratio increased at a faster rate in the 1980s and 1990s than it did elsewhere. By 1994-98, it was 76.3 percent, only marginally below the non-U.S. average of 77.8 percent. Nonetheless, the gender earnings ratio was higher in eight out of 16 other countries than it was in the United States, often considerably so. How do we explain why U.S. women do not rank higher relative to their counterparts in other advanced countries? And, what accounts for the faster narrowing of the gender gap in the U.S.?

There seems to be little reason to believe that U.S. women are either less well qualified compared to men than women in other countries where the gender pay gap is considerably smaller, or encounter more discrimination than women in those other countries. While data on actual labor market experience are not generally available, some indirect indicators suggest that U.S. women tend to be relatively more committed to the labor force then women in many of the other countries. Female labor force participation rates are relatively high in the United States, as is the share of employed women working full time. Occupational segregation by sex tends to be lower in the United States than elsewhere, suggesting that U.S. women have greater labor force attachment and job skills and/or encounter less discrimination in gaining access to traditionally male jobs (Blau and Kahn, 1996b; OECD, 1999).

Nor does it appear that gender-specific policies account for the relatively modest U.S. gender pay ratio. Virtually all OECD and European Community countries had passed equal pay and equal opportunity laws by the mid-1980s, but the United States implemented its anti-discrimination legislation before most other countries (Blau and Kahn, 1996b). By international standards, the United States does have a relatively weak entitlement to family leave, consisting of an unpaid 13-week mandated period, which was only introduced in 1993. In contrast, most

OECD countries have a much longer period of leave, and this leave is usually paid (Ruhm, 1998). Some research on the impact of parental leave has found a positive effect of short leave entitlements on women's relative wages, although extended leaves have been found to have the opposite effect (Ruhm, 1998; Waldfogel, 1998). Child care is another important area of public policy which particularly affects women, but one which is more difficult to summarize across a large set of countries. Some available evidence suggests that, as of the mid-1980s, the United States had a smaller share of young children in publicly funded child care than many other OECD countries, but provided relatively generous tax relief for child care expenses (Gornick, Myers and Ross, 1997).

Since gender-specific factors appear unlikely to account for the mediocre ranking of the U.S. gender earnings ratio, what about more general charactistics of the wage structure? Wage inequality is much higher in the United States than elsewhere. This reflects higher skill prices and sectoral differentials in the United States, although a more dispersed distribution of productivity characteristics also plays a role (Blau and Kahn, 1996a, 1999a, 2000).

Institutional factors appear to be important in explaining higher U.S. skill prices and sectoral differentials. More heavily unionized economies in which collective bargaining takes place at more centralized levels have lower overall wage dispersion, all else equal (Blau and Kahn, 1999a). Among the OECD nations, the United States stands at an extreme with an especially low rate of collective bargaining coverage, pay setting which is often determined at the plant level even within the union sector, and an absence of formal or informal mechanisms to extend union-negotiated pay rates to nonunion workers. Further, minimum wages are lower relative to the median in the United States than in most other Western countries (OECD 1998).

A significant portion of the male-female pay gap in the United States is associated with interindustry or interfirm wage differentials that result from its relatively decentralized-pay setting institutions (Blau, 1977; Groshen, 1991; Bayard, Hellerstein, Neumark and Troske, 1999). Thus, centralized systems which reduce the extent of wage variation across industries and firms are likely to lower the gender differential, all else equal. Moreover, in all countries the female

wage distribution lies below the male distribution. Thus, wage institutions that consciously raise minimum pay levels, regardless of gender, will tend to lower male-female wage differentials. Of course, these kinds of interventions may also produce labor market problems like unemployment and inefficiencies in allocating labor.[13]

Table 4 presents some descriptive information that allows us to make an initial determination of the relative strength of gender-specific factors and overall wage structure in explaining the gender pay gap. It is based on our calculations using International Social Survey Programme (ISSP) microdata and presents information on the United States and five major Western countries for 1985-86 and for 1993-94. These countries are a subset of those included in the ISSP for which data are available in both the 1980s and 1990s. Our findings were similar, however, when we considered the full set of countries. These two periods allow us to observe how the changing economic environment of the 1980s and 1990s affected women in the United States compared to those elsewhere. Earnings are corrected for differences in weekly hours worked.[14]

Our results for the ranking of the U.S. gender wage ratio compared to the non-U.S. average are qualitatively similar to Table 3. We again find that the U.S ratio lagged behind the other countries substantially in the mid-1980s (see top panel, middle column). By 1993-94, however, the United States had closed much of this gap (bottom panel, middle column). The average female percentiles presented in the first column of the table are of interest as an indicator of gender-specific factors. In 1985-86, the wages of U.S. women ranked at the 31.9 percentile of the male wage distribution, virtually the same ranking as the average for the other countries. By 1993-94, the percentile ranking of the wages of U.S. women, 36.9, was considerably higher than the non-U.S. average ranking of 32.0. The percentile rankings suggest that relative qualifications and treatment of U.S. women were similar to women in the other countries in the mid-1980s and

13. See Blau and Kahn (1999a) for a summary of the evidence on many of the issues concerning labor market flexibility.

14. For details on the wage data in the ISSP, see Blau and Kahn (1999b).

actually favored U.S. women by the mid-1990s.

Although the percentile rankings are suggestive, in order to determine the relative strength of gender-specific factors and wage structure, we need to ascertain the wage consequences of women's placement in the male wage distribution. The hypothetical gender pay ratios shown in the last column of Table 4 enable us to do just that. They show what the gender pay ratio would be if men and women in each country had their own relative position in the wage distribution, *but overall wage inequality was at U.S. levels*. So, for example, a man or woman at the 25th percentile of the male wage distribution in Australia would receive a wage equal to a male at the 25th percentile of the U.S. male wage distribution in the same year. For these hypothetical wage ratios, we find that the U.S. gender ratio is higher than the non-U.S. average of the distribution-corrected ratios in both periods: 8.7 percentage points higher in 1985-86 and 13.9 percentage points higher in 1993-94. We conclude that, compared to women in the other countries, U.S. women are better qualified relative to men and/or encounter less discrimination. The mediocre ranking of the U.S. gender ratio in the face of these favorable gender specific factors is a consequence of the higher level of wage inequality in the United States, which places a much higher penalty on being below average in the wage distribution.

The effect of wage structure can also be seen by comparing the hypothetical gender gap for each country shown in the third column of Table 4 -- where workers are evaluated at their actual percentile in the wage distribution of their own country but the distribution itself is shifted to reflect the U.S. level of wage inequality -- to its actual gender pay gap as shown in the middle column of the table. In every case, the gender pay ratio would be higher using own country wage distributions, usually substantially so. On average, the more compressed wage distributions in these countries increased the gender wage ratio from 55 percent to 72.1 percent in the 1980s (top panel, sixth row) and from 59 percent to 76.8 percent in the 1990s (bottom panel, penultimate row).

Table 4 also suggest in several ways that the relative qualifications or treatment of U.S. women compared to women in other countries improved between the 1980s and 1990s. First, the

average female percentile in the male wage distribution rose from 31.8 to 36.9 in the United States, but the average for the other countries was relatively stable (as shown in column 1). Second, the gender pay ratio evaluated at the U.S. male wage distribution rose by 9.2 percentage points in the United States, in comparison to a smaller average rise of 4 percentage points in the other countries (as shown in column 3). Finally, the effect of the higher level of U.S. wage inequality was fairly stable: if the other countries had the U.S. male wage structure, the non-U.S. average gender gap would have been increased by 17.1 percentage points in 1985-86 and 17.8 percentage points in 1993-94 (comparing columns 2 and 3).[15]

Why did changes in gender-specific factors favor U.S. women relative to those in other countries during this period? The reasons may be much the same as the factors considered above as to why the gender pay gap in the United States narrowed over time. The relative qualifications and experience of American women may have improved faster than those of women in other countries. And, if women's labor force attachment increased more in the United States than elsewhere, the associated reductions in statistical discrimination against women could well have also been larger.

The data in Table 4 suggest a determining role for wage structure in raising the U.S. gender pay gap relative to that in other countries. However, it is possible to test this relationship more directly, as we did in a recent paper (Blau and Kahn 1999b). Using microdata for each country and year from the 1985-94 ISSP data (100 country-year observations in all), we found strong evidence that higher inequality of male wages (controlling for the distribution of male productivity characteristics) and higher female labor supply had large, statistically significant,

15. As noted above, one possible objection to the type of decomposition used in Table 4 is that, under certain assumptions, there could be a mechanical positive correlation between male wage inequality and the average female percentile (Suen 1997). But across our full set of countries in the ISSP, there was in fact little statistical relationship between the average female percentile in the male distribution and the standard deviation of the log of male wages, providing evidence against such a mechanical relationship (Blau and Kahn 1999b). Another possible objection to the decompositions is that they assume that the entire difference in male inequality across countries is due to labor market prices and rents rather than population heterogeneity. However, in other work (Blau and Kahn 1996a; 2000), we found that higher U.S. prices are in fact an important reason for higher male wage inequality in the U.S., though population heterogeneity also plays a role.

positive effects on the gender pay gap. The differences in inequality of male wages were quantitatively more important than female labor supply in explaining differences across countries in the size of the gap. Based on these regression estimates, the contribution of higher wage inequality and higher female labor supply in the U.S. to the larger U.S. gender pay gap can be estimated. We found that both helped to explain the higher U.S. gap, with wage inequality being considerably more important. Interestingly, these variables were more than sufficient to account for the higher U.S. gender pay gap, suggesting that unmeasured factors, perhaps higher female qualifications or less discrimination, favored U.S. women.[16]

Conclusion

Our analysis suggests important roles for both gender-specific factors, including gender differences in qualifications and labor market treatment, as well as overall wage structure, the prices the labor market sets for skills and employment in particular sectors, in influencing the size of the gender pay gap. What do these factors imply about the future of the gender wage gap in the U.S.?

The narrowing in the U.S. gender pay gap decelerated in the 1990s and gender-specific factors seem to be the source of this slowing convergence. Without a more detailed analysis of the trends in the pay gap over this period than currently available data permit, it is not possible to know which particular gender-specific factors account for this. It is also difficult to say whether this represents merely a pause in the continued closing of the gender pay gap or a more long-term stalling of this trend. With respect to wage structure, there appears to have been a deceleration in the trend towards rising inequality over the 1990s. To the extent this continues, a major factor

16. It could be argued that the gender pay gap itself could affect male wage inequality and female net supply. On the former effect, see Fortin and Lemieux (1998) discussed above. Recognizing that the explanatory variables may be endogenous, we estimated reduced form models in which male wage inequality and female net supply were replaced by institutional variables such as collective bargaining coverage. We found that more highly unionized countries had much smaller gender pay gaps, all else equal, an effect that is consistent with the estimated positive effect of wage inequality on the gender pay gap.

retarding convergence in the gender gap will be diminished.

Taking these factors together, it seems plausible that the gender pay gap will continue to decline at least modestly in the next few years. But it seems unlikely to vanish. Women continue to confront discrimination in the labor market, although its extent seems to be decreasing.

In addition, at least some of the remaining pay gap is surely tied to the gender division of labor in the home, both directly through its effect on women's labor force attachment and indirectly through its impact on the strength of statistical discrimination against women. Women still retain primary responsibility for housework and child care in most American families. However, this pattern has been changing as families respond to rising labor market opportunities for women that increase the opportunity cost of such arrangements. Further, policies that facilitate the integration of work and family responsibilities, both voluntary and government-mandated, have become increasingly prevalent in recent years. Employers are likely to continue to expand such policies as they respond to the shifting composition of the work force and a desire to retain employees in whom they have made substantial investments. In the longer run, the increasing availability of such policies will make it easier for women to combine work and family, and also for men to take on a greater share of household tasks.

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Figure 1 Female-to-Male Earnings Ratios of Full-Time Workers, 1955-1999

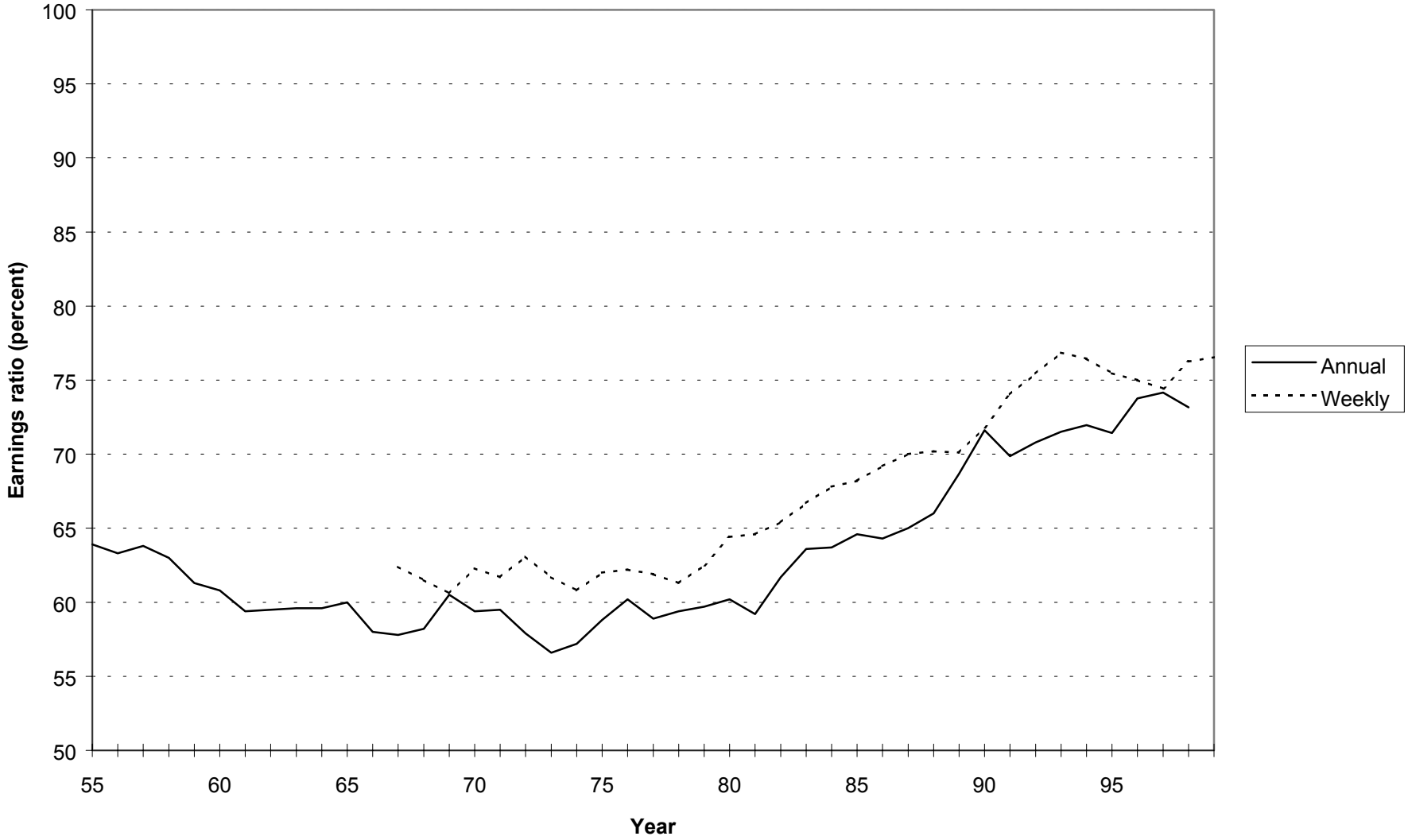

Table 1

Female/Male Hourly Wage Ratios of Full-Time Workers by Age, 1978-98

A. Wage Ratios	1978	1988	1998
18-24	0.824	0.930	0.942
25-34	0.703	0.828	0.850
35-44	0.589	0.687	0.761
45-54	0.582	0.647	0.716
55-64	0.623	0.610	0.693
B. Changes		**1978-88**	**1988-98**
Between cohorts			
18-24		0.105	0.012
25-34		0.125	0.023
35-44		0.098	0.074
45-54		0.066	0.068
55-64		-0.012	0.082
Within cohorts			
18-24		-0.024	-0.092
25-34		-0.016	-0.067
35-44		0.058	0.029
45-54		0.029	0.045

Notes: Gender ratios are computed as exp(ln Wf - ln Wm),
where ln Wf and ln Wm are female and male average log wages.

Source: Authors' tabulations from the Current Population Surveys.

Table 2

Impact of Widening Wage Inequality on Trends in the Female-Male Wage Ratio of Full-Time Workers, 1978-98 (1998 Dollars)

				Change		
	1978	1988	1998	1978-88	1988-98	1978-98
Males						
Wage	$14.06	$14.21	$14.96	$0.15	$0.75	$0.89
Ln (wage)	2.643	2.654	2.705	0.010	0.051	0.062
(Std dev)	(0.527)	(0.594)	(0.609)	0.067	0.015	0.082
Females						
Wage	$9.21	$10.52	$11.70	$1.31	$1.18	$2.49
Ln (wage)	2.220	2.354	2.460	0.133	0.106	0.239
(Std dev)	(0.436)	(0.511)	(0.547)	0.075	0.036	0.111
Mean female percentile in male distribution	26.02	34.76	38.48	8.74	3.71	12.46
Gender Ratio						
Actual	0.655	0.741	0.782	0.086	0.042	0.127
Fixed Weight Average (1978 Base)	0.655	0.726	0.763	0.071	0.037	0.108
Fixed Distribution (1978 Base)	0.655	0.766	0.807	0.111	0.041	0.152

Notes: See Table 1 for the definition of the gender wage ratios.

Source: Authors' tabulations from the Current Population Survey.

Table 3

Female/Male Ratios, Median Weekly Earnings of Full-time Workers

Country	1979-81	1989-90	1994-98	Change 1979-81 to 1994-98
Australia	0.800	0.814	0.868	0.068
Austria	0.649	0.674	0.692	0.043
Belgium	na	0.840	0.901	na
Canada	0.633	0.663	0.698	0.065
Finland	0.734	0.764	0.799	0.065
France (net)	0.799	0.847	0.899	0.100
Germany	0.717	0.737	0.755	0.038
Ireland	na	na	0.745	na
Italy	na	0.805	0.833	na
Japan	0.587	0.590	0.636	0.049
Netherlands	na	0.750	0.769	na
New Zealand	0.734	0.759	0.814	0.080
Spain	na	na	0.711	na
Sweden	0.838	0.788	0.835	-0.003
Switzerland	na	0.736	0.752	na
United Kingdom	0.626	0.677	0.749	0.123
United States	0.625	0.706	0.763	0.138
Non-US Average				
1979-81 sample	0.712	0.731	0.774	0.063
full sample	0.712	0.746	0.778	0.067

Notes: The years covered for each country are as follows: Australia: 79,89,98; Austria: 80,89,94; Belgium: 89,95; Canada: 81, average of 88 & 90, 94; France: 79,89,96; W. Germany: 84,89,95; Italy: 89,96; Japan: 79,89,97; Netherlands: 90,95; New Zealand: average of 88 & 90, 97; Sweden: average of 78 & 80, 89, 96; Switzerland: 91, 96; United Kingdom: 79,89,98; United States: 79, 89, 96.

Source: Authors' calculations from unpublished OECD data.

Table 4

Female Wages Relative to the Male Distribution, Actual and Wage Distribution-Corrected Gender Wage Ratios, 1985-86 and 1993-94

	Average Female Percentile in Male Wage Distribution	Actual Female/Male Wage Ratio	Female/Male Wage Ratio at US Male Wage Distribution
1985-86			
Australia	33.4	0.716	0.555
W Germany	28.4	0.702	0.536
Britain	25.8	0.660	0.471
Austria	31.0	0.718	0.515
Italy	40.5	0.808	0.672
Non-US Average	31.8	0.721	0.550
United States	31.9	0.637	0.637
1993-94			
Australia	34.7	0.773	0.667
W Germany	21.5	0.693	0.368
Britain	35.1	0.782	0.689
Austria	33.3	0.797	0.605
Italy	35.2	0.795	0.622
Non-US Average	32.0	0.768	0.590
United States	36.9	0.729	0.729

Notes: The years covered for each country are as follows: Australia (86, 94); West Germany (85-86, 93); Britain (85-86; 93-94); USA (85-86; 93-94); Austria (85-6, 94); Italy (86, 93-94). Earnings are corrected for weekly hours differences. See Blau and Kahn (1999b) for details.

Source: Authors' calculations from International Social Survey Programme (ISSP) microdata.