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Gender Differences in Earnings

The male–female earnings gap has undoubtedly received more attention than any other indicator of women's position in the labor market and in the economy. In the advanced industrialized countries, where reliable data on earnings are available, this gap has been declining during the second half of the twentieth century, but at different times, and at varying rates. The United States is one of a very few nations where it remained stubbornly at about the same level until the late 1970s. Since then it has narrowed at a sustained, albeit slow, pace. This entry examines these changes and their causes, then briefly discusses policies that might be used to hasten its further reduction.

1. Evidence

Table 1 provides information on the level of women's

Table 1
Female-to-male hourly earnings in manufacturing, selected years 1955–88 (in percent)

	1955	1973	1982	1988
Australia[a]	69.0	69.4	78.2	79.6
Belgium	56.8	68.7	73.5	74.5
Denmark[b]	65.3	82.3	85.1	84.4
Finland[c]	67.6	71.7	77.1	77.2
France	–	76.8	77.7	79.2[b]
Germany, Fed. Rep.[d]	62.8	70.9	73.0	73.0
Greece	64.7[b]	65.5	73.1	78.0
Ireland	56.3	59.9	68.5	68.9
Japan	44.7	53.9	48.8	48.5[b]
Luxembourg	–	55.3	60.1	58.4
Netherlands	58.8	75.5	74.1	74.8
New Zealand	62.8	65.8[f]	70.8	74.6
Norway[e]	67.4	76.2	83.2	84.3
Sweden[e]	69.2	84.1	90.3	90.0
Switzerland[g]	63.7	65.4	67.0	67.5
United Kingdom	58.6	60.7	68.8	68.0
United States[f]	63.9[g]	61.7	65.4	70.2

Sources: Calculated from data in International Labour Organization *Yearbook of Labour Statistics* (various years). United States data are from Department of Labor *Employment and Earnings* (various issues); and Japanese data are from Organisation for Economic Co-operation and Development *Employment Outlook* (September 1988) p. 212
a Earnings of employees only. b excludes vacation pay. c includes mining and quarrying, electricity. d includes family allowances paid by employers. e includes holiday and sick pay, and value of payments in kind. f usual weekly earnings of full-time workers. g earnings of year-round, full-time workers. h 1961. i 1974. j 1986. k 1987

compared to men's hourly earnings in manufacturing for 13 countries from 1955–88. These data are widely thought to be representative of earnings in general. In all instances the proportion is higher at the end of the period than at the beginning. However, at one extreme it rose only from 44.7 percent to 48.5 percent in Japan, while at the other extreme it rose from 69.2 percent to 90.0 percent in Sweden. Data on hourly earnings are not available for the United States. The weekly earnings used are expected to show a somewhat larger male–female differential because on average, even among workers employed full-time, women work fewer hours than men. Nonetheless, the earnings gap in the United States appears to be greater than in the majority of European countries.

As can be seen from Table 2, in the United States the level of women's earnings compared to those of men working full-time, year-round, fluctuated narrowly around 60 percent for about three decades before 1980. Since then it has increased, reaching 68.7 percent in 1989. Similarly, the percentage, when expressed in terms of usual weekly earnings of full-time workers, which tends to be somewhat higher, rose from 61.3 percent in 1978 to 71.8 percent in 1990. The reasons for this difference in the ratios of annual and weekly earnings are discussed in considerable detail in Rytina (1983). The gap would, no doubt, be smaller for hourly wages, but such data

208

Table 2
United States: Female-to-male earnings of full-time workers, selected years 1955–90 (in percent)

Year	Annual earnings of full-time, year-round workers[a]	Usual weekly earnings of full-time workers[b]
1955	63.9	—
1960	60.8	—
1965	60.0	—
1970	59.4	62.3
1975	58.8	62.0
1980	60.2	64.4
1985	64.6	68.2
1989	68.7	70.1
1990	—	71.8

Sources: United States Department of Labor, Women's Bureau Bulletin 298 *Time of Change: 1984 Handbook on Women Workers*; US Bureau of the Census, Population Reports, Consumer Income Series P-60 *Money, Income and Households, Families and Persons in the United States* and US Bureau of the Census, Population Reports, Consumer Income Series P-60 *Money, Income, and Poverty Status in the United States* (various issues); Mellor E F 1984 Investigating the differences in weekly earnings of women and men. *Month. Lab. Rev.* 107; US Bureau of Labor Statistics *Employment and Earnings* (various issues).
a Workers aged 15 and over. Prior to 1979, workers aged 14 and over. b workers aged 16 and over

Table 3
United States: Female-to-male incomes of full-time, year-round workers by age (in percent)

Age	1960	1970	1980	1989
25–34	65.1	64.9	68.6	78.9
35–44	57.6	53.9	56.2	66.4
45–54	58.0	56.3	54.3	59.1
55–64	64.5	60.3	56.7	57.7

Sources: O'Neill J 1980 Women and Wages. The American Enterprise 1 (November/December) p. 25 for data 1960–1980. US Bureau of the Census *Money, Income, and Poverty Status in the United States*, Consumer Income Series P-60, for 1989 data

Table 4
United States: Mean earnings of year-round, full-time workers[a] by sex and educational attainment, 1985

Educational attainment	Women ($)	Men ($)
Fewer than 8 years	9,681	15,039
1–3 years of high school	12,317	19,241
High-school graduates	14,903	22,852
1–3 years of college	17,229	26,705
College graduates	21,362	35,400
1 or more years postgraduate	26,348	44,478

Source: US Bureau of the Census Current Population Reports Series P-60, No. 156, Table 36
a Persons age 25 and over

are not available in the United States. Thus it is clear that the male–female wage gap has been narrowing over time.

Data for 1960–89 in Table 3 show that women's income (largely comprised of earnings) is lower than men's in all age groups, but that, with the exception of the oldest age groups in earlier years, who were most likely to be disproportionately successful women with high earnings, the gap tends to increase with age. This reflects the fact that even in the 1990s women on average accumulate less experience than men. The figures also show that for those under age 45 the earnings gap began to close as early as the 1970s, and that it was the youngest women who experienced the greatest decline. In view of the rapid rise in the labor force participation rates of these cohorts, it is very likely that they will retain at least a substantial part of these gains over the life cycle. Therefore this evidence suggests that the decline in male–female earnings differentials is likely to continue.

There is a growing consensus that the relative improvement in women's earnings has been the result of a combination of supply and demand factors. As Smith and Ward (1989) point out, employment has been declining in the relatively male-intensive manufacturing sector, while the more female-intensive service sector expanded, at least prior to the recession of 1990. At the same time, women's market skills and labor force experience have increased substantially. Between 1966 and 1988 the share of degrees awarded to women increased from 39.9 percent to 52.0 percent for bachelor's, from 40.4 percent to 51.5 percent for master's, from 15.4 percent to 35.2 percent for doctoral degrees, and from 3.8 percent to 35.7 percent for first professional degrees (US Department of Education 1990). Estimated years of labor market experience also increased, from 7.97 to 10.45 years for employed women aged 30, and from 10.57 to 13.51 years for employed women aged 40.

Nevertheless, differences remain in attitudes toward these developments. Neoclassical economists generally emphasize how much the situation has improved, and the extent to which changes in women's own behavior have brought this about. Feminists, on the other hand, are more inclined to point to the substantial earnings gap that still exists, and to what extent external factors are responsible.

The scale of the remaining disparities may be observed in Table 4. It will be noted that in 1985 men with fewer than 8 years of schooling earned more than women high-school graduates; male high-school graduates earned more than women college graduates; and men with 1–3 years of college earned more than women with 1 or more years of postgraduate education.

2. *Causes of the Earnings Gap*

As suggested, there is much disagreement about the

causes of the continuing earnings differentials. The dispute is mainly between those who emphasize only the importance of differences in work-related characteristics, such as education, training, work experience, and job tenure, and those who ascribe a significant role to discrimination as an additional factor.

The importance of differences in human capital is beyond dispute. Indeed, there is broad agreement that such differences account for a substantial portion of the earnings gap. While there is no difference by gender in the number of years of schooling, even in the 1990s women tend to take different courses in secondary school, and to choose different majors in college. It is a well-documented fact that men have more experience and longer job tenure than women, and there is little doubt that they receive more on-the-job training. However, many important questions remain unresolved.

First, none of the numerous existing studies, even those that include information on a large number of variables, have succeeded in accounting for all of the disparities in earnings; often they explain little more than half of the differential, although evidence from the 1980s has improved on this figure (Blau and Beller 1988, Blau and Ferber 1987, Treiman and Hartmann 1981). The unexplained portion may be ascribed to real differences between men and women, say in talents, motivation, or energy expended, which are thought to influence productivity, even though they cannot be measured. For instance, Becker (1985) claims that because women do the bulk of housework they expend less energy per unit of time on their paid work. He does not, however, even attempt to provide any evidence to support this hypothesis, while Bielby and Bielby (1988) show that women actually report expending more effort on their jobs.

Alternatively, the cause may be discrimination resulting in reduced access to better paid jobs and promotions, and lower pay for work in women's occupations or for doing essentially the same work. The law requires equal pay for the same work. Nonetheless, wages for the same work frequently vary by industry and even by firm (Blau 1977). Also, there is a very high degree of gender segregation within individual establishments, as confirmed by Baron and Bielby (1984), who found that in 51 percent of 400 organizations, no men and women shared the same job title, while an additional 8 percent employed workers of only one sex. Such differences in job titles can obscure the fact that women and men may be performing substantially the same tasks.

One problem is that there is disagreement whether, and to what extent, differences in earnings by occupation are tainted by the tendency to devalue women's work. In general, wages are lower in female occupations, as illustrated in Table 5, and this is true even when such variables as years of education, training, and experience, as well as hours and weeks worked, are held constant. On the other hand, there may be differences in work environment, risks, stress, and so on, which are virtually impossible to measure.

A second difficulty is that when women and men make different career choices with respect to their education, the amount of time they plan to spend in the labor market, and the occupation they select, it is not clear to what extent these decisions are themselves influenced by existing discrimination, whether in society, because tradition dictates traditional choices, or in the labor market, where lesser opportunities offer lesser incentives.

3. *Can Discrimination Persist?*

Becker (1957) was the first to develop a formal theory which ascribed discrimination to tastes of employers, employees, and customers. This theory was first developed in reference to race alone, but it became clear that it could be readily applied to gender as well. In the version that involves employers, they are expected to indulge such tastes at the expense of sacrificing profits. Not surprisingly, this conjecture was challenged on the grounds that, in a competitive market, discriminating employers would not be able to hold their own against more efficient producers who hired workers on merit alone (see Arrow 1973, Cain 1986 among others). This difficulty is, however, circumvented by other versions of the theory.

One such explanation is that, rather than disliking members of what may be termed the "out group," employers derive positive satisfaction from discriminating in favor of the "in group." In this case, they may be willing to settle for lower profits in the long run, and may refuse offers to buy them out at a favorable price (Goldberg 1982). Alternatively, it has been suggested that smooth social relations are very important for the efficient functioning of an enterprise, and are often difficult to achieve among a diverse labor force (Bergmann and Darity 1981).

Another related hypothesis is based on the propensity to discriminate among workers themselves. In this case, the employer either has no choice but to refuse to hire members of the out group, or to compensate workers in the majority group for having to associate with them. To the extent that all employers face the same situation and are unable to run their business solely with members of the out group, no single employer will be at a competitive disadvantage. This is generally likely to be the case because experienced workers would be needed, if only to train the newcomers. Alternatively, loss of efficiency may offset what is gained by paying lower wages. This could be one explanation for the somewhat puzzling phenomenon of gender- or race-segregated enterprises. As for the workers who practice discrimination, far from incurring costs, they will either gain directly in the form of higher wages, or

Table 5
United States: Median weekly earnings of women full-time wage and salary workers in selected detailed occupations

	Total number (thousands)	Percent women	Earnings ($)
Professions			
Engineers	1,719	7.0	723
Natural scientists	356	22.8	635
Physicians	254	25.2	714
Lawyers	366	25.7	914
Operations and systems researchers and analysts	208	37.5	675
Teachers (elementary)	1,264	84.4	481
Teachers (special ed.)	222	84.7	489
Librarians	146	84.9	476
Registered nurses	1,075	92.7	516
Technical occupations			
Engineers and related technologists and technicians	854	18.6	479
Health technologists and technicians	909	79.0	367
Sales occupations			
Sales representatives (commodities except retail)	1,302	18.0	539
Sales workers, retail and personal services	2,683	58.8	229
Sales workers (apparel)	166	78.9	207
Administrative support (including clerical)			
Mail and message distribution	776	33.6	463
Secretaries, stenographers, and typists	3,842	98.4	310
Service workers			
Protective services	1,747	11.7	417
Health service occupations	1,438	87.6	236
Operators and fabricators			
Metal work and plastic work machine operators	438	17.8	382
Typesetters and compositors	50	66.0	328
Textile, apparel, and furniture machine operators	1,160	79.4	206
Laborers			
Handlers, equipment cleaners, helpers, and laborers	3,505	16.8	277
Hand packers and packagers	249	60.6	256

Source: US Department of Labor 1989 *Handbook of Labor Statistics*

indirectly, by facing less competition for their jobs. Thus, earnings differentials and/or employment segregation must be expected to result, and can be expected to continue in the long run.

A third possibility is that customers may tend to discriminate. If they are willing to pay a higher price to indulge this taste, once again employers can afford to hire only members of the preferred group at higher wages, even in the long run, while other employers may hire members of the out group, as long as enough customers are willing to take advantage of the lower prices they can offer.

When "taste discrimination" in any of these forms results in exclusion of members of the out group from some occupations, industries, or enterprises, the result will be a greater supply of workers available to the remainder of the economy, causing "overcrowding" and lower wages (Bergmann 1974). This does not constitute an independent explanation of discrimination, but does shed additional light on how occupational segregation and wage differentials interact.

A different explanation for persistent discrimination does not rely on capricious preferences, but

211

assumes knowledge on the part of employers that members of the preferred group of workers are, on average, more productive, although they are unable to predict accurately the productivity of individual workers. This is termed "statistical discrimination" (Phelps 1972, Arrow 1973, Aigner and Cain 1977, Borjas and Goldberg 1978).

When such behavior is based on sound information, it enables firms to maximize profits rather than interfering with this goal, and perhaps should not be considered discriminatory, even though the outcome may be unfair to individuals. Problems arise, however, when employers' decisions are based on popular beliefs rather than accurate knowledge or, more frequently, when they rely on information about past behavior that in times of rapid change is no longer relevant. In such instances, the consequences are particularly serious because of potential feedback effects (Arrow 1973). A good example of this is when women are not hired for jobs that have the potential for upward mobility because in earlier times they were unlikely to remain in the labor force, and then drop out because they do not have jobs making it worth their while to continue working.

Finally, there is "monopsony discrimination." This theory is based on the assumption that employers, in an effort to maximize profits, take advantage of any existing differences in the elasticity of supply of labor. Wages will be lower for the workers less likely to be influenced by changes in pay. More precisely, when marginal outlay and marginal revenue product are equated for each group, wages will be lower for the one with the less elastic supply of labor. Not only can such discrimination persist, but those who practice it would have a competitive advantage and could gain at the expense of other firms. The limitation on this explanation is that the labor supply of women is not necessarily less elastic than that of men, although this may be the case in local labor markets, because women are less likely to move to further their own careers. Moreover, there is legislation that may inhibit such practices.

4. *Policy Issues*

Econometric studies have been unable to resolve the question of the existence of discrimination. Therefore, other relevant information is worth considering. A good deal of direct proof of discriminatory attitudes has been accumulated, mainly by social scientists other than economists.

Evidence has come to light that identical résumés are viewed differently when male and female names are used (Fidell 1970, Riach and Rich 1987). Kanter (1977) discovered that "identifiable outsiders," especially when their numbers are small, are treated very differently in the workplace from members of the majority. Ferber (1986, 1988) showed that researchers are more likely to cite authors of the same sex. One study even disclosed that retail dealers charge far lower prices for cars to Whites than Blacks, and to men than women (Ayres 1991). In addition, employers have been found guilty of discrimination in a great many court cases, even though they had the opportunity to provide testimony about unmeasurable characteristics of workers of the sort not generally accessible to researchers. Thus it is apparent that discrimination poses a real problem.

If remedies are to be found for the pay gap, it is not sufficient to establish that there is some discrimination. It is important to discover the main factors that are responsible for the large earnings differentials.

Considerable light is shed on this subject by Blau and Kahn (1992), who used micro data on nine industrialized countries (Australia, Austria, the Federal Republic of Germany, Hungary, Norway, Sweden, Switzerland and the United Kingdom, in addition to the United States) to analyze differences in the earnings gap which, as has been demonstrated above, is relatively large in the United States. They identified the following four elements within this gap, and determined the effect of each in the various countries:

(a) differences in observed characteristics,

(b) differences in the prices associated with these characteristics,

(c) unobserved characteristics and/or discrimination, and

(d) the overall level of wage equality.

The results of this study indicate that women in the United States had a relatively high level of measured characteristics related to productivity, as well as a high level of unmeasured characteristics and/or were subject to relatively little discrimination. The cause of the comparatively large earnings gap in the United States appears to be a very high degree of wage inequality, and one particularly unfavorable to workers with less than average levels of market skills. The inequality in earnings is further aggravated by the even greater disparity in benefits provided by employers, mainly contributions to social insurance and private pension, health and welfare funds. Such benefits constitute a substantial part of the package of rewards that employees receive, amounting to 28 percent of total compensation, including pay for time not worked (Ferber et al. 1991 p. 89).

The findings above suggest that a large part of the problem in the United States lies in the unusually decentralized wage-setting institutions, together with the particular nature and weakness of labor unions. Assuming these conditions are unlikely to change, the chief hope for further progress in reducing the

212

earnings gap is likely to be continued growth in women's productivity-related skills and labor-force commitment. Although Blau and Kahn (1992) do not address the earnings gap by race and ethnicity, there is even more reason to assume that their conclusion applies to these groups, because they tend to have less education, and education of poorer quality. It must be recognized, however, that as long as women have primary responsibility for children, other family members in need of care, and the household, such progress will not be easy. Hence policies to help people to combine jobs and homemaking successfully would be particularly advantageous. For instance, employers could be urged or required to offer family leave, more nearly equal terms for part-time workers, flextime, flexible benefits, and assistance with child and elder care (Ferber et al. 1991). Such policies might even encourage men to take on a larger share of homemaking chores.

As long as there is widespread occupational segregation, equal opportunity legislation and affirmative action are also likely to be helpful in further opening up traditionally male fields to women, and equal pay for comparable work would raise the earnings of the large numbers of women who continue to be concentrated in predominantly female occupations.

All of these approaches have been used to a greater or lesser extent, with some degree of success. Even without further progress in introducing and enforcing such policies, it is likely that the earnings gap will continue to decline slowly as women prepare themselves for spending more years in the labor market, get more training, and acquire more work experience. At the present pace, it will, however, be a very long time before the gender differential in earnings becomes so small that women who support families will no longer constitute the bulk of the population living below the poverty line in the United States.

See also: Sex Equity: Assumptions and Strategies; Gender and Education; Education and Earnings

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213