

Race, Gender, and the Role of Education in Earnings Inequality: An Introduction

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Abstract—This article serves as an introduction to an issue of the *Economics of Education Review* devoted to research on the role of education in explaining economic inequality among different ethnic/race and gender groups in national labor markets. The article admits that the broad nature of this topic implies that the research presented here is only a small sampling of the work being done worldwide. It argues nevertheless that these seven articles go beyond most in not only attempting to understand why individuals of certain ethnicities earn less or more than individuals from other groups and why men almost universally earn more than women, but in explaining *why such ethnic and gender inequalities change over time*, and what the role of educational inequality may have to do with these changes. The main contribution of the pieces, therefore, is in presenting alternative models and empirical data testing them for analyzing changing ethnic/gender inequalities worldwide. The articles cover Hong Kong, Israel, Peru, the Republic of Korea and the United States. [JEL I21, J35] Copyright © 1996 Elsevier Science Ltd

THIS ISSUE of the *Economics of Education Review* is devoted to research on the role of education in explaining economic inequality among different ethnic/race and gender groups in national labor markets. The very nature of the topic implies that the research presented here is only a small sampling of the work being done worldwide. Nevertheless, these seven articles go beyond most in not only attempting to understand why individuals of certain ethnicities earn less or more than individuals from other groups and why men almost universally earn more than women, but in explaining *why such ethnic and gender inequalities change over time*, and what the role of educational inequality may have to do with these changes.

Economists' interest in the possible effects of race and gender on the price of labor is relatively recent, essentially beginning with Gunnar Myrdal's classic work on discrimination against Negroes, *An American Dilemma* (Myrdal, 1944). Even then, however, it was not for another decade that the topic got serious attention again, this time from Gary Becker (1957). Like Myrdal, Becker tried to explain the workings of discrimination in markets but, rather than in the framework of Myrdal's more historical-sociological

approach, purely in terms of market behavior. Becker argued that it was possible for race-based wage differences to exist between workers in otherwise competitive markets if there was a "taste" for discrimination either among employers, employees, consumers, or all three. Such taste for discrimination by a group with more physical capital against a group with less physical capital "crowded" the discriminated-against group into a more limited number of jobs paying lower wages. Under the "taste for discrimination" model, firms would tend to hire workers from only one group or the other (complete segregation), which seemed in the early 1950s to be the case empirically for blacks and whites, even in northern cities such as Chicago (Becker, 1957).

Economic research on male-female differences in the labor market emerged somewhat later than the racial inequality literature (although Thorstein Veblen had quite a lot to say about women's work and wages in *The Theory of the Leisure Class* (see Veblen, 1973; Ardzooni, 1964) and has focused more on gender-based occupational segregation (see, for example, Blau, 1977; Treiman and Hartmann, 1981; Bergmann, 1986). It also was centered in the United States, and that gave it a particular tone, since educational differ-

ences between men and women in advanced industrial countries tended to be much smaller than elsewhere in the world.

With the development of human capital theory in the late 1950s and early 1960s, the focus of analyzing wage inequality shifted to educational differentials among groups and differing pay-offs to educational investment. The human capital model characterizes individual earnings as a function of education and experience in the labor force. Its premise is that earnings of various groups are explained largely by their average education, training and experience (see, for example, Welch, 1973; Raisin *et al.*, 1988). This still leaves the issue of why average education (or quality of education) and labor market experience differ among different groups. Is the difference voluntary, or the result of discrimination in the supply of educational services and access to "valuable" market experience? But this issue aside, if the human capital model is a correct representation of the market for labor, race, ethnicity and gender play no significant role once the human capital of individuals is controlled for; that is, the coefficients of education/training and labor market experience in the earnings function should be equal for all ethnic/gender groups.

Other models are more elaborate, including the possibility that earnings for different groups vary because of employment in different industries (with significantly lower or higher pay), in public versus private employment, in different parts of the country (Carnoy *et al.*, 1976; Farley, 1986), in jobs that have lower value because they are considered "women's jobs" (Hartmann, 1988), and because of differences in civil status, or in native versus foreign parentage (Bean and Tienda, 1987; Carnoy *et al.*, 1990). Time worked per week or per year is also an important possible factor in affecting earnings differences, since some groups may have higher average levels of involuntary unemployment and part-time employment than others (Chiswick and Mincer, 1972). As more empirical studies were carried out in the United States, it was evident that the returns to education were not equal among race and gender groups (see Welch, 1973; Hartmann, 1988). Some economists defined discrimination as the differential return to educational investment – for women and college-educated black men, particularly through occupational segregation (see, for example, Michaelson, 1969; Freeman, 1973; Freeman, 1976; Hanushek, 1981; Reich, 1982; Reskin, 1984; Bergmann, 1986). They were also able

to get at the explanation for wage inequality by analyzing why relative wages between groups changed over time, and in explaining differential investment in education by these various groups (for example, Freeman, 1976). But by the early 1980s, the existence of race or gender discrimination (differential returns to human capital investment) as a factor in explaining differences in the return to educational investment was contested in favor of (for blacks) differences in the quality of the investment or temporary disequilibria (Smith and Welch, 1989), and for women, in favor of their past *preference* to mix career with child care, hence acquire less and lower quality labor market experience, and their preference for certain kinds of work (Raisin *et al.*, 1988; Polachek and Siebert, 1993). The underlying issue in this controversy is whether, at one extreme, the lower wages paid to some racial groups reflect their lower ability and quality of schooling — "unmeasured skills" — differences (Juhn *et al.*, 1991; Herrnstein and Murray, 1994) and to women, their lower career motivation, or whether the lower wages of, for example, blacks and women reflect labor market/social discrimination (for reviews of the controversy see Donohue and Heckman, 1991; Magnum and Philips, 1988; Carnoy, 1994).

A number of important points regarding education and relative wages emerge from the discussion. First, there are important and persistent ethnic/race/gender differences in earnings, both in the U.S. labor market and in other countries. Second, measured differences in formal education among race/ethnic groups and, in many countries, between men and women, still explain part of earnings differences. Third, unmeasured investment in education in the family before children enter school and while they attend school is still surely a factor in explaining income variation for individuals with the same amount of schooling but of different race (particularly when race is also more highly correlated with social class) and gender (particularly in societies where girls' worth to the family is much lower than boys'). Fourth, the quality of formal education, especially in the case of race, seems to explain part of the earnings differences between race groups (Card and Krueger, 1992a; Card and Krueger, 1992b). Fifth, although family status, race, gender, and the quality of education continue to explain a significant amount of income variance, such sources of inequality can and do change over time (Carnoy, 1994).

The articles in this issue of the *Review* focus on

further explorations of these issues, specifically on understanding changes in the inequality of education and earnings between men and women, and between disadvantaged and advantaged groups. The papers are especially interesting on three grounds: they employ a variety of useful methodologies to get at the issues of why different groups may take more or less education and why their earnings differ even with the same level of education; and they provide important insights into the factors that influence wage structures in a variety of economies around the world.

CHANGING RELATIVE EDUCATION AND INTERGROUP INEQUALITY

The human capital model predicts that the main factor explaining changes in the relative earnings of different groups in society is the change in the relative level of education among the groups. All the papers in the collection begin with this hypothesis, and the empirical results suggest that this is at least partially true.

One way of assessing the impact of education on a group's earnings over time is to analyze a cross-section sample by age group (birth cohorts), with the results for younger workers serving to represent more recent effects and results for older workers representing effects in the past. Elizabeth King's paper uses a detailed survey of adult women in Peru, 20–59 years old, to estimate the impact that a rapid expansion of women's education in the 1950s and 1960s, both in absolute terms and relative to men, had on variance of access to education among women, and the effect that more education had on women's earnings. King finds that the effect of parents' education on women's school attainment has declined in younger age cohorts, suggesting that the educational expansion policies have reduced differential access to education among girls from higher and lower social classes. She also finds that primary school inputs have a larger effect in younger cohorts, implying that once in school, girls' educational attainment is increasingly differentiated by access to textbooks, number of grades offered, and the number of teachers in the school. But the results of her study suggest that, although education had a positive effect on earnings in every age cohort, younger cohorts had a lower return to their investment in education than did older cohorts. This "dilution" effect suggests that increased education in Peru produced women with better opportunities in the labor market, but also a lower

return on their increased education than women had in the past.

Using a different methodology, Yue-Ping Chung finds a similar pattern, in this case for women's *relative* wages in Hong Kong in the period 1976–1991. As in Peru (but from a much higher starting point than in Peru), the average level of education of women in Hong Kong increased rapidly in both absolute terms and relative to men's education. Simultaneously, young (15–26 years old) women's earnings increased relative to men's by 13 percentage points in this period, from an average of 83–96% of men's earnings. Chung asks whether this increase is due primarily to changes in the return to women's education and the structure of wages in jobs held by women, or whether it is due to the change in the amount of educational attainment relative to men and the percentage of women working in higher paying jobs, especially jobs in the public sector, where women are paid comparatively more. Like King, he finds that the gains in educational attainment had a large and positive effect on women's earnings, and that this was the main explanation for women's earnings rising relative to men's. But also like King, Chung finds that part of this gain relative to men was "diluted" by a fall in the return to women's education relative to the return to men's education.

But the story on gender differences in earnings in the Republic of Korea (ROK) is somewhat different. Using a more elaborate version of the "disaggregation" methodology described in the piece by Chung, Young-Sook Nam shows that in the same period, 1976–1991, women's education and earnings in the ROK rose in absolute terms and significantly relative to men. Furthermore, as in the Peruvian and Hong Kong studies, education is an important predictor of Korean women's pay and contributes positively to the decline in the ratio of men's to women's earnings. And also as in Peru and Hong Kong, part of the positive impact of relative increases in women's education is "diluted" by a decline in the return to investment in education by women over time. But Nam's results suggest that neither the increase in women's educational attainment nor the dilution effect were very large compared to the single most important explanation for women's earnings gains during this period, concentrated in its last five years (1986–1991): a significant decline in overall income inequality in the ROK after 1986. This equalization of income distribution was mainly due to a government incomes policy that held down the wages paid to

highly educated cadres and increased minimum wages. The effect was especially important for women, a group whose incomes are concentrated at the lower end of the distribution. Proportionately, their earnings were lifted much more than men's.

My paper on race earnings differences in the United States, which covers a much longer period than either Chung or Nam, is able to draw a more elaborate set of conclusions about why race earnings inequalities exist and why they change over time. Analyzing the 50 years, 1939–1989, dividing that period roughly into decades, and using the same disaggregation methodology, I find that over the whole period, the earnings of black men and women rose substantially compared to whites, but that the rise was concentrated in 1939–1949 (probably 1939 to the early 1950s) and the mid 1960s to the late 1970s. The explanation for equalization in the first period was different from that of the second period. In the 1940s, I argue, incomes of blacks relative to whites increased primarily because of a general “wage compression” in that decade—a compression similar to that found by Nam in Korea in 1986–1991—which lifted wages of the lower educated substantially relative to the higher educated. In the late 1960s and 1970s, however, incomes of blacks increased compared to whites primarily because of policies that reduced racial differences in the return to educational investment. In both periods, the relative educational attainment of blacks rose relative to whites, but this was not the main influence on the reduction of income inequality. Significantly, some of the blacks' largest relative gain in education occurred in the 1950s, with no relative gain in income. Along with Nam, then, I conclude that over a long period of relative educational gain for an “income disadvantaged” group, reducing inequality of educational attainment is usually not enough to have a significant effect on reducing its income disadvantage. Neither, I show, is the differential quality of education argument for explaining the offset to greater equality of attainment a convincing one. Public policies play an important role in changing labor market conditions (“tastes” in Becker's terminology) that produce lower earnings for such groups.

The Carnoy and Gong piece focuses on the 1980s and a local labor market (the San Francisco Bay Area) to analyze how one group, Anglo women, made large gains compared to Anglo men during this period, while other groups—specifically, Asian men and Latino men and women—lost ground. The empirical

analysis of these changes shows that relative increases in education explain some of these changes but are not a major factor. Rather, the gains by Anglo women were primarily the result of major shifts by traditionally gender-segregated manufacturing industries, especially the electronics industry, in the hiring of women into managerial and professional jobs. Minority men and less educated (Latino) women lost ground mainly because the average returns to their high school education fell compared to the returns to college education earned by Anglo men and women and Asian women. Only part of this decline in relative return, however, was due to the general increase in demand for higher educated over lower educated labor. Part was also due to a relative decline in return to higher education for Asian and Latino men. The implication of this pattern of changing demand is that employers “discovered” the possibility of hiring lower-earning, highly educated Anglo (and, to a lesser extent, Asian) women into management and professional jobs in industries that had previously had a distinct preference for men in those jobs.

In Israel, the labor market for two disadvantaged groups—Israeli Arabs and Israeli Jews originating in Arab Countries (ISAA)—is complicated by the existence of two major sets of employers, Jews and Arabs, with less taste for employing workers from the other group.¹ Ruth Klinov analyzes the impact of this demand structure as well as of the supply of the quantity and quality of schooling on educational enrollment patterns of Arabs and ISAA's compared to the most affluent and highest educated group, Jews originating in European countries. She finds a close correspondence between rates of return to different levels of education for these groups, resulting in part from the differential demand structure for Arab and Jewish skills in the Arab and Jewish labor markets, and their enrollment patterns. Specifically, Israeli Arabs are more likely to invest in higher education than ISAA's once they finish secondary school, but Arabs are less likely to take secondary education because of lower rates of return for them at that level. Again, Klinov's results have important implications for understanding the possible limitations that labor markets place on equalizing opportunity for disadvantaged groups purely through educational policy. Although she also finds that educational supply factors (and rising household incomes) play a significant role in changing enrollment rates over time, her analysis suggests that labor market conditions have a

major influence on how much education (and what kind of education) disadvantaged groups will take.

The final paper in the collection, by Susan McElroy, studies the effect that child-bearing patterns, race, and social class have on women's educational attainment in the United States. McElroy uses yet a different methodology from those in the previous articles. She employs regression analysis, but on longitudinal data, that follows 1980 high school sophomores for six years. Such longitudinal data have the advantage of tracing the educational attainment histories of individuals whose socioeconomic characteristics, school performance, and type of school are recorded while they are in school. McElroy finds that although young black women have a much higher incidence bearing children before age 18 than do young white women, the impact of early birth has a much smaller effect on blacks' high school completion, but a larger effect for blacks on college attendance and completion than for whites. Indeed, having a child at all in a woman's teens or early 20s has a large effect on college attendance and completion for both blacks and whites, as do better performance on a reading test and socioeconomic background. Since all three of these variables are correlated, McElroy concludes that, by the 1980s, having children early had become much more associated with lower socioeconomic background and lower career aspirations for women, and hence was as much a reflection of lower motivation to attend four-year college as a causal factor in lowering college attendance. But for black women, coming from even lower-income family backgrounds than whites, the financial implications of having children early are more severe, and therefore the greater negative impact on attending and completing college. At the high school level, however, the greater frequency of early birth in the black community has resulted in school programs aimed to make it possible for young mothers to complete their degree (child care at schools, school inclusion policies for pregnant girls) much more acceptable than in the white community, especially in the traditional South, where many of these early births occur among whites.

SOME PRELIMINARY CONCLUSIONS

The common result of all the papers is that reforms increasing the supply of schooling to educationally

disadvantaged groups increase the probability that income differences between these groups and the advantaged will decline. As far as disadvantaged women's education is concerned, this includes programs that take account of the early child-bearing associated with lower socioeconomic backgrounds. But that said, the studies also suggest that equalizing access to equal quality education may not be enough to equalize opportunities in the labor market, and, in turn, labor market conditions can affect disadvantaged groups' willingness (and financial capacity) to take more and better available education. In countries such as Hong Kong, with relatively small gender differences in returns to education, an increase in women's education relative to men's has a larger effect on reducing gender income inequality than in countries such as Korea, where the differential return to education is much greater. Similar conclusions can be reached on matters of ethnic/race differences. Equalizing Latino-Anglo males' education in the U.S., for example, could have a greater effect on equalizing incomes than for blacks; the return to completing high school and college for younger Latinos is higher than for younger blacks. The increased supply of better schooling has influenced Arabs' educational attainment in Israel, but labor market conditions (lower rates of return to secondary education) still keep them educationally behind the next higher disadvantaged group, Israeli Jews from Arab countries.

Some of the papers suggest something more. Incomes of historically disadvantaged groups can be raised directly in two quite distinct ways: the overall income distribution can be "compressed," raising the incomes of lower-paid workers relative to higher paid workers; and employers' "tastes" can be changed by legislation or by the legitimization of changed hiring practices. The case of the electronics industry in Silicon Valley following the service sector (and a widening practice in the economy as a whole, as well as pressure from the feminist movement) in hiring women into professional and managerial positions is a good example.

NOTES

1. Early on, Becker (1957) specifically identified the possible effect of the distribution of capital among different race groups on relative wages of labor from those groups should taste for discrimination exist.

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