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Title: THE ECONOMIC IMPACT OF THE 1964 FAIR EMPLOYMENT PRACTICES ACT AND SUBSEQUENT EXECUTIVE ORDERS ON BLACK AMERICANS

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The economic status of the Black Americans has lagged far behind that of non-Black Americans in the last four centuries. The major reasons are manifested in (1) discrimination in employment practices by: employers, public and private employment agencies, labor organizations, and apprenticeship agencies; and (2) discrimination in distribution of factor inputs. To bring about economic equality the Presidents of the United States have issued various Executive Orders. Eight years ago the United States Congress enacted the Civil Rights Act of 1964 (Title VII of this Act is known as the Equal Employment Opportunity Title) and made it unlawful to discriminate in employment because of race, color, religion, sex, or national origin. The objective of this study is to examine the effects of the Civil Rights Act of 1964

and other Presidential Executive Orders on the related economic status of Black Americans.

To examine this question, an economic model was developed. In this model, employers are assumed to have a "taste for discrimination," which causes them to have two different market demand curves for Blacks and non-Blacks. In hiring Black workers, employers feel that they incur a cost in addition to the market wage. Therefore Black workers are paid lower wages than non-Black workers in order for employers to compensate their "psychic cost." In this imperfect market Black workers are not perfect substitutes for non-Black workers.

The enactment of the Fair Employment Practices laws (FEP) was, presumably, designed to encourage employers to regard Black workers as perfect substitutes for non-Black workers. Through causing employers "taste for discrimination" to disappear, it is expected that the demand curve for Black workers will shift to the right. The increase in demand would effect an increase in employment and wages for the Black Americans. On the other hand, negative effects could cause an increase in the wage rate and an increase in the unemployment rate. It is argued that the non-Black wage would remain the same, but, in the absence of eliminating the "taste for discrimination" the laws could result in an

increase in the unemployment rate of the non-Blacks.

The quantitative analysis was made by use of the census data in examining variables selected to measure economic status: viz., income, unemployment rates, and occupation distribution. In order to isolate the effects of the FEP laws on these variables, other variables were included, such as growth rate of Gross National Product and a dummy variable to test the impact of the war. Three statistical techniques were employed to evaluate the general overall economic progress of Blacks and the impact of the FEP laws. The statistical techniques are: least square regression analysis, analysis of variance, and information theory analysis technique.

The regression results of many coefficients were not statistically significant at the five percent level of significance. In one instance the FEP laws effect variable was significant at the ten percent level of significance, suggesting that there may exist a relationship between that variable and unemployment rates.

The statistical tests do not persuade one to conclude that the FEP laws have had significant impacts on the improvement of the economic status of the Black Americans. However, finding an expected sign on the estimated coefficients the FEP law effect variable suggests that the FEP laws, if more fully implemented, might lead to a reduction in unemployment and an increase in wage rate for

Black Americans as a result of a shift in the demand curve for Black labor.

The analysis of variance, revealed race itself to be dominantly significant as the cause of economic inequality of the two races. The racial entropy index distribution shows that the Blacks have made some progress in some occupations and have moved to better paying jobs. The descriptive analysis of the charges filed over the four year fiscal period, indicate that over 50 percent of the charges were directed to employers; and that the factor of race was very frequently given as the basis of the discrimination.

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"ASANTE"

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I. INTRODUCTION

> It is true that the ultimate solution will not be found in laws, but in the dark places of men's minds and hearts. But it is also true that laws are the manifestation of the national purpose, and when government is unwilling or unable to provide them, there is no standard to which the wise and just may repair.
>
> Harry Ashmore
> LOOK, July 16, 1963

For the last four hundred years there has been a gap between Black and non-Black Americans in income, employment, and occupational status. This gap had its roots in the institution of slavery. Many laws have been enacted and aimed at decreasing this gap, such as the Emancipation Proclamation, the Thirteenth Amendment, various Executive Orders from the Presidents of the United States, and the latest--the Civil Rights Law of 1964.

[1/] According to the 1960 census Black Americans account for 81% of all non-whites. The percentages of non-whites of the total U.S. population are: Black 10.51%; Mexican-American 0.98%; Indian 0.48%; Puerto Rican 0.17%; Japanese 0.26%; Chinese 0.13%; minor Asiatic races (Filipinos, Koreans, etc.) 0.14%.

Historically, the economic conditions of Black Americans, for analytical purposes, fall into three major periods: (1) the economic condition of the ante-bellum period; (2) the economic status of 1865-1950; (3) the economic political history of the period from 1950 to the present.[2/]

The economic status of the Blacks during the ante-bellum period was similar to that of physical capital, as discussed below. The Blacks were enslaved and brought from Africa as a source of labor power. Like any other factor of production--land, capital management--the intramarginal return earned belonged to the slave owners. The slaves worked in agricultural cotton farms in the South at a time when labor saving technology was not yet available to the farmers and there existed acute labor shortages. Whether the labor of the slaves was productive or unproductive is a question of the economics of slavery. The economic status of the Blacks did not rise although (and perhaps because of the fact that) the planters made money on

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2/ An excellent discussion of the economics of the slave system is found in Alfred Conrad and John R. Meyer, The Economics of Slavery (Chicago: Aldine Publishing Co., 1964), Chapter 3, Kenneth M. Stampp's The Peculiar Institution (New York: Alfred A. Knopf, 1963) contains a more qualitative description of slavery and its effects on southern institutions. The period between the Civil War and World War II is critically analyzed in Gunnar Myrdal, et al., An American Dilemma: The Negro and Modern Democracy (New York: Harper and Brother, Publishers, 1944).

their investment. Alfred H. Conrad and John R. Meyer (1964) constructed an economic model of Southern cotton plantations for the years 1830 to 1860 and then computed the return on the investment on the basis of a Keynesian capital-value formula. The returns varied from 2.2 percent on low yield cotton land to 13.0 percent on very fertile land. According to this study, the returns were good and made slavery productive and profitable for the white South during the ante-bellum Southern period. (Conrad and Meyer, 1964, p. 43-114). Genovese (1965), historian and economist, also showed that slavery was profitable to the Southern economy. In addition to the profits derived from slave labor, slave owners made profit by selling the surplus slaves who were born.

The slaves were denied all property, civil and legal rights. "A slave was in absolute bondage; he had no civil rights and could hold no property, except at the will and pleasure of his master." 3/ The slaves were allowed never to receive nor to exchange gifts; they could make no wills, nor could they inherit anything. Slaves were not permitted to hire themselves out or make contracts for any purpose. Slaves could buy or sell nothing at all, save as their

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3/ Opinion of Judge Crenshaw in Brandon, et al., vs. Planters' and Merchants' Bank of Huntsville, Stewart's Alabama Report, 320, January (1838) quoted in Goodwell, American Slave Code, p. 92.

master's agents: They could keep no cattle, horses, hogs or sheep. The masters who permitted such transactions, except under expressed arrangement, were informally liable to fines.[4/] "Slaves have no legal rights in things, real or personal; but whatever they may acquire, belongs in point of law, to their masters."[5/] The slave institutions barred slaves from acquiring any form of money income. The employers of slaves had absolute power over their workmen; slave labor could be combined with other factors of production in any way the employer desired. The operational cost of maintaining the slave was derived by keeping the slave in good health and optimum strength much the way a manufacturer would keep production machinery in good operational condition.

The questions revolving around the cost of slave maintenance reveal, in essence, two obvious economic alternatives: (1) if the maintenance cost was equal to the competitive wage then slavery as coercion was unnecessary; or, (2) if coercion was necessary it was because the slave was paid less than the marginal value product. Evidently, if slavery made economic sense at some stage the cost of food consumed by the slave was below the total wages that would be

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4/ Ibid., p. 89-104.

5/ Ibid., p. 88. A substantial number of Negroes, in fact bought their freedom in the ante-bellum South, but this required the full cooperation of the masters.

earned if the slave had to be paid a competitive wage. Thus, the food and shelter provided by the slave owner were scaled to keep the slave at the subsistence level.

Although agricultural technology in the United States and England was gradually developing, still, due to slave labor, Southern farmers did not have to modify their farming to keep pace with technological change. Yet, this had, finally, very serious effects. The low production characteristic of Southern agriculture was at last, no longer able to compete with Northern economy. As prices fell, the maintenance cost of slaves became more than the value of the original product. At this time, though slavery proved to be unprofitable, still the slave owners maintained the system. Although capital intensive technology became the basis for maximizing output per man-hour in the U.S., generally, Southerners could not adjust to this phenomenon. They refused to relinquish slavery and to undertake the economic reforms so vital to the acquisition of capital needed to purchase machinery manufactured outside the Southern region. According to Eugene D. Genovese (1965), as the nation approached the Civil War, slavery was no longer providing profit to slave owners. Slavery had evolved into an unprofitable pursuit but it did constitute an indispensible ingredient of the white Southern society and tradition.

Slavery and discrimination against Blacks have some similarities. Gary Becker (1957) has argued that the capitalist does not gain by

discrimination but practices it in order to maximize the economic welfare of the non-Black society (Becker, 1957, p. 13). Genovese (1965) argues that in the case of slavery:

> Aristocratic tradition and ideology intensified the South's attachment to economic backwardness. Paternalism and the habit of command made the slave-holders tough stock, determined to defend their Southern heritage. The more economically debilitating their way of life, the more they cling to it. It was this side of things--the political hegenomy and aristocratic ideology of the ruling class--rather than economic factors, that prevented the South from relinquishing slavery voluntarily. (Genovese, 1965, p. 34-35)

The Southerners maintained slavery, regardless of the economic costs, to maintain the Southern motif of the ruling class.

The Abolitionist movement, the Emancipation Proclamation and the Thirteenth Amendment to the U. S. Constitution legally set the slave free to search for paid employment. Yet, their mobility was externally limited, and most former slaves continued to live in the rural areas of the South. Due to the political, economical and psychological factors and the limited opportunities open to them, however, they actually had no choice save to remain, though free, in economic conditions resembling those under slavery. The psychological factors were many, such as fear, difficulty in believing that they were free "at last," lack of knowledge of what opportunity was open to them, no information about employment opportunities, and the knowledge that they were not equipped with labor skills to do any

type of work but farming.

Analogous to this is the situation of American farmers today. Farmers have remained on farms where their earnings are far below what they would make if they were employed outside farm economy. Some common reasons are given why some farmers have remained on the farms, including: (1) farming is the only way of life the farmers know; (2) competition for jobs would be imperfect due to uncertainty and the fact that farmers would need to learn new skills or trades in order to fit the urban labor market. In support of this, the Committee for Economic Development (CED) stated that "Resources, most importantly labor, do not flow freely out of agriculture at the rate necessary to avoid falling incomes."[6/] The situation for the freed Black was the same: life outside the rural South was uncertain and the labor market was imperfect for him.

In less developed nations, especially those which were under the British, the natives were trained to fit in the new economy by receiving limited education. In the case of the slaves in this country, however, there were no civic privileges of education. Every Southern state, except Maryland and Kentucky, had stringent laws forbidding anyone to teach slaves to read and write, and in some

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6/ Committee for Economic Development, An Adaptive Program for Agriculture, 1962.

states there were penalties for the education of free Black people. They felt that "teaching slaves to read and write tend to dissatisfaction in their minds and to produce insurrection and rebellion." 7/ Some slaves, of course, were trained for special functions in Southern economy, despite restrictive laws. The slave owner, after all, had full control of his slaves, so that the ablest slaves could be trained as skilled laborers on the plantations and in such occupations as blacksmiths, carpenters, masons, bricklayers, painters, shoemakers, harness makers, etc. Thus, some freed slaves were skilled.

For those freed slaves who did not have any skill, and even for those with skills, their labor was further exploited by the slave owners who possessed or controlled both the means of production, such as land, the instruments of labor, and the people engaged in production--the freed slaves. The slave owners paid the freed slaves wages which were far below their marginal revenue product. In competitive markets, where the wage is determined by market forces, the wage is equal to marginal revenue product, but for freed Blacks the employer determined the wage to pay since he had monopsonistic power in hiring slave labor. Such power was

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7/ Goodell, American Slave Code, p. 321, cited by Wesley (1967).

derived largely from lack of information covering employment opportunities elsewhere as discussed above.

This labor market, imperfect for freed Blacks, set the pattern for post-war discrimination. Beyond those factors which I have already mentioned, the imperfection of the economical market was intensified by Jim Crow laws which prevented freed Blacks from owning property such as land and, even more importantly, prevented the free competition for jobs. Further, the job competition was seriously increased by supply of immigrant labor, especially the Irish, who drove Blacks out of many common labor and personal service jobs. Frazier (1957) observed that in the South the politicians felt that

> the utilization of the slave labor in manufacture . . . before the Civil War brought to the surface the competition between the Negroes and the poor whites. There was agitation against the hiring out of slaves as competitors of white mechanics and artisans. In Georgia the white laboring class succeeded in getting the legislature to pass a law in 1845 prohibiting contracts with slave and free Negro mechanics. On the whole, however, the slave holders were able to prevent any serious restriction upon the employment of slaves in industrial occupations." (Frazier, 1957, p. 594)

In the Northern states, for example in New York City, the Democratic party, dominated by Irish and supported by Germans and other immigrant groups, opposed emancipation on the ground that thousands of Negroes would migrate to the North, increasing the competition for jobs and lowering the wage rates. The antislavery

movement neglected the more practical task of creating an economic future for the free Negro population in industry and free Negroes were gradually excluded from many occupations they had previously entered (Wesley, 1967, p. 83).

In the ante-bellum economy of the South, the major agricultural crops were cotton, rice, sugar, and tobacco. After the Civil War the major problem in production was how to produce the same crops by paid labor. The freed Black man had no inherited skill to raise him from the condition of slave labor to that of free labor. The practical experience gained by the slaves in the ante-bellum plantations, logically made the freed man want to acquire land. But ownership of land by freed men was made virtually impossible, despite such attempts at the land reform as the Freedman's Bureau Act in 1865 which was emasculated by the general amnesty from confiscation ordered by President Johnson; in 1867 another bill was introduced in the House, but this was ineffective.[8/]

8/ Excellent discussions regarding these land reforms can be found in The Confiscation of Property During the Civil War; LaWanda F. Cox, "Promise of Land for the Freedman," Mississippi Valley Historical Review, Vol. XLV, No. 3, Dec. 1958; Abbott Martin, "Free Land, Free Land and the Freedman's Bureau," Agricultural History, Vol. 30, No. 4 (Oct. 1956); Walter L. Fleming, "Forty Acres and Mule," North American Review, Vol. CLXXXIII, May, 1906.

The failure to institute a federal program for land reform gave the Blacks three alternatives: (1) to purchase the land; (2) to work for former slave owners for low wages; or (3) to migrate to the North. Migration to Northern cities was difficult, for obvious psychological, as well as for economic reasons, and was not as rapid as expected. Purchases of the land was impossible due to two major reasons: (1) few freed men had capital, a circumstance which has remained a major constraint on Blacks ever since; (2) non-Black people had monopoly power of the land and as such they were able to practice market discrimination in selling their land only to white people. Thus, even if the freed Blacks had some capital, it could have been difficult to purchase land.

The lack of land and capital forced the freed Black people to become sharecroppers, and, as a corollary, to submit themselves to the mercy of non-Black landlords who extracted a high percentage of what Black tenants produced on the land. The black freed men worked but did not own the land; the houses they lived in could not be theirs. By general rule of thumb, tenants had to give 40 percent of the crop to land owner. The remaining 60 percent they owed to the householder and supplier (often all three were the same) to pay off loans carrying exorbitant interest rates, and the debts they had incurred by buying food, clothing, and other necessities

through the credit store or the landlord's advance in credit against shares. This simply meant that the freed Black people were, in effect, still slaves and that non-Blacks owned their labor through the monopolistic power of controlling all factors of production.

The economic shift from the slave labor to priced labor created some major problems to employers in hiring freed Black workers. The employers had to get accustomed to the new economic system of hiring Black workers. Since the employers had a taste for slavery, it made it difficult for them to employ Blacks. The ones who did hire Blacks, did not honor employment contracts which spelled out the terms of employment such as wage rate and room and board. The employment contracts were originated by the Freedman's Bureau which was created to protect the welfare of the freed men. Charles A. Wesley (1967) stated that these contracts gave the freed men the opportunity to earn money under the wage system and although they were broken at times by the planters and the freed men, they served as the best aids in the transition from slave labor to free labor. (Wesley, 1967, p. 131). Some of the planters with a taste for discrimination drove the freed men from their plantations and this increased the number of unemployed. (Wesley, 1967, p. 118).

In addition to the taste for slavery, the following economic

factors aggravated the unemployment situation of the freed Black workers; (1) the price of cotton fell; (2) the labor was no longer entirely under the control of the employers, so to meet their demand for labor some wages and better working conditions than those during slavery had to be provided in order to bring forth a labor supply which was comparable to that which existed under slavery; (3) lack of loan capital. After the Civil War, due to fixed uncertainty and to destruction of the banking structure and credit system, the planters were not able to get money to meet their payrolls and were forced to postpone payment until crops were harvested. Their failure to meet the obligation of honoring the contract made the freed men distrust them and reluctant to renew their contracts.[9/] As a result of these three major and a number of lesser factors, the unemployment rate of the freed Black workers increased.

Freed men were expected to move to Northern cities in great numbers after the Civil War. During the first decade after the Civil War an estimated 68, 000 freed Blacks (net) left the South; in 1900-1910 the number rose only to 100, 000. The low volume

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9/ Dodge, J. R., "Report of the Statistician: in Frederic Walts, Commissioner, U.S. Department of Agriculture, Report of the Commissioner of Agriculture of the Operation of the Department for the year 1876 (Washington, Government Printing Office, 1877), p. 137. Cited by Whitelaw Reid, After: A Tour of the Southern States 1865-1866. (New York: Harper and Row, 1965) (Originally published in 1866.)

of migration flow to the North posed the question of whether the freed Blacks responded to the monetary incentives. Even today the majority of Blacks live in Southern states. In the Southern states the wages have been lower than those of the Northern states, so that the economic status of the Blacks has been far inferior to that of non-Blacks. Thus, we must ask, why so few Blacks migrated northward; which is to ask: What factors cause the people to migrate?

People migrate due to "pull" and "push" factors. The "push" factors are limited to social and economic opportunities at the place of origin. In the South, there was destruction of cotton by boll weevils and mechanization and industrialization in the rural South which worsened the agricultural opportunities for free Black people so that they had to migrate to Northern cities. The freed Blacks were wage earners and had no capital accumulation in the South due to oppressive laws, so low income of the Blacks was due to poor wages. The "pull" factors consist of those promised opportunities at the place of destination. The industrial expansion of the North created by World War I and the worsening economic position of the South combined to increase further migrations to the North. As a result of these forces, more than half a million Blacks left the South (net) during the decade 1910-1920. The same forces caused native whites and foreign-born to migrate to the

North. World War II had a similar impact on the migration of the Blacks and whites. Between 1940 and 1950 more than half a million Blacks left the South.

Historical accounts examined so far reveal that Blacks had great difficulty in acquiring stocks of marketable labor skills and capital as a result of the monopolistic policies pursued by non-Black owners of the factors of production--namely, capital, labor and land. This control caused the relative economic position of the Blacks to be inferior to that of the non-Black majority. The historical market imperfection in both formal and on the job education and the inability of Blacks to acquire capital created this inequality. But other factors were in operation. Arnold Rose remarked, for example, that:

> Increased use of white women in industry meant a new source of competition. It also raised a new block against employing Negroes because of the social equality issue. White women and Negroes cannot work together under the Southern Code. The Jim Crow legislation, enacted in the 1890's drew the color line even sharper and thus had great importance in the economic sphere. (Rose, 1956, p. 102)

In contrast to the imperfect labor marked described above, the perfect labor market is a hypothetical economy that fulfills certain strict conditions, among which the following are primary. Employers and employees are numerous; no single employer or employee can, by his own actions, influence market price. In

other words, employees and employers are assumed to have no taste for discrimination against the Black workers, and as such Black workers have equal chance of being hired and fired and receive equal wages and occupations as non-Black workers. Further, in a perfect market there exists free entry into the mobility within all occupations; all market participants (Black and non-Black workers) are fully informed about employment and goods produced by labor input are equal and non-differentiable.

As shown by Arnold Rose (1956), this type of market has never prevailed for Black workers. Jim Crow laws not only created a labor market which was primarily monopolistic vis-à-vis Black workers, they also caused capital investment in Black schools to be less than in non-Black schools, and as a result, produced conditions for inferior human capital. As a result of this, Black workers are employed in so-called "Negro jobs" which are the most difficult, physically, the poorest paid, the constitute the most undesirable positions in any occupational area--the unskilled or semi-skilled jobs. In addition to creating a monopolistic labor market and an inferior human capital product, Jim Crow laws also allowed for the development of trade unions controlled by non-Black workers, and, indeed, excluding Black workers. In most cases, the union members have complete control over who should be hired and fired and what job one should hold. Trade unions use

four basic methods to limit access to jobs for Blacks: (1) denial of membership to Blacks; (2) segregation of Blacks into separate auxiliary local unions; (3) restriction of Black entrance into apprenticeship training programs by craft unions; and (4) discrimination by untions when negotiating administering collective bargaining agreements.

All these policies are outlawed by FEP laws but are being covertly practiced by trade unions. The NAACP made a study entitled "Racism in Organized Labor--A Report of Five Years of the AFC-CIO" and noted that:

> Discriminatory racial practices by trade unions are not simply isolated or occasional expressions or local bias against colored workers, but rather, as the record indicates, a continuation of the institutionalized pattern of anti-Negro employment practices that is traditional in important sectors of the American economy. (Herbert Hill, 1968, p. 10)

Due to these limitations, the market for employment and job occupations, between the two races, has been imperfect.

There are two parts, then, to the question to be dealt with: one-half of the question is: How can the labor market and capital be modified from a monopolistic market to become a perfect market for all people; the other half of the question is: How can human material capital be transferred to the Blacks? A number of approaches to the solution to these problems is possible. For instance, it may be possible to alter the market structure in the

ways: (1) the government could fully enforce the fair employment laws by providing more manpower and authority to the agencies to enforce the FEP laws; by instituting severe fines to those employers and employees who fail to comply with FEP laws. These fines would become an added cost to them and as such it would not be profitable for them to discriminate; (2) people practicing discrimination should be educated in order to cure the germ of discrimination, and so create a favorable change in their taste for discrimination; (3) direct transfer of physical capital should be instituted by the Federal government.

Historically, when they were freed, the Black people did not own any physical capital such as land; the human capital they had was only good in agriculture and on farms. Thus, economically, they lagged far behind the non-Black people. This circumstance, too, could be corrected by government action. The government could give government land to the Blacks or make loans available to the Blacks to start businesses. Black business should be considered infant business and as such could be protected. The education of Blacks should be improved so that their human capital could make them potential competitors in the labor market. If all this could be done, the economic status of the Black people would definitely improve, since they would move further toward a more perfect market.

Something has already been accomplished to break down the monopoly in the employment market and to acquire factors of production, various forces have been employed. The Black Protest Movement, coupled with government legislation, attempted to affect the monopolistic preferential treatment given to non-Black people. Such organizations as the NAACP and the Urban League have called for active protest against segregation, discrimination and violence against Blacks. The NAACP has dealt with segregated schools, quality education for Blacks and civil laws, while the Urban League has addressed itself to improving conditions of the Blacks living in the cities by helping them to secure jobs and housing and to adjust to city life.

These movements have somewhat mitigated the imperfect market by causing the public and governmental agencies to take some actions to combat racial discrimination. For instance, the first march on Washington, D. C., planned by A. Phillip Randolph to protest racial discrimination in the defense department, made President Roosevelt issue, in 1941, the first Presidential Executive Order (8802) designed to combat discrimination. 10/

10/ Since 1941, many Executive Orders have been issued: in 1943, Executive Order 9346 required all government contracts to contain a clause pledging the contractors not to discriminate; Executive Order 8802 opened certain employment for Blacks during war shortage of labor; Executive Order 10479 issued by President Eisenhower established the President's Committee

This order demanded equal opportunity in jobs having government contracts. Among other Executive Orders, the most important were the following: John F. Kennedy issued Executive Order 10925 on March 6, 1961, which clearly invested the power to cancel or withhold government contracts to those firms which practiced employment discrimination against Black people. Finally, the Civil Rights Act of 1964 (Title VII) utterly prohibited racial discrimination in employment on the grounds of race, creed, color or national origin; and also created a commission to enforce this as the law of the land. The Fair Employment Practices Act of 1964 has three major policies, viz.:

1. Title VII of the Civil Rights Act of 1964 prohibits discrimination in employment. 11/
2. Executive Order 11246 bans discrimination and promotes equal opportunity on the part of employers who have contracts with the federal government. 12/

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on government contracts; in 1955 under Executive Order 10590 the President's committee was established to supervise the non-discrimination program in federal employment. The Kennedy and Johnson Administrations issued the strongest Executive Orders to ban discrimination in all forms of employment, education, housing and transportation.

11/ Public Law 88-352, 88th Congress, H. R. 7152, July 2, 1964. Title VII of the Civil Rights Act of 1964.

12/ Equal Employment Opportunity, Executive Order 11246, Washington: Government Printing Office, 1965.

3. A Federally aided employment service and job preparation program, with regard to equal employment opportunity, is included among their basic objectives.

In addition to Title VII of the Civil Rights Act of 1964, Title IV deals with the desegration of public education; Tible VI barred discrimination under programs or activities receiving Federal assistance.

By definition, the major purpose of these policies is to break down the monopolistic market of discrimination in employment, and to improve the Black human capital by increasing the opportunity to enlarge human capital by investment in education. If discrimination in employment is eliminated and Black human capital is improved, the Federal government hopes, the economic status of Blacks will be improved. "Civil Rights" laws, similarly, are aimed at affecting the behavior of the employers and employees towards Black workers. This would be done by an added cost to discriminating employers, employees and labor unions, such as cutting off federal contracts and the psychological cost (or non-monetary cost) of bad reputations. If the employers and employees minimize cost, it is expected that their taste for discrimination would change in favor of the Black workers. The favorable change for their taste for discrimination against Blacks would bring about a fair distribution of resources.

It could be theorized that if the FEP laws were effective in causing the employers and employees to change their preference toward Blacks, improve the Black human capital investment in Black schools and school desegregation, some economic impacts might be realized in the economic status of the Black people. This theory further assumes that Blacks would take advantage unilaterally of all the opportunities available to them. If these FEP laws were effective, then, the following might take place. First, the aggregate demand for Black labor force would increase relative to that of the non-Black labor force. This is possible because of the change in demand for Black workers as a consequence of favorable change in the taste for discrimination on the part of employers in hiring, and on the non-Black employees in letting Blacks join the labor unions. Many Black workers would come forward to participate in the new labor market. If, and only if, the Black labor supply is so large as to affect the aggregate total labor supply, the overall price of labor might be expected to decrease due to surplus labor supply. Secondly, the income of the Blacks should increase relative to non-Blacks' income due to the equalization of wage and Blacks being employed in better occupations. Thirdly, occupation distribution should improve; that is, many Blacks would be employed in the occupations which previously employed no (or few) Blacks and fair representation in many

occupations might occur. Fourth, the change in taste for discrimination might cause the non-Blacks to consider Blacks as good risk takers and more loans would be made available to the Blacks. This is one way of transferring physical capital to Blacks. If any of the conditions discussed above were to take place, the economic status of Blacks would definitely improve. The interest of this thesis is to examine the first three major anticipated impacts or effects of the FEP laws, and to determine how the experience of Blacks since 1964 in the economic market confirms or denies the anticipated effects of the changes in the position which, theoretically, might have been expected to occur.

Scope and Methodology

This study utilizes the existing microeconomic theory of discrimination. The theory as expounded by Becker (1957), treats the two races as two countries in the international trade, one of the countries (non-Black) capable of imposing tariff on their goods. By Enactment of the FEP laws to remove the tariff on trade, the volume of trade is expected to increase in favor of both countries. In terms of the Blacks this means that by increasing trade more Blacks would be hired and they would receive pay equal to that of the non-Black co-workers.

The objective of this thesis, then, is to examine the effects of

the FEP laws on the relative economic status of Black Americans.

Has there been any change in the relative economic status? In order to be able to answer this and other questions quantitatively, data for income, unemployment rate, and the occupational distribution have to be statistically analyzed in the periods occurring before the law as well as after the law. If there has been any change in the relative economic position of the Blacks, how much of this is attributable to FEP laws? Are there other variables which could be responsible for the change, such as the war in Vietnam or economic growth?

The plan of this thesis is as follows: Chapter II deals with Becker's (1957) theoretical model of Economics of Discrimination. The model developed by Becker (1957) is examined. The first section of the chapter is devoted to the model of wage determination in a perfectly competitive market; the second part discusses the free trade model of two independent sectors trading labor and capital. A racist disutility is introduced into the model in the form of the "taste for discrimination" in the labor market. This taste causes the Black labor to be paid less than its marginal product. Imperfection of the market in the international free trade model is created by the imposition of a trade barrier--a tariff-- by the non-Black sector.

The economic inputs of the FEP laws is expected to increase demand curve of the Black workers as a result of which wage and employment would increase to equal that of non-Black workers.

Chapter III is a detailed analysis of the Fair Employment Practices Act (FEP) and Executive Orders. The FEP Act is designed to combat the market imperfection. What impact would FEP laws have on the economic status of the Blacks? Other factors will be examined which might be responsible for bringing forth the economic improvement. Descriptive analysis of data is used to examine the value of the FEP laws.

Chapter IV develops a statistical model for testing the hypothesis. The ratio of Black income to that of non-Blacks is regressed on variables such as the growth rate of national income, the unemployment rate of Blacks and non-Blacks, the war dummy variable (the Korean War and the Vietnam War), a time trend variable, and an FEP dummy variable. The objective here is to obtain the measure of the degree of association or correlation that exists between variables, that is, to which, if any, independent variables are statistically significant in "explaining" change of the economic position of Black Americans. An analysis of the occupational pattern is used to determine to what degree changes in Black occupational participation have taken place. Analysis of variance and information theory techniques are used to see

the economic impacts of FEP on the Black Americans. The analysis of variance is used to examine the interaction between variables such as race, age, occupation and median income.

In Chapter V information theory is used to calculate Theil's (1961) inequality coefficient which provides a measure of the degree of occupation distribution. The conclusion and the summary are included in Chapter VI.

II. BECKER'S MICROECONOMIC ANALYSIS OF RACIAL DISCRIMINATION AND ITS IMPLICATIONS FOR THE FEP LAWS

> Herein lie buried many things which if read with patience may show the strange meaning of the being black here at the dawning of the Twentieth Century. This meaning is not without interest to you, Gentle Reader, for the problem of the Twentieth Century is the problem of the color line--the relation of the darker to the lighter races of men in Asia and Africa, in America and the islands of the Seas.
>
> W. E. B. DuBois
> The Souls of Black Folk

Introduction

In 1903 DuBois felt that "the problem of the Twentieth Century is the problem of the color line--the relation of the darker to the lighter races of the men in Asia and Africa, in America and the islands of the seas." Sixty-four years later, the Kerner Report on Civil Disorders, ordered by President Johnson to investigate the turmoil of the summer of 1967, reached the basic conclusion that "our nation is moving toward two societies, one black, one white, separate and unequal." 13/ As shown in Chapter I, the two races have never participated equally in the American economy. The non-Black race has been in the dominant position; it has exercised its

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13/ Kerner, Otto, U. S. Riot Commission Report: Report of the National Advisory Commission on Civil Disorders (New York, Times Company, 1968), p. 1.

monopolistic and monopsonistic power over the labor market structure, and the accumulation of capital--both physical and human. By so doing it has caused the two societies to be separate and unequal.

The non-Black race plays a major role in creating market imperfection in the following manner. On the one hand, the non-Black employer has the power to hire and to fire. His utility for labor power differs along the color line. The employer prefers his own race over the Black race. In so doing the employer is said by Becker (1957) to have a "taste for discrimination," since his employment practices are not random in terms of race. On the other hand, the non-Black employees control the supply side of the labor market by the formation of the labor unions or the refusal to work with Black workers. Thus, the non-Black employees are also said to have a "taste for discrimination" against the Black workers. Similarly, the same tendency can be detected in many educational facilities which are controlled by the non-Black race. In essence, then, the "taste for discrimination" held by the non-Black race creates the market imperfection. As a result, non-Black workers are compensated more than Black workers performing the same jobs; non-Black workers enjoy the privilege of having stable and well paying jobs; and they receive preferential treatment in hiring and firing, and the advantages of prerequisite education. The FEP laws are intended to affect gradually the "taste for discrimination"

so that the Black workers will enjoy the same privileges as the non-Black workers.

Becker's Model of the Economics of Discrimination

Professor Gary Becker (1957) of Columbia University was the first economist to apply economic theory to explain market discrimination against Black workers. Since the development of Becker's (1957) seminal theoretical framework in The Economics of Discrimination, many economists have paid much attention to the study of the relative differentials in the economic status of the Blacks and non-Blacks.

Becker's (1957) theoretical model is wholly developed on the assumption that except for the "taste for discrimination" the labor market is a purely competitive marked made up of two societal races. As such, each society is free to trade with each other. Of the two societies, one is Black with a relatively abundant labor factor, the other is non-Black with capital input as its abundant factor. The model is developed from two angles, namely: (1) the price theory of labor in a pure competitive market of labor and (2) the international trade model in which each society would freely export its product with high comparative advantage, until the marginal products of the factors were equal in both societies.

Black would export labor and non-Black would export capital.

Labor Market Structure

Becker's (1957) model assumes that labor is homogeneous, that is, that Black labor input is perfectly substitutable for a non-Black labor input in the sense that it is able to produce the same amount of goods with the same amount of labor. Operating in perfect competition, any labor input performing the same job and producing the same marginal product should receive the same price (or wage).

In practice, however, we live in an imperfect market. To explain the imperfect market Becker (1957) considers the reality of the non-Black "taste for discrimination" against Black workers. The association with Black workers causes disutility to both non-Black employers and employees. The employer's taste for discrimination means that he will be reluctant to employ Black workers and non-Black workers without preference to the latter. When he does employ Black workers a further imbalance is likely to occur. The living of Black workers precipitates an added cost to his production function, since the non-Black employees feel that for them to work with Black workers some form of compensation should be paid, either through higher wages than those of Black workers performing the same job; or through mobility into better occupations with higher wages or better working conditions and more job security than those

which Black workers can anticipate. The employer handles the situation by either "undercompensating" the Black worker or by "overcompensating" the non-Black workers to induce them to work with the Black workers.

This real situation, of course, contrasts to the theoretical model of the homogeneity of labor and labor product. With the assumptions that labor is homogeneous and no production differentiation exists, there would be no way that the consumers could prefer another product over the product being produced by Black labor power. In this theoretical model, the labor market is perfect so that the employer hires workers at random. Since, in this theoretical model the labor force is homogeneous, the marginal physical product (MPP) is the same for Black and non-Black workers. The classical criterion for income maximization for the factors of production requires that workers should be paid the value of their marginal products. Symbolically:

$$W_b = MPP \cdot P_x \qquad (2.1)$$

$$W_{nb} = MPP \cdot P_x \qquad (2.2)$$

Where W_b and W_{nb} are money wages for Black and non-Black labor input, respectively, and P_x is the price of the product. Therefore, since the Black labor input is a perfect substitute of the non-Black labor input, in a pure competition market, their wages are equal. Thus:

$$W_b = W_{nb} \qquad (2.3)$$

But obviously, in the real world the theory of labor homogeneity does not obtain. Introducing the disutility, or taste for discrimination, into the market creates an imperfect marked, and, in consequence, the above equations no longer hold. Such disutility causes the employer either to undercompensate Black workers or overcompensate non-Black workers. At the same time, non-Black workers would not accept working with Black workers unless they are compensated. Since, moreover, the employer does not consider the Black worker as a perfect substitute for a non-Black worker, the employer is urged by his "taste for discrimination" to pay Black workers less wage than non-Black workers. Under these circumstances, the Black worker will be employed only if he is willing to accept lower wages. This is further accelerated by the fact that the non-Black worker will accept working with Black workers only if he were compensated. The new equations then become:

$$W_b^* (1 + d) = MPP_{\cdot}^* P_x \qquad (2.4)$$

$$W_{nb}^* = MPP_{\cdot}^* P_x \qquad (2.5)$$

and therefore

$$W_{nb}^* = W_b^* (1 + d) \qquad (2.6)$$

where "D" is the disutility coefficient (or in Becker's terminology, discrimination coefficient) and by assumption is greater than zero. The quantity $W_b{}^*d$ is the exact money equivalent of the non-monetary cost caused by the disutility.

By dividing equation (2.6) by $W_b{}^*$ we arrive at:

$$\frac{W_{nb}{}^*}{W_b{}^*} = (1 + d) \qquad (2.7)$$

Expressing equation (2.7) in terms of "d" it becomes:

$$d = \frac{W_{nb}{}^* - W_b}{W_b{}^*} \qquad (2.8)$$

The equation (2.8) expresses the relative differential of the two wage rates. The equation (2.8) was labeled by Becker as the market discrimination coefficient (MDC); viz.:

$$MDC = \frac{W_{nb}{}^* - W_b{}^*}{W_b{}^*} \quad \underline{14}/$$

The equation (2.8) is very significant because it gives the relative differential of income in monetary terms based on the wage differentials which are caused by the taste for discrimination which has created an imperfect market. Discrimination has caused the wage to differ from that of the perfectly substitutable factor.

<u>14</u>/ The Bureau of Labor Statistics reports income as median income instead of wages so for practical purposes median income will be used in statistical computation.

The magnitude of the "taste for discrimination" coefficient "d" determines the relative wage differential between the Black and non-Black workers. The wage ratio W_b^*/W_{nb}^* approaches closely to the ratio W_b/W_{nb} when the degree of magnitude of taste for discrimination is very small; but when, if the degree of magnitude of "taste for discrimination" is very large, the wage ratio W_b^*/W_{nb}^* would diverge widely from the ratio W_b/W_{nb}. In addition to relative wage differentials, the number of Black workers hired or fired would depend on the intensity of "taste for discrimination." The demand and supply functions for the Black workers would be determined directly by the intensity of "taste for discrimination."

From the above price model it can be concluded that the reduction of the "taste for discrimination" by both non-Black employers and employees could reduce the relative wage differentials between the two races, assuming that the change in the disutility factor is also accompanied by free educational and legal entry into all areas of the material and human market. The "taste for discrimination" creates the imperfect market. To improve market perfection some measures are to be imposed to change the employer's and employee's disutility. The FEP laws are intended to affect the disutility. If the disutility is affected by the FEP laws it means that the market discrimination coefficient MDC is minimized to zero, due to the fact that the FEP laws demand that $W_{nb} = W_b$.

Trade Model of Factors

The marginal analysis model demonstrated the disutility of associating with Black workers. This disutility causes the employer to pay Black workers, which are perfect substitutes for the non-Black workers, lower wages than the non-Black workers. In the trade model, it is assumed that there exist two independent societies, one Black (b) and the other non-Black (nb). It further assumed that the Black society is relatively well-endowed with labor (L) compared to its capital stock (K) in comparison with the non-Black society which is relatively capital rich compared to its labor endowment, i.e.,: $(K/L)_b < (K/L)_{nb}$. Each society exports its relatively abundant factors, therefore, the Black society exports labor and the non-Black society exports capital. Under the Trade Model of Factors, trade is completely free and costless; that is, there are no tariff protections or quota limitations, and transportation cost is zero. It is also assumed that one good is being produced and there exists homogeneous production functions in the two societies.

Figure 1 shows the full isoquant map and relevant range of production in each society. Points A and B in Figure 2 are points at which the isoquant I_3 bends back upon itself. Through similar points on the other isoquant, OL and OC are constructed, known as

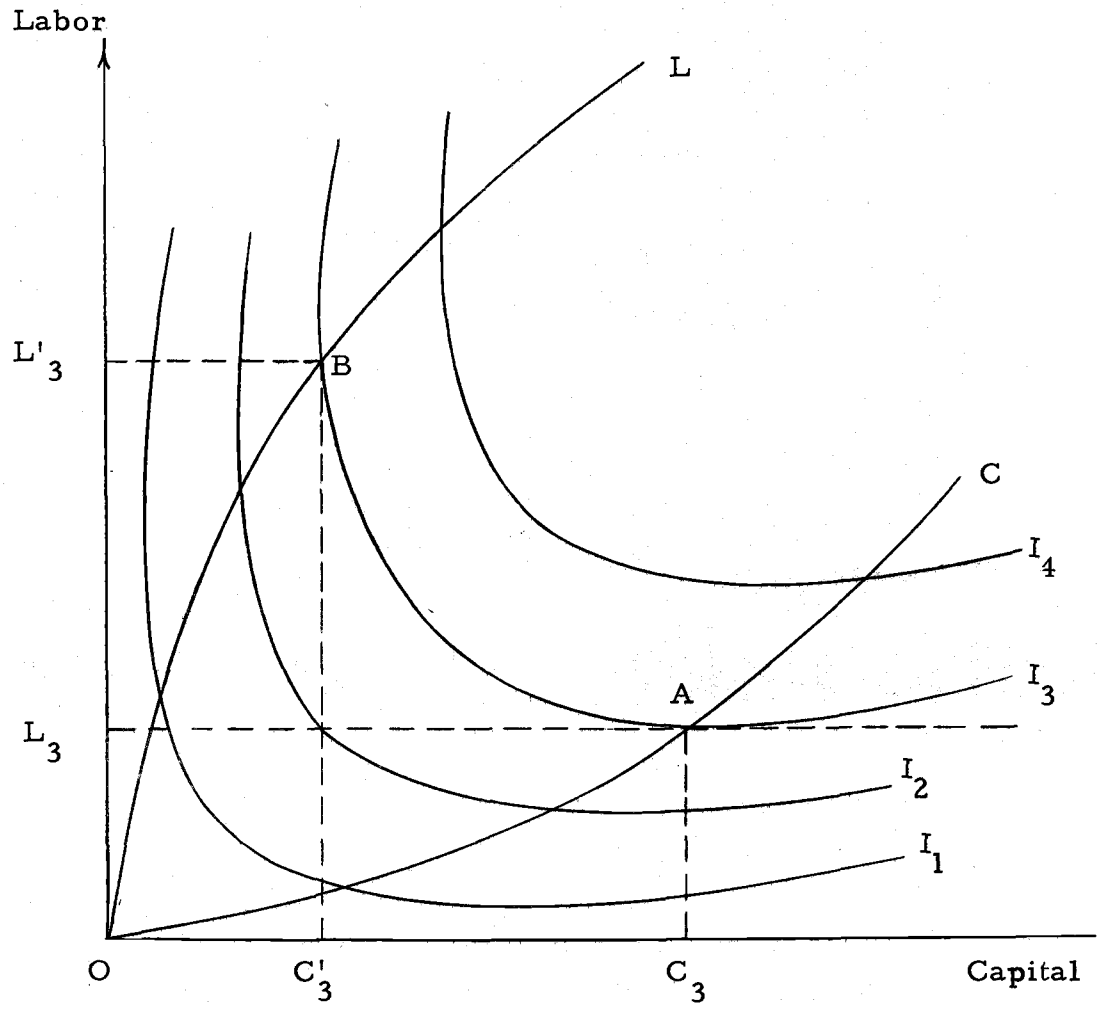

Figure 1. Full isoquant map and relevant range of production in each society.

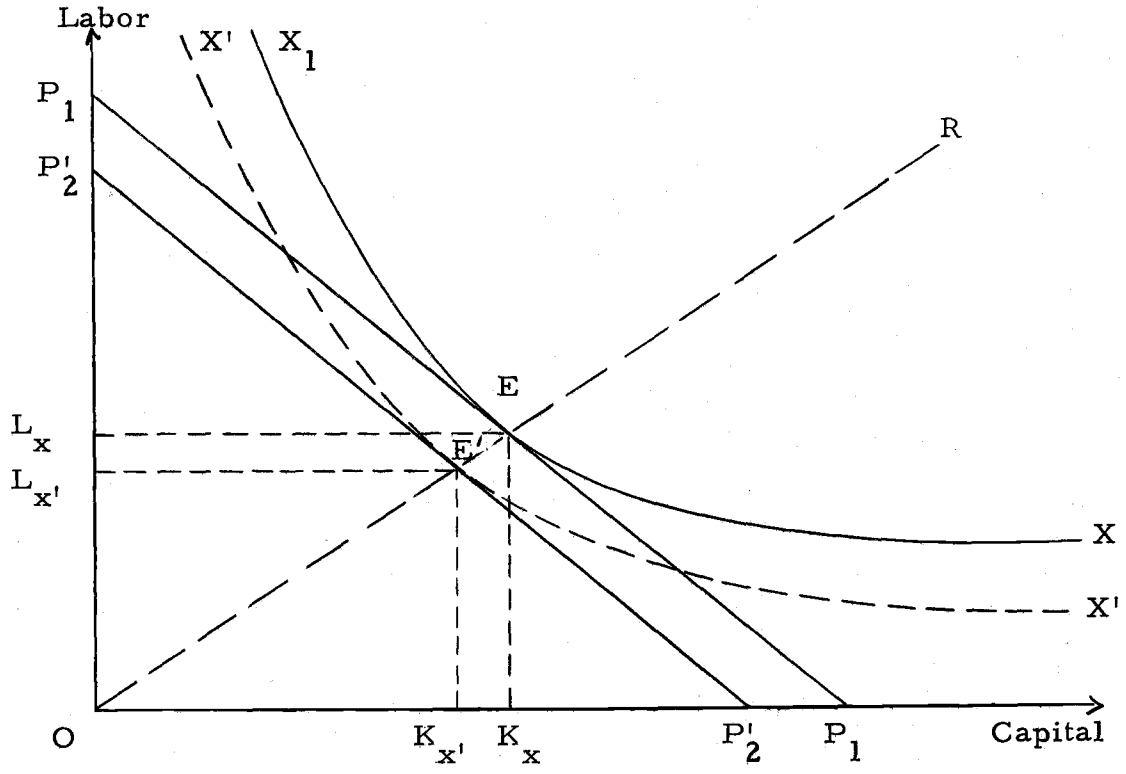

Fig. 2A

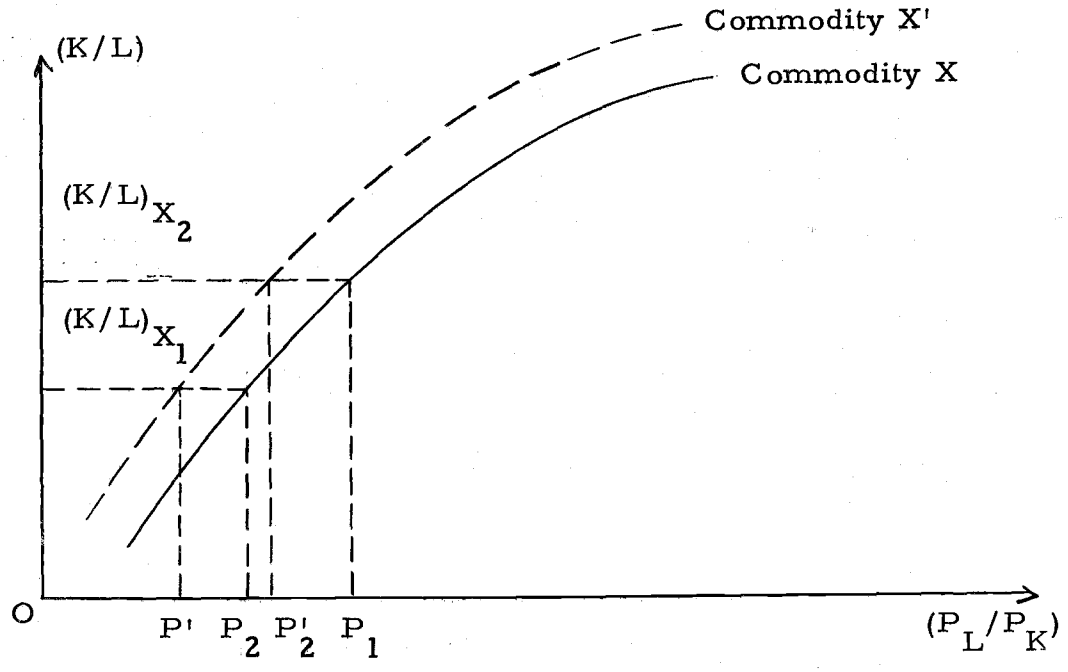

Fig. 2B

Figure 2. Production isoquant for the Black and non-Black.

ridge lines. The area between the ridge lines is the possible production region of goods being produced. For instance, a quantity of goods to be produced given by isoquant I_3, could be produced at either point B or A with different combinations of labor and capital. At point B, OL'_3 of labor would be used, and OC'_3 of capital is required, similarly at point A, OB_3 of labor and OC_3 of capital.

The trade between the two societies occurs between factors of production, not commodities (Becker, 1957, p. 12). In effect this assumes that one good is being produced in each society. The Figures 2A and 2B give terms of trade at equilibrium. Figure 3A shows the quantity of labor input measured on ordinante, while the quantity of capital is measured on abscissa. The isoquant designated by I_3 shows that an unspecified amount of commodity X can be produced by various combinations of capital and labor as in Figure 1. Any ray drawn from origin, O, to isoquant I_3 would give the capital and labor required to produce commodity X. The efficient production point would be given by relative factor price of labor and capital. In this case it is determined by the slope of P_1P_1. Any point on P_1P_1 connotes a constant level of expenditure on capital and labor combined, given their relative price. The efficient point is at the point E, where OL_L of labor and OK_K of capital is used to produce X given by the isoquant I_3, and lies on the expansion path. The exchange rate between labor and capital

is given by the expansion path OR. Thus mathematically speaking, the production of X:

$$X = f(\mathbf{K}, L)$$

Taking a partial derivative with respect to each factor gives the marginal products of capital and labor $\frac{\partial X}{\partial K}$, $\frac{\partial X}{\partial L}$, respectively.

Under these circumstances, the total differential of the production function becomes

$$dx = \frac{\partial f}{\partial k} dk + \frac{\partial f}{\partial L} dL \qquad (2.9)$$

the output is constant along an isoquant, so that dx=0; by substituting this into (2.9) we get

$$\frac{\partial f}{\partial K} dk + \frac{\partial f}{\partial L} dL = 0 \qquad (2.10)$$

which is the equation for an isoquant. From (2.10) we get,

$$-\frac{dk}{dL} = \frac{\frac{\partial f}{\partial L}}{\frac{\partial f}{\partial K}} = \frac{MP_L}{MP_K} \qquad (2.11)$$

when $-\frac{dk}{dL}$ is the marginal rate of technical substitution (MRTS). The equation (2.11) gives MRTS of capital for labor.

The Pareto optimality of Free Trade

Figure 3 represents Edgeworth's diagram illustrating the allocation of two resources, labor and capital, between two uses, domestic and foreign. The Black society endowed with relatively

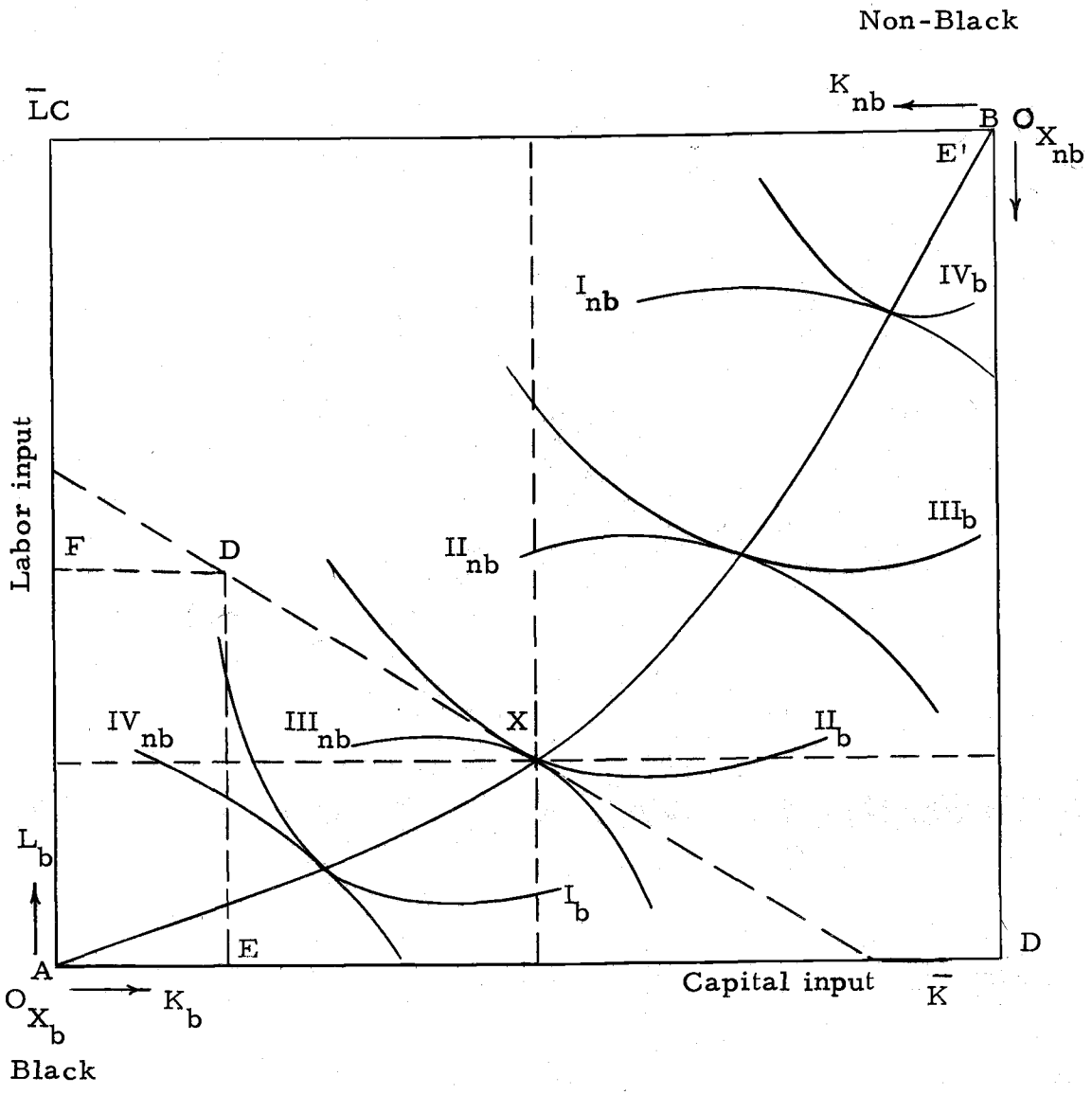

Figure 3. Optimum conditions of factor substitution trade off.

Point D is the initial endowment point. It shows that the Black society is endowed with AF labor and AE capital, while the non-Black society is endowed with CF of labor and DE of capital. Free trade will lead to an equilibrium at X.

more labor than capital. It would trade this labor with non-Black society for capital. The non-Black society is better endowed with capital than is the Black society. Such labor exported to non-Black society would help the non-Black society, in turn, to produce at a higher isoquant. These isoquants are shown in Figure 3 as $I_b, \ldots IV_b$ and $I_{nb}, \ldots IV_{nb}$ for Black and non-Black society, respectively. Since the relative endowments of the two factors vary from society to society, each society will trade off at its optimal and maximizing production. Optimal points should be like X in Figure 4, where the non-Black society is at isoquant III_{nb}, and the Black society is at isoquant II_b establishing an equilibrium point. At this point neither of the societies has an economic advantage over the other.

The points along the contract line EE' represent equilibrium points under free trade, and such payment to the facts must be the same in both societies. Thus:

$$P_x \cdot MPL_b = P_x \cdot MPL_{nb} \tag{2.12}$$

$$P_x \cdot MPK_b = P_x \cdot MPK_{nb} \tag{2.13}$$

where P_x is the price of the commodity being produced. Since there is only one commodity being produced, the equations (2.12) and (2.13) become

$$\frac{MPL_b}{MPK_b} = \frac{MPL_{nb}}{MPK_{nb}}$$

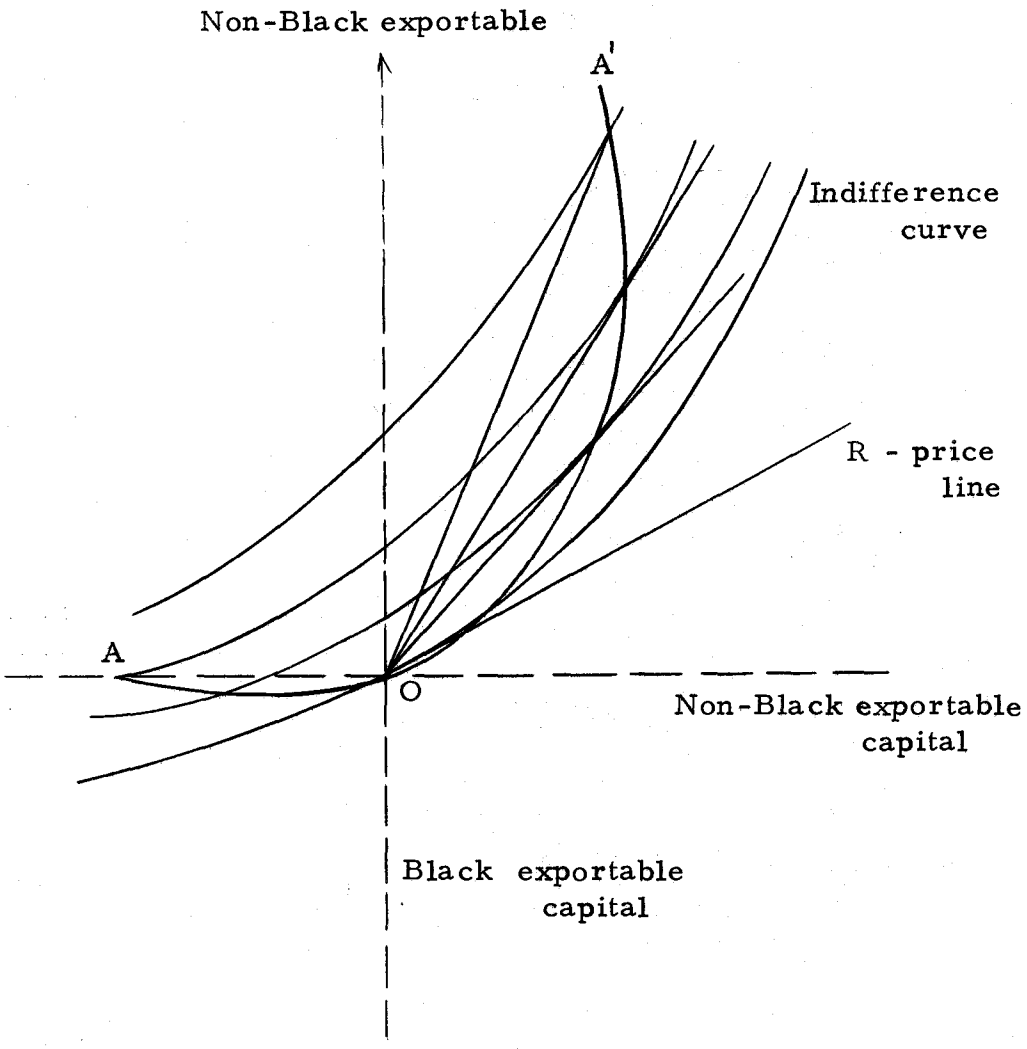

Figure 4. Derivation of the offer curve for non-Black society from its trade indifference map.

Trade Without Free Trade

The trading between the two societies can be shown further by use of the offer curves. The offer curves represent the locus of a series of tangencies of various price lines to the trade indifference map of successively higher indifference curves. Each society has a trade indifference map, such as shown in Figure 4.[15/]

Briefly, the offer curve is derived as follows. In Figure 4 the horizontal axis measures the non-Black exportable capital, and vertical axis Black exportable labor. In order for the society to trade, a price higher than the domestic price has to be offered. The initial slope of the offer curve through the origin represents the domestic price without trade. As a higher price for the non-Black exportable capital is offered in terms of Black exportable capital, non-Black society would be at high indifference curves. The OR gives the initial prices by rotating OR and drawing tangent points at each individual indifference curve. By joining the points, the offer curve is given AA', as Figure 4. The offer curve for the Black society could be traced similarly. Figure 5 gives the non-Black and Black offer curves intersecting at equilibrium point T and the terms of trade OR, the tangent to indifference curves

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15/ Kindleberger has given detailed derivation of the offer curve, in the International Economics, p. 555-561.

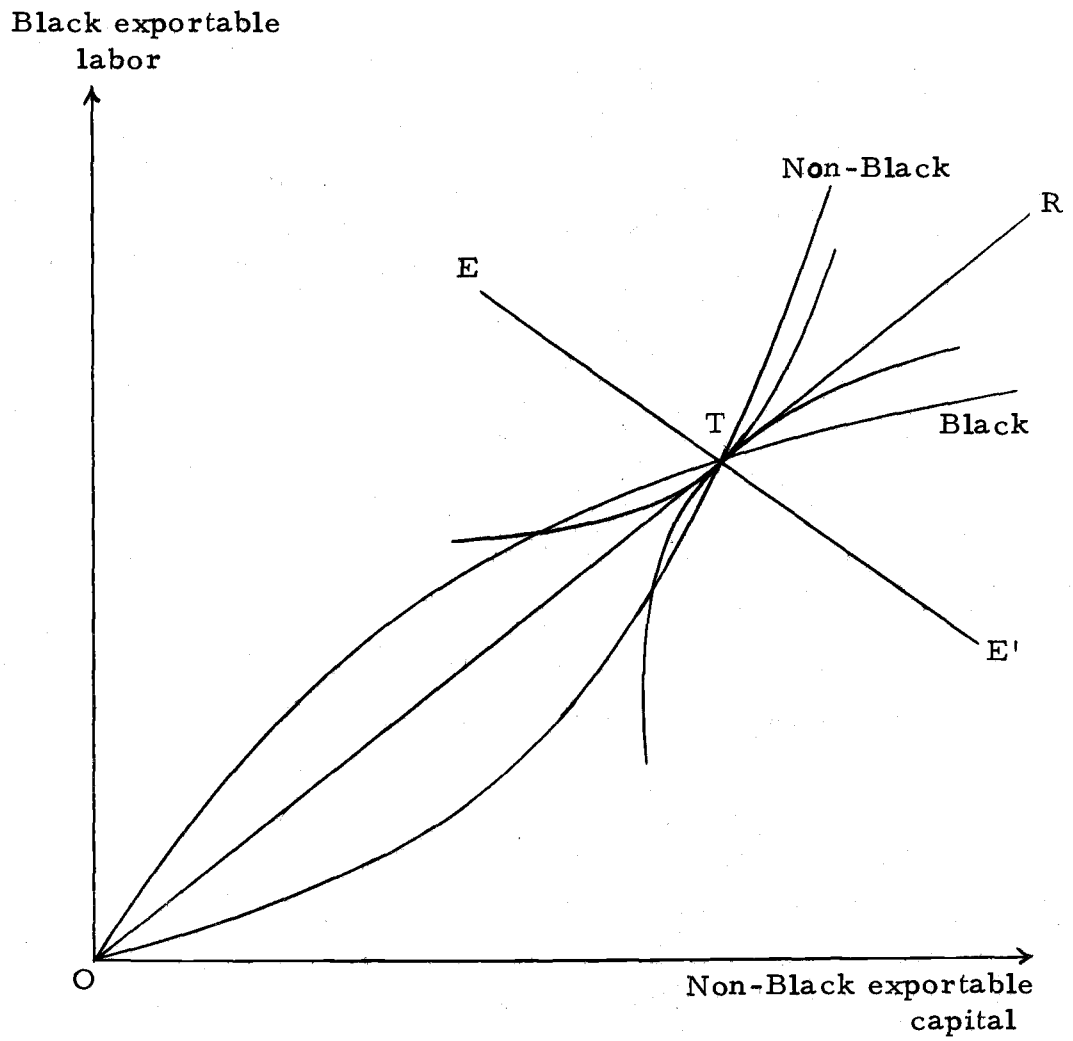

Figure 5. The contract curve and trade equilibrium.

of both societies. The contract curve EE' joins the tangencies of trade indifference curves which are not shown in the diagram. The contract curve EE' serves the same purpose as that of the Edgeworth-Bowley box in Figure 3. Trading between the two societies is free trade.

Eventually, the non-Black society imposes a tariff on imports and a quota on capital being exported. That is, free trade no longer prevails. The change in terms of trade causes a shift in demand for the exports and imports. In Figure 6 the non-Black offer curve would shift to the left from NB to NB_1, establishing new equilibrium point at T^1. At the new level of T^1, the amount of the capital traded is now $OK_2 < OK_1$; the same thing would happen to labor $OL_2 < OL_1$. The new price ratio is measured by OR^1 which has a steeper slope than former slope OR.

By changing the terms of trade, the non-Black society would be expected either to experience some gains or some losses.[16/] The gains and losses would depend on the elasticity of the offer curve, so that if (1) the elasticity of supply is zero, the decline in the price for labor would not change the quantity of labor being demanded, and the non-Black would gain by paying low prices; but

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16/ It will be shown in Appendix I that non-Blacks would be producing at a higher isoquant than Blacks, and Blacks are receiving lower prices for goods traded.

(2) if the elasticity of supply is infinite, wages are fixed, and the Black labor cannot be traded at less than the value of its marginal product and would lose its intramarginal produce; on the other hand, (2) if the elasticity of supply is greater than zero but less than infinite, both gains and losses would occur.

Becker's (1957) Major Theorems

Black society is affected as Becker's four major propositions stipulated.[17/] First Proposition: In a purely competitive society with two groups of persons, the effect of taste for discrimination against one group as reflected in a positive market discrimination coefficient against that group is to reduce the per capita real incomes of both groups (Becker, 1957, p. 11-13). Second Proposition: Discrimination will harm the group discriminated against (in this case Black) more than the discriminating group, non-Black, "if the Black is more of an economic minority than the non-Black is a numerical minority" (Becker, 1957, p. 18-19). Third Proposition: When there is discrimination against Blacks as labor sellers, but not to an important degree as employers, its effect is to raise the wage rate for non-Blacks as laborers, but to

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17/ A full detailed treatment of these propositions is given in Appendix I.

harm non-Blacks as capitalists by causing them to pay more than otherwise for their labor (Becker, 1957, p. 13-14). Fourth Proposition: If Blacks attempt to retaliate they will lower their own income further, and by more than they will lower incomes of the members of the non-Black group (Becker, 1957, p. 23-24).

Discussion will now focus upon the implications of each of these propositions for the subject at hand.

Becker's first proposition implies that the positive market discrimination coefficient causes imperfect trade, in which the amount of capital exported by non-Blacks would decrease as well as the amount of labor exported by Blacks. Non-Black capital would have less labor to combine with its capital, so the net return to non-Black capital would be reduced. This is also true, of course, to Black labor.

In a "free" trade model Black society is relatively well endowed with labor (L) compared to its capital stock in comparison with non-Black society which is relatively capital rich compared to its labor endowment. That is, $(K/L)_b < (K/L)_{nb}$. Black society would gain in free trade in trading with the non-Black society. The return to the factors is in its value marginal product; this exhypothesis is the same for Black and non-Black in international trade. The total income earned by each society is as follows:

$$Y_{nb} = VMP_K \cdot K_{nb} + VMP_L \cdot L_{nb} \qquad (2.14)$$

$$Y_b = VMP_K \cdot K_b + VMP_L \cdot L_b \qquad (2.15)$$

where Y is income, VMP is value of marginal produce, K is capital, L is laxor, subscript nb is non-Black and b is Black. Since $K_{nb} > K_b$, and $L_{nb} > L_b$, therefore $Y_{nb} > Y_b$. The aggregate total income of the Black is less than that of the non-Black. Replacing VMP's by appropriate prices (P) in equations (2.14) and (2.15), we have:

$$Y_{nb} = P_K K_{nb} + P_L L_{nb} \qquad (2.16)$$

$$Y_b = P_K K_b + P_L L_b \qquad (2.17)$$

The necessary and sufficient condition in "free" trade, in this model, occurs when income is maximized in both societies and only when the price ratios of the factors are equal. Thus:

$$\left(\frac{P_K}{P_L}\right)^{nb} * = \left(\frac{P_K}{P_L}\right)^{b} * \quad \underline{18/} \qquad (2.18)$$

measured along the price ratio line OR 9see Figure 6) at equilibrium point at T where the two offer curves intersect at the point of free trade market. By changing the terms of the trade, the non-Black's offer curve shifts to the left. The price ratio line OR has a steeper slope than in tree trade. Then, equation (2.18) no longer holds. Thus we have:

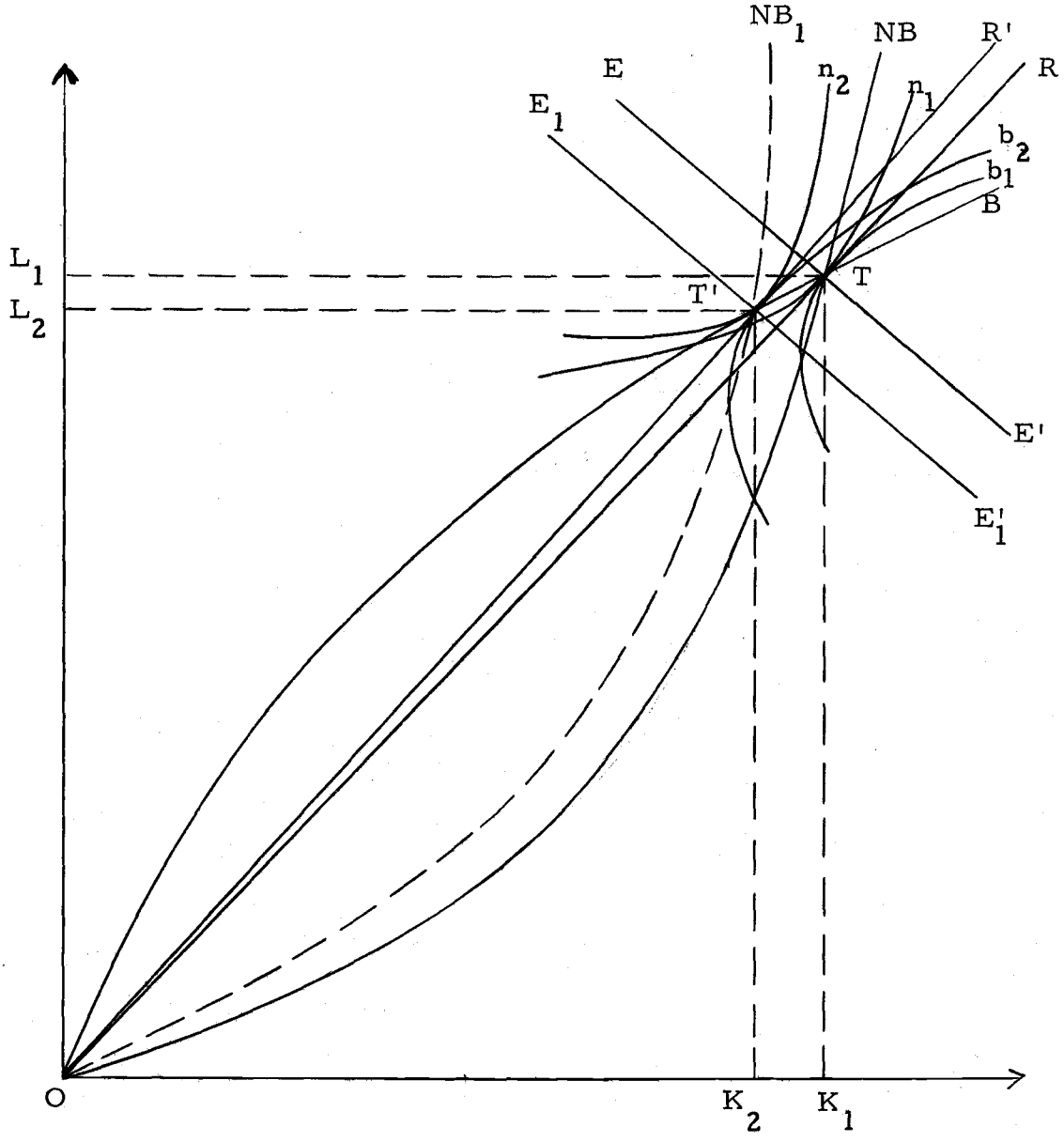

Figure 6. Change in terms of trade.

$$\left(\frac{P_K^{nb}}{P_L^{nb}}\right) > \left(\frac{P_K^{nb}}{P_L^{nb}}\right)^* \quad \text{and} \quad \left(\frac{P_K^{b}}{P_L^{b}}\right)^* < \left(\frac{P_K^{b}}{P_L^{b}}\right)$$

The change in terms of the trade is measured by change in slope, which becomes the measure of discrimination. The aggregate slope of the non-Black offer curve in free trade is TK_1/OK_1. The change in slope after change in term of trade is T^1K_2/OK_2. The difference in two slopes $T^1K_2/OK_2 - TK_1/OK_1$ determines the net loss of the physical labor exported and imported capital.

The Black society is at lower trading positions--trading at a lower indifference curve--compared to that of free trade. The non-Black society would be trading at n_2 indifference curve instead of b_1. The amount of goods being produced is less in each society; that is, production is at a lower isoquant. The per capita income of the Blacks is reduced by a net positive differentials in change for the price ratio given by change in slope. This also applies to non-Black society. The total aggregate income earned by the Blacks is still smaller than the income earned in "free" trade market. So Becker's (1957) proposition is correct in that the discrimination in a purely competitive society would reduce the per capita real income of each group.

The second proposition was explained by Reder (1958) to mean that if Blacks furnish less labor than non-Blacks, discrimination

will always reduce Blacks' income relative to non-Black's, but if Blacks furnish more labor than non-Blacks, Blacks will be harmed by discrimination more than non-Blacks only if the income yielded by Non-Blacks resources (human and non-human) would be less, in the absence of discrimination, than the income yielded by all non-Black resources. (Reder, 1958, p. 495-596.

Non-Black society, of course, sets the terms of trade under these circumstances. Thus, when discrimination takes place, less capital and less labor is traded. Then, Black labor has less capital to combine with the production of goods and production occurs at a lower isoquant, as shown in Figure 6. A further reduction in the export of labor would put Black society into an even lower isoquant. In any case, the income received by Black society is still less than that received under conditions of free trade.

The third proposition implies that discrimination against Black labor as labor sellers causes a rise in the wage rate of the non-Black workers, but harms non-Black as capitalists by causing them to pay more than they otherwise would for their labor. Here, Becker is dealing with the widely held belief that the non-Black capitalists are the major beneficiaries of prejudice and discrimination in a competitive capitalistic economic system. Becker showed that a "taste for discrimination" on the part of non-Black capitalists against the Black workers would tend to lower profits. According to Becker, profit

would prevail only if a wage differential resulted from price discrimination owing to monopsony power. (Becker, 1957, p. 14).

In production, both non-Black and Black labor are strongly cooperant: marginal productivity of either type of labor may increase with the amount of the other that is used. So if the capitalist happens to discriminate against Black labor, it is possible that the wage of both might be lowered, but when Black labor is discriminated against by union workers, a labor shortage is created which may force the wage of non-Black workers to increase, forcing the capitalist to pay higher wages.

The fourth proposition states that if Blacks attempt to retaliate they will lower their own income further, and by more than they will lower the income of the non-Blacks. The Marshallian offer curves in Figure 7 show graphically how the two societies are affected by the change of terms of trade. In Figure 7, u^N and u^B are the preference system of societies non-Black and Black, respectively, with ON and OB their respective offer curves, and T the free trade equilibrium. When the non-Blacks discriminate against Black labor, the non-Black offer curve shifts to the left and establishes a new trade point at T', putting Black labor at lower preference curve $u^B{}_4$. The non-Black society is at a higher curve u_4^N. So the retaliation by the Blacks would cause the Black's offer curve to shift to the right from OB to OB_1 intersecting with non-Black

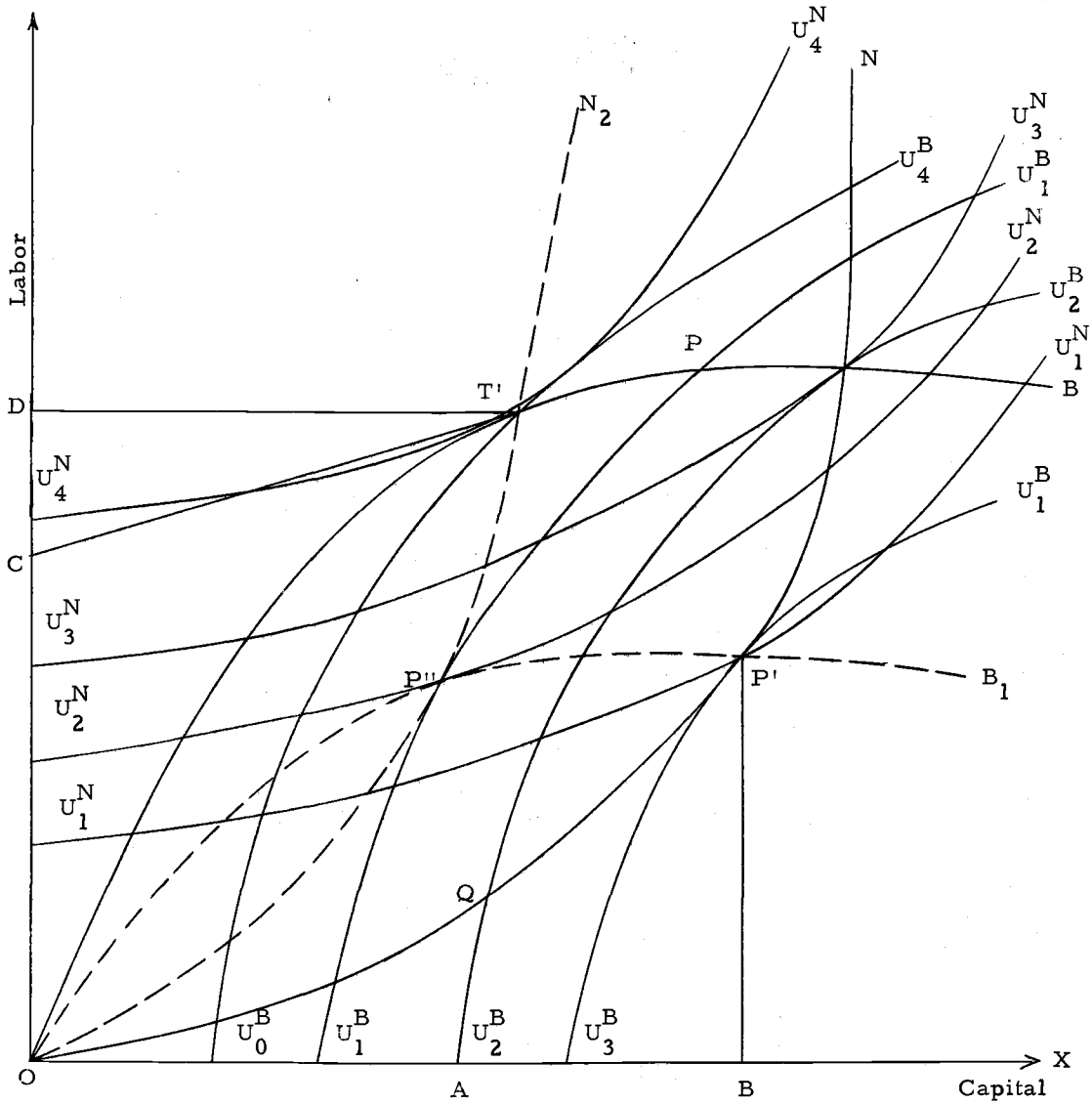

Figure 7. Retaliation by Blacks.

offer curve ON at P''. Since the non-Black offer curve is not a straight line, Black society is expected to gain by retaliation, and be at a higher indifference curve than if it does not retaliate, u_1^B. The Blacks would demand less of the capital being imported by the non-Blacks.

Retaliation by the Blacks requires a collective action which would raise the marginal cost of discrimination sufficiently to change the demand for their labor services, thereby raising their incomes. Such retaliation would consist, for instance, of the imposition by Blacks upon non-Black employers such conditions as (1) hiring of Black workers on the same terms as non-Black workers; or (2) withdrawal from employment, which could diminish the labor force and raise non-Black wages disproportionately. The nature of the compromise resulting from such retaliation would depend, then, upon the magnitude of the discrimination coefficient of the individual employer.

According to Figure 7 at point P'' both societies are bound to lose by discrimination and retaliation. They are trading at lower indifferent curve. This contradicts Becker's fourth proposition that Blacks are only harmed by retaliation.

The four propositions, as I have explained and modified them, are operative in American society as well as in many countries that are members of the Third World, namely, many countries in

Africa, Asia and Latin America. According to these sets of propositions, it is evident that the Black Americans have a long way to go to overcome economic discrimination. Two basic necessary variables for continuance of effective discrimination consist of capital and the numerical magnitude of the labor force. If one race is in the position to control one of the variables, it is able to discriminate against the other race. In South Africa the whites control the capital which gives them the power to control the Black labor force. It is logical then to argue that if Black Americans are to overcome discrimination, black population must increase drastically and Black control of significant capital must become a reality. The first of these imperatives is not possible, while the second has potential. There are two types of capital: one is human capital, and the other one is non-human capital. Human capital is acquired through education, job training and experience on the job. In her study on Investment in the Human Resources of Negroes, Bergmann (1968) argued thus:

> It is well known that Negroes, as a group, are possessed of less of the education, training, and experience needed to enter into and perform well in high-paying, high-productivity occupations than are whites. In years past, dollars which should have been invested in enhancing Negroes' ability to be economically productive--in building up "human capital" of Negroes--were not invested, in part because of discrimination, and in part because of the poverty and ignorance of many of the Negroes themselves. The result is that the value of the stock of

> human capital embodied in the average male adult Negro is on the order of $10,000 smaller than the human capital the average white male has position of. For the nation as a whole, this adds up to a deficiency of around $50 million of investment in the human capital of the adult male Negro Americans, which would have been made had they been whites. (Kain, 1969, p. 52) 18/

The non-human capital can be provided by the society. The Small Business Administration created by the Federal government is supposed to get the capital into the hands of the Blacks.

Impact of FEP Laws on Employment Levels

In the previous discussion, the four propositions postulate that for effective discrimination to take place against any society, some necessary conditions have to prevail. The necessary condition for effective discrimination against Blacks requires that they be an economic minority. This means that Blacks are less endowed in both human and physical capital than is non-Black society. There is no doubt that these conditions do prevail; how does the FEP law intend to improve the economic status of the Black Americans?

The main clause of the FEP laws calls for equal wage and equal

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18/ Barbara R. Bergmann, "Investment in the Human Resources of Negroes," in U.S. Congress, Joint Economic Committee, Federal Programs for the Development of Human Resources, Vol. L, Part II, Manpower and Education (Washington, D.C.: Government Printing office, 1968), edited by Kain (1969) p. 52-57.

employment opportunity for all workers. Figure 8 shows the existing different market demand for both Black and non-Black workers. Employers, due to taste for discrimination, tend to possess a separate market demand for Black and non-Black workers. The D_{Bd} is the result of discrimination, and the D_b would be the actual market demand for the Black workers in the absence of discrimination. The D_N is the actual market demand curve for the non-Black. In addition, S_B and S_N are supply curves for the Black and non-Black workers, respectively. They are assumed to be affected by the taste for discrimination.

Before FEP Laws

As long as there exists a "taste for discrimination" by employers, Black labor and non-Black labor may be treated as less-than-perfect substitutes in production. Thus it is not helpful to add the supply and demand curves together since the input is not regarded as homogeneous. The curve D_{Bd} is the actual market demand curve for Black labor resulting from the postulated condition that employers have a "taste for discrimination." It may be interpreted as follows: for any level of employment of Black labor the corresponding point on O_{Bd} represents the wage the discriminating employer would pay. If the "psychic" cost associated with hiring Black workers were included, the sum of this psychic used and

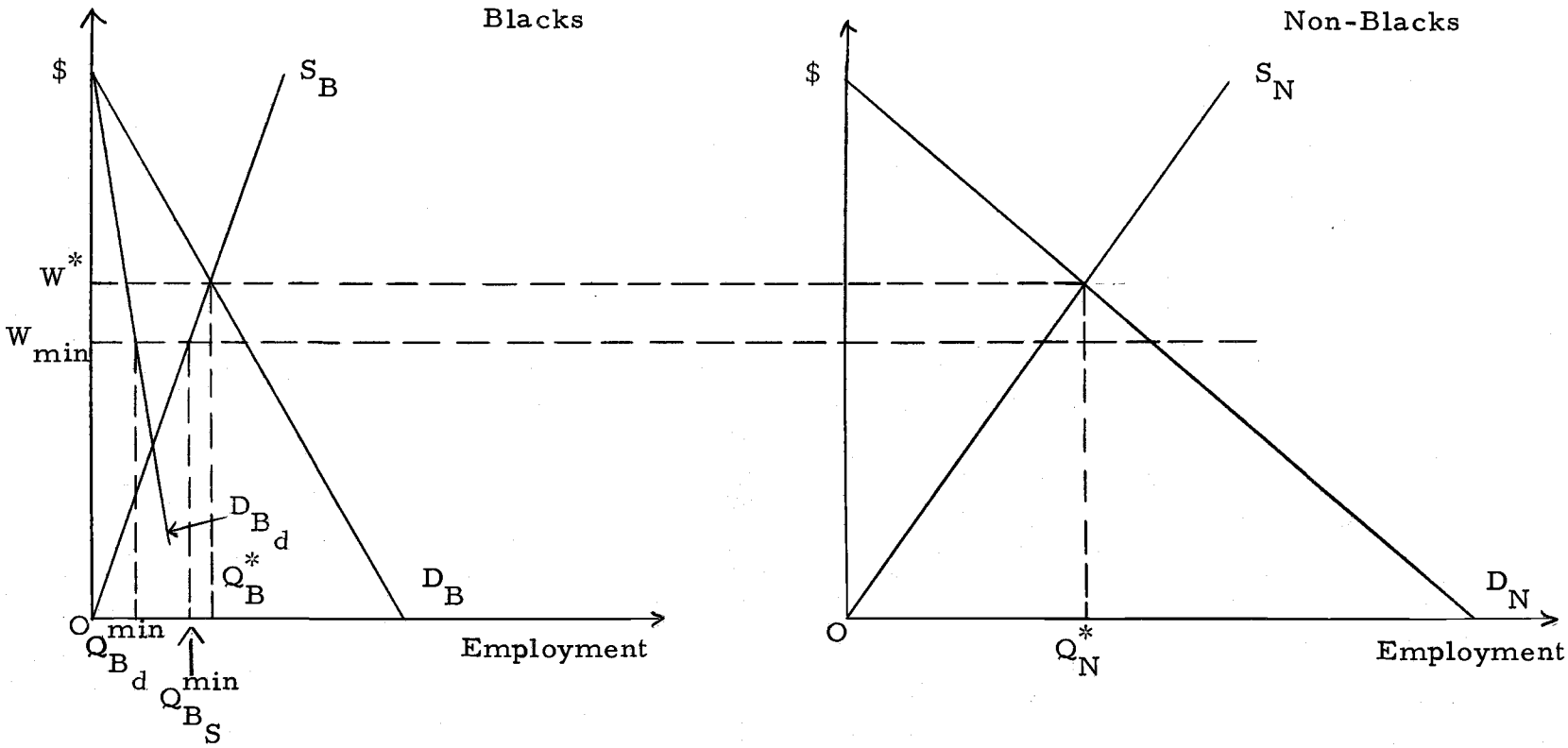

Figure 8. Employment levels as a result of FEP laws.

the market wage would be represented by the point on D_B corresponding to the assumed employment level. In the absence of a "taste for discrimination," it is assumed that the employer would be willing to pay this psychic cost in the form of money wages. Thus, D_{Bd} is the market demand for Blacks before the FEP laws. The curve D_B is the market demand for Blacks which could result if the hoped for effects of the FEP laws were realized (i.e., if the "taste for discrimination" were eliminated).

The "demand" curve D_B could also be interpreted as the demand for Black labor if Black and non-Black labor were regarded as homogeneous. The curve D_N is the demand for non-Black labor. The curves S_B and S_N are the supply curves of Black and non-Black labor, respectively.[19/] It is further assumed that, because of the existence of labor unions, minimum wage legislation, and the other factors which keep wages above their equilibrium levels, the wage rate in the Black labor market is at W_{min}. At that wage rate, Q_{Bd}^{min} labor is employed. Since Q_{Bs}^{min} labor is willing to be employed at W_{min}, there is unemployment of $Q_{Bs}^{min} - Q_{Bd}^{min}$ at that wage (i.e., before the FEP laws). In the non-Black labor market, the wage rate is W* and the employment level is Q_n^*.

19/ For analytical convenience, S_B and D_B have been drawn to intersect at the same wage as that corresponding to the intersection of S_N and D_N. Thus, it is assumed that, in the absence

After FEP Laws

If the FEP laws eliminate discrimination by insistence that some Blacks be hired at higher wages, Black employment would rise to Q^*_B, Black wages would rise to W* and Black unemployment would fall to zero. This would be the result if the "taste for discrimination" were eliminated.

An alternative effect of the FEP laws, however, could be that the demand curve for Blacks does not shift to D_B but instead remains at D_{Bd}. If employers were required to hire more Blacks than Q^{min}_{Bd} at a higher wage (say, W*) than W_{min}, the result could be a higher wage rate for Blacks, increased employment and decreased or increased unemployment. Whether unemployment were increased or decreased would depend upon the nature of the demand and supply curves and upon how many more Blacks employers were required to hire. If the same number of Blacks were hired after after the FEP laws as before but at a higher rate unemployment would rise to $Q^*_B - Q^{min}_{Bd}$. In fact, if the FEP laws did not eliminate the taste for discrimination, so that Black and non-Black labor would be viewed by employers as imperfect substitutes, then different D_N curves would have to be drawn for

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of discrimination, the only factor leading to different demand and supply curves is the relative sizes of the Black and non-Black population.

various levels of Black employment. In this case, as Black employment increased, the demand for non-Black labor would fall and steady wages could result in non-Black unemployment.

From Figure 8, it could be concluded that the FEP laws might have both a positive and negative effect on employment and wage rate. Since this is the case, it seems to stand in contradiction to the arguments of the policy makers who expected a uniformly favorable effect of increasing demand and wage rate for the Black workers without affecting employment and the wage rate of non-Black workers. The functions of FEP laws are analogous to that of free trade in which the tariff is removed as a barrier from the volume of trade, and should produce an increase in volume.

The change in terms of trade or shift in demand would be examined quantitatively in the following chapters. In Chapter III, the historical development of the FEP laws will be examined along with the Executive Orders. Some data will be analyzed descriptively in an attempt to evaluate the impact of FEP laws. In Chapter IV, an econometric model will be constructed to test the effect of FEP laws on the economic status of Black Americans. In addition, analysis of variance techniques will be utilized to determine the interaction between the major variables--race, age, occupation and median income. In Chapter V, information theory is used to calculate Theil's inequality coefficient and to evaluate change in the coefficient as a result of the impact of FEP laws.

III. THEORETICAL AND QUANTITATIVE ANALYSIS OF FEP LAWS AND EXECUTIVE ORDERS

> I enlist every employer, every labor union, and every agency of the government. . . in the task of seeing to it that no false lines are drawn in assuring equality of the right and opportunity to make a decent living.
>
> John F. Kennedy
> June, 1963

Historical Development of FEP and Executive Orders

The struggle of Black Americans to achieve full equality in political and economic rights has been a major social issue since the Civil War. The federal government has passed various civil rights laws to protect the civil rights of the Black Americans. The first step to guarantee racial equality was the 13th Amendment to the Constitution in 1865, which outlawed slavery. The 13th Amendment did not abolish slavery. DuBois (1935), the Black historian, noted that most of the four-million new freedmen still worked on the same plantation and did the same work that they performed before emancipation, except as their work had been interrupted and changed by the upheaval of the War. Furthermore, the freedmen received about the same wage and were subject to an implicit slave code changed only in name. Many thousands of freedmen were in soldier's camps or on streets--sick, homeless and impoverished. They were freed practically with no land nor money; and, save in exceptional cases, without legal status,

and without protection (DuBois, 1935, p. 188).

The 14th Amendment, passed by Congress in 1866 and ratified in 1868, guaranteed Blacks federal and state citizenship and provided:

> No state shall make or enforce any laws which shall abridge the privileges and immunities of citizens of the United States; nor shall any state deprive any person of life, liberty or property without due process of law, nor deny any person withon its jurisdiction the equal protection of the law.

The 15th Amendment, passed in 1868 and ratified in 1870, provided that rights to vote could not be denied by the United States or state "on account of race, color or previous condition of servitude." These three amendments gave Black Americans legal, economic and political rights. For instance, the 14th Amendment gave the Blacks the right to own property, such as capital, land and other necessary factors of production.

But these amendments failed to provide capital transfer and skill to freedmen. Thaddeus Stevens, Senator in the 39th Congress, after ratification of the 13th Amendment in December 1865, realized this when he said to Congress:

> We have turned, or are about to turn, loose four million slaves without a hut to shelter them or a cent in their pockets. The infernal laws of slavery have prevented them from acquiring an education, understanding the commonest laws of contract, or of managing the ordinary business life. This Congress is bound to provide for them until they can take care of themselves. If we do not furnish them with homesteads, and hedge them around with protective laws, if we leave them to the legislation of their late masters, we had better have left them in bondage.
>
> (DuBois, 1935, p. 265-66)

The amendments gave the freedmen the right to own property. The right to own capital did not imply actual transfer of human and physical capital. Organizations such as the Freedmen's Bureau, however, attempted some form of physical capital transfer by urging the passage of a bill to "set apart for the loyal refugees or feedmen, such tracts of land...as shall have been abandonned" in lots of "not more than forty acres" and rent them, at a modest percent of their value, to freedmen and their families (McFeely, 1971, p. 11-20).[20/] This plan was never implemented. Instead, such punitive laws as Black Codes, which restricted mobility of freedmen, were instituted to facilitate segregation along racial lines. So the freedman did not get a chance to own "forty acres and a mule." The Black man had to survive by continuing to work the soil for ex-slave owners and other landlords. Otey M. Scruggs wrote that, "In the face of the Black Codes and Northern failure to carry out through a policy of confiscation and redistribution of Southern land, Blacks soon recognized their economic helplessness" (Huggins, 1971, p. 77)

During the period of 1876-1939, few advances in civil rights occurred, save testing the constitutionality of the amendments and implementing them. For instance, the 14th Amendment, as outlined in the Slaughterhouse Case (83 U.S. 36) in 1972 and the Civil Right

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[20/] U.S. Statute, p. 508, quoted by McFeely and edited by Nathan I. Higgins (1971), Key Issues in the Afro-American Experience, Vol. II. Harcourt Brace Jovanovich, Inc., 1971 (pp. 11-12).

Case (109 U.S. 3) in 1883, was not placed under federal protection: "the entire domain of civil rights heretofore belonging exclusively to the states;" and the 14th and 15th offered federal protection against state, but not private, action.[21]

The problem of not placing the 14th and 15th amendments under the Federal hand enabled some states to rewrite the state constitution or enact disfranchising statutes, which denied Blacks the civil rights protection given by these amendments. Such methods as poll tax, literacy requirements, and giving power to the registrar over voters were introduced in order to bar the Black voting right. Until World War II the Federal Government played a very limited role in the protection of civil rights.

The Roosevelt Administration made no recommendation of civil rights legislation to Congress, and none were enacted. But two significant executive actions were taken. In 1939, Attorney General Frank Murphy created the Civil Liberties Agency which was empowered to deal with the problems of civil rights. Two years later (1941), the first civil rights executive order was established and created a Committee on Fair Employment to eliminate discriminatory employment practices in companies and unions with government contracts to engage in war work. President Roosevelt was put under the pressure to issue

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[21] A publication of Congressional Quarterly Service, Revolution in Civil Rights, 3rd edition, p. 2.

this Executive Order #8802 by Black leaders protesting against discrimination in defense industries.

In addition to the Black protest, the war created a big demand for labor, which forced the employer to hire Black workers. Carey McWilliams wrote in 1946 that,

> Despite continuing resistance to the upgrading of Negroes, the number employed as skilled craftsmen and foremen doubled from 1940 to 1944; the number of those in semi-skilled jobs also doubled. The number of Negro women in industry has quadrupled since the war.
>
> (McWilliams, 1946; p. 72-73)

During the period 1945-1964, major civil rights legislation was passed which outlawed discrimination in public schools, polling places, public facilities, housing, hiring offices, and public vehicles. The major goals of this legislation fell into three broad classifications: employment, education and public right. These will be discussed in the following section according to these classifications.

Human Capital Improvement 1945-1964

The freed Blacks have been in segregated schools since the day they were set free after the Civil War by the doctrine known as "Separate-But-Equal," which originated from an 1849 Massachusetts case involving segregated school facilities. Chief Justice Shaw commented that: "It is urged that this maintenance of separate schools tends to deepen and perpetuate the odious distinction of caste, founded in a

deep-rooted prejudice in public opinion. This prejudice, if it exists, is not created by laws, and probably cannot be changed by laws." In 1946, House bill HR 3370 proposed to bar funds to states or schools practicing discrimination. However, this bill did not pass, and its failure acted as a restatement of the existing "separate but equal" doctrine.

Major revolutionary change came during the Eisenhower administration, over a decision in the area of public education. The Supreme Court, in the 1954 case, "Brown vs. Board of Education of Topeka, Kansas," decided that "in the field of public education, doctrine of separate but equal has no place. Separate educational facilities are inherently unequal." The decision that it was unconstitutional for public schools to segregate by race was a major step forward. In addition, the decision tried to extend to desegregation of public facilities such as parks, playgrounds, libraries, etc., and also to privately owned transportation. According to this decision, the "separate but equal" doctrine was dead. The federal government adjudicated many similar cases, such as Cooper vs. Aaron, Watson vs. City of Memphis, and Griffin vs. Prince Edward County School Board. In the case of Cooper vs. Aaron in 1958, the Supreme Court called on local officials to make a prompt start in desegregation of schools. The court required "a prompt and reasonable start" and warned that no scheme of racial discrimination against Negro children could stand

the test of the 14th amendment if "there is state participation through arrangement, management, funds or property." In 1963, the case, Watson vs. City of Memphis, the Supreme Court ruled that "the basic guarantees of our constitution are warrants for here and now, and unless there is an overwhelmingly compelling reason, they are to be promptly fulfilled." Here again, the court was growing impatient since very little had been done to speed school desegregation. Thus in 1964, the Supreme Court noted that there was "entirely too much deliberation and not enough speed." It unanimously declared unconstitutional and in violation of the equal protection clause of the 14th Amendment the closing of public schools in Prince Edward County, Virginia to avoid integration, while other public schools in Virginia remained open (Griffin vs. Prince Edward County School Board). Black children in Prince Edward County had gone without formal education since 1959, when the schools had been closed down, while non-Black children attended private schools which discriminated against Black children. The Supreme Court prohibited the giving of tuition grants and tax credits to these schools and concluded that, "delays in desegregation of school systems are no longer tolerable," discarding its 1955 rule of "all deliberate speed." The question of complete desegregation has been, and will be a major task for the Supreme Court, for only when full school desegregation is achieved can Black human capital improve.

The goal of ending the notion of "separate but equal" in public education was to provide equal educational facilities for all. Getting an education is a formal way of investing in a human being. It was assumed that people with equal educational achievement, would have the same marginal product; and, as such, would earn equal wages, if they were performing the same job and were hired at the same time. The taste for discrimination in public education has caused Blacks to receive inferior education in segregated Black schools. This is due to the shortage of physical capital investment in Black schools; and, as a result, the output from these schools has been lower than that of non-Black schools. The legal requirement of desegregation in schools, if enforced, might improve the education of Blacks and better the possibility that Blacks would earn equal wages with non-Black workers. If integration in education does not take place, it is possible for education of Blacks to improve if more physical capital is allocated to Black schools. Again the question boils down to the distribution of physical capital which is determined by the dominant group.

Political Economic Legislation 1945-1964

Until the mid-50's the majority of Blacks were not allowed to vote in many Southern states and in some states in the North. But in 1957, during the Eisenhower administration, Congress passed its first statute to enforce civil rights since the 1870's. It was a weak

law which gave federal authorities some power to restrain local polling officials from preventing voting by Blacks. HR 6127, the Civil Rights Act of 1957 in Title IV, "prohibited attempts to intimidate or prevent persons from voting in general primary elections for federal offices." It also empowered the Attorney General to seek an injunction when an individual was deprived or about to be deprived of his right to vote. Another important item of this Civil Rights Act was the creation of an executive commission on Civil Rights and the establishment of the Civil Rights Division in the Department of Justice to be headed by an Assistant Attorney General.

The right to vote gave the individual the right to cast one vote for the political candidate who would protect his interest locally or nationally. Of course, the Civil Rights Act of 1957 covered only the right to vote in federal elections, while most decisions which directly affect the community are made by the local politicians and local officials, and Blacks were not ensured this right by the Civil Rights Act of 1957. The economic significance of the right to vote is that Blacks through block votes could elect Federal officials with a low "taste for discrimination." Having a low coefficient of "taste for discrimination," would in turn mean that the elected officials would need to be interested in fairly representing the interest of the Blacks and would fight for programs that would improve their economic status.

The distribution and allocation of the resources to the Black people would become an issue to deal with.

Three years later, in 1960, another Civil Rights measure came into effect as a result of recommendations made by the Civil Rights Commission and the Eisenhower administration. The major provision was an enforcement clause which gave the Attorney General more power. This second statute strengthened the existing law. The effectiveness of the Act was described by Arnold M. Rose (1965): "It is doubtful that these statutes helped the position of Negroes enough to offset the damage inflicted on other liberal legislation, such as the bill to provide federal aid for education, by the political bargaining that was required (Rose, 1965 p. 8).

Between 1960 and 1963, little civil rights legislation came from Congress, save some unsuccessful attempts by President Kennedy to enforce existing laws. However, during this period, the Black awakening movement became popular and Blacks as a collective body sought for more substantial legislation to outlaw discrimination in voting, education, employment, and business relations.

Political power is a necessary condition for economic stability. If Blacks could achieve sound political power, they could then use that power to influence politicians to alter their "taste for discrimination" against Blacks, and, as a result, more resources would be allocated to the Black community to improve their economic status.

Fair Employment Practice Legislation 1945-1964

The question of discrimination in employment is dealt with by the sections in the Civil Rights Acts commonly known as the Fair Employment Practices Commission (FEPC). The four presidential administrations, namely--Roosevelt (1933-1945); Truman (1945-1953); Eisenhower (1953-1961); and Kennedy (1961-1963) addressed themselves to the question of discrimination in employment against the Blacks with the prime objective being to bring equality to all people in employment.

The Roosevelt administration, as discussed earlier, was the first administration to issue the Presidential Executive Order (#8802 in 1941) to prohibit discriminatory practices in companies and in unions which had government contracts or were engaged in war work. Also, in the same era, a temporary Fair Employment Practice Commission was established. The Roosevelt administration was forced to take this action because of the pressure from Black protest movements, coupled with war pressure. The employment situation for Blacks and other races was very good--not becuase of the law, but as a result of the labor shortage created by the war. James Tobin has shown that, during a tight labor market, the unemployment rate of Blacks is low.

> In a tight labor market, unemployment is low and short in duration, and job vacancies are plentiful. People who

> stand at the end of the hiring line and the top of the layoff list have the most to gain from a tight labor market. It is not surprising that the position of Negroes relative to that of whites improves in a tight labor market and declines in a slack market. (Tobin, 1967 p. 453)

The Truman administration, with bill (HR 2232) in 1945, attempted unsuccessfully to make the FEPC a permanent commission, with a budget of $250,000. This administration, however, made some other improvements. The problem of segregation and discrimination in military service had not been solved by Executive Order #8802 issued by Roosevelt; therefore, President Truman issued another Executive Order (#9981), calling for a progressive breakdown of segregation barriers in the military to be completed by June 30, 1954. Still Congress took very unfavorable views towards Civil Rights legislation; for example, in 1948 Truman proposed bills calling for anti-lynching, anti-poll tax, and anti-transportation segregation legislation and for the establishment of a permanent FEPC Commission, none of which came through. Many other Civil Rights bills ended in the same fashion.

The Taft-Hartley Bill, in 1949, was an important piece of legislation. The bill called for "making it unfair labor practice for a union or employer to discriminate because of race, creed, or color." Unfortunately, this part of the bill was not successful. In 1954, an anti-discrimination amendment was offered to the Taft-Hartley revision bill in the Senate, but the Senate recommitted the bill

without voting on it.

President Eisenhower was determined to deal with civil rights problems. His first State of the Union message on February 2, 1953 said that much of the answer to civil rights problems lay "in the power of fact, fully publicized, or persuasion, honestly pressed, and of conscience, justly aroused." Without calling for federal legislation in the civil rights sphere, he proposed "to use whatever authority exists in the office of the President to end segregation in the District of Columbia, including the Federal Government, and any segregation in the armed forces." President Eisenhower issued Executive Order #10479 which created a Government Contract Committee to promote compliance with the anti-discriminatory clause in government contracts. The Eisenhower administration did not accomplish very much in regard to fair employment practice, except for the continued implementation of the existing non-discriminatory policies, and the establishment of a permanent FEPC. The administration is credited with its support of the Court's rulings on school desegregation.

The Kennedy and Johnson administrations made quite substantial progress in the Civil Rights struggle. For instance, President Kennedy issued Executive Order #10925 in 1961 which established the President's Committee on Equal Employment Opportunity. The Committee was responsible for all functions relating to civil rights. The committee had the power to deal with discrimination in

employment, and made some "affirmative" actions dealing with discrimination. It investigated about 32, 000 enterprises consisting of over ten million employees. The operating budget of this committee was close to four million dollars. The Kennedy administration came up with the bill to deal with desegregation of public accommodations, to aid school desegregation, and cut off the federal funds to programs and areas which did not spread the benefit equally between Blacks and non-Blacks.

The Johnson administration issued Executive Order #11246 on October 24, 1965; and, in the same year, on August 6, signed into law the Voting Rights Act of 1965. This was the most comprehensive voting rights legislation to gain Congressional approval in 95 years. Executive Order #11246 superceded all other executive orders, prohibiting discrimination in government employment, in employment by government contractors, and creating a non-discrimination provision in federally assisted construction contracts. The President's Committee on Equal Employment Opportunity was terminated, and all such functions and responsibilities of the administration and enforcement of the Executive Order #11246 were assumed by the Secretary of Labor.

The Civil Rights Act of 1964 is the most comprehensive act in the history of Civil Rights. The Act has eleven titles. Three of the titles, namely: Title IV, dealing with desegregation of public

education; Title VI, barring discrimination under any program or activity receiving federal assistance; and Title VII, outlawing discrimination practices in employment--are significant in changing the attitudes of persons discriminating against minorities. The law became effective on July 2, 1965. Between 1965 and 1966, the law was applicable to employers of 100 or more employees, and labor organizations with 100 or more members. In succeeding years, the number of employees or members was reduced by 25 each year.

Title VII is known as "equal employment opportunity," or commonly referred to as the "Fair Employment Practices" (FEP) under the Civil Rights Act of 1964. The FEP laws have a basic clause prohibiting employment discrimination by employers, labor unions, employment agencies and others because of race, creed, color, or national origin. According to the FEP laws, these various groups are assumed to elicit a taste for discrimination, which is prohibited by law. Because of this taste for discrimination, employers, labor unions, and employment agencies exercise monopoly power in the labor market, reducing the terms of the trade between the two societies.

In order to improve the quality of the Black labor input, Title IV calls for desegregation of the public schools. This title strengthened the School Desegregation Law of 1954. If Blacks attended the same schools as non-Blacks, they would achieve the same

quality education as non-Black students. Education improves the marginal physical product of the Black workers. The investment in human capital can only be done through education, or in job training.

Title VI states that, "No person in the United States shall, on the ground of race, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal assistance." The majority of businesses in the United States receive federal assistance; so, by calling the desegregation of these businesses, one would expect that many job openings would be available for Blacks. The federal government intends to "terminate" or "refuse" to grant or to "continue" assistance to any business which refuses to comply. If this Title VI were enforced and complied with, many businesses would be affected and more work would be available for Black workers.

Employer Discrimination Preference

Legislative pronouncements up to and including the Civil Rights Bill of 1964 failed to define discrimination against Blacks in some of its various forms. Dale L. Hiestand (1970) describes discrimination as "a problem in perception, as an attitude, or as a prejudice which leads employers to make what an objective observer would consider an irrational decision with respect to the hiring and placement of workers; considering their qualifications and qualities necessary for

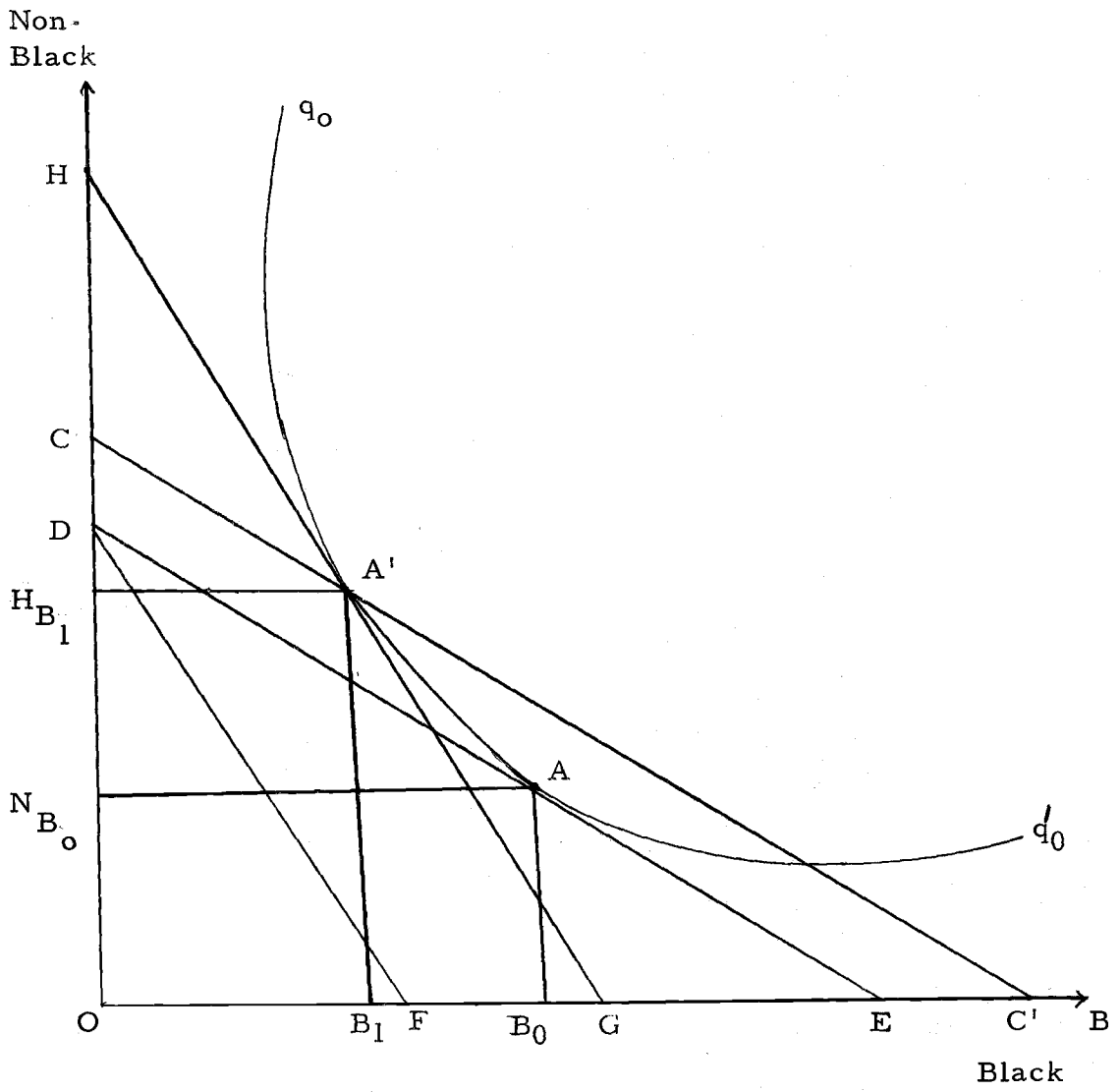
technical performance on the job. In this view, discrimination exists if the employer does not apply the same objective, relevant standard to all applicants for a particular job!" (Hiestand, 1970, p. 5). A social and technical definition of discrimination is said to "exist only if an employer refused to hire a minority group member whose technical qualities and personal acceptability to clients and co-workers are great enough to make him, on balance, the equal of available majority workers" (Hiestand, 1970, p. 6). The last definition of discrimination, "turns on the differential effects of various social institutions and processes which determine which group and individual in the population end up in particular jobs" (Hiestand, 1970, p. 6).

The FEP laws assume that discrimination exists, and therefore prohibit discrimination in employment on account of race, color, religion, sex or national origin. In the field of economics, discrimination is a rather difficult concept to deal with because it is equated with attitudes. Many economists tend to accept whatever attitudes and values exhibited by individuals as natural phenomena as facts of life. Gary Becker (1957) developed a discrimination coefficient to measure "attitudes." According to Becker, the pay differentials between Blacks and non-Blacks is a measure of discrimination; that is, it is a measure of a difference in attitude or in "taste." Becker assumes, as do the FEP laws, that "if an individual has 'taste for discrimination' he must act as if he were willing to pay something

either directly or in the term of reduced income, to be associated with some persons instead of others. When actual discrimination occurs, he must in fact, either pay or forfeit income for this privilege" (Becker, 1957,p.6). The FEP laws, by outlawing discrimination, would be expected to affect the "taste for discrimination." If the taste for discrimination increases, that individual would pay more or forfeit the income further. A decrease in the 'taste for discrimination' would cause the individual to pay less or forfeit less income. Since, according to Becker (1957) the pay differential between the Blacks and non-Blacks is a measure of the difference in attitude, a decrease in attitude would reduce the pay differential between the two societies.

It is assumed that, if an employer has a "taste for discrimination," then, at any time of hiring, the employer who prefers non-Black workers to Black workers would hire non-Blacks regardless of their relative capability; that is, even if the Black worker's marginal value product is greater than the marginal value product of the non-Black worker.

Figure 9 gives an isoquant-isocost diagram, where B represents Black labor input, NB is non-Black labor input, and p_B and p_{NB} represent wage rates for Blacks and non-Blacks respectively, $q_o q'_o$ is the isoquant, and HG, CC', DE are different isocost curves. The production function q is given by a combination of the



Note: $D = \frac{C}{P_{NB}}$, $E = \frac{C}{P_B}$, $F = \frac{C}{P_B(1+d)}$ C = Total Cost

Figure 9. Isoquant-Isocost: The Effect of Discrimination in Hiring

two inputs; thus:

$$q_o = f(B, NB)$$

and by taking a partial derivative with respect to B and NB, we get the respective marginal product MP_b and MP_{nb}. The ratio MP_b/MP_{nb} is the marginal rate of technical substitution (MRTS) which is the slope of the isoquant $q_o q_o$.

$$MRTS_{bnb} = MP_b/MP_{nb}$$

The total cost (C) of producing q is thus:

$$C = p_b B + p_{nb} NB$$

without any discrimination, giving the isocost curve DF. At point A, the isocost is tangent to the isoquant. The OB_o black and ONB_o non-Black workers would be employed to produce output q_o. In addition, at this point of production q_o, the marginal rate of technical substitution is equal to the wage rates, that is, $MRTS = P_b/P_{nb}$.

The employer with a taste for discrimination when hiring Black workers, acts as if the wage rate of the Blacks is $P_b(1 + d)$, where $d > 0$. That is, $(P_b + P_b d)$, where d is discrimination coefficient and $P_b d$ is money equivalent of non-monetary costs of hiring Blacks to the employer. The new isocost curve becomes DF. By drawing HG parallel to this new isocost curve, DF, tangent to the isoquant $q_o q'_o$ at A'. At A' the same output as q_o

would be produced at an added cost associated with isocost curve C'C'. This is constructed by drawing C'C' parallel to DG through A'. The new marginal rate of technical substitution associated with the new cost is

$$MRTS = P_b(1 + d)/P_{nb}.$$

Fewer Black workers would be hired OB_1 and more non-Black workers would be hired, $O_{N_{B_1}}$.

The new cost of producing q_o is given by

$$C' = P_b(1 + d)B + P_{nb} NB$$

Thus, discrimination by the employer is an added cost, $C' > C$. It could be concluded that it does not pay the capitalist to discriminate. On the other hand, it is a benefit to non-Blacks whose employment increases with discrimination. In conclusion, discrimination decreases the quantity of the Blacks demanded and increases the quantity of non-Black workers.

What force could be used to cause the employer's taste for discrimination to change? It seems from the above discussion that employers should be educated that discrimination results in added cost to them, and thus has to be minimized in order to maximize profit. Rational employers being made aware that discrimination brings an added cost, might be led to change their attitudes in order to minimize their costs. In practice, however, it is very difficult

to prove or show to employers that it is not to their advantage to discriminate. Some employers might discriminate to maximize welfare of non-Black workers' employment; as was shown in Figure 9. The discrimination constitutes a gain to non-Black workers. Since this is the case, federal action has to be taken to reduce discrimination. Therefore the objective of the Civil Rights Act of 1964 is to eliminate discrimination in any form which interferes with individual civil rights.

Title VII of the Civil Rights Act of 1964 deals exclusively with employment. It protects employees against any discrimination involving the employment relationship that is based on race, color, religion, sex or national origin. The protection goes beyond the mere act of hiring. The Black employees and applicants for employment are protected against the following:

(1) A refusal by an employer to hire or a refusal by an employment agency or labor union to refer for employment.

(2) Discrimination with respect to compensation, terms, conditions, or privileges of employment.

(3) Limitation, segregation, or classification by an employer in such a way as to deprive or tend to deprive them employment opportunities or otherwise adversely to affect their status as employees.

(4) Discrimination by employers, labor unions, or joint

labor-management committees in admission to or employment in apprenticeship, training, or retraining programs.

(5) Discriminatory classifications or referrals by employment agencies.

(6) Exclusion or expulsion from membership or other discriminatory treatment by a labor union.

(7) Limitation segregation, classification of membership, or classification or failure or refusal for jobs by a labor union in any way that would deprive or tend to deprive them of employment opportunities, limit their employment opportunities, or otherwise adversely affect their status as employees or applicant for employment. 22/

(BNA, 1964; p. 51)

Theoretically, the fair employment laws force the employer to hire Black workers and to integrate them in the industries, and pay them equal wages of the non-Black workers performing the same type of job. However, human behavior is very difficult to change--even by the use of laws. The employer could still hire Black workers and be racist and have his "taste for discrimination" unchanged; and, as such, the cost of working with the Black worker remains unchanged. On the other hand, if the Black workers are

22/ The whole text of the Civil Rights Act of 1964 is fully analyzed by BNA Incorporated, The Civil Rights Act of 1964; Washington, D. C. BNA Incorporated, 1964.

are hired, in aggregate, the number of unemployed Black workers is reduced, which would reduce the Black unemployment rate. The law outlaws segregation in job classifications, so Black workers should theoretically be able to acquire employment in any occupational category, rather than in only the so called "Negro jobs." The proportion of Black workers in each occupational category should be expected to improve toward approaching that of the randomly distributed. The wage differential between the two races should also narrow. This is expected to come about because of the investment made in Black human capital brought about by enforcement of the Civil Rights Law Title IV, and because, at the same time, Blacks are expected to take advantage of all educational facilities open to them such as on-the-job training and the like. In addition, since the FEP laws call for equal compensation, the employer would hire at a single wage for both Black and non-Black, where the wage would equal the value of marginal product.

Implicitly, for the above to take place, the economy has to be healthy, so that the additional labor input could be increased. So if FEP laws are passed during poor economic conditions, few workers would still be hired. On the other hand, during an economy boom, if FEP laws are in effect, more Black workers might be hired. The question then becomes, is it because of a change of "taste for discrimination" by employers, or is it due to economic growth, or war crises that Black participation in the economy will be increased. An obvious

but too simple--answer is that all these forces create an increase in hiring of Black workers and therefore directly improve the economic status of the Blacks. In the regression model these variables would be tested in order to determine what role each variable plays in the improvement of the economic status of Blacks.

Labor Organizations and Discrimination

Historically, labor unions, it is well known, have been segregated, since unions exert monopolistic power through their control of the entry into the union, employment, and setting of the wages. The trade unions are traditionally monopolistic sellers of labor and seek to maximize the incomes of their total membership. In order to maximize their goals of increased income and welfare benefits, the labor unions have to control the supply of labor through their membership and stipulate that the industry can only hire union members. Moreover, non-Black workers hold similar attitudes toward Black workers as ex-slave owners had, and, as such, non-Black workers refused to allow the freed Black workers to become the trade union members. Unions set forth many criteria in order to disqualify Black workers, particularly the criterion of race. Since the Black worker did not qualify for union membership, he could not be employed in industries which were under union domination. However, in Section 703 (c) of the Civil Rights Act of 1964, unions are forbidden:

(1) To exclude or to expel from membership or otherwise to discriminate against, any individual because of his race, color, religion, sex, or national origin.

(2) To limit, segregate, or classify membership or to classify or fail or refuse to refer an individual for employment in any way that would deprive or tend to to deprive him of employment opportunities or would limit such employment opportunities or otherwise adversely affect his status as an employee or as an applicant for employment because of his race, color, religion, sex, or national origin.

(3) To cause or to attempt to cause an employer to discriminate against an individual in violation of the Act.

According to the Civil Rights Act of 1964, then, the trade unions could no longer "exclude" or "expel" from their membership, or "discriminate" against, any individual because of his race, color, religion, sex, or national origin. All methods used by trade unions to bar membership or to cause employers to discriminate were outlawed by FEP laws. Because of this action, more Black workers would be expected to join labor unions, enjoy high wages and secure employment.

FEP Laws and Factors Substitutability

The supply of non-Black and Black labor is given by the labor market. The tastes for discrimination among the employers in the labor market are not homogeneous. The Black worker is a perfect substitute for the non-Black worker. But, in reality when an employer is faced with two workers--one non-Black and the other Black--

because of his taste for discrimination, he prefers to hire the non-Black worker first and the Black worker last. The non-Black worker in many instances refuses to work with the Black worker, unless he is over compensated by his employer.

The FEP laws declare it is unlawful employment practice to discriminate against any individual in "admission" to or "employment" of any apprenticeship training, or retraining program. This applies to employers, labor unions, or joint labor-management committees. In addition to this, Title IV of the Civil Rights Act of 1964, calls for desegregation of public education. The laws here open educational facilities to Black workers. Due to education and training, the human capital of the Black workers would improve, and his marginal productiveness would improve and so bring forth more income. In the long run the Black workers would be accepted as an equal substitute for the non-Black workers. In addition to improving human capital, Title VI of the Civil Rights Act of 1964 intends to refuse government contracts to industries which refuse employment to the Black workers. The FEP laws in section 703 (b) specifies that it is unlawful practice for employment agencies: to fail or refuse to refer for employment; to classify or refer any individual for employment on the basis of race, color, religion, sex, or national origin. Theoretically, the FEP laws have opened the labor market to the Black workers more then ever before, by outlawing all the prejudicial barriers which

created the market's imperfection.

By implementing the FEP laws, gradually, the taste for discrimination among non-Black workers would gradually decrease. The non-Blacks would work with Blacks without over compensation. The Black workers would earn wages equal to non-Black workers and would gain employment in many high-paying jobs. The number of Black workers to be employed would certainly decrease with the decline in intensity of the taste for discrimination. The liberal employers, with a low degree of intensity of taste for discrimination, would be expected to hire workers who are getting a lower wage--in this case, Black workers. Regardless of the low wage even, the liberal employer would tend to hire Black workers in order to comply with laws. Similarly, conservative employers would be expected to hire non-Black workers first, until non-Black workers were not available; then he would hire a very small number of Black workers to comply with the law.

Enforcement of the Civil Rights Act

When the Civil Rights Act of 1964 was enacted, some civil rights enforcement agencies were formed to enforce the law of the land. The major Federal agencies were the Equal Employment Opportunity Commission, the office of Federal Contract Compliance, the Justice Department's Civil Rights Division; in most states, local

Civil Rights Commissions were established. Each of the Civil Rights Commissions was empowered by the law to enforce equal employment statutes and Presidential Executive Orders. In addition, other civil rights organizations, such as NAACP, had some responsibility to make the law effective.

The Commissions themselves have no enforcement powers. Their functions are "persuasion" and conciliation." The Civil Rights Law establishes two basic forms of legal enforcement: (1) The individual who charges he or she is a victim of job discrimination may initiate action in Federal Court; and (2) The United States Attorney General may file suite in a Federal court wherever there is reason to believe that any person or group of persons is engaged in a pattern or practice of discrimination.

While these provisions constitute useful beginnings, they are hardly perfect, and are oftentimes not entirely satisfactory. The procedures to be followed to make a complaint are time consuming, because of their complicated regulations. For instance, it is required that a written report of the charge has to be filed within 90 days after the discriminatory act has occurred. In addition, the Civil Rights Commission is not authorized to conduct investigations in the absence of a formal charge of discrimination. After the complaint has been filed, the Commission is expected to "endeavor to

eliminate any such alleged unlawful employment practice by informal methods of conference "conciliation" and "persuasion."[23/] If the Commission exhausts its power and is unable to come to voluntary compliance, then complaints are filed or taken into Federal or State courts to secure compliance with anti-discrimination statutes and orders.

The problems of enforcement of the Civil Rights Act Laws are complicated. Since discrimination occurs in a free trade environment as a result of the desire of many non-Blacks not to associate with Black people, then the Government and Black organizations can only attempt to alter these attitudes (i. e., taste for discrimination). The pragmatic formulation of the Federal government objectives in the equal job field thus is described: "to make progress towards equality at a rate which balances value considerations of justice and equal opportunity and the interests of certain groups which have resisted changes in personnel patterns and practices, the outcome frequently being a greater emphasis on voluntary action to achieve positive results than on the use of sanctions to force compliance." [23/] Thus stated policy objectives seem to support the opinion that laws and policies cannot quickly or automatically end deeply held social values and attitudes. The Civil Rights laws have therefore been compromises.

[23/] United States Commision on Civil Rights, Jobs and Civil Rights, Brooking Institute, Washington, D. C., 1969, p. 10.

If industry behaves rationally and attempts to maximize profit, and if the government imposes some cost to those who do not comply with the civil rights laws, the added cost might force them to change their attitudes.

Interpretation of Compliance of FEP Laws

The impact of the Equal Opportunity law on the economic status of Black Americans can be measured by the effect it has on decreasing the relative economic gap between Black and non-Black as estimated by income, unemployment rates, and occupation distributions. The laws have to affect two aspects of discrimination, namely, source and form. The source refers to the ultimate person generating discrimination--such as consumers, employers and employees; and the other, form, refers to manifestations of discrimination. Unless these two aspects of discrimination are affected, there will be no decrease in the taste for discrimination, by which employers will hire Black workers and compensate them equally with the non-Black workers. Only when this is obtained would non-Black workers work together with the Black workers and admit them equally to the labor unions. Only then would the relative income of the Blacks to non-Blacks improve and employment differentials be reduced.

According to the Equal Employment laws, there is no required number of Black workers that the industry must hire to comply with

the law. For instance, an industry with a total of one thousand employees could hire one Black worker and still comply with the law. Similarly a labor union can admit one Black into their membership. Herbert Hill (1964) points out that "an employer may often feel his company is abiding by a nondiscriminatory policy if the commission's poster is exhibited and one or two Negroes are employed." He continues by saying, that the real problem is "the fact that FEPC in Connecticut and elsewhere is not meant to change the Negroes' occupational pattern by widespread and fundamental change in racial employment practices" (Herbert Hill, 1964, p. 38). In aggregate, the total gain of change in employment patterns in all industries might not be reflected in reducing the unemployment rate, or by a relative income increase; since this would amount to merely "token" compliance in hiring Black workers.

The problems of equal employment, however, go deeper than this, into the psychic of the workers, particularly. In the urban sector, the market of labor show racial dualism. Black workers and non-Black workers, for instance, have developed separate patterns of job seeking. Black workers do not seek employment with firms identified as being totally in the non-Black labor market; nor do they seek jobs that they identify as being non-Black jobs. This is due to the psychological manifestation of the historic institutional separation of the workers. Additionally, in many instances, some

firms fill vacancies by word of mouth to friends and relatives of employees, thus recruiting from the same racial group and reinforcing their present labor force. How could the Equal Employment laws affect this type of racial job network? The laws require positive action of employment integration; so, it appears that the industry would take some pain to recruit members of poorly represented minority groups.

The causes of the income differences arise from two basic sources (1) difference in the kinds and quantities of resource, owned by different individuals and (2) differences in prices paid in different employments for units of any given resources. The kinds and quality of labor resource depends on its acquired and inherited characteristics. The labor supplied by workers is human. The inherited character is inborn with individual worker, who is capable of increasing his acquired ability through investing time in education. The laborer possessing this characteristic is known as human capital. The earning capability and what type of work one does is in many cases determined by acquired ability. The Civil Rights Acts of 1964 called for the efforts to end public school segregation. At the same time on-the-job training facilities have also opened for Black workers. The Black workers would be expected, after acquiring necessary training and education, to move to better paying jobs. The wage of the Black worker should reflect the equal compensation provision of

the FEP laws. In the long run, the relative income of the Black to that of the non-Black workers would be expected to increase.

The major effort of the Equal Employment laws is to break down the monopoly and monopsony power of non-Blacks who practice discrimination. Becker's (1957) disutility approach applied to Thurow's (1969) concept of a free economy of trade through the Fair Employment laws could do very little to end discrimination. But Becker (1957) argues that the public policy could be used to increase the cost of discrimination. The FEP laws on the other hand demand that industry should hire Black workers, that all employment information should be available to the Blacks, that labor unions should be integrated, and that apprenticeship training be opened to the Blacks. If not, the Federal government can withdraw or refuse government contracts to non-compliants.

The equal compensation for equal work would bring the relative income of the Black up to that of the non-Black, that is, the impact is the shift of income co-efficient as a result of the FEP laws. Still, there are problems here as well.

Assuming that the human capital is the same, the employer may be viewed as having separate demand curves--one for Blacks and another for non-Blacks, as shown in Figure 8 . The employer's demand would shift after the passage of the laws and implicitly there would be expected a reduction in unemployment differentials. Here

it is assumed that there exists room to hire Black workers; but should the industry have hired all required workers, then it would appear that some of the non-Black workers have to be fired to make room for Black workers or the employer would hire Black workers at lower wages than non-Black workers. The changes depend on the risk the industry is willing to take, such as refusing to pay equal wages or firing non-Black workers. Consequently, unemployment and income differentials between Blacks and non-Blacks would widen.

The laws might influence individual Black workers to risk quitting their jobs due to expectations of a better job elsewhere. Some of the gains Blacks are making are in the form of an economic rent. That is, due to the great demand for qualified Black workers, many employers are competing for these Blacks. In the long run they are paid higher prices than non-Black workers with the same qualifications performing the same work. The difference between the two wages is known as economic rent. All these magnitudinal changes and shifts in coefficients would have an impact on the economic status of the Blacks as well as on the non-Black workers.

The problem now is to determine the impact of the FEP laws empirically. In this chapter descriptive techniques will be employed roughly to determine the success or non-success of the laws. Thereafter, in Chapter IV regression analysis will be applied for better analysis.

Empirical Evaluation of the Effects of the Equal Employment Laws

The standard measure of the success or the non-success of the Equal Employment laws is determined by comparing the relative economic situation of the Blacks before and after the enactment of the laws. We will look for changes in the following factors: the ratio of the Black family median income to the non-Black median family income, the ratio of the unemployment rate, and the proportional occupational distribution. The income earned by the family is a function of the wage rate received, the type of occupation one has, the length of time one is employed, education and some other variables. The premise on which FEP laws function is that all workers are equal and as such they should be compensated equally (i.e. equal wage). If this holds true then the Black worker would make some significant progress in terms of income provided fair employment and occupation are available.

Black Income

Table 1 shows the non-Black vs. Black income ratio. In 1939, the average income of a male worker age 14 years and over for non-Black was $1112 and for Black was $460, giving a differential of $652 and a ratio of 41 percent. World War II brought a major income distribution progress, but in the post-war period there was a decline in spite of

Table 1. Median Family Income by Color 1947-1969

Year	Black	Non-Black	Ratio (B/NB)
1947	1614	3157	51.1
1948	1768	3310	53.4
1949	1650	3232	51.1
1950	1869	3445	54.3
1951	2032	3859	52.7
1952	2338	4114	56.8
1953	2461	4392	56.0
1954	2410	4339	55.5
1955	2549	4605	55.4
1956	2628	4993	52.6
1957	2764	5166	53.5
1958	2711	5300	51.2
1959	2917	5643	51.7
1960	3233	5835	55.4
1961	3191	5981	53.4
1962	3330	6237	53.4
1963	3465	6548	52.9
1964	3839	6858	56.0
1965	3994	7251	55.0
1966	4628	7722	60.0
1967	5141	8274	62.0
1968	5590	8937	63.0
1969	5590	8937	63.0

Source: U. S. Department of Labor, Bureau of Labor Statistics. The Negroes in the United States, Their Economics and Social Situation, Bulletin no. 1511. June, 1966. 241b.

Recent Trends in Social and Economic Conditions of Negroes in the United States. Current population Report Series P-23, No. 26 BLS Report No. 347, July, 1968. 28 p.

Statistics on Manpower: A Supplement to the Manpower Report of the President. March, 1969.

the liberal programs. The income went up again during the Korean War. Rapid progress was made in closing the relative gap in 1939 and 1954. In 1964, the Black family median income was $3839; this was 56 percent of the non-Black family median income. In the period between 1966 and 1969 it was over 60 percent.

In a study by Batchelder investigating all change in income from all possible source by region between 1949 and 1959, revealed that the ratio of median income of the Black to non-Black median income for men in the United States did not change significantly in that half decade. Instead there was a significant decline in income within each major region. The data indicates that for conterminous limited states the income ratio, Black to non-Black fell from 52.52 percent in 1949 to 51.96 percent in 1959; Northeast from 74.70 percent in 1949 to 71.94 percent in 1959; North Central from 81.22 percent in 1949 to 76.64 percent in 1959; West Central from 73.55 percent in 1949 to 71.13 percent in 1959; and South from 50.02 percent in 1949 to 46.62 percent in 1959 (Batchelder, 1964; p. 525-528).

An improvement in income ratio is considered a measure of progress toward economic equality among the races. Then, to what extent did the FEP laws and Executive orders affect the income change. It is difficult to tell from the ratios. For instance, the change between 1962-1965 from Table 1 was 54.3 percent before the FEP law and after the law between 1966-1969 was 62.25 percent.

The problems with the ratios is that it is difficult to tell what contribution was made by each individual variable. Therefore, some other means should be employed to account for the change.

Black Employment

The occupational pyramid naming its apex in the "white collar worker," has relatively very few Black workers; however, of its base, composed of blue collar workers, the majority are Black workers. During the period from 1941 to 1969 major events took place when indirectly or directly influenced employment of Blacks--namely the Korean War, the Vietnam War and the enactment of Executive Orders and Fair Employment Laws of 1964. In 1965, 6.4 million Black workers were employed; ten years later in 1965, the number increased to 7.7 million Black workers, which meant an increase of the ratio of Black workers, to a total employment from 10.2 to 10.7 percent. The employment of non-Blacks rose from 56.6 million to 66.5 million between 1955 and 1965.[24/] The general outlook of employment of Black workers is highly concentrated in blue collar and service occupations of which the rate of growth is much slower than that of white collar workers. Although there is clear indication of Black workers

24/ It is probable that this rapid rate of growth in employment of Blacks is due to a rapid rate of population growth and a small decrease in the unemployment rate. Black population increase by over 25%, the white population by 16%.

moving up to skilled jobs, there is no sign of narrowing the unemployment gap between Black and non-Black workers. The only possible way of narrowing the unemployment gap is for Black workers to improve their employment in white collar jobs at a larger proportion than heretofore. In order to do this governmental and private programs have been developed to improve the educational level and develop capacity for skilled occupations.[25/] Between 1960 and 1969 there was some increase in Black workers moving to skilled and well-paying jobs. It appears, indeed, that the percentage change of workers has increased more sharply than the percentage of non-Black workers in white collar jobs.

Black Unemployment

The Fair Employment laws and Executive Orders are expected to deal with the market imperfections by way of opening the entry to the labor market for the Black workers. The law forbids employers who "refuse" to employ Black workers because of their race; this is known as the "segregation provision." If the laws are functional, one could expect some changes in the unemployment rate because of the free labor market opened to the Black workers, assuming that the

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25/ Manpower Development and Training Act, Vocational Education Act, and various legislation providing for improvement and expansion of education and financial aid for students, Educational Opportunity Program- investment in human to up-grade the human capital.

supply of labor remains the same and that the demand for Black labor increases.

When examining the unemployment rates before and after the enactment of the laws, some change should be observed over the period of time. Table 2 shows that the ratios of unemployment rates of Black to that of non-Black workers has remained two-to-one since 1954. From 1947 to 1953 the ratio was below two due to Korean War prosperity of 1950 to 1953. The highest peak of unemployment rate for Blacks reached as high as 12.6 percent in 1958, whereas that of non-Black was 6.1 percent for the same year. The period between 1958 and 1963 the unemployment rate of Blacks was over ten percent and of non-Black was below six percent. This period, then, is one of retrogression rather than progression for the Black. There has been a significant gradual decrease of unemployment rate since 1964, but whether this is due to the Fair Employment laws, the war in Vietnam, or the growth rate of GNP is yet to be seen. For instance, the growth rate of GNP rose from 5.9 percent in 1964 to 6.2 percent in 1965. The ratio of unemployment was 2.0 percent when the GNP growth rate fell to 5.5 percent in 1966 and the unemployment rate was 2.2 percent. The GNP growth rate remained in the statistical model in the next chapter.

Black Occupational Progress

There are about ten major occupations which are further grouped

Table 2. Unemployment Rate 1947-1969.

Year	U.S.	Blacks & Others	White	Bu/Wu	Growth rate of GNP %
1947	3.9	5.2	3.4	1.5	4.5
1948	3.8	5.2	3.4	1.5	0.1
1949	5.9	8.9	5.6	1.6	9.6
1950	5.3	9.0	4.9	1.8	7.9
1951	5.3	5.3	3.1	1.7	3.1
1952	3.0	5.4	2.8	1.9	4.5
1953	2.9	4.5	2.7	1.7	1.3
1954	5.5	9.9	5.0	2.0	7.6
1955	4.4	8.7	3.9	2.2	1.9
1956	4.1	8.3	3.6	2.3	1.4
1957	4.3	7.9	3.8	2.1	1.1
1958	6.8	12.6	6.1	2.1	6.4
1959	5.5	10.7	4.8	2.2	2.5
1960	5.5	10.2	4.9	2.1	2.0
1961	6.7	12.4	6.0	2.1	6.6
1962	5.5	10.9	6.9	1.58	4.0
1963	5.7	10.8	5.0	2.2	5.3
1964	5.2	9.6	4.6	2.1	5.9
1965	4.5	8.1	4.1	2.0	6.2
1966	3.8	7.3	3.3	2.2	5.5
1967	3.8	7.4	3.4	2.2	4.7
1968	3.6	6.7	3.2	2.1	4.7
1969	3.6	6.5	3.2	2.0	4.7

Source: U.S. Department of Labor. Bureau of Labor Statistics.. See Table 1 source.

into four major classes. The first one is white-collar workers which has four occupations: namely, professional and technical workers; managers, officials and proprietors; clerical and sales and kindred workers. The second classification is called blue-collar workers with three occupations: namely, craftsmen and foremen; operatives and kindred workers (nonfarm laborers). The majority of Black workers are in this class. The third classification is that of service workers with two occupations: namely, private household and other. The majority of Black female workers dominate this class by tradition. The last classification is farm workers, with two occupations: namely, farmers and farm managers, laborers and foremen. The majority of the Black workers in Southern states are employed on the farms by the capitalists. In 1948 about 21.1 percent of Black workers worked in agriculture, but by 1959 only 12.0 percent. The Black farm operators in the United States decreased, from 925,710 in 1920 to 272,541 in 1959.[26/]

The question we want to deal with in this section is this: What progress have the Black workers made toward better occupations? Susan C. Holland (1967) of the Employment and Unemployment Analysis, U.S. Department of Labor, states that:

[26/] U.S. Census of Agriculture, 1959, Vol. II. General Report Chap. 10, p. 1104. The overwhelming majority of black farmers live in the 16 states which constitute the South.

> The objective of the equal employment opportunity principle is that "Black" should have an opportunity to move into better jobs--those with better pay, better chances for advancement, more security, and more dignity. Traditionally, the majority of Negroes have been concentrated in the bottom occupational ladder--in household work, other service occupations, agricultural labor and unskilled labor in the cities.
>
> (Holland 1967, p. 11-25)

Table 3 shows the occupational annual average of all ten major occupations. There is a substantial increase of all total occupations from 6692 thousand workers to 8369 thousand between 1956 and 1969. Between 1956 and 1966 the number of Black workers rose from 775 thousand to 1659 thousand. This was a significant gain in employment for Black workers. The major gain was about 325,000 jobs in professional and technical occupations, and 400,000 clerical positions. A small gain in managers, officials, and proprietors and sales positions was encountered. Among the blue-collar workers there was a rise from 2789 thousand to 3320 thousand between 1956 and 1966. About 250,000 skilled labor jobs (craftsmen and foremen) and 350,000 semi-skilled jobs (operatives) were gained by Black workers. The net increase in this class was about 531 thousand jobs. There was a substantial decrease in the number of laborers in about 47 thousand jobs. In the field workers there was some decrease, especially in private households (of net negative decrease) of about 49 thousand workers, which meant that Black women were moving out of domestic jobs into respectable openings. Many black workers left agricultural

Table 3. Black Employment, by occupation, annual average 1956-1969

OCCUPATION	1956	1961	1965	1966	1969	1975	Change 1956-1965 No.	Change 1956-1965 %	Change 1961-1966 No.	Change 1961-1966 %	Change 1965-1969 No.	Change 1965-1969 %
Total, all occupations	6692	6936	7750	7968	8369	88700	1058	15.8	1032	14.9	619	8.0
White-collar workers	775	1137	1510	1659	2187	42800	735	94.8	522	45.9	677	44.8
Professional & technical workers	224	319	530	551	692	13200	306	136.6	232	72.7	162	30.6
Managers, officials, & proprietors	141	173	200	208	254	9200	59	41.8	35	21.4	54	27.0
Clerical	334	534	630	751	1078	14600	296	88.6	217	40.6	448	71.1
Sales	76	111	150	149	163	5800	74	97.4	38	34.2	13	8.7
Blue-collar workers	2789	2712	3160	3320	3578	29900	371	13.3	608	22.4	418	13.2
Carftsmen & foremen	366	423	520	600	704	11400	154	42.1	177	41.8	184	35.4
Operatives	1441	1394	1650	1785	1998	14800	209	14.5	391	28.0	348	21.1
Laborers, excluding farm & mine	982	895	990	935	876	3700	8	0.8	40	4.5	-114	-11.5
Service workers	2156	2275	2450	2500	1525	12500	294	13.6	225	9.9	-925	-37.8
Private household	990	1006	980	941	712	2400	-10	-1.0	-65	-6.5	-268	-27.3
Others	1166	1269	1470	1559	X	10100	304	26.1	290	7.1	X	X
Farm workers	974	811	630	487	X	3500	-344	-35.3	-324	-40.0	X	X
Farmers & farm managers	311	201	-184	140	127	1800	-171	-55.0	-74	-36.8	X	X
Laborers & foremen	663	610	490	360	366	1700	-173	026.1	-250	-41.0	-124	-25.3

Source: U. S. Department of Labor. Bureau of Labor Statistics. See Table 1 source.

employment, which showed about a 50 percent decline during that decade.

Employment Comparison of 1961 and 1965-1969

The period 1960 to 1970 is one of the significant times in the history of Fair Employment Practices. The important Executive Order enacted by President Kennedy in 1961 established the President's Committee on Equal Opportunity. It was the first time responsibility for fair employment practices of the federal government, government contractors, and labor organization was placed under a single body. The nine large corporations holding defense contracts made a pledge to voluntarily uphold and affirmatively support equal employment opportunities. The first "Plans for Progress" were established to implement President Kennedy's Executive Order #10925.

In 1964 the major Civil Rights Bill was enacted. The Title VII is entirely devoted to fair employment. In 1965, President Johnson ordered the Executive Order #11246 which strongly prohibited discrimination of any form in employment both in the private sector and the government sector. During the same time there was some economic boom because of the war in Vietnam. The comparison of the occupational progress of the period 1961-1966 is of interest to us in studying the economic improvement of Black workers.

Tables 3 and 4 show in each period (1961-1966 and 1965-1969)

some changing patterns in employment in every single occupation. Between 1961-1966 there was a net increase of 1032 thousand jobs compared to that of 619 thousand jobs between 1965-1969. Table 4[27/] shows that Blacks held 10.4 percent of total employed workers in 1961, and rose to 10.8 percent in 1966, and between 1965-1969 rose from 10.7 percent to 11 percent. For both periods, Blacks were under-represented in all white-collar and skilled-labor categories, and over-represented in all semi-skilled jobs, unskilled, service positions and farm laborers. In professional and technical occupations there is a steady increase (faster than any other occupation in this category) of white-collar workers. The managers, officials, and proprietors jobs show very slow occupational entry gains for both periods, there being a net gain of about 35 thousand jobs between 1961 to 1965, and 54 thousand jobs between 1965 and 1969--a proportionate gain of 2.4 percent in 1961 to 2.8 percent in 1966. The employment proportionate gain of Black workers in professional and technical jobs took place between 1961 and 1965 from 4.1 percent to 5.9 percent in 1965, and has remained constant between 1965 and 1969 at about at about 5.9 percent in proportion of Black workers of the total employment.

27/ Table 4 is a more exacting test of equal opportunity than Table 3. For instance, Black farm laborers fell by 300,000 jobs or 46 percent from 1956 to 1966, Table 3; the proportion of all farm laboring jobs held by Blacks declined very little from 22.9 to 20.2 percent.

Table 4 . Black Employed workers as a percent of total employment, by occupation selected years 1965-1969.

OCCUPATION	1956	1960	1961	1964	1965	1966	1969	Projected
Total employed	10.3	10.6	10.4	10.6	10.7	10.8	11	11.4
White-collar workers	3.0	3.9	3.9	4.5	4.7	5.0		6.6
Professional & technical	3.7	4.4	4.1	5.8	5.9	5.9	6	9.0
Medical & other health		4						
Teachers, except college		7						
Managers, officials, & proprietors	2.2	2.5	2.4	2.6	2.8	2.8	3	3.4
Clerical	3.8	5.2	5.4	5.4	5.7	6.3	8	7.3
Sales	1.8	2.6	2.3	3.1	3.1	3.1	4	4.8
Blue-collar workers	11.1	11.6	11.4	11.8	11.9	12.2		12.5
Craftsmen & foremen	4.2	4.9	4.9	5.8	5.6	6.3	7	7.5
Construction craftsmen		6					8	
Machinists, Jobsetters & others		4					6	
Foremen		2					4	
Operatives	11.3	11.9	11.9	11.8	12.3	12.9	14	13.3
Durable goods		10					14	
Nondurable goods		9					14	
Nonform laborers	26.8	26.4	25.7	26.9	25.6	25.3	24	24.9
Service Workers	28.3	26.8	26.3	26.0	26.3	25.8		24.6
Private household workers	46.6	45.3	43.4	43.6	43.6	41.8	44	40.9
Other service workers	12.3	20.1	20.1	20.0	21.8	21.0	19	20.8
Protective services		5					8	
Waiters, cooks, & bartenders		15					14	
Farm Workers	14.9	16/2	15.7	14.6	14.7	12.6	11	13.8
Farmers & farm managers	8.5	7.9	7.4	6.3	6.1	6.1		3.8
Farm laborers & foremen	22.9	25.1	24.8	23.8	24.3	20.2		24.4

Source: U. S. Department of Labor. Bureau of Labor Statistics. See Table 1 source.

The employment of Black clerical and kindred workers has improved tremendously, being second only to the profession group, with an increase from 3.8 percent in 1956 to 6.3 percent in 1966. Between 1960 to 1965 the gain still held going from 5.2 percent in 1960 to 5.7 percent in 1965. A remarkable gain from 5.8 percent to 8.0 percent was noticeable between 1965 and 1969. The significant gains were made in the public sector and public utilities, such as the postal office and telephone companies, where Blacks were hired.

The number of Blacks employed as sales workers rose from 111 thousand jobs in 1961 to 163 thousand jobs in 1969. The improvement in this group is very poor and too slow. The Black workers proportion is less than one third the proportion of non-Black workers employed.

The rate of increase in employment of Blacks in blue-collar positions has remained constant in proportion to the total of 12 percent between 1960 and 1969. Between 1961 and 1966, the Black craftsmen, foremen, and kindred workers increased from 4.9 percent to 6.3 percent. A substantial rise in proportion of total employment for the same group of from 5.6 percent in 1965 to 7 percent in 1969 was gained. Employment of Black operatives and kindred workers has been less than other occupations. Between 1961 and 1966 there was a net gain of 391 thousand jobs compared to that of 348 thousand jobs between 1965 and 1969. The proportion of employment of Black operatives and kindred workers rose from 12.3 percent in 1965 to 14 percent

in 1969. There is a mild decline of employment of Black nonfarm laborers. Black workers are more than in proportion in this category of unskilled jobs.

The rate of employment of Black service and kindred workers has been almost constant at about 26 percent between 1956 and 1969. In 1961, 43.4 percent of private household workers were Blacks. By 1966 this fell to 41.8 percent. The figures indicated it has gone up to 44 percent in 1969. The truth still holds that Black workers are still over-represented in these unskilled and undesirable jobs.

The number of farmers and farm managers has decreased significantly between 1956 and 1969 which might have caused the employment of Black workers to decline rapidly from 24.8 percent in 1961 to 20.2 percent in 1966. In 1956, Black farm workers constituted 22.9 percent of the total employment; this rose to 24.3 percent in 1965. Although these figures are correct, Table 3 shows a net increase of 173 thousand jobs.

Conclusion of Empirical Evaluation

The above empirical evaluation of economic situation of Black workers is inadequate to detect the effects of the Equal Employment laws. The contribution of each individual variable responsible for economic progress is not easily identified. For instance, Table 1 shows that in 1965 the relative income of the Black family to the

non-Black family was 55 percent and rose to 60 percent in 1966. The net change in income was 5 percent which might have resulted from all variables. Some of the variables contribute more than the others, and some of them are statistically significant. The comparison of ratios of income, unemployment rate in Tables 1 and 2, one can only conclude that the great change in ratios occurred during a period of economic prosperity. The ratios might tend to underestimate the gap between non-Black and Black and make it impossible to say to what impact the laws, war, etc. have had on the economic progress of Black Americans.

To underscore this limitation, the regression technique will be used in order that such variables as FEP, war could be included in the model as dummy variables to determine their significant contribution to the improvement of the economic status of the Black American.

IV. ECONOMIC IMPACT OF FEP LAWS AND ECONOMETRIC MODELS

> It takes no one to stir up the sociological dynamite that stems from the unemployment, bad housing and inferior education already in the ghettos. This explosively criminal condition has existed for so long, it needs no fuse, it fuses itself, it spontaneously combusts from within itself.
>
> Malcolm X, 1964.

Introduction

The economic impact of the 1964 Fair Employment Practices and subsequent Executive Orders on Black Americans is subject to some statistical appraisal in this chapter. How does one estimate the economic impact of laws? In Chapter II, a theoretical discussion of the effect of the FEP laws demonstrated that the FEP laws might cause the wage of the Black workers to increase, and in addition there might be an increase in unemployment if the demand remains unchanged; or an increase in employment if the demand curve shifts to the right.

The hypotheses to be tested are that one the income of the Black American relative to that of the non-Black Americans has increased with the advent of the FEP laws; two, the unemployment rate has decreased, or at least thus failed to increase, and three the Black occupational distribution has become approximately the

same as that for non-Blacks.

Effects of FEP Law Revisited

The FEP laws are aimed at improving the economic position of Black American people. If one accepts this assumption, then in Figure 8 there should not be an increase in unemployment of Black labor. If this holds true, then the logical thing to happen as a result of the FEP laws is for the demand curve of Black workers to shift from D_{Bd} to $D_{B'}$, such that the intersection of the demand curve D_B and the supply curve S_B is at point where the Black wage is equal to that of the non-Black wage.

The primary task of the econometric models is to estimate the effects that the FEP laws have had on the relative economic position of Black Americans between 1947 and 1969. The period before the FEP laws would serve as a comparison. The behavior of Black income relative to that of non-Black income, and the ratio of the unemployment rates are statistically analyzed over this period of time. Chapter V will be devoted to examining the economic effect of the FEP laws on occupational distributions.

Statistical Models

The economic status of the two races, Blacks and non-Blacks, who live in the United States of America have always been unequal

in terms of income, employment and occupation. The causes of the inequality are many but the major ones are assumed to be manifested by taste for discrimination which increases inequality in capital endowment distribution and in wage rates and discrimination in employment which creates a segregated labor market. As was discussed before due to the taste for discrimination, the market is imperfect. The non-Black wage is greater than that of the Black wage. To bring the market to that relationship, a "perfect" market, the FEP laws call for equal wage and equal employment opportunity.

In Figure 8 it was shown that the expected economic impact of the FEP laws is to shift the Black demand curve to the right. As a result of the shift in demand, Black wage could increase and the number employed increase. If, however, the demand did not shift, as expected, unemployment could, in fact, decline. On the other hand, the number of the non-Blacks employed could decrease or remain constant, depending upon whether the demand curve shifts in response to the FEP curve. So far it has been assumed that this curve remains the same. The "shiftiness" in demand curve has also a functional relationship with other variables. Now in order to evaluate the effect of the FEP laws in the specification of the econometric model, the effect of other variables would also have to be determined. Thus, some of the possible variables to be included

in the econometric model are as follows:

Models

Possible variables to be included in the model:

X_1 = Time trend

X_2 = United States unemployment rate

X_3 = Black unemployment rate

X_4 = Non-Black unemployment rate

$X_5 = X_3/X_4$

X_6 = Black median income

X_7 = Non-Black median income

$X_8 = X_6/X_7$

$X_9 = (X_7 - X_6)/X_6$ Discrimination Coefficient

X_{10} = Gross national product growth rate

X_{11} = War dummy variable

X_{12} = Fair employment dummy variable

X_{13} = Minimum wage

X_{14} = Black labor force participation rate

X_{15} = Non-Black labor force participation rate

$X_{16} = X_{14}/X_{15}$

X_{17} = Median year of education for Blacks

X_{18} = Median year of education for non-Blacks

$X_{19} = X_{17}/X_{18}$

X_{20} = Taste for discrimination

Formal Models

The market demand function for Black labor relative to non-Black labor thus can be defined by the following formal model:

$$\frac{W_b}{W_n} = f\left[\frac{B}{NB}, \frac{MP_b}{MP_n}, F_D, \frac{U_B}{U_N}, GNP, U_S, W_D, U\right] \quad (4.1)$$

Where W_b/W_n is the ratio of Black to non-Black median incomes, B/N is the ratio of labor force participation, MP_b/MP_n is the ratio of the marginal product of Black to non-Black labor, F_D is the fair employment effect, W_D is the war effect, U_B/U_N is the ratio of unemployment, U_s is the United States unemployment rate, BNP is the rate of growth of the Gross National Produce, and U is the component effect of all other unspecified variables.

The MP_b/MP_n is estimated by the difference in abilities and in the amounts of physical and human capital per Black and non-Black workers. This variable is a difficult variable for which to find values. Thus, when it appears in the statistical equation it is treated as a "dummy" variant. The economic impact of the FEP laws on W_b/W_n is that if FEP laws have a positive effect on Black wage as shown in Figure 8 the Black demand curve would shift to

the right causing wage to increase and the number hired also to increase. An alternative economic impact on Black workers would be that the wage goes up and the number unemployed goes up. As discussed earlier, this could be the case if the FEP laws had not in fact eliminated the "taste for discrimination." On the other hand, the economic impact of the FEP laws on non-Blacks demand curve could be to shift it to the left causing the decrease in wage and number employed. It is also possible for non-. Black wages to remain the same due to such facets as the influence of labor unions. Thus, the FEP laws would have a zero effect on non-Black wages. Even in this case, it may be possible to avoid reducing employment of non-Black workers. A more complete treatment of this situation would require a bargaining model. This is beyond the scope of the present investigation but nevertheless is an important consideration.

The functional relationship of the change in the ratio of the Black to non-Black income as a result of the FEP laws could be expressed as follows:

$$W_b/W_n = f(B/N,\ F) \qquad (4.2)$$

Where W_b/W_n is the ratio of the wage rates of Black and non-Black labor and B/N is the ratio of the number of Black and the number of non-Black workers, and F is effect of the FEP laws. It should be

noted that, in the regression model, the median income is used in computation instead of the relative wage due to limitations in the availability of yearly average wages by color. Hurd (1971) stated that

> there are almost no wage data available appropriate for studying change in wages received by different race, sex, age, and education groups in the labor force. The only official data on hourly wages, those published in Employment and Earnings by the Bureau of Labor Statistics are disaggregated by industry, but not by the personal characteristics of the wage-earners. (Hurd, 1971, p. 189-199)

In statistics, both average and median are used as the measure of the central tendency and-or the typicalness of a set of data. Although the average is more sensitive a measure than the median, it seems that median income of a group of people well reflects the general economic position of that group. Hopefully, the conclusion reached would be essentially the same as it would have been if wage rates were employed.

Regression Equation Models

Three regression equation models are examined to determine the effects of the FEP laws on the economic status of Blacks. One regression equation is on the market discrimination coefficient to determine any shift; the second regression is on relative income, and the third regression equation is on relative unemployment. These are possible linear regression equations:

$$X_9 = \beta_0 + \beta_2 X_2 = \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} + \beta_{16} X_{16} + E \quad (4.3)$$

$$X_8 = \beta_0 + \beta_2 X_2 + B_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} + \beta_{16} X_{16} + E \quad (4.4)$$

$$X_5 = \beta_0 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} + \beta_{16} X_{16} + E \quad (4.5)$$

In all three equations, linear relation is assumed to exist. The partial regression coefficient β_{12} represents the shift due to the Fair Employment Law.

The market discrimination coefficient X_9 defined as $(X_7 - X_6)/X_6$ in equation (4.3) is treated as a dependent variable. The independent variables are U.S. unemployment rate X_2, the rate of growth of Gross National Product X_{10}, war dummy variable X_{11}, the FEP dummy X_{12}, the minimum wage X_{13} and ratio of the Black labor force participation rate to that of non-Black labor is X_{16}. The FEP laws are expected to have a positive effect on Black wage X_4. On the other hand the non-Black wage X_7, will decrease, or remain constant. The number of Black workers employed increases and that of non-Black workers decrease. Also, during the war period, many workers are employed due to tight labor market. The demand for

war goods causes government expenditure to increase. If the money is used in domestic industries, one would expect many workers to be employed, and, as a result, decrease in the rate of unemployment. The FEP laws were enacted during the Vietnam war so the shifting in demand curve could also be related to effect of the war. Therefore, there is some possibility for X_{11} and X_{12} to be related. In addition, the increase in government expenditure increases capital investment as a result increase in Gross National Product. The GNP growth rate X_{10} is included in the model to determine this effect. The economic growth is normally coupled by an increase in employment. As many economic opportunities become available, many people come forth looking for employment, and such a labor force participation rate is included in the model, X_{16}, and is intended to measure shifting supply. In equation (4.4) the ratio of Black income to that of non-Black income X_8 is regressed on other explanatory variables. The ratio of Black unemployment rate to that of non-Black is treated as a dependent variable in equation (4.5). A multiple least-square stepwise regression was performed on each equation by use of time series data appearing in Tables 1, 2, and 5. As was pointed out some of the explanatory variables might be related to each other and such might be difficult to isolate effect for each variable. For instance, variable X_{10} and X_{11} might be interrelated.

Table 5. Labor Force Participation and Minimum Wage, 1947-1969.

Year	Black (%)	Non-Black (%)	Minimum wage
1947	64.60	57.40	$0.75
1948	64.60	57.40	0.75
1949	65.15	56.50	0.75
1950	64.50	57.95	0.75
1951	64.25	58.30	0.75
1952	64.00	58.15	0.75
1953	61.65	57.55	0.75
1954	67.68	67.84	0.75
1955	67.50	67.37	1.00
1956	67.76	67.84	1.00
1957	67.02	67.01	1.00
1958	66.76	66.48	1.00
1959	65.98	66.23	1.00
1960	66.25	65.81	1.00
1961	65.24	65.19	1.25
1962	63.90	64.30	1.25
1963	63.46	63.92	1.25
1964	63.39	63.80	1.25
1965	63.09	63.60	1.25
1966	66.43	66.01	1.25
1967	66.08	66.13	1.40
1968	65.39	65.98	1.60
1969	65.39	65.98	1.60

Source: U.S. Department of Labor, Bureau of Labor Statistics. Statistics on Manpower. A supplement to the manpower report of the provident, March, 1969.

Regression Results

Market Discrimination Coefficient:

$$X_9 = 12.248 + 0.468X_2 - 0.077X_{10} - 0.673X_{11}$$
$$(0.20692) \quad (0.08174) \quad (0.36449)$$

$$- 0.20439X_{12} - 1.198X_{13} + 4.497X_{16} \qquad (4.6a)$$
$$(0.59705) \quad (0.91650) \quad (3.58302)$$

$$r^2 = 0.8928$$

$$X_9 = 18.026 - 0.305X_5 + 0.063X_{10} - 0.999X_{11}$$
$$(1.27355) \quad (0.06497) \quad (0.38473)$$

$$- 0.885X_{12} - 0.802X_{13} + 0.935X_{19} \qquad (4.6b)$$
$$(0.63670) \quad (1.07272) \quad (5.95539)$$

$$r^2 = 0.8563$$

Income Ratios:

$$X_8 = 25.289 - 0.509X_2 + 0.092X_{10} + 0.563X_{11}$$
$$(0.69524) \quad (0.27463) \quad (1.22465)$$

$$- 0.581X_{12} - 3.109X_{13} - 16.092X_{16} \qquad (4.7a)$$
$$(2.00604) \quad (3.07937) \quad (12.03873)$$

$$r^2 = 0.4125$$

$$X_8 = 24.105 - 0.616X_5 - 0.049X_{10} + 0.959X_{11}$$
$$(3.49284) \quad (0.18150) \quad (0.92716)$$

$$- 3.324X_{13} - 15.561X_{16} \qquad (4.7b)$$
$$(2.34097) \quad (16.74654)$$

$$r^2 = 0.379$$

Black to Non-Black Unemployment Rates:

$$X_5 = 5.489 - 0.011X_2 + 0.015X_{10} + 0.032X_{11}$$
$$(0.04650) \quad (0.01837) \quad (0.08191$$

$$- 0.171X_{12} + 0.221X_{13} - 3.586X_{16} \qquad (4.8)$$
$$(0.13418) \quad (0.20597) \quad (0.80523)$$

$$r^2 = 0.8855$$

Numbers in parentheses are standard errors of the estimated coefficients.

Testing Against Serial Correlation

Most frequently, the time series data are victims of serial correlation of disturbance in a regression equation. Durbin and Watson's Statistic[2/] (1950-1951) test is appropriate in testing this. This test is described as follows: letting e_t (t=1, . . ., n) denote the residual from the fitted-least square regression, Durbin-Watson's d is:

$$d = \frac{\sum_{t=2}^{n} (e_t - e_{t-1})^2}{\sum_{t=1}^{n} e_t^2}$$

Dubin and Watson (1950, 1951) formulated lower and upper bound d_L and d_U, respectively, for various values of n (sample sizes) and K (equal to the number of explanatory variables in the estimated equation). These bounds were used in determining whether to accept or reject the hypothesis of zero serial correlation. The

operational procedure of this test is to reject the null hypothesis in favor of the alternative hypothesis of positive auto-correlation if $d < d_L$; to draw no conclusion of d falls in (d_L, d_u) that is $d_L < d < d_u$, the test is inconclusive; and to accept the null hypothesis if $d > d_u$.

The residual data on Table 6 were used to compute the various values of the Durbin-Watson statistic, d. The result is summarized in Table 7. The Durbin-Watson test was performed at the five percent and one percent level of significance. In all five cases, the null hypothesis tested against positive auto-correlation was neither rejected nor accepted. The d statistic falls into the "no conclusion" range, that is, $d_L < d < d_u$.

The indicative of this called for further adjustment of time series data used. The residual data computed from general linear relation model is given by the following equation:

$$Y_t = \alpha + \beta X_t + \epsilon_t \qquad (4.9)$$

where ϵ is the stochastic term. From this equation, various values of ϵ were computed as shown in Table 6. The serial correlation is made up of two components: (1) is its previous value e_{t-1}, (2) includes a slight further error known as perturbation,[28]

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[28] Perturbation is applied to V_t in order to clearly distinguish it from normal error, or residual t. The methods followed here in transforming data are developed by R. J. Wonnacott and T. H. Wonnacott, Econometrics, John Wiley & Sons (New York, 1970) p. 136-148.

Table 6. Residuals From Five Regression Equations, 1947-1969.

Year	Equation [a] (4.6a)	(4.6b)	(4.7a)	(4.7b)	(4.8)
1947	0.8248	0.3228	-2.5857	-2.2503	-0.2341
1948	-0.3692	-0.3017	0.0670	-0.1666	-0.1691
1949	-0.1665	-0.0595	-0.4272	-0.3820	0.1710
1950	-0.0942	0.0006	0.4515	0.3426	-0.0015
1951	0.1339	0.8707	-0.7083	-0.5549	-0.0300
1952	-0.0805	-0.5560	2.0938	2.7370	0.1233
1953	-0.0816	-0.2167	1.5364	1.6566	-0.0301
1954	-0.8346	-1.2253	0.7344	1.0537	-0.1209
1955	-0.3616	-0.5068	1.3750	1.6278	0.0964
1956	0.6402	0.4550	-1.5317	-1.1352	0.2005
1957	0.2233	0.1128	-0.5025	-0.3731	0.0073
1958	0.3631	0.6810	-2.0173	-2.4126	-0.0437
1959	0.3698	0.6556	-1.8207	-2.0427	0.0999
1960	-0.9690	-0.6436	1.9251	1.5711	0.0073
1961	-0.1752	-0.0308	0.8907	0.6284	-0.1031
1962	0.1854	0.1624	0.5187	0.5621	0.0222
1963	0.3925	0.2811	0.0014	0.1260	0.0051
1964	-0.1225	0.0983	3.3733	3.1940	0.0618
1965	1.2018	1.3483	1.4269	1.1882	-0.0831
1966	-0.0246	-0.0469	-3.8648	-3.7231	0.1195
1967	-0.5070	-0.4764	-1.3251	-1.2637	0.0983
1968	-0.2737	-0.4463	0.1949	0.3396	-0.0482
1969	-0.2737	-0.6768	-.1949	0.3396	-0.0482

[a] Corresponds to equations on p. 123-124.

Source: Residuals from the regression equations.

Table 7. Durbin-Watson Statistics.

Equation	Computed d-value	n	K	Durbin-Watson value from table d_L	d_U	Level of significance (%)
(4.6a)	1.6102	23	6	0.90	1.92	5
				0.70	1.67	1
(4.6b)	1.6838	23	6	0.90	1.92	5
				0.70	1.67	1
(4.8)	1.2789	23	6	0.90	1.92	5
				0.70	1.67	1

Note: (i) n = sample size

(ii) K = number of explanatory variables in equation

(iiia) Reject null hypothesis if $d < d_L$

(iiib) No conclusion if $d_L < d < d_u$

(iiic) Accept null hypothesis if $d < d_u$

(v) d-values computed from Table 5.

symbolically thus:

$$e_t = e_{t-1} + V_t \tag{4.10}$$

Where V_t is the perturbation term, with the mean equal to zero and the constant variance which is independent of the other perturbation V_{t-1}, V_{t-2}, . . . V_{t-n}. The equation (4.10) is further modified to reflect some economic situation, and is written as:

$$e_t = \quad e_{t-1} + V_t \tag{4.11}$$

Where $|\rho| < 1$. The rho (ρ) is used to transform equation (4.7) for time t-1. The new equation is:

$$Y_{t-1} = \rho\alpha + \rho\beta X_{t-1} + \rho e_{t-1} \tag{4.12}$$

and subtracting (4.11) from equation 4.9) we haveα

$$Y_{t-1} - \rho Y_{t-1} = \alpha(1-\rho) + \beta(X_t - fX_{t-1}) + (e_t - \rho e_{t-1}) \tag{4.13}$$

we define

$$Y_t - \rho Y_{t-1} = \gamma Y_t$$
$$X_t - \rho X_{t-1} = \gamma X_t \tag{4.14}$$

Computation ρ and γ.

The residual data in Table 6 was used to calculate ρ of each equation. The normal regression was performed, using zero intercept, according to equation (4.11). The following values for ρ each equation were obtained by pairing each residual for the year before. The following are ρ's value of the untransformed equation

which would be used to transform them.

Equation	ρ
(4.6)	0.01958
(4.6b)	0.13951
(4.7)	0.15215
(4.7b)	0.16179
(4.8)	0.01399

The ρ values were then substituted in equation (4.11) to compute γ values. Thus the full transformation was completed, giving the generalized differences,

$$Y_t = \alpha (1-\rho) + \beta\gamma X_t + V_t \qquad (4.15)$$

In addition to the above transformation, the first Y and X were transformed as follows:

$$\sqrt{1-\rho^2}\, Y_1 = \gamma Y_1$$

$$\sqrt{1-\rho^2}\, X_1 = \gamma X_1$$

Also, it should be noted that the dummy variablesα namely war and FEP, were not transformed.

Regression Results of Transformed Data

The stepwise linear regression was performed using the transformed data. The following equations resulted and were chosen on the basis of highest R^2:

$$X_9 = 10.96775 + 0.45462X_2 - 0.72077X_{11} - 0.21579X_{12}$$
$$(0.21872) \quad (0.37466) \quad (0.61310)$$
$$- 1.05321X_{13} + 5.47456X_{16} - 0.07699X_{10}$$
$$(0.95724) \quad (3.65100) \quad (0.08484) \qquad (4.16a)$$
$$R^2 = 0.8871$$

$$X_9 = 2.462775 + 1.29314X_5 + 0.01992X_{10} - 1.07558X_{11}$$
$$(1.43221) \quad (0.06557) \quad (0.40611)$$
$$- 0.69107X_{12} - 0.13388X_{13} + 12.10140X_{16} \qquad (4.16b)$$
$$(0.66652) \quad (1.24715) \quad (4.10738)$$
$$R^2 = 0.8652$$

$$X_8 = 22.30428 - 1.05331X_2 + 0.18580X_{10} + 0.39460X_{11}$$
$$(0.69385) \quad (0.23973) \quad (1.11595)$$
$$- 0.57954X_{12} - 3.24887X_{13} - 14.27261X_{16}$$
$$(1.72472) \quad (2.84651) \quad (7.58129) \qquad (4.17a)$$
$$R^2 = 0.5329$$

$$X_8 = 23.17368 - 2.95068X_5 - 0.07605X_{10} + 0.23930X_{11}$$
$$(3.54047) \quad (0.16472) \quad (1.03610)$$
$$+ 0.20132X_{12} - 2.67074X_{13} - 14.63698X_{16}$$
$$(1.68577) \quad (3.20406) \quad (9.32933) \qquad (4.17b)$$
$$R^2 = 0.4619$$

$$X_5 = 5.32632 + 0.01153X_{10} + 0.0304X_{11} - 0.14131X_{12}$$
$$(0.01139) \quad (0.06843) \quad (0.10946)$$
$$+ 0.19149X_{13} - 3.51256X^{16}$$
$$(0.18974) \quad (0.69796) \qquad (4.18a)$$
$$R^2 - 0.8943$$

$$X_5 = 5.24659 + \underset{(0.01102)}{0.01082X_{10}} - \underset{(0.0878)}{0.11485X_{12}} \quad \underset{(0.18486)}{0.18474X_{13}}$$

$$- \underset{(0.65093)}{3.41969X_{16}} \qquad (4.18b)$$

$$R^2 = 0.8910$$

Number in the parentheses below the regression constant are corresponding standard errors.

Fair Employment Effect

The regression coefficient X_{12} of the FEP laws is a measure of a shift in the relative demand curve. The values of regression coefficients are shown in each equation of the transformed data. In all cases, these coefficients are not statistically significant at five percent level of significance by the t-test. Nevertheless, they all have the right sign, as was expected, and in addition, in equations (4.16b), and (4.18b) were statistically significant at the ten percent level of significance.

The change in the gross market discrimination coefficient, MDC, is one measure of the impact of the FEP laws. The market discrimination coefficient, X_9, was estimated where the predictors explained over 85 percent of the total variance in gross market discrimination coefficient. The Fair Employment Laws could reduce MDC by -0.21579 when the United States unemployment

rate is used in equation (4.16a), on the other hand, in equation (4.16b), the ratio of Black to non-Black unemployment was employed in a regression analysis as one of the predictors, and the results suggest that the MDC could be decreased by -0.69107. The intercept of equation (4.16a) is much higher than that of the equation (4.16b). The equation (4.16a) was considered the better of the two, based on its higher R^2.

The regression equations (4.17a) and (4.17b) are the prediction of the ratio of Black to non-Black income. The difference between the two is that in (4.17a), the United States unemployment rate was included, and, in equation (4.17b), the relative unemployment rate of Black to non-Black was included. The FEP variable has different signs; in equation (4.17a) it has a negative sign, and in (4.17b) a positive sign. The impact on change in income as a result of FEP is -0.57954 and 0.20132 in equations (4.17a) and (4.17b), respectively. In both cases, the regression coefficients are not significant, and in equation (4.17a), the predictors explain about 53 percent of the total variation on X_8 and only 46 percent explained in equation (4.17b).

The ratio of the unemployment rate between Black and non-Black is two to one. That is, for every one non-Black person unemployed, there are two Black persons. The FEP laws are expected to have some effect on this ratio.

In equation (4.18) and equation (4.18b), the fair employment coefficients are -0.14131 and -0.11485, respectively. The FEP laws' coefficients have a negative sign, which mean that as a result of the shift in demand curve, the number of Black workers employed could increase. In equation (4.18b) the FEP laws' coefficient is statistically significant at ten percent level of significance. Also FEP coefficient in (4.18) is significant at ten percent level of significance by t-test.

Interpretation of Other Variables

For the FEP laws to have an impact on the economic position of Black people, other variables involved in determining the income and reduction of unemployment rate should work in conjunction with the FEP laws. The war dummy variable X_{11} is statistically significant at a five percent level of significance in both equations (4.16a) and (4.16b). The values of war coefficient are -0.7207 and -1.0755, holding the right sign. At the time of war, the gross market discrimination coefficient decreases. This confirms a strong systematic relationship between MDC and war. The decrease in MDC means employers taste for discrimination decreases due to a tight labor market. The relative labor force participation coefficient X_{16} is statistically significant at the five percent level of significance in all equations, carrying the appropriate sign. The MDC is positively

related to X_{16}, and on the other hand, relative income and unemployment rate are negatively related to X_{16}. The minimum wage, X_{13}, is not statistically significant. The Gross National Product coefficient X_{10} is also not statistically important.

Interdependence of Variables

In the above regression results over 80 percent of the total variation in dependent variables was explained in four of the six equations. In addition to that, very few of the explanatory variables were found to be statistically significant. For instance, in equation (4.16a), X_2 and X_{11}, of t-value 2.0785 and 1.9075, respectively, were statistically significant at ten percent level of significance. The rest of the explanatory variables were not statistically significant. In view of this, some further investigation was made to see if there were some problems of multicollinearity. Multicollinearity is defined as an interdependency existing between two or more explanatory variables in a multiple regression equation. In this circumstance, the theoretically independent influences of these variables become very difficult to disentangle (Johnston, 1963, p. 201-207).

Tables 8, 9, and 10 show the same pattern of the interdependence of explanatory variables in the equations (4.13 and (4.15b). The estimation procedures of the interdependence in the tables

Table 8. Pattern of Interdependence: Market Discrimination Coefficient.

Variables	Equations	1 $\text{Var}(\hat{\beta}_i)$	2 $\frac{\text{Var}(\hat{\beta}_i)}{\sigma_u^2} = Cii$	3 $(n)(Mii) = \Sigma x_{ii}^2$	4 r_{ii} (Column 2 x 3)	5 $R_{ii}^2 = 1 \frac{-1}{rii}$
X_2	(4.16a)	0.047838	0.131424	27.278	3.5850	
	(4.16b)	2.051225	3.884895	0.897	3.4847	
X_{10}	(4.16a)	0.007197	0.019774	138.345	2.7356	
	(4.16b)	0.004299	0.081420	145.360	11.8352	
X_{11}	(4.16a)	0.140370	0.385632	5.727	2.2085	
	(4.16b)	0.164925	0.312357	5.727	1.7888	
X_{12}	(4.16a)	0.375891	1.032669	4.646	4.7978	$R_{11}^2 = 79\%$
	(4.16b)	0.444248	0.841378	4.646	3.9090	$= 74\%$
X_{13}	(4.16a)	0.916308	2.51733	1.702	4.2844	
	(4.16b)	1.555383	2.945801	0.1334	3.9296	
X_{16}	(4.16a)	13.329801	3.662033	0.069	2.52680	
	(4.16b)	16.870570	31.951837	0.092	2.93956	

Source: Regression equations.

Continued.

Table 8--Continued.

Source:

$\text{Var}(\hat{\beta}_i)$ = estimated variance of regression (where i=1 . . . m. m is number of explanatory variable in the equation)

σ^2_u = estimated variance of the mean

C_{ii} = $\text{Var}(\hat{\beta}) / \sigma^2_u$

N = sample size (N=23)

Mii = estimated variance of each explanatory variable

Σx_i = (Mii x N)

rii = is the coefficient of diagonal element index of multicollinearity

rii = $C_{ii} (\Sigma x^2_{ii})$

R^2 = $[1 - \frac{1}{rii}]$

Note: The problem of simultaneous equation bias has been described in general terms. To the extent that it exists in the estimating equations, some of the estimated coefficients may be subject to such bias.

Table 9. Pattern of Interdependence: Income Ratios of Black and to Non-Black.

Variables	Equations	1	2	3	4	5
		$\text{Var}\ (\hat{\beta}_i)$	$\frac{\text{Var}\ (\hat{\beta}_i)}{\sigma_u^2} = Cii$	$(n)(Mii) = \Sigma x_{ii}^2$	r_{ii} (Column 2 x 3)	$R_{ii}^2 = 1\ \frac{-1}{rii}$
X_2	(4.17a)	0.481427	0.15489	0.851	1.318192	
X_5^2	(4.17b)	12.534927	3.67916	0.828	3.046351	
X_{10}	(4.17a)	0.057470	0.01849	146.349	2.706124	
X_{10}^{10}	(4.17b)	0.271326	0.07963	147.131	11.717189	
X_{11}	(4.17a)	1.245344	0.40068	5.727	2.294750	
X_{11}	(4.17b)	1.107350	0.32502	5.727	1.861400	
X_{12}	(4.17a)	2.974659	0.95709	4.646	4.446674	$R^2 = 78\%$
X_{12}	(4.17b)	2.841820	0.83411	4.646	3.875284	$= 74\%$
X_{13}	(4.17a)	8.102619	2.60702	1.288	3.355784	
X_{13}	(4.17b)	10.26600	3.01328	1.265	3.811708	
X_{20}	(4.17a)	57.475958	18.49290	0.092	1.701347	
X_{20}	(4.17b)	87.036398	25.54634	0.092	2.350263	

Source: See Table 8 for source.

Table 10. Pattern of Interdependence: Black to Non-Black Unemployment Rate.

Variables	Equations	1 Var (β_i)	2 $\frac{\text{Var}(\beta_i)}{\sigma_u^2} = Cii$	3 $(n)(Mii) = \Sigma x_{ii}^2$	4 r_{ii} (Column 2 x 3)	5 $R_{ii}^2 = 1 \frac{-1}{rii}$
X_{10}	(4.18a)	0.000129	0.00864	138.115	1.19414	
X_{10}^{10}	(4.18b)	0.000121	0.00086	138.115	1.19765	
X_{11}	(4.18a)	0.004682	0.31217	5.727	1.78781	
X_{11}^{11}	(4.18b)					
X_{12}	(4.18a)	0.011984	0.79876	4.646	3.71106	R^2 = 74%
X_{12}^{12}	(4.18b)	0.008064	0.57574	4.646	2.67489	= 63%
X_{13}	(4.18a)	0.036001	2.40008	1.725	4.14013	
X_{13}^{13}	(4.18b)	0.034173	2.44092	1.725	4.2106	
X_{16}	(4.18a)	0.487148	32.47653	0.069	2.24088	
X_{16}^{16}	(4.18b)	0.423709	30.26492	0.069	2.08827	

Source: See Table 8 for source.

were used as those used by Farrar and Glauber (1967). For example, in equation (4.13a), the computation of column (4) in Table 8, defined as r_{ii} which is the diagonal element index of multicollinearity between the explanatory variables, as follows:

$$rii = \frac{\text{Var } (\hat{\beta}_t)}{\text{estimated variance of mean}} \times \text{(sample size) (variance of each explanatory variable)}$$

The existence of collinearities in the equation revealed that the coefficients of the variables had some limitations to interpretation. The FEP laws variable X_{12}, the index of multiple determination R^2 were computed. It turned out to be in equations (4.16a) through (4.18a) over 70 percent of variation was explained by other explanatory variable. In equation (4.18b) the problem of collinearities was less serious since only 60 percent was explained by other explanatory variables.

Nevertheless, although interdependences somewhat obscured the effectiveness of explanatory variables, still the interpretation of the explanatory power of the entire equation remained essentially unchanged. The FEP-variable X_{11} carried the expected sign, indicating that if the FEP laws could cause shift in demand curve, more Black workers could be employed at higher wages than before the FEP laws and unemployment rates could be reduced.

In summary, despite the fact that the FEP coefficients in some equations are not statistically significant, this does not prove there is no relationship between the fair employment dummy variable and relative income of Blacks to non-Blacks; and the ratio of the unemployment rate of the Blacks to non-Blacks. The fair employment coefficients carry the expected signs which is consistent with the theoretical grounds that if the fair employment has some effects, the gross market discrimination coefficient should decrease; the income of the Blacks should also increase as a result of the decrease in the discrimination coefficient; and unemployment should also decrease.

Analysis of the Interaction Between Occupation, Race, Age and Median Income

The total civilian labor force was 70, 921 thousand in 1959; it included about 60. 2 percent of the United States populations of persons 16 years of age and over. The analysis of employed males between 25 and 65 years of age for 1959 was made. The occupational categories are reported according to age, total number of workers employed, median income, mean income and color. In every occupational category, there is an apparent income difference between the two races. In every case, the non-Black income is double that of Blacks. What is the real cause of this difference?

The difference in income might be due to such variables as race, age, number of workers, occupational type, region, education and working experience. The question of whether or not observed differences in income are attributable to race, age, occupation or total number of workers can be answered by a statistical inference. The procedure to be used is the "analysis of variance."

The analysis of variance proves to have several advantages over the regression analysis. By the analysis of variance, one is able to compare the means of several populations and to test for the significance of the difference among the means. It is assumed that two random samples are drawn from normally distributed populations with equal variance, that is, homoscedasticity. The United States Department of Census Population gathered the income data randomly which gives a correct representation of the income of non-Blacks and Blacks. The median income is used rather than the mean income because it describes the more central tendency of income concentration among the two races. The hypothesis to be tested is that the difference between the mean of the median income of non-Blacks and Blacks is zero; that is, to test if there is a significant difference.

Statistical Model: The analysis of variance model to be tested is defined as: Income Y is equal to the mean of the median income for i^{th} race (i=1, 2); j^{th} age (j=1, 2, 3, 4); and K^{th} occupation (K=1, 2, 3, . . . 12).

$$E(Y_{ijK}) = M + a_i R_i + a_j A_j + a_K O_K + a_K O_K + \beta_{ij} (RA)_{ij}$$

$$+ \beta_{iK} (RO)_{iK} + \beta_{jK} (AO)_{jK} + E_{ijK},$$

Where

M = general mean of median income

R_i = race (Black, non-Black) (i=1, 2)

A_j = age (j=1, 2, 3, 4)

O_K = occupation (K=1, 2, 3, . . ., 12)

E = random term,

subject to the restrictions:

$$\sum_{i=1}^{2} a_i = \sum_{j=1}^{4} a_j = \sum_{k=1}^{12} a_K = \sum_{j=1}^{4} \beta_{ij} \text{ (in all i)} =$$

$$\sum_{K=1}^{12} \beta_{ik} \text{ (in all i)} = \sum_{K=1}^{12} \beta_{jk} \text{ (in all j)} = 0$$

As a result of the constraints, M is considered to be the overall mean level, while the other coefficients are the differences between the row level and overall mean, column level and overall mean, and all the joint row plus column level, respectively.

The result of the analysis of variance, Table 11, shows the interaction effects taking place by the combinations of treatments among the three variables--race, age, and occupation. In other words, the difference income between the races is due to systematic effects not only of either race alone, or to occupational distribution alone, or to age alone, but could also be attributed to a combination of the three variables. The sequential F-test is used to test the hypothesis that there is a significant difference between the mean of median income of the two races. If the effects of interaction are present, this would be interpreted to mean that the mean of the median income differs in every occupation. The sequential F-test indicates that at the five percent level of significance of value 4.17 with (1, 33) degrees of freedom (i.e., $F/1, 33, 0.95/ = 4.17$) all three variables are significant, but the race has the highest value of F-ratio of all. Examining the interacting effects between race and age, race and occupation, and age and occupation, it is revealed that the interaction between race and occupation is the most statistically significant of all, whereas the interaction between age and occupation is not statistically significant. In economic terms, this means that the difference between the income of Black and non-Black males is attributable to race, then secondly to occupation, and lastly to age.

The F-statistic test confirms the hypothesis that the mean of

Table 11. Analysis of Variance

Source of variation	Sum of squares	Degrees of freedom	Mean of squares	F	F.95	F.99
Race	71933	1	71933	733.673	4.17*	7.56*
Age	4358	3	1453	14.827	2.92*	4.51*
Occupation	232075	11	21098	215.285	2.16*	2.98*
Race X Age	408	3	136	1.388	2.92	4.51
Race X Occupation	14464	11	1315	13.418	2.16*	2.98*
Age X Occupation	3171	33	96	0.980	1.84	2.39
Race X Age X Occupation	3245	33	98	1.000	1.84	2.39
Total	329657	95				

Data source: The United States Bureau of Census, 1959.

d. $F\text{-ratio} = \frac{\text{MS between row}}{\text{MS interaction}} = \frac{71933}{98} = 733.763.$

* Significance at level of 5 percent and 1 percent.

the median income of the two races varies in every age category within the occupation. Race seems to play the major role in explaining the difference of interacting effects in the combination of race and occupation. The data shows that the occupational distribution of the Black workers is highly concentrated in unskilled occupations which have a high rate of unemployment and low wages.

Scheffe's (1959) method for multiple comparison is used to test the contrast among the means of median incomes. The method enables us to determine in which occupation average median income is statistically significant. The raw data indicates that in all 12 major occupations in each individual occupation there are apparent differentials in the income of the two races. The output from the analysis of variance shows that the estimated grand average median income of Blacks is $2,952 and $4,683 for non-Blacks, or, in other words, the Black relative income is 63 percent of that of non-Blacks. Table 12 shows the average median income for the two races, taken together the highest income earned by professional, technical, and kindred workers, and the lowest earned by farm laborers and wage earners. This category of farm laborers has a high concentration of Black workers, especially in the Southern states. Table 13 shows the average median income of both races according to four age classifications. At an early age the income is low and then increases at an increasing rate and after it reaches

Table 12. The Average Median Income of Different Occupations, 1959

1.	Professional, technical and kindred workers	$6, 133
2.	Farmer and farm workers	1, 726
3.	Managers, officials and proprietors except N. E. C.	5, 438
4.	Managers, officials and proprietors N. E. C.	5, 424
5.	Clerical and kindred workers	4,829
6.	Craftsmen, foremen and kindred workers	4, 539
7.	Operatives and kindred workers	4, 029
8.	Service workers including private household	3, 474
9.	Farm laborers and foremen	1, 397
10.	Farm laborers and wage workers	1, 362
11.	Laborers except farm and mine	3, 252
12.	Occupations not reported	4, 209

Source: See Table 5.

its maximum, it starts declining at a decreasing rate with old age. Table 12 shows that the average median income of different occupations, except for unskilled occupation numbers 2, 9, and 10, which were far below the grand average income, was moving away from the central tendency of the grand average income of Blacks at $2, 952; on the other hand, moving toward the central tendency of that of non-Black at $4, 682. Also, Table 13 indicates that all average

Table 13. The Average Median Income for Different Ages for Different Occupations, 1969.

Age	Income
25-34	$3,686
35-44	4,133
45-54	3,881
55-64	3,571

Source: U.S. Department of Commerce, Bureau of the Census of Population, 1960, Occupation by Earning and Education. The average median income figures are estimated by analysis of variance.

incomes for different ages for different occupations were above the grand average income of Blacks at $2,952 and below that of non-Blacks at $4,682.

In order to apply Scheffe's multiple comparison test, the variance of the incomes of 12 occupations was estimated to be 313, and the total degrees of freedom for interaction is 11, and for the error the term is 33, (that is, a three-way interaction between race, wage, and occupation) and the total sample size is 96. Any interaction was considered to be statistically significant at a five percent level of significance if:

$$|I| > S_{V_1} \sqrt{\frac{F_{(V_1, V_2)}}{n}}$$

Where |I| is interaction, (S) is equal to estimated variance, (V_1) the degree of freedom for interaction, (V_2) is equal to the degree of freedom for error term, and n is the sample size. The value of interaction was estimated to be 509. Each occupation was compared to this value. It was found that differences in incomes among the professional, technical and kindred workers; managers, officials, and proprietors (except farm managers); clerical and kindred workers; farm laborers and foremen; and farm laborers wage workers are statistically significant at the five percent level of significance. The statistical significance enables us to reject the hypothesis of no difference between means of occupations. There is, rather, a real difference between the median incomes of the two races.

To double check the result, the t-test was applied at five percent and one percent levels of significance and it confirmed that in all 12 occupations there was real statistical difference in every single occupation.

In conclusion, Table 11 shows how each variable accounts for the contribution which causes the income differentials. Each variable acting separately has some impact on the income gap, but the analysis of variance indicated that race is the major contributor, or, the most significant variable. The Black race earns less income than non-Black races in all levels of occupations.

What factors and variables make the Black workers earn less income? A few are race, education, age, occupation, region, experience, and sex. The age reflects the experience one has in a particular occupation; but according to the analysis of variance, age turned out to be insignificant.

Tables 14 and 15 show that Blacks and non-Blacks with the same amount of schooling differ greatly in their income. Blacks start out at a lower level of salary than non-Blacks and earn at a slower rate of increase; this fact leads one to conclude that education for Blacks does not constitute the same earning capacity as for non-Blacks of equal standard of education and of the same age group. In many instances, Blacks are engaged or employed in occupations which do not require experience and such wage advancement is not reflected in experience in advancement in age. Also, the investment in Black human capital is much less than that on non-Black human capital.

A subsequent analysis of variance after 1964 might be viewed to be necessary in order to test the effect of FEP laws. Theoretically, this proves to be difficult due to assumptions underlying the analysis of variance. First, if any analysis of variance is performed on any year after 1964, one should be able to compare 1959 and the years post-FEP laws. The hypothesis tested in 1959 considered whether there was any difference between the mean of

Table 14. Median Income and Median Years of School Completed, Total Population, and Black by Occupation, 1959.

Occupation	Median Income Black	Income total	Median years of school Black	Total
Bakers	$3,354	$4,633	8.2	9.2
Carpenters	2,320	4,271	8.1	9.3
Welder and flame cutters	4,454	5,116	9.6	9.7
Elevator operators	3,122	3,487	8.7	8.6
Automobile mechanics	3,173	4,372	8.9	9.9
Tinsmiths, coppersmiths and sheet metal workers	4,710	5,542	11.1	10.8

the median income of Blacks and non-Blacks, or whether it was zero. The 1959 data confirmed that there was significant difference. Suppose another analysis of variance was carried out for a post-FEP year and the result showed the same to be true--that there is statistical significant difference between the mean. Although the result is the same, there is no way one could compare the two years tested. For the comparison to be valid, the same population tested in 1959 should be the one tested in the post-FEP year of the same size and of the equal variance. The post-FEP year data have

Table 15. Mean Income of Males 25 to 64 Years Old in the Experienced Labor Force by Race, Age, and Years of School Completed, 1960.

Race and age	Elementary		High school		College	
	0 to 7	8	1 to 3	4	1 to 3	4 or more
White						
25 to 34	$3,537	$4,357	$4,988	$5,480	$5,964	$7,146
35 to 44	4,015	4,861	5,671	6,507	8,007	11,027
45 to 54	4,093	5,000	5,852	6,793	8,752	13,536
55 to 64	4,088	4,908	5,874	6,940	8,760	13,300
Non-white						
25 to 34	2,151	2,844	3,136	3,657	4,078	4,439
35 to 44	2,444	3,362	3,740	4,266	4,623	5,479
45 to 54	2,436	3,396	3,501	4,017	4,312	5,482
55 to 64	2,284	3,211	3,394	3,780	3,998	5,108

Source: 1960 Census of Population: Occupation by Earnings and Education.

to be independent of 1959. Apart from statistical problems, the data are not yet available. If analysis of variance were performed for any post-FEP year, it is expected that the F-test would still show there to be a statistical significant difference between the mean of median income of Black and non-Black.

V. ALTERNATIVE METHODS OF EVALUATING THE IMPACT OF FEP LAWS ON ECONOMIC PROGRESS OF THE BLACK PEOPLE

Introduction

In previous theoretical framework and empirical discussion so far, the effect of FEP laws have been examined on effect on wage as a result of change in demand curve. The equal opportunity as called for by FEP laws is interpreted to mean that Black workers could be able to enter or gain employment in all occupations which they were limited in numbers to be employed as a result of taste for discrimination. The impact of FEP laws as was shown in Figure 8 affect the quantity of Black workers demanded in each occupation. The number of Black workers employed in each occupation would be reflected by the increase on quantity of demanded as well as shift in demand curve. In this chapter, by use of the information theory concept, would examine the impact of the Civil Rights Laws on occupational improvement of the Black Americans.

Theoretical Context of Racial Entropy[29] and Occupational Distribution

When people are looking for employment, the probabilities are

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29/ This theory has been discussed in great depth in Henry Theil's Economics and Information Theory, Rand-McNally and Company (Chicago, 1967), pp. 488.

such that they might be hired or not hired. To explain the chances of their expectations of successes and failures, the information theory concept is an appropriate tool for analysis. The information originated in statistical thermodynamics and is mainly used in communication engineering. Social sciences, namely, statistics, psychology,[30] and economics have applied some information concepts to various problems. Theil noted: "the reason information theory is nevertheless important in economics is that it is more than a theory dealing with information concepts. It is actually a general partitioning theory in the same sense that it presents measures for theory in which some set is divided into subsets" (Theil, 1967, p.9). The information concept is applied here to determine the occupational allocation between Black and non-Black workers.

The workers in the labor force have different job faculties; some are medical doctors, lawyers, craftsmen, and so on. Each worker in his lifetime has gone out to look for a job. Some workers have been lucky enough to get a job as soon as they applied for one, whereas others have had to move from one employer to another until they were hired. In the United States, there are customarily some jobs meant for Black workers and some for non-Black workers. This

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[30] Some of the application of information concepts can be seen in: Kullback, S., Information Theory and Statistics. New York: John Wiley and Son, Inc., 1959; Attneave, F., Application of Information Theory to Psychology, New York: Henry Holt & Co., 1959.

traditional definition of job by race has been caused by the taste for job discrimination which causes unfair employment practices by the employers who favor non-Black workers over the Black workers. To correct injustice, the Federal government enacted the FEP laws which are aimed to open more occupational opportunities to Black workers and effect desegregation of the occupations.

In every occupational category there is representation of the two groups, Blacks and non-Blacks. If we were to assume that the two populations are normally distributed, hired at random, and fired at random, one would expect a fair distribution of each race in every occupation. Further, it is assumed that the employer would hire on a first come, first "get a job" basis. Also, it is assumed that job information is free and available to all people and there exists free entry to the job market. Suppose one occupational category has a set on N events (job openings), $X_1 \cdots X_n$. Thus one of them hired would be a Black worker or a non-Black worker, if their probabilities are:

$$x_1, x_2, \cdots, x_n$$

which should add up to 1.

$$\sum_{i=1}^{n} x_i = 1, \quad x = 0, \quad i = 1, \cdots, n.$$

In the event of looking for employment, there are two possible

outcomes, one is either hired or not hired. Once one is hired, he can keep the job or be fired. We shall let the symbol X stand for the random variable of the number of the Black workers hired in a particular occupation. In other words, event X_i has occurred. The probability of random variable X_i taking place is given by x, $0 = x = 1$. This probability that X has occurred is symbolized as $P(X) = x$, or simply as $h(x)$. This means, in the information concept, that the reliable message states that X_i has been hired. By definition, the information content of the message that event X has occurred is given by equation: (Theil, 1967, p. 24).

$$h(x_i) = \log x_i = \log \frac{1}{x} . \quad \underline{31}/$$

The information content could be any numbers $h(x_1) \cdots h(x_n)$, since there are n events, $X_1 \cdots X_n$. It was noted that X_i has probability x_i, that is X_i was hired or the message took place receives the same probability. Therefore the information content would be $h(x_i)$, with probability x_i. The expected information content is therefore

$$H(X) = \sum_{i=1}^{n} x_i \, h(x_i) = \Sigma x_i \log \frac{1}{x_i} = \Sigma x_i \log x_i$$

where the x on the left stands for the array of the n probabilities, $x_1 \cdots x_n$. In terms of the employment of Black and non-Black workers in a particular occupation, for instance, professional,

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31/ The logarithmic function is needed because of its additivity property in the case of the independent events.

technical and kindred workers, there is a number of Black workers expected to be found in this occupation. The expected information from this distribution of Black workers is called the entropy of that distribution, that is, racial entropy of occupational distribution.

If (W) is the fraction of non-Blacks working in a particular occupation, then (1-W) is the fraction of Black workers in that occupation. The racial entropy of occupational distribution (REO), then, is:

$$REO = W \log \frac{1}{W} + (1-W) \log \frac{(1)}{(1-W)} \quad .$$

Suppose in an occupation that there is a minimum racial entropy of zero; that is, W = 1, whole fractional number of non-Black workers. That is to say that the particular occupation is completely segregated. For instance, the apprenticeship for occupations such as plumbing, pipefitting, and electrical work used to be completely segregated. On the other hand, if a 50-50 event that is $h(1/2) = 1$ exists, that means equal representation of both races exists. The fraction of non-Black is $W = 1/2$ and Black is equal to $(W - 1/2) = 1/2$. When this condition prevails, the occupation is said to have a maximum integration. In this case, the value of the racial entropy index would be 0.5. If this index shows a value greater than 0.5, it means that there is a high concentration of Black workers and, when it's less than 0.5, there is a low concentration of Black workers.

Results of Racial Entropy of Occupational Distribution

Table 16 shows the occupational racial entropy indices computed by use of the data in Table 17. During the years between 1954 and 1969, there are two major behaviors of the occupational entropy indices. In some of the occupational categories, the entropic index increased, and in some, it decreased. The increase is found in the skilled occupations and the decrease in the unskilled.

Occupational progress is defined as movement of Blacks toward better jobs. Grouping the occupations into three classes, skilled, semi-skilled, and unskilled, Table 16 illustrates this progress. The index for professional, technical, and kindred workers ranges from 0.1583 in 1956 to 0.2378 in 1969, giving an upward trend over that period of time. Indices for clerical workers, craftsmen, foremen, and operative workers show a rapid increase. Between the years 1954 and 1963, the increase is smaller than that between 1964 and 1969. In the managerial, official, and proprietor classifications, the index has slightly increased, indicating that movement towards these occupations has been too slow. In craftsmen, foremen, and kindred workers, the entropic index rose by less than one percent from year to year. On the other hand, in the next group of occupations, unskilled or service jobs, the racial entropy index declined. In 1967, about 41 percent of Blacks were engaged in these occupations, whereas the

Table 16. Employed Persons, by Occupation and Color, 1954 to 1969 (in thousands).

Occupation group	1954			1955			1956		
	Total	Non-Black	Black	Total	Non-Black	Black	Total	Non-Black	Black
Professional, technical & kindred workers	5,689	5,472	217	5,792	5,564	228	6,053	5,829	224
Managers, officials & proprietors	6,048	5,918	130	6,450	6,303	147	6,295	6,154	141
Clerical	7,894	7,586	308	8,367	8,049	318	9,056	8,722	344
Sales	3,957	3,868	89	3,976	3,895	81	4,002	3,926	76
Craftsmen & foremen	8,248	7,932	316	8,228	7,896	332	8,490	8,124	366
Operatives & kindred workers	12,363	11,050	1,313	12,762	11,416	1,346	12,861	11,420	1,441
Private household workers	1,828	937	897	1,946	994	952	2,142	1,152	990
Service workers excluding private household	5,229	4,172	1,057	7,106	6,022	1,084	5,309	4,143	1,166
Farmers & farm managers	3,905	3,516	389	3,795	3,473	322	3,882	3,571	311
Farm laborers & foremen	2,011	1,422	589	2,218	1,606	616	2,381	1,718	663
Nonfarm laborers	3,426	2,417	1,009	3,681	2,665	1,016	3,526	2,556	982
Total	60,598	54,286	6,312	62,997	56,559	6,438	63,990	57,298	6,692

Continued

Table 16--Continued.

Occupation group	1957			1958			1959		
	Total	Non-Black	Black	Total	Non-Black	Black	Total	Non-Black	Black
Professional, technical & kindred workers	6,469	6,223	246	6,998	6,726	272	6,196	6,893	303
Managers, officials & proprietors	6,754	6,615	139	6,675	6,516	159	6,878	6,712	162
Clerical	9,264	8,864	400	9,032	8,628	404	9,093	8,689	404
Sales	4,192	4,114	79	4,104	4,015	89	4,278	4,184	94
Craftsmen & foremen	8,702	8,321	381	8,449	8,058	391	8,438	8,048	390
Operatives & kindred workers	12,476	11,065	1,411	10,966	9,621	1,345	11,586	10,260	1,326
Private household workers	2,251	1,244	1,007	2,346	1,302	1,044	2,283	1,287	996
Service workers excluding private household	5,393	4,241	1,152	5,500	4,317	1,183	5,837	4,686	1,151
Farmers and farm managers	3,381	3,105	276	3,138	2,892	246	3,128	2,892	236
Farm laborers & foremen	2,113	1,461	652	2,169	1,566	603	2,467	1,835	632
Nonfarm laborers	3,640	2,632	1,008	3,499	2,513	986	3,826	2,790	1,036
Total	64,261	57,510	6,751	62,907	56,184	6,723	65,012	58,282	6,730

Continued

Table 16--Continued.

Occupation group	1960			1961			1962		
	Total	Non-Black	Black	Total	Non-Black	Black	Total	Non-Black	Black
Professional, technical & kindred workers	7,475	7,144	331	7,705	7,386	319	8,040	7,667	373
Managers, officials & proprietors	7,065	6,889	176	7,119	6,946	173	7,048	7,220	188
Clerical	7,783	9,276	507	9,861	9,327	534	10,107	9,595	512
Sales	4,401	4,288	113	4,439	4.328	111	4,346	4,231	115
Craftsmen & foremen	8,560	8,145	415	8,623	8,200	423	8,678	8,251	427
Operatives & kindred workers	11,986	10,751	1,415	11,762	10,368	1,394	12,041	10,629	1,412
Private household workers	2,216	1,209	1,007	2,317	1,311	1,006	2,341	1,301	1,040
Service workers excluding private household	8,349	7,117	1,232	6,323	5,054	1,269	6,461	5,175	1,286
Farmers and farm managers	2,780	2,562	218	2,711	2,510	201	2,595	2,400	195
Farm laborers & foremen	2,615	1,960	655	2,459	1,849	610	2,271	1,684	587
Nonfarm laborers	3,665	2,693	972	3,477	2,582	895	3,559	2,597	962
Total	66,681	59,640	7,041	66,796	59,860	6,936	67,846	60,749	7,097

Continued

Table 16--Continued.

Occupation group	1963			1964			1965		
	Total	Non-Black	Black	Total	Non-Black	Black	Total	Non-Black	Black
Professional, technical & kindred workers	8,263	7,828	435	8,550	8,051	499	8,883	8,358	525
Managers, officials & proprietors	7,293	7,101	192	7,452	7,260	192	7,340	7,136	204
Clerical	10,270	9,747	523	10,667	10,095	572	11,166	10,533	633
Sales	4,356	4,224	132	4,456	4,320	136	4,715	4,569	146
Craftsmen & foremen	8,924	8,452	468	8,986	8,461	525	9,221	8,701	520
Operatives & kindred workers	12,507	11,032	1,475	12,924	11,404	1,520	13,390	11,739	1,651
Private household workers	2,306	1,271	1,035	2,322	1,309	1,013	2,251	1,270	981
Service workers excluding private household	6,726	5,386	1,340	6,934	5,536	1,398	7,091	5,5k0	1,452
Farmers & farm managers	2,396	2,228	168	2,320	2,175	145	2,428	2,209	138
Farm laborers & foremen	2,219	1,683	536	2,124	1,618	506	2,021	1,332	458
Nonfarm laborers	3,551	2,619	932	3,624	2,650	974	3,855	2,870	985
Total	68,809	61,575	7,234	70,357	62,877	7,480	72,179	63,432	7,747

Continued

Table 16--Continued.

Occupation group	1966			1967		
	Total	Non-Black	Black	Total	Non-Black	Black
Professional, technical & kindred workers	9,322	8,791	560	9,879	9,291	593
Managers, officials & proprietors	7,405	7,205	207	7,495	7,300	208
Clerical	11,846	11,104	749	12,333	11,414	897
Sales	4,759	4,624	151	4,525	4,380	136
Craftsmen & foremen	9,598	8,989	598	9,845	9,224	617
Operatives & kindred workers	13,880	12,096	1,785	13,884	12,011	1,883
Private household workers	2,249	1,322	940	1,769	929	833
Service workers excluding private household	7,440	5,883	1,562	7,566	6,039	1,522
Farmers & farm managers	2,095	1,983	127	1,962	1,858	104
Farm laborers & foremen	1,781	1,388	359	3,554	1,261	320
Nonfarm laborers	3,691	2,776	932	3,533	2,654	897
Total	74,065	66,097	7,968	74,372	66,361	8,911

Continued

Table 16--Continued:

Occupation group	1968			1969		
	Total	Non-Black	Black	Total	Non-Black	Black
Professional, technical & kindred workers	10,325	9,688	637	10,769	10,080	696
Managers, officials & proprietors	7,776	7,520	229	7,987	7,716	252
Clerical	12,803	11,856	964	13,397	12,305	1,082
Sales	4,647	4,472	155	4,692	4,519	168
Craftsmen & foremen	10,015	9,350	654	10,193	9,454	713
Operatives & kindred workers	13,955	11,992	1,928	14,372	12,374	2,004
Private household workers	1,725	949	776	1,631	904	713
Service workers excluding private household	7,656	6,098	1,536	7,897	6,396	1,526
Farmers & farm managers	1,997	1,829	98	1,822	1,738	84
Farm laborers & foremen	3,464	1,220	302	3,292	1,182	268
Nonfarm laborers	3,672	2,710	874	3,672	2,781	880
Total	75,920	67,751	8,169	77,902	69,518	8,384

Source: Dept. of Commerce, Bureau of the Census, Current Population Report Series P-50, P-57. Dept. of Labor, Bureau of Labor Statistics, Employment and Earnings and Monthly Report on Labor Force.

Table 17. Racial entropy indices by occupation.

YEAR	Occupation 1/											
	1	2	3	4	5	6	7	8	9	10	11	Total
1954	.1620	.1038	.1648	.1076	.1625	.3385	.6930	.5034	.3242	.6047	.6061	.3341
1955	.1659	.1087	.1616	.0995	.1691	.3369	.6929	.4271	.2905	.5891	.5891	.3299
1956	.1583	.1072	.1579	.0941	.1777	.3508	.6903	.5264	.2790	.5915	.5883	.3350
1957	.1616	.1003	.1779	.0935	.1798	.3529	.6876	.5187	.2827	.6179	.5900	.3361
1958	.1643	.1126	.1927	.1045	.1874	.3722	.6871	.5206	.2748	.5911	.5946	.3399
1959	.1746	.1116	.1818	.1056	.1872	.3556	.6850	.4965	.2675	.5690	.5840	.3327
1960	.1813	.1166	.2039	.1194	.1940	.3630	.6890	.4185	.2749	.5629	.5784	.3372
1961	.1724	.1143	.2106	.1169	.1957	.3640	.6845	.5014	.2642	.5602	.5703	.3334
1962	.1878	.1183	.2004	.1222	.1962	.3614	.6869	.4991	.2667	.5715	.5836	.3351
1963	.2062	.1217	.2012	.1358	.2069	.3628	.6879	.4993	.2539	.5529	.5756	.3362
1964	.2224	.1197	.2090	.1365	.2226	.3621	.6850	.5026	.2338	.5490	.5820	.3387
1965	.2245	.1270	.2178	.1381	.2169	.3735	.6849	.5289	.2182	.6416	.5683	.3693
1966	.2185	.1242	.2342	.1268	.2364	.3836	.6776	.5130	.2086	.5277	.5600	.3414
1967	.2256	.1206	.2652	.1418	.2354	.3956	.6919	.5029	.2078	.6504	.5610	.3417
1968	.2316	.1448	.2638	.1604	.2442	.4062	.6881	.5052	.2887	.6488	.5751	.3415
1969	.2378	.1481	.2824	.1579	.2601	.4032	.6872	.4863	.1869	.6529	.5541	.3415

Source: Table 16.

1/ See Table 18 for explanation.

figure for non-Blacks was only 15 percent.[32] The entropy index declined by more than one percent every year, indicating that Black workers were moving out of these undesirable occupations. The decline is more noticeable between 1954 and 1963 for farm workers, and shows a slight change or no change from 1964 on. The racial entropy index remains constant in private household occupations, which could be interpreted to mean that Black females are still employed in large numbers by private households, a major source of employment.

Occupational Regression Results

A linear regression model, namely,

$$Y = \beta_0 + \beta_1 X \cdots \qquad (5.1)$$

where β_0 is the Y intercept, and β_1 is the slope of the line used to estimate, the value of Y changes with each one unit change in time. The data in Table 16 are used to compute each occupational regression, as shown in Table 17. Each occupational racial entropy value is regressed against time. Table 17 also gives occupational parameters and correlation coefficients. The slopes are ranked from the highest

[32] The actual number for "Black employment" is the number of Blacks actually employed with present job discrimination. Black employment, if distributed as non-Black, means that if there existed no discrimination or imperfection in the labor market, Blacks should have the same percentage of workers in these occupations in proportion to their number in the labor force.

to the lowest. The intercepts vary from one occupation to another, indicating the level of employment. The slope parameters are all statistically significant. All skilled occupations have positive slopes, which are interpreted to mean that Black workers are moving into these occupations. On the other hand, unskilled occupations have negative slopes, which mean a decrease in the racial entropy index. This is interpreted to indicate that Black workers are leaving these undesirable jobs for skilled jobs. It is quite interesting to note that all the occupations having negative slopes have a high concentration of the Black labor force.

The problem to investigate is whether a decline or an increase in the racial entropy of unskilled and skilled occupations respectively means economic progress for the Black workers. In order to answer this problem, a further regression analysis was carried out. Two models were employed, namely:

$$Y = \beta_0 + \beta X + \beta_1 X_1 \tag{5.2}$$

and

$$(Y-a) = \beta_0 + \beta X + \beta_1 X_1 \tag{5.3}$$

where $a = 0.5$ is the deviation index from full integration, X is the dummy variable to isolate the impact of the FEP laws; assume a value of 0 for the pre-FEP laws, 1954-1964, and the value of 1 for the post FEP laws period, 1965-1969.

Tables 18 and 19 show the regression results of equations (5.3) and (5.4), respectively. The slope's rank is significant in that the occupations with the highest slope rank show the highest degree of mobility of Black workers gaining employment in those positive slope occupation, or moving away to better occupations. The professional, technical and clerical kindred workers are ranked numbers one and two, respectively, meaning that more Black workers were employed in those occupations at a higher rate than in any other occupations. In terms of numbers, between 1959 and 1964, Blacks gained 198,000 jobs in the professional and technical category and 158,000 jobs in the clerical group, that is, an increase of the racial entropy index from 0.1746 to 0.224, and 0.1818 to 0.2090, respectively. There was a real increase in skilled craftsmen of more than 134,000, in semi-skilled operatives, 193,000, and in service workers, 262,000; there was a decrease of 188,000 unskilled laborers for a net gain of 401,000 manual jobs.

The Department of Labor forecast that between 1965 and 1975, employment growth is hoped to be "more than average" in professional and technical service and clerical fields, "average" in sales, managerial and skilled labor categories, and "less than average" in semi-skilled occupations; it also predicts that the number of unskilled labor

Table 18. Regressions of Racial Entropy of Each Occupation

	β_0	β_1	R^2	Slope's Rank
1. Professional, techincal, and kindred workers	0.1934	0.0054 (0.0005)	0.9616	2
2. Managers, officials, and proprietors (exclusing farm)	0.1187	0.0022 (0.0005)	0.8832	6
3. Clerical and kindred workers	0.2072	0.0068 (0.0005)	0.9394	1
4. Sales workers	0.1225	0.0037 (0.0005)	0.9322	4
5. Craftsmen, foremen, and kindred workers	0.2045	0.0053 (0.0005)	0.9750	3
6. Operatives and kindred workers	0.3676	0.0035 (0.0001)	0.8945	5
7. Private household workers	0.6874	-0.0003 (0.0005)	-0.4388	9
8. Service workers (excluding private households)	0.4968	0.0011 (0.0005)	0.1853	8
9. Farmers and farm managers	0.2576	-0.0056 (0.0005)	-0.7887	11
10. Farm laborers and foremen	0.5925	0.0021 (0.0005)	0.2684	7
11. Laborers (excluding farm and mine)	0.5787	-0.0023 (0.0005)	-0.8618	10
12. Regression of <u>all</u> occupations	0.3277	0.001589	0.3174	

Source: See Table 16.

Note: R^2 is the correlation coefficient, β_0 is the intercept, and β_1 is the slope of the occupation; the number in brackets is the Standard Error.

Table 19. Regressions of Racial Entropy of Each Occupation with Deviations of 0.5 for the Period 1954-1969

	β_0	β	β_1	Slope's Rank
1. Professional, technical, and kindred workers	0.6912 (0.0031)	0.6983 (0.0056)	0.0049 (0.0007)	2
2. Managers, officials, and proprietors (excluding farm)	0.6175 (0.0024)	0.6213 (0.0043)	0.0019 (0.0005)	6
3. Clerical and kindred workers	0.7015 (0.0048)	0.7197 (0.0048)	0.0055 (0.0011)	1
4. Sales workers	0.6229 (0.0031)	0.6217 (0.0055)	0.0039 (0.0007)	4
5. Craftsmen, foremen, and kindred workers	0.7020 (0.0024)	0.7099 (0.0043)	0.0048 (0.0005)	3
6. Operatives and kindred workers	0.8632 (0.0034)	0.8774 (0.0060)	0.0025 (0.0007)	5
7. Private household workers	1.1869 (0.0013)	1.1886 (0.0023)	-0.0004 (0,0003)	8
8. Service workers (excluding private households)	0.9921 (0.0122)	1.0073 (0.0217)	-0.0000 (0.0027)	7
9. Farmers and farm managers	0.7604 (0.0091)	0.7516 (0.0162)	-0.0049 (0.0020)	11
10. Farm laborers and foremen	1.0680 (0.0126)	1.1466 (0.0224)	-0.0037 (0.0028)	10
11. Laborers (excluding farm and mine	1.0805 (0.0027)	1.0749 (0.0048)	-0.0018 (0.0006)	9
12. Regression of all occupations	1.8351 (0.0028)	0.8475 (0.0049)	-0.0001 (0.0006)	

Source: See Table 16.

Note: R^2 is the correlation coefficient, β_0 is the intercept, and β_1 is the slope of the occupation; the number in brackets is the Standard Error.

would decline.[33/] The racial entropy Table 17 strongly reveals this prediction, save the managers, officials and proprietors; sales workers show slow progress in integration. The number of salaried managers rose from 47,000 in 1959 to 72,000 in 1963, but the fact remains that Blacks are under-represented in this occupation, creating a deficit of about 400,000.

In Tables 19 and 20, the slopes are the same, but the intercepts are different, as shown in Figure 10.

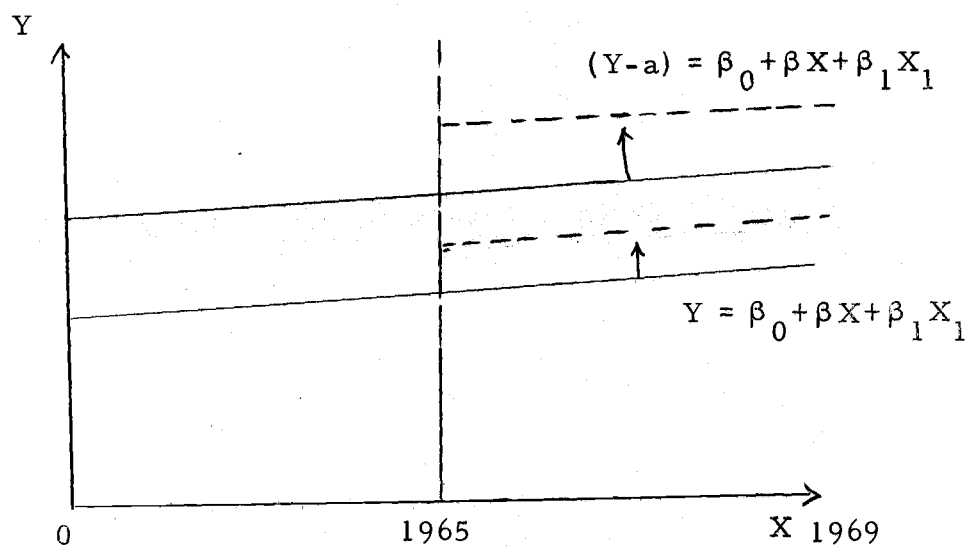

Figure 10. Shift in Intercept as a Result of FEP Laws

The effect of the FEP laws, as denoted by parameter β, shows that the intercept is higher in the post-FEP laws period than in the pre-FEP period. The shift in the intercept could probably be considered

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33/ U.S. Department of Labor, "A Report on Manpower Requirements, Resources, Utilization and Training," (Washington, D.C., March, 1965).

Table 20. Regression of Racial Entropy of Each Occupation as a Result of FEP Laws

	β_0	β	β_1	Slope's Rank
1. Professional, technical, and kindred workers	0.1912 (0.0031)	0.1983 (0.0066)	0.0049 (0.0007)	2
2. Managers, officials, and proprietors (excluding farm)	0.1175 (0.0024)	0.1213 (0.0043)	0.0014 (0.0005)	6
3. Clerical and kindred workers	0.2015 (0.0048)	0.2197 (0.0085)	0.0055 (0.0011)	1
4. Sales workers	0.1229 (0.0031	0.1218 (0.0055)	0.0039 (0.0007)	4
5. Craftsmen, foremen and kindred workers	0.2020 (0.0024)	0.2099 (0.0043)	0.0048 (0.0005)	3
6. Operatives and kindred workers	0.3632 (0.0034)	0.3774 (0.0060)	0.0025 (0.0007)	5
7. Private household workers	0.6869 (0.0014)	0.6886 (0.0025)	-0.0004 (0.0003)	8
8. Service workers (excluding private households)	0.4921 (0.0122)	0.5073 (0.0217)	-0.0000 (0.0027)	7
9. Farmers and farm managers	0.2604 (0.0091)	0.2516 (0.0162)	-0.0049 (0.0020)	11
10. Farm laborers and foremen	0.5680 (0.0126)	0.6466 (0.0224)	-0.0037 (0.0028)	10
11. Laborers (excluding farm and mine)	0.5805 (0.0028)	0.5749 (0.0049)	-0.0019 (0.0006)	9
12. Regression of all occupations	0.3351 (0.0028)	0.3475 (0.0049)	-0.0001 (0.0006)	

Source: See Table 16.

Note: R^2 is the correlation coefficient, β_0 is the intercept, and β_1 is the slope of the occupation; the number in brackets is the Standard Error.

as the effect of the FEP laws, as was intended to shift the demand curve to the right for the Black workers and increasing the number employed.

Examining the period between 1964 and 1969, Table 18 indicates that all skilled occupations increased at a decreasing rate of change, as in the period before 1964. The unskilled occupations declined at an increasing rate, which indicated that the movement to well-paying jobs was of the same magnitude as before the FEP laws. Professional and technical employment increased by 17 percent, reducing the deficit by 44,000. Remarkable progress was observed in clerical jobs, but sales workers still dragged behind, showing hardly any change. Black workers gained drastically in craftsmen: note that the entropy index for 1964 jumped from 0.2069 in 1963 to 0.2226 in 1964, a cut of the deficit of 58,000 jobs in that particular year. Among the skilled occupations, the managers, officials, and proprietors is seen the lowest slope rank, indicating that Black workers have made relatively slow gains in employment in these occupations. The increase is too slow between 1954 and 1962; the entropy index rose from 0.1039 to 0.1143. From there on, the progress is very encouraging. Between 1962 and 1967, many Blacks achieved managerial employment in large companies and with the government. The increase in the occupational entropy was from 0.1183 in 1962 to 0.1206 in 1967, representing an

increase from 77,000 to 115,000 Black salaried managers.[34/] Between 1967 and 1969, there was a net gain of 44,000 Black managers.

The majority of Black workers are found in unskilled jobs which have high rates of unemployment. As was noted before, the racial entropy is declining. Although the entropy index is decreasing, the number of Black service workers rose by nearly 250,000 in the 1962-1967 period to a total of 1.5 million, a change in percentage from 32.8 in 1962 to 29.4 in 1967. The majority of Black women are employed in domestic service jobs, but the number is declining. Between 1962 and 1967, the number fell by 200,000. The entropy index remains unchanged, indicating that the proportion of Black workers to the total in the occupation remained unchanged.

Black farm workers have been laboring on farms for the last four hundred years. They have remained on the farms because of the limited opportunities which were open to them. It has been seen that, gradually, "push" factors toward the farms have been overpowered by "pull" factors of the urban cities and metropolitan areas. Between 1962 and 1967, over 350,000 Blacks left the farm for better jobs elsewhere. The rate of out-migration of Blacks from farms is twice that of the rate for non-Blacks; the reason might be that Blacks did not own the farms, and so they had to migrate to urban settings for higher paying jobs.

34/ U.S. Department of Labor, "The Negro Job Situation, Has It Improved?" Special Labor Force Report No. 102, pp. 20-28. 1968.

Overall, the entropy index has increased for all skilled occupations and declined in the unskilled occupations. The percentage increase in the entropy index is related to employment gains in the number of Black workers hired in new occupations, whereas percentage decrease revealed the movement of Blacks to better paying jobs. In the period of the FEP laws, between 1965 and 1969, the change in the racial entropy index is very slight and cannot be considered statistically significant. Also, regression results show that some occupations are hiring more Black workers than others.

VI. ECONOMIC COSTS, SYNOPSES AND POLICY RECOMMENDATION

Impact Cost on Misallocation of the Black Labor Force

Introduction

The enactment of the Civil Rights Laws in 1964 was designed to combat discrimination in all forms of employment, housing, education, labor unions, and use of public places. As a result of these laws, the following theoretical effects are possible: One, the reduction of the unemployment rate of Blacks, and a corresponding increase in the labor demand; two, a rise in the production level as a result of the increase in Black employment; three, a rise in production output brought about by raising the educational level of Black workers and thus improving the quality of Black labor supplied; four, efficient allocation of resources bringing about some redistribution of income and occupation among the two races; and five, placement of Blacks in better housing at lower rental rates compared to what they are paying now for less desirable housing.

The misallocation of Black labor is a cost to the society as a whole. If resources could be more efficiently allocated, the entire society could efficiently increase its returns.

Economic Cost to the Nation

In 1965, the Council of Economic Advisors (CEA) reported that Blacks have not been participating fully in the abundance of the nation's economy. The CEA said, "on the average, the blacks have less education, work in less skilled occupations, suffer more unemployment, and get paid lower wages."[35/] The CEA, by using 1960 census data, estimated that: One, if Blacks were paid equal wages with non-Blacks of equal education, the personal income of the Blacks of the nation would be $12.8 billion higher. That is, by misallocation of the Blacks' potential, a cost to the nation of $12.8 billion is incurred every year. Two, if Blacks had the same educational attainments as white workers, and earned the same pay and experienced the same unemployment as non-Blacks, then their personal income and that of the nation would be $20.6 billion higher. Three, the CEA declared that the entire economy would benefit from better education of Black workers and an end to job discrimination; and, furthermore, that by this means industry would earn additional profits. Resulting productivity derived could raise Gross National Product by an estimated $23 billion. The computation of these statistics is possible by making certain

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35/ From a staff memorandum of the Council of Economic Advisors (March 26, 1965), Mimeographed.

assumptions regarding the Black labor force. It is assumed that when the education of Blacks is the same as that of non-Blacks, Blacks receive the same wage as non-Blacks performing equal jobs in the same region. These assumptions are those of pure competition. Thus, Black labor is a perfect substitute for non-Black labor, and by assuming equal education, their marginal physical products would be equal, so that Black labor input should receive equal wages. It is asserted that Black workers are paid lower wages than non-Black workers. This inferior education is a manifestation of slavery and discrimination. For a long period of time less money has been invested in Black schools; as a result of this there has come to exist an education gap between Blacks and non-Blacks. This education gap, however, is narrowing. In 1960 the Black education median was 10.8 years, compared to 12.3 for whites; in 1968, educational attainment of persons 25 to 29 years old was 12.2 for Blacks and 12.6 for non-Blacks, showing that young Black men have definitely made substantial gains over the last ten years.

On the other hand, the median number of years of school completed by Blacks 25 years of age and over was 5.8 in 1940, 6.9 in 1950, 8.2 in 1960, and 9.4 in 1967. The ratio of the Black to the non-Black median increased from 0.67 in 1940 to 0.71 in 1950, 0.75 in 1960, and to 0.78 in 1967. If the 1960-1967 rate of change

holds, the relative median education would be 1.00 in 2000. Therefore, if education is the only necessary condition for Black workers to earn the same wage rate as non-Black workers, equalization would be expected in the year 2000.

Table 21 shows the labor supply, by race, for the United States for the years 1963 to 1968. The unemployment rate is at a ratio of two to one, that is, for every one non-Black unemployed there are two Blacks unemployed. In column 4 it is assumed that the labor force is randomly distributed and that each race has an equal chance of being employed. A lower unemployment rate being the desired goal of any economy, by equalizing non-Black/Black unemployment rates from 1963 through 1968, employment in the economy would have increased by a total of 2, 202, 000 in the entire period. This total is arrived at by decreasing the Black unemployment rate to that of non-Blacks. For instance, in 1963, by equating the unemployment rate of Blacks from 10.8 percent to 5.0 percent, the employment would have been increased by 462, 000 (see Table 21 for the rest of the period). This is, of course, unrealistic since it fails to consider impacts on wages. However, if the "taste for discrimination" were completely eliminated it may be a reasonable figure to consider.

The excessive unemployment suffered by Black workers represents a cost to the Black community. The simple calculation of

Table 21. Labor Supply by Race, 1963-1968 (in thousands).

	Non-Blacks	Blacks	Blacks a/	Increase in employment
		1963		
Labor force	63,830	8,004	8,004	--
Employment	60,622	7,140	7,602	462
Unemployment	3,208	864	402	
Unemployment Rate (%)	5.0	10.8	5.0	
		1964		
Labor force	64,921	8,169	8,169	
Employment	61,922	7,383	7,793	410
Unemployment	2,999	786	376	
Unemployment Rate (%)	4.6	9.6	4.6	
		1965		
Labor force	66,136	8,319	8,319	
Employment	63,445	7,643	7,978	335
Unemployment	2,691	676	341	
Unemployment Rate (%)	4.1	8.1	4.1	
		1966		
Labor force	67,274	8,496	8,496	
Employment	65,019	7,875	8,216	341
Unemployment	2,253	621	280	
Unemployment Rate (%)	313	7.3	3.3	
		1967		
Labor force	68,699	8,648	8,648	
Employment	66,361	8,011	8,354	344
Unemployment	2,338	638	294	
Unemployment Rate (%)	3.4	7.4	7.4	
		1968		
Labor force	69,977	8,760	8,760	
Employment	67,751	8,169	8,480	310
Unemployment	2,226	590	280	
Unemployment Rate (%)	3.2	6.7	3.2	

a/ The unemployment rate of the Black is assumed to be equal that of non-Black, employment would be increased and there would be a reduction in unemployment.

Source: U. S. Department of Labor, Statistics on Manpower, "A Supplement to the Manpower Report of the President" March, 1969, p. 6.

matching one dollar per hours to hours lost by unemployment would amount to 2.2 million dollars per hour which would have been earned by Black workers, had the unemployment rates been equal.

Black workers have been underemployed relatively more so than non-Black workers. In 1968, some 5.3 million Blacks 16 years of age and over were outside of the labor force, which constituted ten percent of the non-participants of the total labor force. The U.S. Department of Labor[36/] indicated that of the non-participants interviewed in 1968, 18.4 percent were Blacks who expressed a desire to have a job and only 7.3 percent of non-Blacks expressed that desire. It is interesting to note that the ratio between these two percentages is about 2.5 to 1, which is approximately the same as the relative unemployment ratio, Blacks to non-Blacks ratio being two to one.

The large majority of the people earn their income from jobs. Each job requires a certain amount of skill which is acquired in a trade school, formal school, or on-the-job training. Theoretically, people of the same education work at the same type of occupation and receive the same wage. In practice, this has not been true for American Blacks. They frequently do inferior, dirty jobs requiring an abundance of physical energy, and are underpaid.

36/ U.S. Department of Labor, "Persons Not in the Labor Force", Special Labor Force Report No. 110, p. 13. 1969.

In "On the Cost of Being a Negro,"[37/] Paul M. Siegel (1965) investigated the non-Black/Black differentials in average earnings within major occupational groups at every education level for experienced labor force, ages 24 to 64 years. Siegel's study used 1960 census data. He found that the income differentials differed between North and South, and that income increased more rapidly with increasing education in some occupations than others. Lastly, he discovered that non-Black/Black differentials increased with increasing education. Siegel worked out a decomposition and revealed that,

> the total difference in average white-nonwhite earnings, we find that only $1,097 of total difference of $2,852 can be attributed to white-nonwhite differences in mean earnings within region, occupation and education combinations. Thus, net of regional, education and occupational effects, the cost of being a Negro is roughly a thousand dollars. On the other hand, 61.5 percent of the total difference in white and nonwheat mean earnings can be attributed to compositional differences with regard to region, occupation, and education---for 38.5 percent of the current difference in average earnings of whites and nonwhites is apparently independent of the achievement of nonwhites! To put it baldly, about two-fifths of the difference in average earnings of whites and nonwhites is what it costs to be black.

The FEP laws are an attempt to minimize this cost of $1,000 to zero, if possible; in such a case the Black community would receive a gain of $1,000 multiplied by the number of Blacks in the

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37/ Paul M. Siegel, "On the Cost of Being a Negro," Sociological Inquiry 35, No. 1 (Winter, 1965), p. 41-58.

labor market of that community. The question is, then, "Has the cost of being a Negro been reduced by the enactment of the FEP laws?" It is rather difficult to answer this question in terms of numbers, as Siegel (1965) did, due to the lack of data (1970 census data are not yet available), but in examining the previous result of this study it is possible to say that the cost as measured by the decision coefficient, might have been reduced insignificantly, or has remained the same. It will be a job of future research to examine this cost when 1970 census data will be available.

Table 22 gives a breakdown of the charges filed according to the basis on which people felt they are discriminated when they sought employment in different industries. During the period of the four fiscal years studied, race is ranked the highest, followed by sex, national origin and religion, in that order. The number of cases increased year by year as the budget increased. Race as the basis of charges made up to 53 percent of all cases in the fiscal year 1965-66, and rose to a record high of 66 percent in the fiscal year 1968-69. In the fiscal year 1965-66 about 33 percent charged that they were discriminated against because of being the "wrong" sex (mostly female); as time went on the percentage declined to 19 percent in the fiscal year 1968-69. The other basis of discrimination due to national origin and religion put together, constitutes less than ten percent of charges every

Table 22. Analysis of Charges on Basis of Discrimination, Fiscal Years 1966 to 1969.

Basis	1969	%	1968	%	1967	%	1966 a/	% b/
Race	9,562	66	6,650	60	4,799	56	3,254	53
Religion	330	2	291	2	169	2	87	1
Sex	2,689	19	2,410	22	2,003	24	2,053	34
National origin	1,093	8	721	6	478	6	131	2
Unspecified	797	6	1,100	10	1,063	12	608	10
Total	14,471		11,172		8,512		6,133	

a/ In 1966, 8,854 complaints were received and analyzed but only 6,133 were recommended for investigation, deferred, or additional information was required.

b/ Rounding errors cause the total percentage to add to more than 100 percent.

fiscal year.

Table 23 shows what the various respondents charged on race issues. The majority of charges were filed against employers whom the complainants felt refused to employ them because they were Blacks. In fiscal year 1965-66, 60 percent of all charges were filed against the employer, and almost 15 percent against labor unions. The state employment services produced about one percent of cases. Employer practices and union practices have remained the basis of the majority of charges for the whole four year period, making up about 60 percent of all cases charged on the basis of race.

Immediate Benefits to Blacks

The major functions of the FEP Commission are to investigate and conciliate and to persuade employers, unions, employment agencies and labor management apprenticeship committees to eliminate unlawful employment practices. The immediate success of the FEP laws is reflected in how successfully investigations and conciliations are completed in bringing about fairness in employment. Table 24 illustrates the accomplishments of the Commission. In the fiscal year 1966, a total of 1,659 investigations were completed. The investigations nearly doubled in number every year to a total of 7,543 (involving 4,993 respondents in the

Table 23. The Respondents Charged on Basis of Race for the Fiscal Years 1965-66 to 1968-69.

	1968-69	%	1967-68	%	1966-67	%	1965-66	%
Employer practices	8,107	56	5,349	48	3,744	44	5,284	60
Union practices	1,022	7	1,079	10	885	10	1,347	15
Employment agency practices	90	1	24	0	--	--	--	--
Labor-management practices	190	1	63	1	48	1	2	0
Employer-union-agency practices	153	1	47	0	43	1	--	--
State employment agencies	--		88	1	19	0	89	1
Private employment agencies	--		--		48	1	23	0
Total	14,471	66	11,172	60	8,512	57	8,854	76

Note: The percentage does not add to 100 percent because the remainder charges were filed on the on the basis of sex, religion, and national origin.

Source: U.S. Equal Employment Opportunity Commission, Annual Reports Nos. 1, 2, 3, and 4 for the fiscal years of 1965-66 and 1968-69. U.S. Government Printing Office, Washington, D.C.

Table 24. Comparison of Compliance Activity: Fiscal Year 1966 vs Fiscal Year 1967, Fiscal Year 1968 vs 1969.

Status of conciliations	Fiscal 1966 Charges - Respondents		Fiscal 1967 Charges - Respondents	
Uncompleted work brought forward	--	--	513	146
New work received	704	214	1,310	399
Total work received	704	214	1,823	485
Completed conciliation	191	68	890	174
In process and pending assignments	513	146	933	311
Total disposition	704	214	1,823	485
ANALYSIS OF COMPLETED CONCILIATIONS				
Fully successful	111	45	306	66
Partially successful	20	7	77	22
Unsuccessful	60	16	507	86
Total	191	68	890	174
Total incoming work	8,854		12,927	
Recommended for investigation	3,773		4,084	
Completed investigations	1,659	--	3,549	1,740

Continued

Table 24--Continued.

Status of conciliations	Fiscal 1968 Charges	Fiscal 1968 Respondents	Fiscal 1969 Charges	Fiscal 1969 Respondents
Uncompleted work brought forward	933	311	1,262	535
New work received	1,573	864	2,067	916
Total work received	2,506	1,175	3,329	1,451
Completed conciliation	1,244	640	1,305	774
In process and pending assignments	1,262	535	2,024	677
Total disposition	2,506	1,175	3,329	1,451
ANALYSIS OF COMPLETED CONCILIATIONS				
Fully successful	424	253	486	319
Partially successful	89	53	90	57
Unsuccessful	731	334	729	398
Total	1,244	640	1,305	774
Total incoming work	15,058		17,272	
Recommended for investigation	6,056		9,152	
Completed investigations	5,368	3,510	7,543	4,993

Source: See Table 22.

fiscal year 1969. The successful conciliations completed in fiscal 1966 were 111 individual charges, versus 306 individual charges in fiscal 1967. In fiscal 1969 individual conciliations rose to 486 (involving 319 respondents) versus the preceding year's total of 424 fully successful individual charges (involving 253 respondents). Unsuccessful conciliations of individual charges were low only in fiscal 1966, a total of 60 compared to 731 individual charges in fiscal 1968. In every fiscal year, except fiscal 1966, unsuccessful conciliations exceeded successful individual cases. The following example illustrates this fact:

	Fiscal year 1967	Fiscal year 1968	FY 1968 vs FY 1967 % increase
Completed investigations	1,740	3,510	+102
Completed conciliations	174	640	+268
Fully successful	66	253	+283
Partially successful	22	53	+140
Unsuccessful	86	334	+288

These conciliations have immediate benefits to the charging workers. In fiscal year 1967, the number benefitted from conciliation was 8,500, which rose to 28,000 in fiscal year 1968, a percentage increase of 288 percent. It was estimated that 70 percent were Blacks and 10 percent were Spanish surnamed

Americans. The immediate benefits received by individuals in fiscal 1967 also included $58,000 paid in cash, with estimated future benefits of over $3,700,000 annually. About 30,000 persons were benefitted by successful conciliation; in addition, a total back pay of $2,834,692 was received in the fiscal year 1969.

The FEP laws have accomplished many objectives, some of which are unmeasurable in monetary terms--for instance, there is no dollar value that can be attached to the confidence minorities now have in seeking employment in all areas of the labor market. Many institutions and companies have changed their overt and covert attitudes in providing employment opportunity regardless of race, color, religion, sex, or national origin. In the Southern industries, where previously no Blacks could be hired, affirmative action has been taken in employing persons from minority groups. No doubt since the enactment of the FEP laws the demand for minority labor has increased, regardless of the discrimination still pervasive in American society.

In conclusion, the racial entropy index distribution shows that Blacks have made some progress over this period of time. In such occupations as professional, technical and kindred work and clerical work, Blacks have made some tremendous progress; some Blacks have moved from unskilled jobs to better jobs. Discriminatory practices cost the nation. Conservatively, it is

estimated that the taste for discrimination costs the nation over 30 billion dollars annually in wasted productivity; the human cost in terms of injustice, frustration and deprivation is incalculable. To minimize this cost would improve the economic status of the Black community and that of the nation as a whole.

Considering the number of charges filed against employers, unions and through means of investigation and conciliation, litigation, public confrontation and active programs of the technical assistance, the EEOC has obtained employment for some hundreds of thousands of minority individuals. Analysis of the charges indicates that race as the basis of discrimination was the dominant factor, making up over 50 percent of all charges filed during the four fiscal year periods. Many charges were filed against the employers; therefore, it follows that much attention should be given to educating employers and unions toward changing their preference in regard to Black workers. The worker-load brought forward each year is an indication of the shortage of manpower in the EEOC, so the budget should be increased to meet this demand.

Synopses and Policy Recommendation

The question of whether the economic status of the Black people has improved both absolutely and relative to that of non-Black people has been a major concern to policy makers and fellow economists.

So far it is not agreed upon among economic researchers as to what gain or decline Blacks have made. A brief review will be made here of major studies which have dealt with this problem.

In Economics of Discrimination, Gary Becker (1957) made a major contribution toward developing a theory to study discrimination in the market place. Becker computed an index which indicated that there "has been relatively little change in discrimination during the interval 1910-1950." This conclusion was reached by a comparison of the relative "occupation position" of the Blacks to that of the non-Blacks in both the North and South. "Occupation position" is measured by grouping all workers in one of the three sub-occupational categories (skilled, semi-skilled and unskilled) which are assigned numerical values proportional to the 1939 average income of the non-Black workers therein. The critics of Becker's (1957) study indicate that since 1940 the relative median wage and salary earnings of the Blacks rose appreciably as compared to those of non-Blacks, which suggests that Becker's (1957) measure of the relative occupation positions does not respond to certain types of forces which bear upon the relative earning power of Blacks. Some of the forces are immigration from the South to the North and from rural to urban areas. Professor Ginzberg's (1956) study revealed just the contrary of Becker's thesis, that is:

> the present position of the black in American society is far better than . . . his most optimistic friends could have predicted fifteen years ago . . . in addition to the increase in the availability of nonfarm jobs, black workers made equally important gains by virtue of new opportunities to obtain preferred jobs in the urban economy . . . the black man has made truly spectacular gains in the civilian economy, both in the North and the South . . . . (Ginsberg, 1956, p. 5, 11)

These two studies by Becker and Ginzberg pose a major question: What is the real truth in regard to the advancement in the economic status of Blacks since 1940?

Rayak's (1961) study, "Discrimination and the Progress of Negroes," found that Becker (1957) was in error in constructing an occupational index. Becker (1957) has assumed constant weights of relative income for three classes of skills and thus did not take into account the sharp narrowing of income differentials. His study found that there is very substantial improvement in the relative position of Blacks between 1940 and 1950--a rise of 15 percent in the North and 18 percent in the South. Although relative increases in the North are smaller than those in the South, this is due to migration from South to North. In conclusion, Rayak (1961) rejected Becker's (1957) conclusion that "the average occupational position of blacks . . . relative to whites has been remarkably stable." Further, he agreed that improvement in the relative position of Blacks did not stem from a decrease in discrimination with respect to employment, but was a product of

severe labor shortages between 1940 and 1948. In general, Blacks have done very well relatively when there was a shortage of labor. In the final analysis, Rayak confirmed Professor Ginsberg's (1956) study but he agreed that change in the relative position of Blacks does not reflect a significant reduction in discrimination.

In his recent study, "Decline in the Relative Income of Negro Man," Batchelder (1964) compared the median income of Black people with that of non-Black people for the years 1949 and 1959. Batchelder (1964) revealed that for both years the relative income ratios of Blacks to non-Blacks have been much lower in the South than in the other three regions. Taking all regions in aggregate it was found that in any region in income terms, the relative position of Black men was low in 1949 and still lower in 1959. What about the position of the Black women relative to that of the Black man? Two conclusions were drawn from the study: One, "the changing role of American women in the 1950's was different for Black women than for non-Black women"; two, the income of Black women became increasingly important during the 1950's relative to the income of Black men. Why? First: because Black women in the South and the West earned relatively more than Black men; Second: because a substantially larger percent of Black women worked in 1960 than had worked in 1950. In general, Batchelder's

(1964) article shows that there was a downward trend between 1949 and 1959 in the Black to non-Black men's median income ratio. Batchelder (1964) predicted that any upward trend in income ratio in the 1960's might result from the return to a high level of aggregate demands or the Fair Employment Laws jurisdiction of the Civil Rights Act of 1964 (Batchelder, 1964, p. 525-548).

The increasing importance of the Black woman's income relative to that of the Black man raises a question: Are Black women less discriminated against than Black men? The answer seems to lie in the fact that discrimination against Black men is of a different type than that against Black women. One type may be in that the attitudes of discrimination are subjective, and the other type, the actual ability to discriminate is a function of the objective environmental situation, for instance, in this case the peculiar and transitory condition of the labor market. Historically the freedom of the Black people was determined by greater willingness to employ Black women than Black men. During the Nineteenth Century the Black washerwoman was in many cases the sole breadwinner of the family. "In 1849, in Philadelphia, as an extreme example, there were more females than black men in gainful occupations." (Greene, 1930, p. 3-4) Since the employers considered the Black woman labor force to be significant to them, they were therefore willing to suppress their subjective desire to discriminate in favor of employing more

Black women than Black men.

Gilman's (1965) article examines "Discrimination and Unemployment" positions of minorities. Consistent with the popular conception of greater discrimination in the South, the unemployment differentials are smaller in the South than the non-South, if the difference between equilibrium and actual wage ratios are smaller in the South than in the non-South. Gilman (1965) argued that "differential wage rigidity" is a factor making for higher unemployment rates for Black workers in the presence of discrimination. He continued to argue that even if there was no "differential wage rigidity", discrimination would furnish higher unemployment to the limitation of employment opportunities which Black workers have. His study never attempted to measure the total effect of discrimination on unemployment due to the fact that a lower level of education or on-the-job training of Blacks as compared to non-Blacks is probably in itself the result of discrimination. The conclusion one can draw is that discrimination is then one of the variables contributing to higher relative differential rates of unemployment of Blacks than that of non-Blacks.

An earlier study on the problems of Black workers than Becker's (1957) and others was done by Dewey (1952), who explored "Negro Employment in Southern Industry." Dewey's (1952) article synthesized the working conditions of the Black workers

and their relative position to that of non-Black workers. He found that in Southern industries Black workers were concentrated in the unskilled, dirty, difficult jobs, where Black workers worked without any contact with non-Black workers. When it came to questions of upgrading, no employer considered upgrading Black workers until someone had done so elsewhere. This boils down to traditional racial barriers in occupation and ignorance of the quality of Black labor. The unions' objective was to maintain racial status quo in all occupations. This proved to be one of the restrictive policies maintaining racial discrimination in employment. Here again, Dewey (1952) noted that a shortage of labor forces employers to hire Black workers, for instance in building trades--that is, in all seasonal jobs where one type of skill was needed.

During the year 1970 two significant articles came out, one by Gwartney (1970), "Changes in the Nonwhite/White Income Ratio--1939-67," and the other by Rasmussen (1970): "A Note on the relative Income of Nonwhite men 1948-64," both attempting to estimate the change in the ratio of income of the Black to the non-Black between 1939 to 1967 for the person 25 years and over, impact of changes in regional composition, scholastic achievement, quantity of education, and structural demand for highly educated labor on the magnitude of non-Black/Black income differential.

Gwartney (1970) revealed that between 1949 and 1959 mean income rose from 49.3 to 51.5 percent--an increase of 4.6 percent; between 1959 and 1967 it jumped from 51.5 to 47.4 percent--an increase of 11.6 percent; in terms of median income this represents an increase of eight percent. The changes were traceable to migration of Blacks from South to North. He also found that by adjusting the regional composition there was a substantial increase in the 1940's, and relative stability during 1949-1967. On the other hand, the relative change in the income ratio of Black females to non-Black females for the same period is much higher than that of males. For instance, in the United States, the ratio of the mean income was estimated to have increased 20.9 percent in the 1950's, and between 14 and 15 percent after adjusting for regional migration. The increases were due to income and educational impact, and not owing to migration as in the case of males. Gwartney's (1970) study concluded that future relative income gains for Black males are likely to be slow even if there were some reduction in employment discrimination.

In "A Note in the Relative Income of Nonwhite Men 1948-1964," Rasmussen (1970) investigated two of Batchelder's (1964) propositions regarding the trend in Black/non-Black male income ratio. He regressed the non-white/white median income ratio (Y_t) on the ratio of growth of GNP(% GNP), the unemployment rate lagged

one period (U_{t-1}) and the time trend (T) and found:

$$Y_t = .57 + 0.00984\ (\%\ GNP) - 0.0270\ (U_{t-1}) + 0.00323\ (T)$$
$$\qquad\quad (0.0025) \qquad\qquad (0.0077) \qquad\quad (0.0015)$$

$$R^2 = 0.57$$
$$df = 13$$

Numbers in parentheses are standard errors.

Rasmussen (1970) concluded that the relative income of non-whites is related to the level of aggregate demand, and both cyclical variables had the expected sign and were significant at the 0.01 level. Black males experienced a fall in relative income during periods of poor economic growth.

The purpose of this thesis has been to investigate the overall impact of the Fair Employment Law practices on the economic status of the Black people. To determine the effects of FEP laws gross market discrimination coefficient, relative income, unemployment rate, and occupational distribution were statistically examined.

Table 1 shows that the ratio of Black family median income to non-Black family median income between 1947-1965 has been slightly above 50 percent, and thereafter it is above 60 percent. Gwartney"s (1970) study showed this to hold true. Also in the table the ratio of unemployment rate of Black to non-Black

has remained at ratio two to one.

The regression analysis performed revealed very minor statistical significance in shift of the economic status of the Blacks associated with the FEP laws. A dummy variable was used to estimate the impact of FEP laws on economic status of the Blacks in the post-FEP law period to the pre-FEP law period. The various trends derived in this study do not show any significant change either prior to FEP laws or after the FEP laws. Nevertheless, the analysis of occupational distribution indicates that over the period of time studied, Black workers have managed to move from unskilled occupations to skilled occupations. The clerical and kindred workers, and professional and technical workers showed the most rapid increase for the Black worker. Among the managerial and kindred workers, the progress was very slow. The overall mobility from unskilled to skilled as shown by positive slope for skilled and negative slope for unsk8lled groups, conforms with other studies done by the Bureau of Labor Statistics.

The analysis of variance results indicated that the race aspect proved to be very strong, followed by occupation and by age. This means that to reduce the inequality between the two races in per capita income distribution, occupational distribution and unemployment, the preference for the non-Black race over the Black race has to be eliminated in employment practices.

Policy Recommendations

Had demand shifted one would have expected a reduction in unemployment--to the extent that the demand shift represents a reduction in the market discrimination coefficient. A statistically significant relationship between the ratio of Black to non-Black unemployment rates was not found. It may be appropriate to offer some suggestions which, if implemented, might result in a reduction to the "taste for discrimination" and a consequent increase in the demand for Black labor (from D_{Bd} to D_B in Figure 10).

The following are some suggestions which somewhat might bring forth a "shift" in demand:

First, it is significant that any law without enforcement is not an effective law. So if expectations are to be realized, the first prerequisite may be to bring about full enforceability of FEP to the extent that this would "shift" demand curve to the right for the Black Americans. One method to enforce the FEP laws is to give all statutory power needed to the agents such as the Equal Employment Opportunity Commission (EEOC). At present EEOC serves three functions[38/] of: (1) holding informal conferences

38/ U.S. Equal Employment Commission, 3rd Annual Report, 91st Congress, 1st Session.

with employers or labor unions; (2) conciliation; (3) persuasion. These functions are limited essence, and such statutory powers may be needed.

Second, the public sector could set some examples of increasing the quantity of the Black workers employed in all Federal and state jobs. By vertical and horizontal integration of these occupations, one would expect a ratchet effect which might cause a shift in demand in private sector. The FEP laws state that the government contracts should be withheld, denied, or cancelled if the companies involved violate FEP laws. In the history of FEP laws none of the companies have ever lost a government contract. If the government contracts are withdrawn as the laws call for, some of the companies would not be functioning. It seems that this would be one of the good weapons to cause the companies' demand for Black workers to "shift".

Third, mass education could be directed toward employers, consumers, employees, labor unions, and all citizens to effect hiring and acceptance of Blacks. The right education might change the attitudes of employers and others who tend to discriminate on the basis of ignorance, and such would affect the taste for discrimination. As the positive change in taste for discrimination demand curve for Black Americans would "shift" to the right increasing the number employed and the wage rate.

The following are called political suggestions which this thesis has not yet analyzed. If the FEP laws cannot eliminate the "taste for discrimination" alternative policies to change the present distribution may be:

First, the government should do heavy investing in ghetto communities. The human capital investment should be given first priority. People should be educated to acquire the necessary skills so that they can manage business in their communities and seek employment outside them. The ghetto economy should be developed in such a manner that it will be in a position to export goods outside its economy.

Second, ghetto residents should be aided in acquiring capital ownership. This can be accomplished by establishing cooperatives which are owned by ghetto residents. It should be noted that these would not operate on the same principles as those associated with Black capitalism but rather in terms of people's businesses owned by those people who reside in the ghetto. By so doing, capital accumulation would be saved for future investment.

Third, utilization of available ghetto resources, such as its human resources, should be made.

Fourth, some reductions should be made in the outflow of consumption expenditures and investments from the ghetto through more efficient ghetto production of marketable value and the creation of wealth.

Fifth, Black communities should be educated in such a manner

as to be able to develop their own communities.

Sixth, some direct income transference should be made to ghetto communities in preparing themselves for economic self-support.

Conclusion

The statistical tests do not persuade one to conclude that, if the FEP laws are fully implemented, some improvement in the economic status of Blacks is possible. However, finding a negative sign on the estimated coefficients for the fair employment effect variable X_{12} in equations (4. 14) through (4. 18b) suggests that the FEP laws may lead to a reduction in the unemployment, and increase in wage rates for the Black Americans. The analysis of occupational distribution by use of the information theory concept revealed that, the racial entropy index has increased over the years. The slopes of some occupations as can be seen in Table 19 revealed that some occupations such as clerical and kindred workers, and professional, technical, and kindred workers ranked very high, indicated a high intake of Black Americans in these occupations.

It might be also concluded that--although this was not studied in this study--some programs such as those designed to create a tight labor market, improve the distribution of human and physical capital, increase labor mobility, educate employers, and develop

the ghetto economy are all vital in conquering the economic inequality which presently exists between the Blacks and non-Blacks.

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APPENDIX

APPENDIX I

FURTHER ANALYSIS OF EFFECT OF TASTE FOR DISCRIMINATION (Trade Model)

Racial discrimination practiced by the non-Black society against Black society causes the trade between the two societies to be imperfect. The following assumptions are made in the trade theory:

I. That there are only two communities; one inhabited solely by Blacks and the other by non-Blacks.

II. They trade only two factors; capital and labor with each unit of labor and capital in the Black community being a perfect substitute in production for each unit of labor and capital in non-Black society. These factors are perfectly mobile.

III. The communities trade only factors of production used in production of one commodity economy.

IV. Each community exports its relatively abundant factor: Blacks export labor, and non-Blacks export capital.

V. The production function is mathematically homogeneous of the first order and subject to Euler's theorem.

In addition to the above assumptions, the following conditions also would be fulfilled at full equilibrium in a perfect trade market:

I. Payment to each factor would be independent of whether it was employed with Black (B) or non-Black (N) labor.

II. The price of each product would be independent of whether it was produced by B or N.

III. The unit payment to each factor would equal its marginal value product.

The above assumptions and conditions would be used to test Becker's (1957) four major propositions. The pure free trade model will be developed first and then taste for discrimination will be introduced which means that no longer will the above assumptions and conditions hold.

Proposition: In a purely competitive society with two groups of persons the effect of taste for discrimination against one group as reflected in a positive market discrimination coefficient against that group is to reduce the per capita real incomes of both groups (Becker, 1957, p. 11-13).

Proof: Let Y(W) and Y(N) be net income in non-Black and Black societies, respectively. Then Y(W) is equal to the sum total return earned by capital and labor. Thus,

$$Y(W) = C_w MP_c(W) + L_w MP_c(W)$$

Given that:

$$MP_c(W) = \partial f/\partial c\ (C_w - C_t;\ L_w) + \partial f/\partial L\ (C_w - C_t;\ L_w)$$

Therefore:

$$Y(W) = C_w \partial f/\partial c\ (C_w - C_t;\ L_w) + L_w \partial f/\partial L\ (C_w - C_t;\ L_w)$$

Similarly total return in Black society is equal to:

$$Y(N) = C_N MP_c(N) + L_n MP_L(N)$$

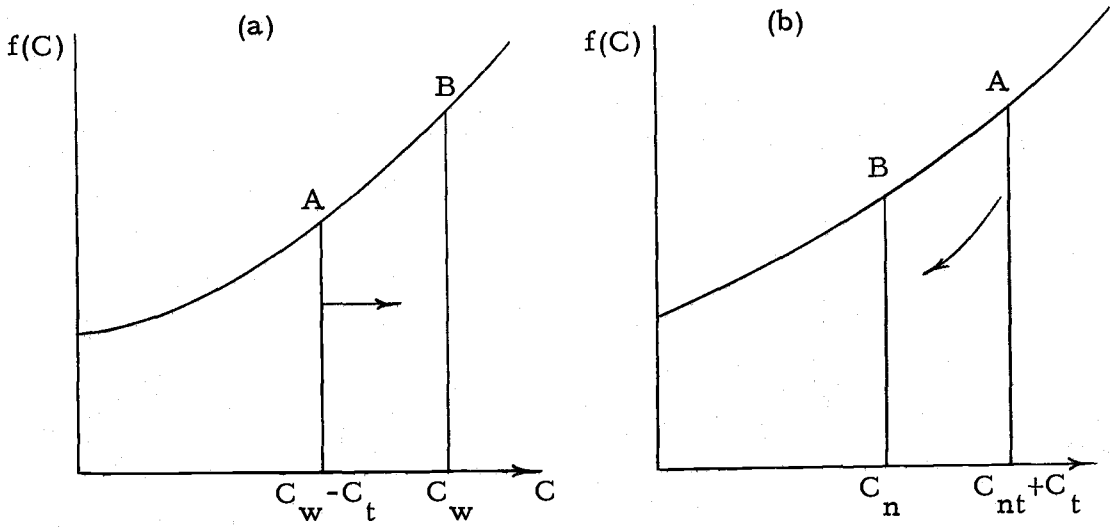
$$= C_m \partial f'/\partial c\ (C_n + C_t;\ L_n) + L_n \partial f'/\partial L\ (C_n + C_t;\ L_n)$$

where f and f' is the production in non-Black and Black sector, respectively, and C and L denoted by subscript w and n is capital and labor for non-Black and Black, respectively, and C_t is exported capital by non-Black.

If the production function is assumed to be monotonically increasing, when discrimination takes place, less capital is being exported and as a result less labor would be imported. That is:

$$C_t = C_1 \leq C_2 \quad \text{implies that} \quad f(C_1) \leq f(C_2)$$

where C_2 is capital exported as a result of discrimination, and f is a monotonic function. Diagrammatically, we have:



Non-Black sector

Black sector

In diagram (a), at point A we have $f(C_w - C_t)$ and at B, we have $f(C_w)$. As C_t gets smaller $(C_w - C_t)$ gets larger, it is likely that some capital would be underemployed and monotonic production function would increase. In diagram (b), as C_t gets smaller, $(C_n + C_t)$ also gets smaller as does the monotonic production function. The labor input would be underemployed due to a shortage of capital. The output is definitely less than would be produced in a free trade where there would be no underemployment of labor or capital in either sector. Then discrimination reduces per capita real income of both groups.

Q. E. D.

Theorem 1. If L_w is the fixed non-Black labor stock C_w is the fixed total capital stock of non-black, C_t is the amount traded, and $C=C_w - C_t$, then, under conditions of perfect competition (other than discrimination), $\partial Y/\partial C_t \geq 0$, provided $Y = f(C, L)$ is homogeneous of degree one.

Proof: $$Y(W) = C_w \frac{\partial f}{\partial C}(C; L_w) + L_w \frac{\partial f}{\partial L}(C; L_w),$$

where $\frac{\partial f}{\partial C}$ is the return to non-Black capital in money terms in the non-Black economy and equal to a higher money return in the Black economy suitably discounted by the "taste for discrimination" as a psychic cost. (Beker, 1957, p. 12).

Lemma: If $Y = f(C, L)$ is homogeneous of degree one

$$C\frac{\partial f}{\partial C^2} + L\frac{\partial^2 f}{\partial L \partial C} = 0$$

Proof: By Euler's theorem: $f = C\frac{\partial f}{\partial C} + L\frac{\partial f}{\partial L}$

Then: $$\frac{\partial f}{\partial C} = C\frac{\partial^2 f}{\partial C^2} + \frac{\partial f}{\partial C} + L\frac{\partial^2 f}{\partial L \partial C}$$

and the lemma follows.

By the chain rule $\frac{\partial f}{\partial C_t} = \frac{\partial f}{\partial C}\frac{dC}{dC_t} = -\frac{\partial f}{\partial C}$ (note total derivative) and

$$\frac{\partial^2 f}{\partial C_t^2} = -\frac{\partial^2 f}{\partial C \partial C_t}$$

Taking the partial derivative of Y(W) with respect to C_t:

$$\frac{\partial Y(W)}{\partial C_t} = C_W \frac{\partial^2 f}{\partial C \partial C_t} + L_W \frac{\partial^2 f}{\partial L \partial C_t} = L_W \frac{\partial^2 f}{\partial L \partial C_t} - C_W \frac{\partial^2 f}{\partial C_t^2}$$

From the Lemma:

$$C \frac{\partial^2 f}{\partial C_t^2} = L \frac{\partial^2 f}{\partial L \partial C_t} \quad \text{since } C \frac{\partial^2 f}{\partial C_t^2} = -C \frac{\partial^2 f}{\partial C^2}$$

So:

$$\frac{\partial Y(W)}{\partial C_t} = C \frac{\partial^2 f}{\partial C_t^2} - C_W \frac{\partial f}{\partial C_t^2} = - C_t \frac{\partial^2 f}{\partial C_t^2}$$

Since $\partial^2 f / \partial C_t^2 < 0$ and $C_t \gtreqless 0$ then $\frac{\partial Y(W)}{\partial C_t} \gtreqless 0$

Similarly, $\partial Y(N) / \partial C_t \gtreqless 0$.

Thus, discrimination by non-Black reduces the net income of both Black and non-Black based on Becker's (1957) quasi-foreign trade model assumptions.

Q. E. D.

Theorem 2:

Proposition: To prove that discrimination will harm the group discriminated against (in this case Blacks) more than the discriminating group, non-Blacks, "If the blacks are more of an economic minority than non-Blacks are a numerical minority" (Becker, 1957, p. 18-19). The necessary conditions for an

economic minority are as follows:

(i) $Y(W) > Y(N)$

(ii) $C_W > C_N$

(iii) $L_W > L_N$

where the above inequalities are expressed in relative terms, $Y(W)$ and $Y(N)$ are incomes of non-Blacks and Blacks, respectively, C_W and C_N are capital; and L_W and L_N are labor. Subscripts W and N refer to non-Blacks and Blacks.

Proof: The ratio of income of Black to non-Black denoted by R is:

$$R = Y(N)/Y(W)$$

Compute $\partial r/\partial C_t$ By the quotient rule:

$$\partial R/\partial C_t = \frac{Y(W)\ \partial Y(N)/\partial C_t - Y(N)\ \partial Y(W)/\partial C_t}{(Y(W))^2} \qquad (1)$$

In theorem 1 it was shown that $\partial Y(W)/\partial C_t = -C_t \partial^2 f/\partial C_t^2$ (2a)

and similarly $\partial Y(N)/\partial C_t = -C_t \partial^2 f'/\partial C_t^2$ (2b)

(where f' is the Black production function).

Let us substitute (2a) and (2b) into (1)

Then $$\partial R/\partial C_t = \frac{-Y(W)C_t \partial^2 f'/\partial C_t^2 - Y(N)C_t \partial^2 f/\partial C_t^2}{(Y(W))^2} \qquad (3)$$

Since $C_t \geq 0, \quad (Y(W))^2 > 0$

$$\partial R/\partial C_t = \cdot (Y(N)\ \partial^2 f/\partial C_t^2 - Y(W)\partial^2 f'/\partial C_t^2)\ C_t/(Y(W))^2$$

Therefore $$C_t/(Y(W))^2 \geq 0$$

We can conclude then:

$$\left.\begin{aligned}
&\text{(a) } \partial R/\partial C_t = 0 \quad \text{if } Y(N)\partial^2 f/\partial C_t^2 = Y(W)\partial^2 f'/\partial C_t^2 \\
&\text{(b) } \partial R/\partial C_t > 0 \quad \text{if } Y(N)\partial^2 f/\partial C_t^2 > Y(W)\partial^2 f'/\partial C_t^2, \\
&\qquad\qquad \text{and if } C_t > 0 \\
&\text{(c) } \partial R/\partial C_t < 0 \quad \text{if } Y(N)\partial^2 f/\partial C_t^2 < Y(W)\partial^2 f'/\partial C_t^2, \\
&\qquad\qquad \text{and if } C > 0.
\end{aligned}\right\} \quad (4)$$

Following the same assumptions made by Becker (1957) that f and f' were identical production function in non-Black and Black sector, respectively, and no discrimination existed, capital to labor ratio would be the same in both economies if factor prices are equal as result of perfect competition (Becker, 1957, p. 27-28).

Thus: $$\frac{C_M + \hat{C}_t}{L_N} = \frac{C_W - \hat{C}_t}{L_W}$$

where $\hat{C}_t = C_t$ is the expected amount of the capital to be exported.

$$\frac{L_N}{L_W} = \frac{C_N + \hat{C}_t}{C_N - \hat{C}_t}$$

$$L_N = C_N\ (C_N + \hat{C}_t/C_W - \hat{C}_t)$$

Let $b = (C_N + \hat{C}_t / C_W - \hat{C}_t)$

which is capital ratio in both economies.

$$L_N = bL_W$$

or

$$(C_N + \hat{C}_t = b(C_W - \hat{C}_t)$$

$$\partial^2 f / \partial C_t^2 \, (C_N + \hat{C}_t, \; L_N) = L_W / L_n \; \partial^2 f / \partial C^2_t \, (C_W - \hat{C}_t, \; L_W)$$

To show that:

$$\partial R / \partial C_t > 0 \quad \text{if} \quad Y(N)/Y(W) < L_W / L_N$$

at a specific point where $C_t = \hat{C}_t$.

Suppose $Y(N)/Y(W) < L_W/L_N$ we need then to show that

$Y(N) \; \partial^2 f / \partial C_t^2 > Y(W) \; \partial^2 f / \partial C_t^2$

Given: $Y(N)/Y(W) < L_W/L_N$ (6)

Multiply equation (6) by $\partial^2 f / \partial C_t^2 < 0$

$$Y(N)/Y(W) \; \partial^2 f / \partial C_t^2 > L_W/L_N \; \partial^2 f / \partial C_t^2 \quad (7)$$

Multiply equation (7) both sides by $Y(W) \neq 0$

$$Y(N) \; \partial^2 f / \partial C_t^2 > Y(W) \; \partial^2 f / \partial C_t^2 \; L_W/L_N \quad (8)$$

Suppose $Y(W) \; \partial^2 f / \partial C_t^2 > 0$ and $L_W/L_N > 1$ (9)

Since it is assumed that $L_W > L_N$, multiplying both sides of equation (9) by $Y(W)\ \partial^2 f/\partial C_t^2$ then equation (9) becomes

$$L_W\ L_N\ \partial^2 f/\partial C_t^2 > Y(W)\partial^2 f/\partial C_t^2$$

Thus the proof is completed. A slight taste for discrimination by non-Blacks would decrease Blacks' income by a larger percentage than it would non-Blacks' income.

Here it should be noted that this is a weak proof. Suppose furthermore we assume $L_N > L_W$, that is, Black labor force is greater than that of non-Blacks. Then

$$\frac{L_W}{L_N} < 1$$

Multiplying both sides of this inequality by $Y(W)\ \partial^2 f/\partial C_t^2$ we get

$$L_W\ L_N\ Y(W)\ \partial^2 f/\partial C_t^2 > Y(W)\ \partial^2 f/\partial C_t^2$$

Thus again from equation (8) we get:

$$Y(N)\ \partial^2 f/\partial C_t^2 > Y(W)\ \partial^2 f/\partial C_t^2$$

That is, a slight taste for discrimination by non-Blacks would decrease Blacks' income by a larger percentage than it would non-Blacks' income.

The above proposition is shown graphically by examining factor endowment and change in terms of trade. The Figure A-1 is an Edgeworth Box diagram showing the entire factors for the

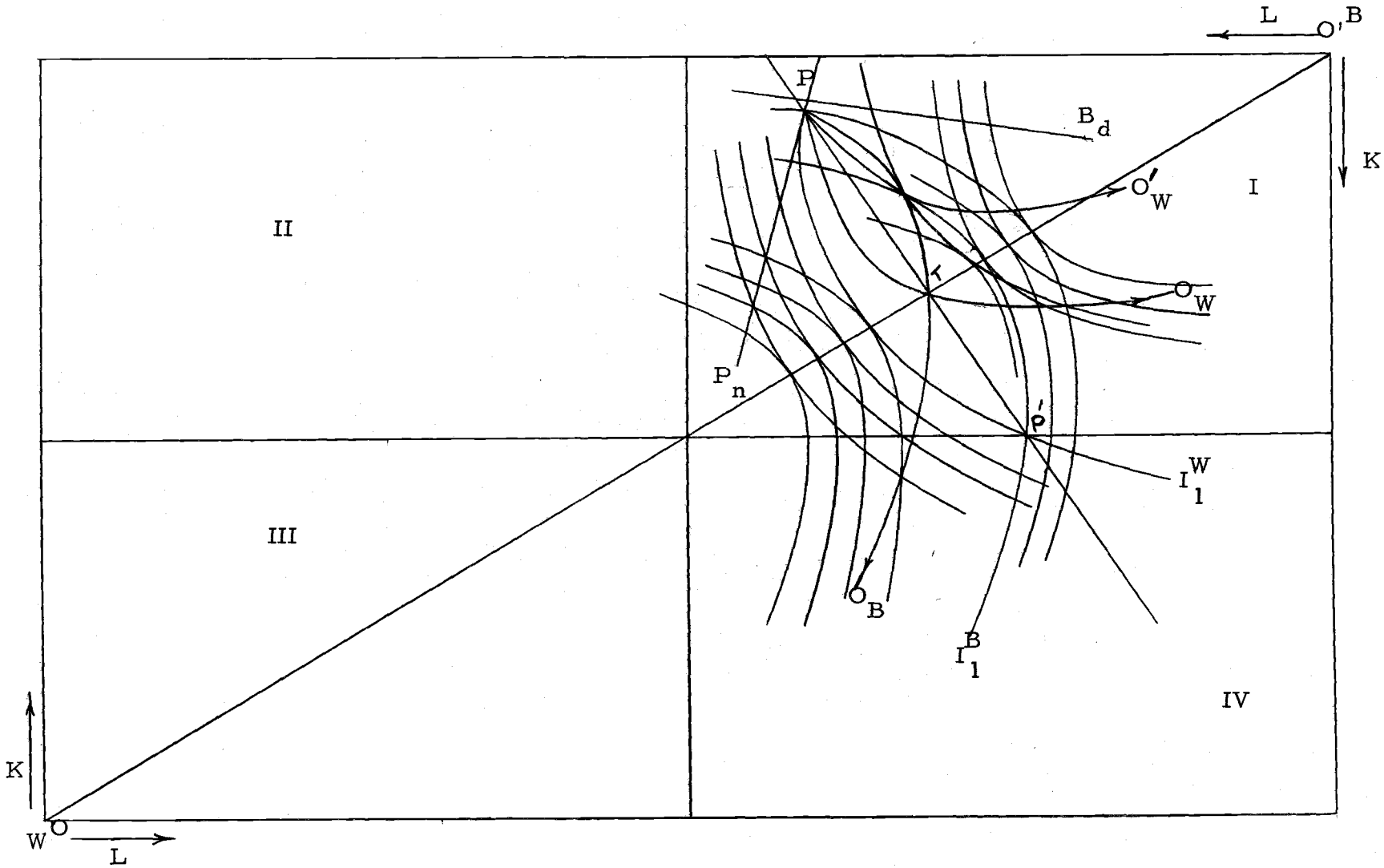


Figure A-1. Box-diagram and factors endowment.

non-Black economies share the same homogeneous production function of the first order.

The area enclosed by the indifference curves I_1^B of Blacks and I_1^W of non-Blacks is the set of holdings of labor and capital that are Pareto superior to the point P. This area is the feasible area of trade. Note that the P' is the Pareto indifference to the point P. From P, two offer curves are constructed intersecting at point C, representing the competitive non-discriminatory equilibrium. The offer curves are constructed as those in Figure 4, by rotating the price lines of each community. For instance, the non-Black price line is Ppw which is rotated toward O' establishing a series of tangents on each non-Black indifference curve. By joining these tangential points an offer curve for non-Blacks is constructed. The same method is used to construct the Blacks' offer curve. The two offer curves would intersect at C, which is on the contract curve. This is also possible because of the homogeneous production function. The point C represents the absolute maximum possible output. Each community is maximizing its national income. That is, Black workers are receiving Pareto maximum return of their labor exported to non-Black society and non-Black imported capital is also receiving maximum return. The trading is a gain to both communities and each community is maximizing its productivity.

two communities. The term "economic minority" differentiates trade in international spheres with the trade between Blacks and non-Blacks in the U.S.A. To account for this, the Edgeworth Box is divided into four quadrants. The quadrants (II) and (IV) represent different factor endowments whilst quadrants (I) and (III) represent situations in which either Blacks or non-Blacks have less of both factors than the other.

At random, a point P is selected to represent the economic minority of Blacks and the economic majority of the non-Blacks before trade. At this point P, Blacks are endowed with relatively greater amounts of labor than capital; contrariwise, non-Blacks are endowed with relatively more capital than labor.

The trade begins between the two communities. Through point P, it is assumed that there is trade indifference curves for each community, intersecting each point at point P'. As in Figure A-1, the whole map of the indifference curves is constructed. The non-Blacks' indifference curves are convex to its origin W_o, and Blacks' indifference curves are convex to their origin O'B. Each indifference curve of the individual community is tangential to the corresponding indifference curve at the minimum point. By joining the tangential points a straight line is formed joining the origins. This line OO' is known as a contract curve. The contract curve is a straight line because both Black and

Change in Terms of Trade

The change in terms of trade means there is no free trade between the two communities. The equilibrium price at C in Figure A-1 no longer prevails. The non-Black society decides to change the terms of trade in order to improve the terms of the trade. This would put them at a higher indifference curve. The non-Black offer curve shifts to the left, PW_o^1, cutting the Black free trade offer curve at T. To keep the Figure A-1 from becoming cluttered, Figure A-2 is constructed to show the new terms of trade.

In Figure A-2, PO_w and PO_b are offer curves for non-Blacks and Blacks, respectively, and $I_1^w \ldots I_4^w$ and $I_1^b \ldots I_4^b$ are their respective indifference curves; and OO' is the contract curve. The $PO_w^{'}$ is the new non-Black offer curve after change of terms of trade. When the terms of trade change, the non-Black community is faced with two alternatives, one to offer less capital to the Black community or to pay a lower price for imported labor. The offering of less capital means that there will be fewer job openings for the Black workers and as a result of this the Black rate of unemployment might increase. For instance, in Figure A-2, PB of labor was being exchanged with BS of czpital in a zero trade

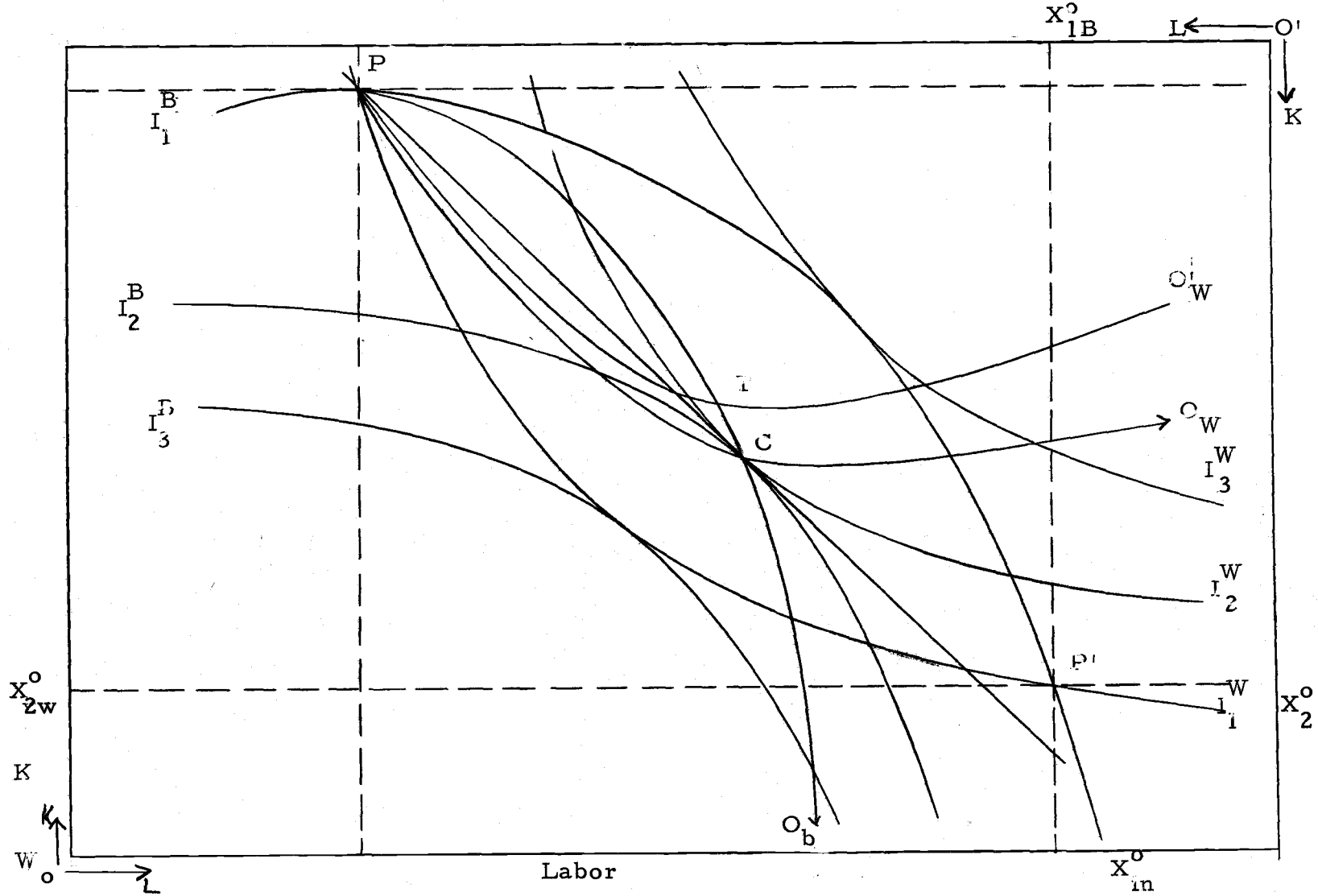


Figure A-2. Box-diagram and inequality in factors endowment.

market. But due to the change in terms of trade, the same amount of labor PB is traded with less capital BT. The TS is the reduction in capital. Similarly, the non-Black community used to offer PY capital for DY labor, but after the change in the terms of trade, non-Blacks require TY in labor, collecting P'D as tariff. Both reductions in price and capital reduce the income going to the Black community.

In Figure A-2 it seems that the change in the terms of trade shift the Pareto optimum equilibrium from the contract curve OO' to an inferior position at T. The non-Black society is at a higher indifference curve I_3^w, whereas the Black society is at a lower indifference compared to free trade market at Pareto optimum equilibrium point C. But, it might be noted that since the non-Blacks discriminate in order to maximize their terms of trade, at the new level of equilibrium T, non-Blacks are better off than blacks. The gain and loss in terms of trade from imposing a tariff depend on the elasticity of the foreign offer curve. In our diagram, since the offer curves were not completely elastic, that is, a straight line from the origin with a slope PC, change in terms of trade affects both communities. The non-Black sector is at higher indifference curve and the Black sector is forced to be at lower indifference curve and as such, Blacks are affected more by change in terms of trade than non-Blacks.

Theorem 3.

Proposition: When there is discrimination against blacks as labor sellers (but not to an important degree as employers) its effect is to raise the wage for non-Blacks as laborers, but to harm non-Blacks as capitalists by causing them to pay more than otherwise for their labor (Becker, 1957, p. 13-14).

Proof: The two societies are engaged in trade of two factors, labor and capital. The terms of trade are shown in Figure A-3. In a perfect trade market an equilibrium trading point is established at C which is the intersection of the two societies' offer curves. The trading price is given by PP_o. At this equilibrium point C, the following conditions prevail:

(1) The marginal rate of substitution (MRS) must be equal to the ratio of the factors marginal products

$$(MRS)_{\text{non-Black}} = (MRS)_{\text{Black}} = (MP_L)/(MP_K)$$

(2) Ratio of marginal products of the factors are equal in both societies.

$$(MP_L/MP_K)_{\text{non-Black}} = (MP_L/MP_K)_{\text{Black}}$$

(3) Since in perfect competition a factor's return is equal to its marginal product it is apparent that relative factor price in the two communities is fully equalized.

$$(P_L/P_K)_{\text{non-Black}} = (P_L P_K)_{\text{Black}}$$

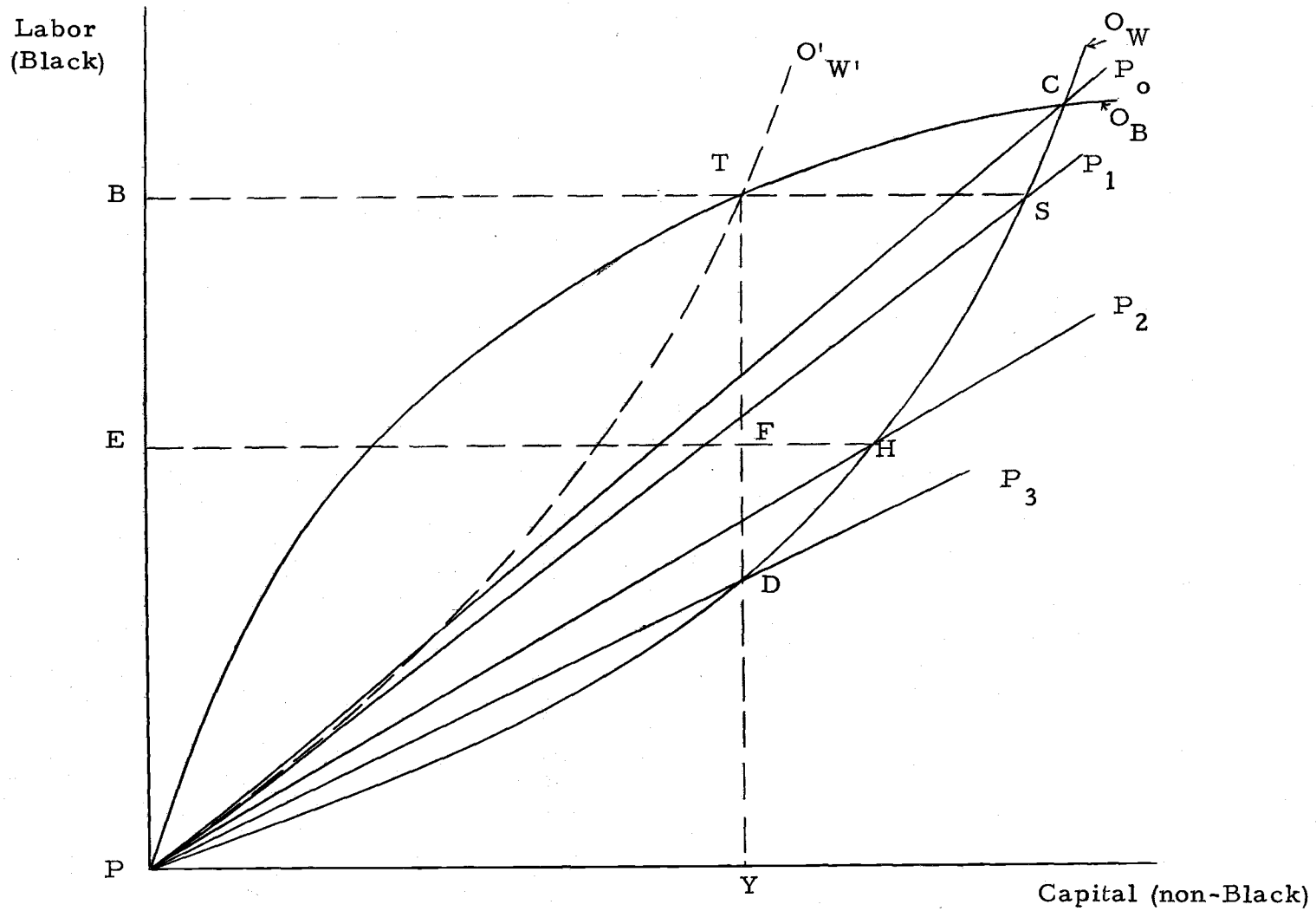


Figure A-3. Change in terms of trade affect price.

Under the above conditions each society is maximizing its return, factors are being paid their marginal revenue, and the capitalist also maximizes his profit.

The non-Black society is assumed to have taste for discrimination. This causes the non-Black offer curve to shift to the left reducing the amount of capital exported and labor imported. PT is the post-discrimination term of trade. The production is at a lower ksoquant than that of free trade for the Black sector and higher for non-Black as shown in Figure A-1. At this new term of trade the capitalist is faced with these alternatives:

(1) To pay the factors the same price as the one in the free trade market.

(2) Price discrimination against imported labor.

Among these, the best alternative for the capitalist is to levy taxes on both export and import. That is, paying the factor the adjusted price that is lower than that if tree trade. No price, such as, PP_1, PP_2, and PP_3, should be paid because they are at higher price levels than PP_o. In order for the capitalist to minimize his cost, he must pay price PT. If the discrimination against the Black labor force could cause the capitalist to pay higher prices, then the capitalist would be harmed. For instance, in a particular job, the non-Black labor is limited to jobs of a supervisory charactor while Blacks are being supervised. Suppose the capitalist

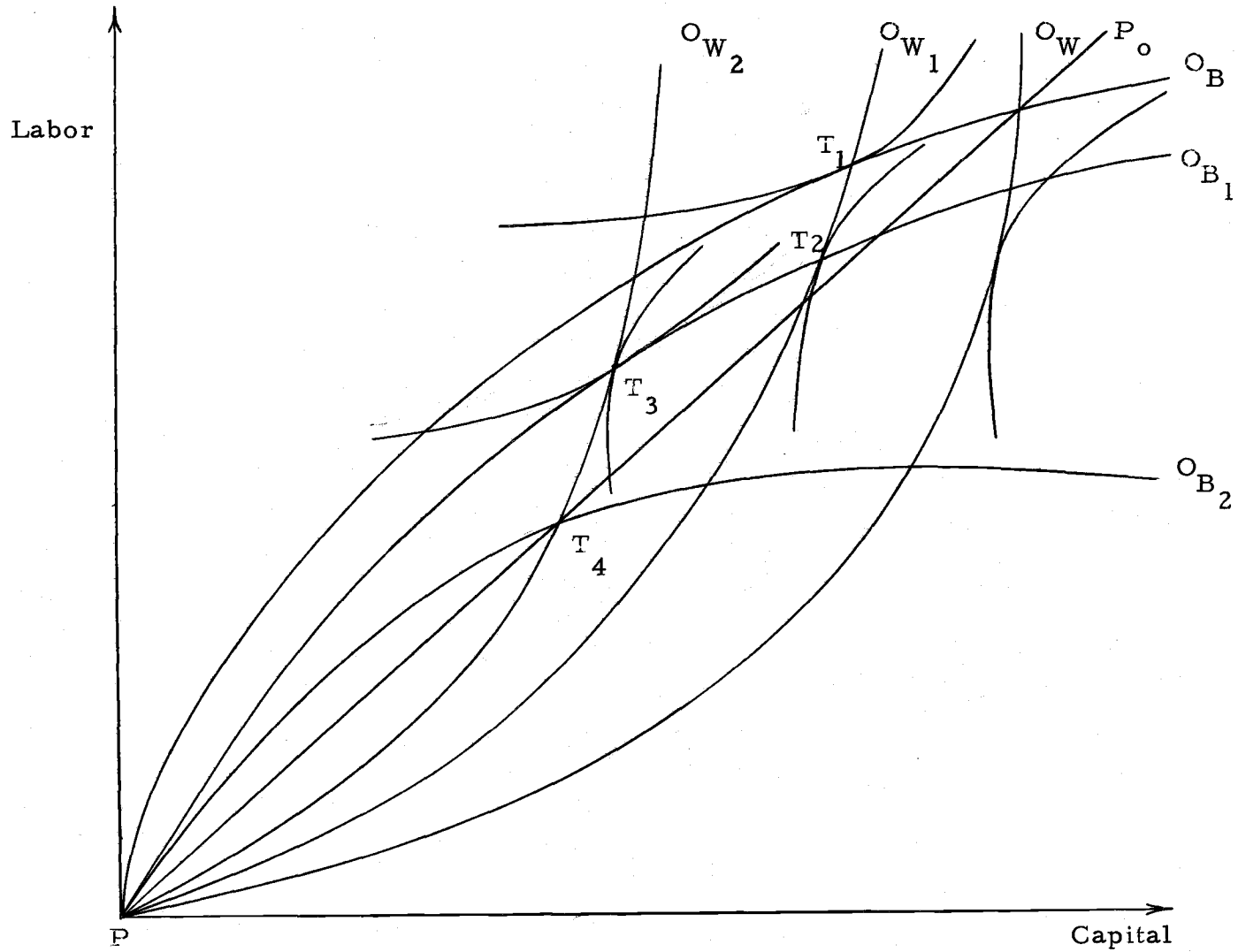


Figure A-4. Discrimination by Blacks to improve the terms of trade "retaliation".

discriminated against Black labor, then non-Black labor would have a smaller Black labor force to supervise; consequently, production would decrease.

Theorem 4.

To Prove: If the blacks attempt to retaliate, they will lower their own income further and by more than they will lower the income of a member of the non-Black group (Becker, 1957, p. 23-24).

Proof: The retaliation by Blacks is defined that Blacks would counter-discriminate against exported capital by non-Blacks by imposing the appropriate tax. The Figure A-4 shows different levels of trade between the two races. In a free trade market the terms of trade are given by two offer curves PO_b and PO_w, establishing an equilibrium trading point at C. The change in terms of trade by non-Blacks would shift the non-Black offer curve to the left. That is, the amount of capital exported is reduced. When Blacks counterdiscriminate, their offer curve should shift to the right reducing the amount of labor exported to such levels as PO_{B1} and PO_{B2}. This would go on until Blacks reached the highest indifference curve tangential to non-Blacks' free trade offer curve, PO_w. The final retaliation equilibrium would be established at

such a point as T_4. In the non-Black community, there will exist a surplus of capital, while in the Black community there will be idle labor due to the shortage of exported capital. Each community is producing at lower isoquant level and earning less net income compared to that of the free trade market. By previous proof, since the Blacks are an economic minority, the decrease in their net income would be greater than that of the non-Blacks.

Mathematical Proof

Let the total real income in each sector be Y(W) and Y(N) for non-Blacks and Blacks, respectively; and MP(W) and MP(N) be the return to labor and capital as denoted by subscripts L and C. Hence, the following is a functional relationship:

$$MP_C(W) = f/\ C(C = C_W - C_t;\ L = L_W + L_t)$$

$$MP_L(W) = f/\ L(C = C_W - C_t;\ L = L_W + L_t)$$

$$MP_C(N) + f/\ C/C = C_n + C_t;\ L = L_N - L_t)$$

$$MP_L(N) = f/\ L(C = C_N + C_t;\ L = L_N - L_t)$$

$$Y(W) = (C_W - C_t)MP_C(W) + (L_W + L_t)\ MP_L(W)$$

$$Y(N) = (C_N + C_t)\ MP_C(N) + (L_N - L_t)MP_L(N)$$

where C = capital, L = labor, C_t is capital exported to the Black and L_t is labor exported to non-Blacks by the Blacks. Subscripts W and N refer to non-Blacks and Blacks, respectively.

$$Y(W) = C_W MP_C(W) - C_t MP_C(W) + L_W MP_L(W)$$
$$+ L_t MP_L(W)$$

$$Y(N) = C_N MP_C(N) + C_t MP_C(N) + L_N MP_L(N)$$
$$- L_t MP_L(N)$$

At equilibrium trading point, trade completely equalizes the factor price ratios of the two communities. In addition, the same factor combination is used in the production of commodities being produced in both communities. By the linear homogeneous production functions assumption, the relative marginal products of the factors must be identical in both communities, and also the marginal product ratio depends solely upon the proportions in which the labor and capital are used. The trade balance is then:

$$C_t MP_C(W) = L_t MP_L(W)$$

$$C_t MP_C(N) = L_t MP_L(N)$$

$$MP_C(W)/MP_C(N) = MP_L(W)/MP_L(N)$$

The alternative way of showing the same relationship is by use of partial derivatives. The partial derivatives are taken with the respective capital exported and labor exported, thus:

$$\partial f/\partial C_t = \partial f/\partial C \cdot \partial C/\partial C_t = -\partial f/\partial C$$

and

$$\partial^2 f/\partial C_t^2 = -\partial/\partial C_t\,(\partial f/\partial C) = -\partial/\partial C(\partial f/\partial C)\cdot \partial C/\partial C_t$$

$$= -\partial^2 f/\partial C^2 \cdot \partial C/\partial C_t$$

but $\partial C/\partial C_t = 1$

$$\partial^2 f/\partial C_t^2 = \partial^2 f/\partial C^2$$

In the argument above, it was assumed that C does not depend on L_t, but now since Blacks are counter-discriminating, C has to depend on L_t, as well as C_t depends on L_t. Then taking the partial derivative with respect to L_t we have:

$$\partial f/\partial L_t = \partial f/\partial L \cdot \partial L/\partial L_t + \partial f/\partial C \cdot \partial C/\partial L_t, \text{ (where } L=L_W+L_t)$$

$$= \partial f/\partial L + \partial f/\partial C\partial C/\partial L_t \qquad \text{since } \partial L/\partial L_t=1$$

$$\partial^2 f/\partial L_t^2 = \partial/\partial L_t(\partial f/\partial L_t) = [\partial/\partial L(\partial f/\partial L_t)]\ \partial L/\partial L_t$$

$$+ \partial/\partial C(\partial f/\partial L_t)\,[\partial C/\partial L_t]$$

$$= \partial/\partial L(\partial f/\partial L + \partial f/\partial C\partial C/\partial L_t) + \partial/\partial C(\partial f/\partial L$$

$$+ \partial f/\partial C\partial C/\partial L_t)\partial C/\partial C_t$$

$$= \partial^2 f/\partial L^2 + \partial f/\partial C \cdot \partial^2 C/\partial L\partial L_t + \partial C/\partial L_t$$

$$\cdot \partial^2 f/\partial L\partial C + \partial^2 f/\partial C\partial C \cdot \partial C/\partial L_t + \partial f/\partial C$$

$$(\partial^2 C/\partial L_t^2)\,\partial C/\partial L_t + \partial C/\partial L_t\,\partial^2 f/\partial C^2\partial C/\partial L_t$$

The factor endowment in the non-Black sector is greater than that in the Black sector. Thus, Blacks are the economic minority. The relative factor endowments are indicated by:

$$(L/K)_W > (L/K)_N \quad \text{or} \quad L_W/L_N > K_W/K_N$$

The dependence of C on L_t is assumed to be so meager--close to zero. Then we have:

$$\partial^2 f/\partial L_t = \partial^2 f/\partial L^2$$

Therefore retaliation by the Blacks does not profit them, but on the contrary tends to hurt them more. Then, the logical conclusion is that effective economic discrimination comes about due to the endowment of resources. As long as resources remain unevenly distributed among the two communities, the Black society will remain the victim of any form of discrimination.

Q. E. D.