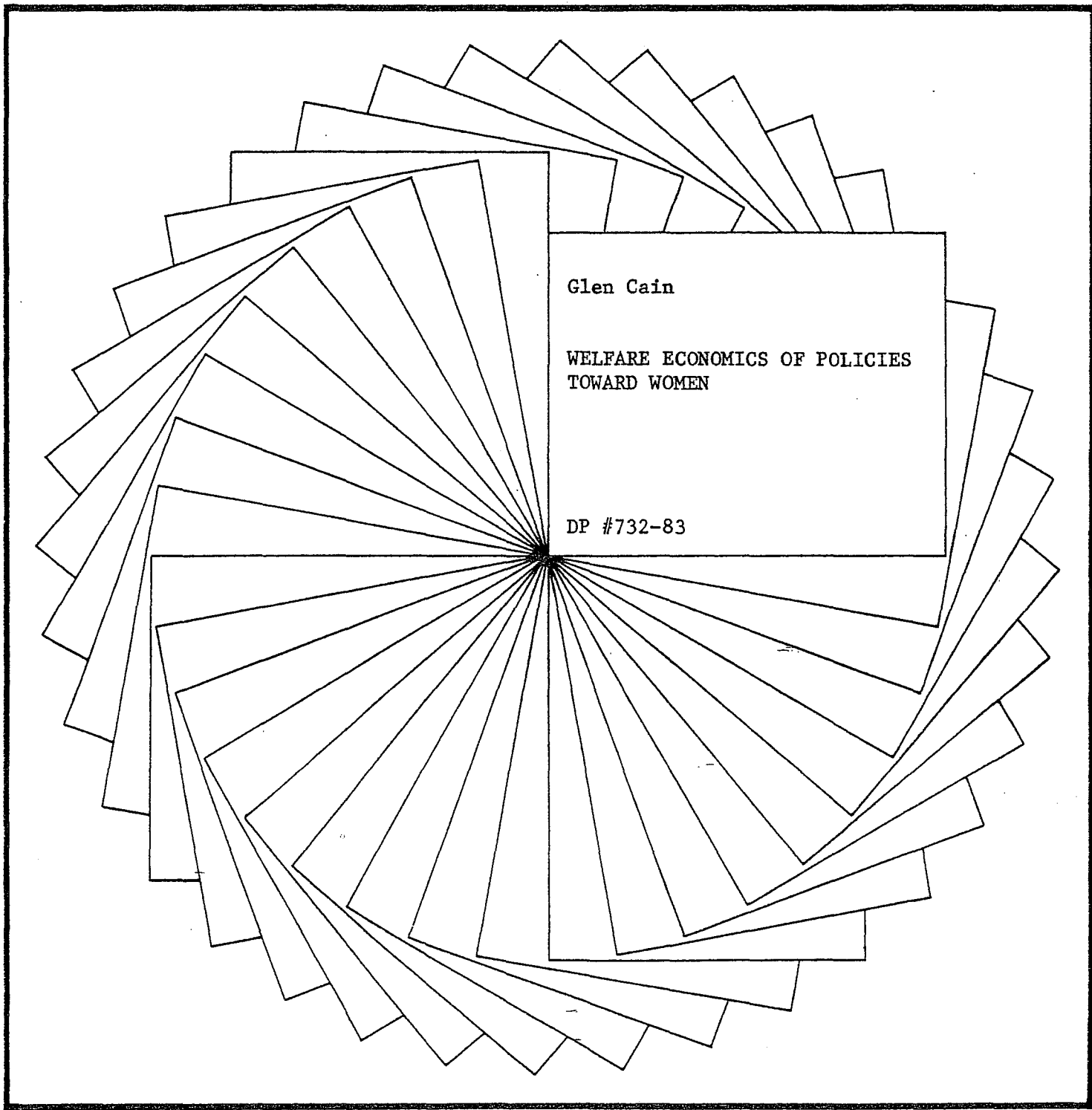

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WELFARE ECONOMICS OF POLICIES
TOWARD WOMEN

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Welfare Economics of Policies Toward Women

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ABSTRACT

The rationale for government policies aimed at promoting market work by women is examined according to the criteria of efficiency and equity. Efficiency involves the issues of market failure and labor market discrimination. Equity involves the comparative economic well-being of women relative to men. The case for interventionist policies on behalf of women is found to be weak on efficiency grounds but strong on equity grounds. It is suggested that conventional measures of labor market discrimination against women are hopelessly ambiguous, and an alternative measure of economic discrimination is proposed. Lifetime measures of income for men and women are constructed to measure this concept of discrimination, and women are shown to be poorer than men throughout most of their adult lives.

WELFARE ECONOMICS OF POLICIES TOWARD WOMEN

I. INTRODUCTION: SETTING SOME BOUNDARIES

In this paper welfare economics is intended to cover issues of efficiency and equity. The efficiency of interventionist policies is seen primarily, although not exclusively, as rectifying market failure. Among the conventional assumptions of welfare economics that are adopted in this paper, a crucial one is that the distribution of preferences is given. Their role in determining demand and supply prices is not questioned.

The policies under consideration are government microeconomic policies that directly affect wages and the allocation of time to work. The policies may be classified into those that (i) attempt to change one's earnings capacity, such as education and training programs; (ii) affect the price or the provision of goods and services that are complementary (or substitutable) with labor, such as child care or housing subsidies; (iii) affect labor supply directly by changing one's income and/or wage rate (without directly affecting one's earning capacity), such as taxes on earnings or income maintenance programs.

I limit my discussion to gender-specific policies which, in principle, may be thought of as either removing old barriers (or taxes) on women's participation in various economic activities or introducing new inducements (or subsidies) to women's participation. However, in this paper I will assume that there is no legal discrimination against women; no laws of any consequence that prevent women from equal access to market work.¹ Focus on de facto discrimination and the justification for

affirmative action that takes the form of subsidizing and promoting market work by women.

A number of gender-specific policies are in force in the United States. There are programs of affirmative action to improve the education and training of women; employment programs to hire more women, some of which include punitive legal sanctions; and equal-pay policies that usually raise women's wages. There are policies that lower the cost of pregnancy among women with jobs by granting "disability" pay or paid leaves-of-absence and by protecting the woman's seniority and claim on the job. Such subsidies to pregnancy are an example of health care policies that affect labor market behavior and that are effectively gender-specific. Retirement policies are another example. They can subsidize or penalize women, depending on the way mortality differences between men and women determine the balance between the costs paid in, and the benefits received from, the retirement program.

Income maintenance programs affect market work, and these are often gender-specific. In the United States, the largest "pure" or "direct" subsidy for income maintenance is Aid to Families with Dependent Children (AFDC), which is, generally speaking, restricted to poor women with dependent children and without husbands. The largest governmental subsidy to income maintenance is the old-age retirement insurance program, but this subsidy is indirect, consisting of insurance benefits that exceed the value of the insurance premiums paid in by the beneficiary. It is difficult to allocate this subsidy to men or women, however, because the benefits are often effectively to husband-wife households, and widows receive favorable treatment.

Laws that regulate marriage, divorce, child custody, and child maintenance sometimes have important direct effects on the labor supply and wages of men and women. Alimony and child-support payments may constitute a tax on an ex-husband's earnings. A child-custody arrangement, whether court-ordered or dictated by custom, may drastically restrict the ex-wife's labor supply. Ordinarily, however, the government's role in a marriage relationship is not intrusive, and its indirect role in affecting labor market activities through its effect on the marriage relationship is even more remote.

Finally, policies affecting capital markets have, I believe, only minor differential effects on the labor market behavior of men and women. Past practices by lending institutions--institutions which constitute a regulated monopolistic industry--were probably punitive toward women. In contrast, some current government policies in the United States subsidize investment credit to women. I doubt that either regime has had much impact on labor market behavior. If, however, the concept of the capital market is extended to cover intrafamily allocations of resources from parents to children, then the effects on labor supply behavior of men and women are surely very large. I will discuss this point later.

II. A SUMMARY OF CONCLUSIONS

To sharpen the focus of my discussion, I first summarize my general conclusions and implicit recommendations and, second, suggest why they are so moderate.

A. Conclusions

1. I see no strong case based on efficiency criteria for government intervention to subsidize the economic activities of, or to promote market work by, women.

2. There is a case based on equity criteria for government intervention to assist women and subsidize their market work. I justify this on the grounds that women have an inferior status in the labor market, according to our conventional measurements, and, most important, women receive smaller total incomes during their lifetimes. The claim that women receive less lifetime income is developed in section IV.

B. Justifications for the Conclusions

1. I suggest two "negative" arguments against the efficiency case for intervention. First, neither standard economic theories nor measures of labor market discrimination demonstrate that there would be efficiency gains from intervention. This is a complicated issue that is discussed in section III. Second, I doubt that the conventional forms of market failure justify intervention. Let us consider this second argument.

To begin, I accept the principle of consumer sovereignty--here viewing consumers also as producers who supply capital, entrepreneurial skills, and other labor skills to markets. Adults are presumed to act in their own best interests in their economic choices--choices that include marriage, marital dissolution, and fertility in addition to work choices and expenditures of money. Thus, a woman is assumed to choose her marital state and, whether married or not, she is assumed to choose her allocation of time to home and market work.

Are the market conditions that constrain a woman's choices impeded by market failure--by monopoly, externalities, or informational uncertainties?

Surely monopoly plays a minor role in household decisions about time allocation. On the supply side, households are competitive, except when some of their members organize in unions with significant monopoly power. Although labor unions probably discriminate against women, generally speaking, I doubt that they play a major role in the inferior labor market status of women. On the demand side, I do not see sustained monopoly or monopsony power distinctly affecting women.

Externalities associated with the time allocations of households seem minimal, except as regards children. Hours of market work and housework are truly micro decisions, and their effects seem fully internalized, again with the possible exception of the effects on children. However, several externalities associated with child care are already addressed by government programs for income maintenance, health, and schooling, and by laws concerning child neglect and child abuse. A much discussed issue is the effect on children of market work by their mothers. Implicit in this discussion is the concern about whether parents know these effects--in some probabilistic sense--and, if they do, whether they internalize these effects in some optimal manner. Explicitly, the research literature, mostly noneconomic, usually compares various measures of child outcomes, such as health and schooling, for children in families where the mother does or does not work in the market. Of course, using these comparisons to establish causality is far from simple. The authors of a recent survey claim that the existing

literature does not show convincing evidence one way or the other, and the authors themselves lean toward a benign view of the effect of work by mothers on their children (Moore and Hofferth, 1979). Finally, I see no case for government action to promote or retard fertility rates nor to determine how parents should share in child care.

There are informational uncertainties about the consequences of training, marriage, fertility, and work, but surely the individuals making these decisions have better knowledge about their personal outcomes than do government agents. I hasten to add that this opinion has no relevance to the merits of a variety of gender-neutral policies that the government undertakes to affect marriage, schooling, unemployment, income maintenance, and so on.

Informational uncertainties about fertility deserve special attention. In modern industrialized societies fertility is almost fully determined by the woman's choice. However, it is not difficult to justify government support for programs that improve personal control over the fertility decision and for programs that assist women when the control fails. Fathers are not always identified, and, in any case, the mother carries the burden of this lapse of information regarding expenditures of time.

2. The equity argument for government intervention on behalf of women has two parts. One is the factual basis for my claim in section IV that women are poorer than men, according to customary definitions of income. The second part concerns the reasons for their low income, the role of the labor market in income determination, and the consequent justification for interventions that subsidize market work by women.

As displayed in section IV below, the lifetime incomes of men and women as adults are defined by (a) their pooled income when "married"--that is, living together in a household, and (b) their separate incomes when living separately--that is, "unmarried." If we assume that pooled incomes are shared equally, that own-earnings dominate the sources of income of unmarried persons, and that leisure consumption is roughly the same for men and women, then men have higher lifetime incomes because their earnings are higher during the periods when men and women are unmarried. The rising trends in the age of first marriage, divorce, separation, and widowhood have increased the proportion of time spent unmarried.

The fundamental reason that the earnings of unmarried women are less than those of unmarried men is because women's wage rates are lower. Discrimination against women is one explanation for this inequality, but an alternative is specialization by men in the labor market. To some extent this specialization is a legacy of the past, when the following environmental and biological constraints prevented women from having equal access to labor market opportunities:

- (1) Seriously imperfect control over fertility and the limited alternatives to breast-feeding for the proper nurturance of babies.

- (2) Physical disadvantages relative to men in performing much, and perhaps most, market work.

- (3) A collusive monopolization by men of various instruments of power, often institutionalized into laws, that prevented women from having equal access to market work.

I do not argue that the three constraints prevail today to any significant degree. However, the legacy may play a role in the determination of current preferences, which I take as given. Some relevant information about preferences for work roles is found in the prestige scores for "housewife" and "househusband" that were measured by Bose (1980) in a 1972 study of 110 representative occupations. The scores, which are on a scale of 0 to 100, are shown in Table 1.

Bose remarked that the low rating for househusband was "not unexpected, since the role lacks cultural legitimacy." By contrast, the average score of 51 for housewife "seemed fairly high" to Bose, and it was, in fact, higher than the average for all women's occupations.¹ This last point suggests that random movements from the occupation of housewife to an occupation in the paid labor market would lower the average occupational status among women. Of course, the actual moves are nonrandom, and there is no reason to believe that the women who enter the labor market are, on average, made worse off. Note that the occupation of housewife is held by most women during part of their adult life, but by very few women for their entire adult life.

Bose's figures also strongly suggest that attempts to encourage widespread "role reversals" between husbands and wives would encounter resistance. Personally, I am skeptical that these particular prestige scores will be robust in the face of changing environmental constraints, so perhaps not too much should be made of them. A revealing and apt illustration of this potential nonrobustness is contained in the surveys that gauge approval or disapproval of market work by wives and mothers. The percentage of the population approving such work has increased

Table 1

Prestige Scores of the Occupations
of Housewife and Househusband

Occupation	Respondents		
	Women	Men	Average
Housewife	61	41	51
Househusband	14	15	14.5

Source: Bose (1980).

substantially during the past 20 to 40 years, even though a surprisingly (to me) large fraction of the population still disapproves.²

These existing preferences, which reflect, in part, the above-mentioned legacy, have affected child-rearing practices and education in ways that have produced a shortfall in women's stock of the human capital used in market work. A crucial element in the equity-based argument for policies to assist women is that this shortfall is imposed on them and not something that they have voluntarily chosen. In my view, it is the legacy that is imposed, not child-rearing practices per se. I am assuming that the differences in parental investments in their sons and daughters reflect the parents' collective sense of what is "best" for their children. Thus, I will focus on optimal policies for adults and simply assume that these will lead to the correct information for optimal child-rearing practices. (Realistically, there may be lags in the adjustment of child-rearing practices to environmental changes.)

To the extent that the disadvantages of women in labor-market skills are an anachronistic legacy, it is reasonable to believe that the disadvantages, and, consequently, the equity case to compensate women, will wither away as time passes. However, the inequity exists now, and, as we see regarding racial discrimination, a long time appears required for its elimination.

There is another aspect of the legacy that strengthens the equity case; namely, that the legacy included implicit contracts for the sharing of household income within a marriage. As part of this implicit contract, women invested in marriage-specific skills, analogous to firm-specific training. Firms, however, are a market institution and have

greater incentives to honor their part of the implicit contract than do husbands. I have no evidence for this proposition, but, for whatever the reasons, the implicit contracts of marriage are apparently being broken with increasing frequency during recent years. A common result is a capital loss, particularly for the wives who made the largest investment in marital skills relative to labor-market skills.

If these observations have merit, assistance to women is presumably more justified among older women who made their contracts longer ago. Younger women who have yet to marry have more information about the fragility of marriage contracts, and they should be able to act in their own interests accordingly.

It is tempting to point to the higher labor force participation rates among black wives compared to white wives as evidence for this type of response to an expected higher probability of marital dissolution. We also know that the ratio of female to male wages is higher among blacks than whites. However, one would first have to disentangle the three-way causality in the relationships between market work, wages, and marital dissolution to use this racial comparison as convincing evidence.³

Now, if women are to be assisted because they are less wealthy than men, why not use straight income transfers and thereby minimize the distortions of market prices? I offer four arguments on behalf of labor-market subsidies to women. First, the labor market is, I believe, the source of women's economic disadvantage. The disadvantage is not only part of their legacy but also important in their current and prospective negotiations of the marriage contract. Subsidies to increase women's labor market skills should improve their bargaining power relative to

that of their husbands. This may increase divorce rates, but the policy should reduce the capital losses of women who divorce.

Second, there may be a stigma attached to income transfers relative to assistance in labor market skills. Third, most income transfer programs, including those that primarily benefit women, introduce distortions in market prices that discourage market work. Policies to promote market work could be viewed as optimal subsidies insofar as they offset the existing suboptimal taxes. This argument does not imply that the subsidy would be justified in its own terms as an isolated policy. Fourth, there is the possibility that subsidies to market work by women may be efficient in their own terms--a speculative argument to be taken up in the concluding section V.

III. EFFICIENCY AND LABOR MARKET DISCRIMINATION AGAINST WOMEN

1. Definitions

I define labor market discrimination as unequal wages for workers who are equally productive, where productivity refers to the ability of the worker to perform a task, given an equal opportunity and an equal willingness to perform the task. Wage rates are a shorthand term for full remuneration from work, including (a) earnings, insofar as "involuntary" unemployment leads to different earnings among people with the same wage rate; (b) fringe benefits and nonpecuniary aspects of the job, and (c) on-the-job training, which affects the lifetime profile of wages and earnings. Lifetime earnings, which are discussed below, show a less favorable outcome for women, relative to men, than do wage rate comparisons that are measured at a point in time. It is not clear to me how

accounting for employment stability, fringe benefits, and nonpecuniary aspects of the job would change the comparison given by women's and men's wage rates. Regarding nonpecuniary aspects, for example, women's jobs tend to be safer and cleaner, while men's jobs tend to have more "authority."

I assume that men and women are innately equal in productivity (or productive capacity), at least with regard to general skill capacities. Thus, although biological and other differences may be responsible for differences in the detailed occupational distributions, by assumption these sex differences are not responsible for differences in average wage rates of the groups.

The female-to-male wage ratio in the United States is typically measured to be around .55 to .60.⁴ Adjusted (or controlling) for such productivity variables as labor market experience and education, the ratio is around .70 or .75. A recent study by the U.S. Bureau of the Census (1983) shows the present values of lifetime earnings for men and women for five levels of years-of-schooling completed. The ratios of women's to men's present values, using discount rates of 0, 3, and 5 percent, are around .6 for full-time workers.⁵ Even the 25 percent gap, represented by the ratio of .75, is large and indicates a severe price distortion if, as is often assumed, the male and female workers are equally productive. However, I argue below that the conventional econometric measures of discrimination, usually expressed by these types of ratios, are so ambiguous that we cannot rule out the possibility that the true ratio for equally productive men and women is as low as .55 or as high as 1.0.

2. Theories

The existing theories of discrimination are not satisfactory as predictors of the observed market outcome (see Arrow, 1972, 1973, and Welch, 1975, for this view). Moreover, the theories convey little information about the consequences of discrimination for efficiency. At the risk of oversimplifying a complex theoretical issue, I believe it is safe to say that Becker's (1957) theory of taste discrimination conveys no implication of an efficiency loss. In the version in which employers exhibit tastes for discrimination, those who hire the discriminated group will gain from the lower wages paid the group, but they lose in psychic disutility. All of us may have our personal opinions about how to weigh such psychic costs, but I do not know how economics provides the weights.

In another version of the Becker model, the employers with no tastes for discrimination would enjoy unencumbered profits from hiring the discriminated group, and these employers would expand production to the point where wages between the majority and minority groups would tend toward equalization, and the discriminating employers would be driven out of business. Efficiency losses could not arise if wages are equalized.

In theories of discrimination that depend on exploitation, there appears to be a transfer of income from the victims of discrimination to those who discriminate. But a transfer does not, by itself, represent an inefficiency. And if the exploitation theory rests on the existence of monopolies, then the monopolies might be presumptively inefficient, but discrimination is not.

Arrow (1973), who had expressed dissatisfaction with the "exploitation" and "tastes" theories, tentatively suggested the theory of

"cognitive dissonance." In essence, expectations are formed by employers about the inferiority of the discriminated group, and the latter internalize these expectations and take actions--in particular, underinvest in human capital--which confirm those expectations. I see two weaknesses with this theory: first, the expectations ought to be subject to an articulated rational refutation; second, the predicted behavior seems obviously counter to the best interests of two key actors--the discriminated group, whose members want to overturn the expectations, and employers, who ought to prefer to augment the supply of labor by encouraging more investment in human capital.

A "statistical" theory of discrimination and a related "signaling" theory were given prominence by Phelps (1972) (also Arrow) and Spence (1973, 1974) respectively. Essentially, these theories rationalized the lower wage for the discriminated group by the group's particular disadvantage in conveying information to the employer about their true productivity. In a subsequent study, Aigner and Cain (1977) suggested that the theories could only explain wage differences that equaled the cost differentials in obtaining information about the majority and minority groups, and we suggested reasons why this cost differential should be relatively low.

Theories of discrimination against women should deal with two factors that differentiate women from a racial minority group like blacks. First, women may be said to choose to specialize in home production, thus rationalizing a lower market wage. No such alternative employment is credible among black men. Second, even if women suffered lower market wages because of discrimination, they might recover all or part of these losses by marrying the favored group, men.

3. Measurement

The usual econometric measure of wage discrimination is the residual in average wages between working men and women after accounting for their "endowments" (or productivity characteristics). The residual is usually obtained from a multiple regression, with a wage rate as the dependent variable and numerous indicators of productivity as independent variables. The units of observation are commonly random samples of workers from a nationwide survey. Often the ultimate purposes of the study are not made explicit. Perhaps the purpose is to provide a general social indicator of inequity in the economy. Predictive uses of the regression results are not often explored, and specific remedies (policies) for discrimination are seldom linked to the regression results.

Consider the following regression specification: Let y = wage; x_j = the j th productivity trait, collectively abbreviated as Σx ; B_j = the "effect" of x_j , interpreted as the market return (or "payoff") to x_j ; e = a random error; and $i = f$ or m for female or male. (Subscripts for individual observations and the j -subscripts for the independent variables are omitted to avoid clutter.)

$$(1) - y^i = \Sigma B^i x^i + e, \text{ with } \hat{y}^i = \Sigma B^i x^i \text{ as the regression-predicted value of } y, \text{ given } x.$$

$$(2) \bar{y}^m - \bar{y}^f = \Sigma B^m (\bar{x}^m - \bar{x}^f) + \Sigma \bar{x}^f (B^m - B^f).$$

Equation (2) is a standard decomposition of the male-female wage difference. The first term on the right-hand side shows the product of the

male coefficients, B^m , and the difference between the mean values of the "endowments." Usually $\bar{x}^m > \bar{x}^f$, on average, where the x 's are positively related to y (i.e., $B > 0$), so the first term is presumed to express the component of the predicted difference that is attributable to unequal endowments. As a corollary, if the endowments could be equalized, $\bar{x}^m = \bar{x}^f$ (for each x or "on average"), this source of a wage gap would be eliminated.⁶

The second term on the right-hand side is conventionally attributed to market discrimination. The endowments are held constant (here, at the mean values for women), and the (on average) excess of B^m over B^f is said to reflect the market's favored treatment of men. In other words, the same good (x) is valued at different prices, which defines discrimination.

Equation (2) is useful for its descriptive content and, I believe, for clarifying some inherent weaknesses in the econometric attempt to measure market discrimination. The major problem is the ambiguity of the x 's as representations of "endowments." Frequently the x 's reflect market discrimination directly, and such x 's should not be held constant. A glaring example occurs when the x 's measure occupations, perhaps as a collection of dummy variables (1 if in the occupation; 0 otherwise). Occupational segregation may be the most serious form of market discrimination.

A more subtle example is the use of an x that measures labor market experience, defined as some measure of the quantity of labor supplied. Experience may reflect explicit training or perhaps "learning by doing." However, wage rates and labor supply are mutually causal, so the

interpretation of the statistical relationship is generally ambiguous. The point holds for any x variable that is endogenous--that is, affected by the operation of the labor market. Education, for example, is a personal investment that is responsive to rewards in the labor market. Fertility may be influenced by the labor market opportunities for women, and so on. Indeed, except for age and ethnicity, few of the variables used in earnings functions are exogenous. All this suggests that the conventional equations, (1) and (2), tend to understate discrimination against women in the labor market as a whole.

It may be illuminating to mention the use of multiple regression models like (1) and (2) in the analyses of discrimination in individual firms. In the United States the regression analyses are sometimes offered as evidence in court cases or other litigation proceedings stemming from antidiscrimination laws. These analyses have three advantages over nationwide studies. First, the objectives are explicit--a verdict of guilty or innocent. Second, a variety of characteristics-- x variables--may well be exogenous to a given employer, even though they are not exogenous to the labor market as a whole. Third, explicit information about the employer's criteria for hiring, retention, promotion, or pay may be used to determine the x -variables. Regression analyses with nationwide samples usually suffer from ambiguities and vagueness about all these points.

Unfortunately, the analyses of data from a single firm have two serious faults that severely limit their use for assessing market discrimination. First, the selection rules for becoming part of the data base are seldom known; second, the sampling variability is unknown but

probably very large. If the company under study was randomly selected, or believed to be "representative," and was known to select its employees randomly, then only the problem of a small sample size would detract from the inferences and estimates obtained. However, the companies studied in court cases are not a random sample of all companies, and their recruitment policies are certainly not random.

Company records generally apply only to one industry and to a few occupations, so the measure of discrimination would at best apply to this industry and these occupations. The role of market discrimination in determining the sex distribution in the industry and occupations is not examined. More generally, the analysis of discrimination in the firm is seriously impaired by the lack of information about the company's recruitment (selection) procedures. Perhaps the company has a reputation for discrimination against women that restricts the pool of female applicants. (Maybe only a small number of newcomers to the community constitute the pool of female applicants.) The statistical analyst usually deals with the employees on board or, at best, with persons who have applied to the company. Under these circumstances, generalizations about discrimination to the market as a whole cannot be validly based on studies of one or several companies.

Now consider the second term on the right-hand side of equation (2). Polachek (1975) claims that larger values of B^m do not necessarily represent discrimination because the same x -values will typically represent more market productivity when embodied in men. In his words:

...structural differences [B's] [may] be attributed in part to the division of labor within the household which could come about either because of direct market discrimination, societal discrimination, or the optimal mating process.... It is because of such a division of

labor...that family characteristics have differing effects [B's] for males and females. For this reason...namely, the assumption that family characteristics have the same effect on both male and female wages--many of the current estimates of the male-female discrimination coefficients are seriously biased (p. 227).

Thus, Polachek argues that equation (2) is biased toward overstating market discrimination against women. He in effect simply defines the interaction term, "maleness" times x , to have a positive effect on the basis of a priori arguments. If this interaction is assumed to be "large enough," the "corrected" wage ratio could be 1.0. It should be clear, however, that denying the B's their role as measures of discrimination is tantamount to abandoning the method entirely.

Looking back at the standard decomposition of the male-female wage difference in equation (2), my preference is to challenge the interpretation of the first term involving the x -differences, but to accept the second term involving the B-differences. At least, I prefer to place the burden of proof on the person who denies that the B's are measuring different prices for the same good.

IV. AN ALTERNATIVE MEASURE: SOCIETAL DISCRIMINATION —

The core of the controversy about labor market discrimination against women concerns the division of labor between home and market. The fact that women tend to specialize in home production and men in market production may lead to the view that higher market wages of men are an efficient outcome of market forces. The fact that econometric estimation of market wage functions does not predict equal wages among men and women of equal measured productivity may be dismissed as the fault of errors in the specification of the model or errors in the data. Needless to say,

both our models and our data are inadequate to estimate the "home wages" of women or men.

If we assume that the specialization in work is voluntary, then, even though the choices are made by persons of equal average innate abilities, it becomes a seemingly small step to conclude that the sex differences in work and wage payments are equitable as well as efficient. A measure that, under certain assumptions, tests this "benign" theory is presented next.

My point of departure is to shift from the focus on market wage rates to income received during one's adult life, and, as a corollary, to shift from the individual market worker as a separate unit of analysis to the individual as a member of a household that shares the household's income receipts. Income received is intended to represent earnings for services rendered. Ideally, I want to measure:

$$W^*f = \frac{w^f M^f + p^f H^f}{M^f + H^f} \quad \text{and} \quad W^*m = \frac{w^m M^m + p^m H^m}{M^m + H^m}$$

where: w = market hourly wage; p = home hourly wage; M = hours of market work; H = hours of home work; f = female; m = male.

Does $W^*f = W^*m$?⁷ Because neither p nor H is observed, I use income receipts to attempt to answer this question. The homework of a wife, in particular, is assumed to be paid for by her share of household income.

In Table 2 I illustrate the framework for measuring lifetime incomes of men and women, which are intended to represent lifetime earnings for all work, both home and market. I assume that all men and women become married and that the husband and wife share equally in consumption of

Table 2

Income Received Over the Adult Lifetimes of Women and Men

Period	Approximate Age	Woman's Income	Man's Income
1	18-22	E_1^f	E_1^m
2	23-25	$\frac{1}{2}(E_2^f + E_2^m)$	same (as woman's)
3	26-33	$\frac{1}{2}(E_3^m + E_3^f)^a$	same
4	34-64	$\frac{1}{2}(P')(E_4^f + E_4^m) + P(E_4^f + C)^b$	same first term + $P(E_4^m - kC)$
5	65-71	$\frac{1}{2}(P')(A_5^f + A_5^m) + P(A_5^f)^b$	same first term + $P(A_5^m)$
6	72+	A_6^f	0 (or negative) ^c

Note: The E's, A's, and C are means of discounted earnings, nonlabor income, and child support and alimony, respectively, for the *i*th period for females (*f*) and males (*m*). *P* is the probability of divorce or separation, and *P'* (= 1 - *P*) is the probability of being married and living with one's spouse. *k* is the fraction of *C* contributed by the ex-husband (or father) and 1 - *k* is the government's share of the transfer payment to the unmarried woman.

^a E_3^f is presumed to be much less than E_3^m or even than E_2^f , because this age period is assumed to be when 1, 2, or 3 children are born and when the maximum amount of child care is provided by the mother.

^b E_4^f , E_4^m , A_5^f , and A_5^m may differ depending on whether the separation occurs. The same symbol is used to avoid clutter.

^cWhen the man is dead his earnings are, of course, zero. In all other periods, well-being (or "utility") was assumed equivalent to leisure-plus-income. Perhaps a negative value is required to express the worse-than-zero utility associated with death.

market-purchased goods and in leisure, which is defined as:

Total Time - (H + M). Other terms used in Table 2 are defined below.

1. Six life-cycle periods of adult life are indicated by subscripts: 1 ... 6. The superscripts remain f and m. The fact that women live longer than men is reflected in a zero value for income for men in the final period.
2. Earnings in the market equal E, where E is a discounted average. Although E equals wages times hours worked, the decomposition may be ignored because leisure is assumed to be equal for men and women in each period.
3. Retirement income and returns on savings from earnings is measured by A. Wealth at the beginning of adulthood is assumed to be equal among men and women.
4. C equals payments made to a divorced, separated, or widowed woman. These payments are mainly for the support of dependent children. The fraction of C paid by the husband who separates from his wife is k, and $(1 - k)C$ is the government's contribution. The tax revenues for these payments are not accounted for, but they may be considered proportional to market earnings.
5. P equals the probability that the woman and man are divorced, and $P' = 1 - P$.

The comparison between men's and women's economic well-being and, provisionally, the issue of equitable treatment are examined by summing the income amounts in each of the last two columns of Table 2. Empirical approximations for entries in these columns may be obtained from longitudinal data or from cross-section surveys from different years.

In Table 3, I show preliminary empirical results, which are based on a cross-section survey of men and women, aged 20 and older, for the United States in 1980-81. By the method of synthetic cohorts, the cross-section is used to construct a lifetime measure of income, roughly corresponding to the stylized scheme in Table 2, but refined in several ways:

1. The probability of being in the following three marital/household states is used to weight the income for each state at each age: married couples living together; men or women heading households with no spouse present; men or women living alone in one-person households. These classifications account for about 85 percent of men and women over 20. The remaining 15 percent are other members of households and families, mostly either sons and daughters who are not principal earners or unmarried persons over 65 years of age who are not heads of households. It is difficult to measure income for these persons. In the calculations below, I simply assume that the female-to-male ratio of their income is the same as for the covered 85 percent.

2. The probability of survival for each sex and age is used to compute an expected income. (A simplified one-zero probability of survival is used in Table 2.)

3. Income is measured for both "all persons" and for those who work year-round in full-time jobs (hereafter referred to as full-time workers). Using full-time workers when comparing men and women in unmarried states may provide a closer approximation of the assumed equality of hours of work and leisure.

4. A per-capita measure of the household income of the men and women is calculated using the average household size in each age period for each marital/household state.

Table 3

Present Values and Female-to-Male Ratios of Present Values
of Lifetime Income and Lifetime Earnings in the United States:
Synthetic Cohort Data from Cross-Section Surveys, 1980-81 and 1979

Unit and Income	All Persons	Full-Time Workers ^a
Household income, 1980 (Household income divided equally for married couples)		
(1) Men	\$280,831	\$285,841
(2) Women	227,636	249,731
(3) Ratio	.81	.87
Per-person household income, 1980 (Household income divided by average size of household)		
(4) Men	185,541	190,180
(5) Women	123,638	134,265
(6) Ratio	.67	.71
Per-person earnings, 1979		
(7) Men	350,170	429,660
(8) Women	157,033	263,971
(9) Ratio	.45	.61

Sources: Current Population Reports, Population Characteristics,
"Marital Status and Living Arrangements, March, 1981," P-20,
No. 372, Table 2. U.S. Bureau of the Census.
-----, "Household and Family Characteristics, March 1981,"
P-20, No. 371, Tables 3 and 13. U.S. Bureau of the Census.
-----, Consumer Income, "Money Income of Households,
Families, and Persons in the United States, 1980," P-60,
No. 132, Tables 10 and 26. U.S. Bureau of the Census.
-----, Consumer Income, "Lifetime Earnings Estimates for
Men and Women in the United States: 1979," P-60, No. 139.
U.S. Bureau of the Census.
Vital Statistics of the United States, Vol. II, Section 5,
Life Tables, 1978.

^aFull-time workers refers to male and female heads of household in rows
(1) to (6) in this column, but income for married couples refers to all
married couples. In rows (7) to (9) full-time workers refer to persons.

5. A discount rate of 5 percent is used to compute the present values of the income receipts.⁸

6. Adjustments for child support payments and alimony, C, are needed for men but not for women, whose income is supposed to be inclusive of all sources. (Realistically, for both men and women there are sources of unreported income, unmeasured interfamily transfers, and such income in kind as food stamps, medical care, free housing, and so on, but I have not attempted to take these into account.) An estimate of the man's contribution, kC, is available (see U.S. Bureau of the Census, 1980), but subtracting it from the man's income scarcely affected the ratios--raising them by only .01.

Table 3 shows the present values of income for men and women based on the household unit and the framework of Table 2. Also shown are the present values of earnings, using the individual as the unit, which have been previously published in a slightly different form in a special study of the U.S. Bureau of the Census. The principal findings and interpretations of Table 3 are the following:

1. Women receive substantially less income than men during their adult life, even though they are assigned a share of income equal to that of their husbands when married. However, the amount of time an adult spends in an unmarried state is sizable. Between the ages of 20 and 54, I estimate that women are single, divorced, separated, or widowed during 32 percent of these 34 years; and men are in these unmarried states 31 percent of the time. Past the age of 54, singleness increases rapidly for women and gradually for men, although the incomes in the older ages are so discounted that these amounts do not have a large effect in the present values of income. By construction, the periods of singleness for

men and women produce almost the entire sex difference in incomes. When single, women have much smaller household incomes and a larger household size than men. Given my assumption of equal leisure consumption, it follows that the results in Table 3 show that women experience economic discrimination in terms of total income received.

2. Women fare better when income rather than earnings is the basis for a comparison with men. Even the lowest ratio of income, in row (6), which is for all persons, adjusted for household size, is larger than the highest earnings ratio, in row (9), for full-time workers.

3. Allocating the household income on a per capita basis by dividing by the average household size sharply lowers income for women relative to men, because the size of the household headed by a woman is considerably larger than that of the household headed by a man, and there are more female-headed households (excluding households of married couples).

Generally, a larger household implies more housework and, among full-time workers, less leisure time. Sometimes dependent members perform a substantial amount of housework, but this would not be true of young children, who are more likely to be living with the mother when the parents separate. The per capita figures in rows (4) to (6) allow for the reduced consumption of market goods per person, but not for reduced leisure.

There is a strong presumption, therefore, of less leisure consumption by female heads-of-household who work full time. How leisure consumption compares among the other groups--wives and husbands in intact marriages and single-parent households where the head does not work full time--is an important and unanswered question. Many female heads-of-household are on welfare, and these women probably consume more leisure than the

average, but their incomes are very low, and their lives are often adversely constrained by administrative rules.

Up to now, no utility has been attached to work, other than the income received. Regarding market work, this issue arose in the earlier mention of nonpecuniary aspects of such work. The issue is more complicated regarding housework, because there is a close connection between the work performed and the worker's consumption of the services of the work. For example, dependent children require housework, but they also yield utility, and the extra burdens on the divorced mother may be offset by this extra utility. More generally, the presumed higher skills of women in housework might permit unmarried women to enjoy more household consumption than unmarried men--sufficient, perhaps, to offset their income (and leisure?) disadvantage.

Several additional questions about Tables 2 and 3 may be raised. Do women feel a stigma if their market wages are lower or if they receive transfer payments, even if their incomes equal those of the men with whom they may be comparing themselves? Is the longer life span of women attributable to the division of work? Biologists tell us that women are probably endowed with more longevity, but whether the sex difference in market work adds to this endowment is unknown.

Although the ratio E^f/E^m has increased during the past 30 years, so has P --the probability of divorce and separation. The variance in expected income has probably increased, particularly among women, as a consequence of rising P values. Accounting for risk aversion suggests that the simple sums of the expected values overstate the value of women's total income relative to men's.

The recent rise in P may have caused the current generation of women to have suffered a decline in lifetime income (as defined above) relative to men despite the rise in E^f relative to E^m . One must ask whether the rise in P is a consequence of the relative rise in E^f and whether all of this reflects an overall improvement in women's well-being. The issue is analogous to that regarding job terminations: Is the termination a voluntary quit--representing, on average, an increase in the worker's utility? Or is it an involuntary discharge or layoff, representing a capital loss and a decrease in utility? This question is difficult for economists to answer regarding market employment; it is further out of reach regarding marriages.

The empirical measure in Table 3 of gender equity avoids the question of why market wage rates are lower for women and does not attempt to measure discrimination in the labor market. Instead, I ask: Regardless of why men are paid higher wages, are women compensated in whole or part by alternative income receipts? My tentative answer is that they are partially compensated, but that their shortfall remains so large that an economic inequity is strongly suggested. Of course, data for actual cohorts of men and women, more information about leisure consumption, and, ideally, more information about actual consumption of home and market goods are needed for definitive conclusions.

V. CONCLUSIONS

This paper has focused on the economic basis for or against an interventionist policy to promote market work by women. Efficiency and equity were the guiding criteria, although I recognize that equity is a more

ambiguous concept than efficiency in economics-as-a-science. I do claim that economic measurements suggest that women are less wealthy than men throughout most of their lifetimes. This is a finding of potential use to a society with an egalitarian ethic. The justification for egalitarian transfers through intervention in the labor market requires additional arguments, however, and some of these must deal with the efficiency of such policies.

In section III the economic analysis of labor market discrimination was examined to see if a case for efficiency emerged from the presumptive finding that women workers are underpaid. My conclusion is that the theories are so stark and the evidence so murky that they offer little guidance for policy recommendations. I hasten to add that I had deliberately excluded from consideration those situations in which governments or private monopolies taxed (or suppressed by regulatory means) women's labor market activities. The case for efficiency gains by eliminating these policies would presumably be straightforward. The difficult task is to make the case on economic-efficiency grounds for affirmative action in the context of competitive markets and a benign government. Section III is, I recognize, a sketchy treatment of a complex subject.

Even a convincing argument for transfers or assistance to women on equity grounds is only a first step in an economic analysis of the issue. Benefit/cost analyses are needed to determine which transfer mechanism is the most efficient, or least inefficient. The distributional consequences of the alternatives may be even more important.

In this paper, policies that promote labor market activities of women were weakly justified by references to the following arguments:

(a) hastening the transition from a past legacy of unfair treatment of women in the labor market; (b) avoiding or offsetting the putative stigma of direct transfers; (c) offsetting the price distortions inherent in direct transfers that discourage work.

To these I would add the following speculative argument. The theories of discrimination that failed to justify efficiency-based intervention on behalf of women would also falter on behalf of blacks. Yet, I speculate that most economists believe that efficiency has been and will continue to be improved by government intervention in support of blacks. In part, this is because there is no benign alternative explanation for the inferior position of blacks in the labor market; in part, it is because the "tastes" for discrimination are offensive, and we may be less concerned about discounting them. Perhaps there are many members of the majority group with such tastes who are ashamed of them and would welcome the exercise of the police powers of the state to override their own tastes. Thus, even if the existing distribution of tastes implies efficiency losses in the short run, there is a sort of "infant industry" argument to suggest that the long-run gains in national product obtained by "forcing" equal opportunities for blacks will justify the intervention on efficiency grounds. For those who reject "voluntary choice" as the explanation for the inferior labor market status of women, might not the same arguments apply?

Notes

¹The score of 51 for housewives compares with the following female-dominated occupations: hairdresser, 39; pastry chef, 39; office secretary, 51; inspector in a manufacturing plant, 51; and stenographer, 53. Some comparisons for househusbands among male-dominated occupations are: bellhop, 11; and janitor, 12.

²The Gallup poll reveals an increase from 22 percent in 1938 to 68 percent in 1976 in the population who approve of the wife working "if she had a husband capable of supporting her" (see Greene, 1976). A Canadian poll shows that between 1960 and 1982, the percentage who thought that a "married woman should take a job outside the home" increased from 5 to 38 percent if the question was about married women who "have young children," and 65 to 86 percent if the question was about married women who "have no young children" (see Index to International Public Opinion, p. 283).

³Data on labor force participation, wages, and marital dissolution rates among black and white wives and husbands were presented 17 years ago by Cain (1966, pp. 101-104), and there is abundant evidence that these racial comparisons have persisted.

⁴A useful, recent compilation of studies of the comparison of male and female wages and earnings is contained in O'Neill and Braun (1981).

⁵The ratios are relatively insensitive to the choice of a discount rate or to the assumed rate of growth in productivity--another parameter used in the Census study. The study, which is referred to again in connection with Table 3 below, reported the present values only for the five categories of years-of-schooling completed. My figures are weighted

averages of these five values, using the percentage of women and men in the five categories as weights.

⁶Note that an alternative "price" for these endowments is the vector B^f . The use of B^f in the first term and \bar{x}^m in the second term provides an alternative decomposition. These and other scaling devices reflect the inherent "index number" problem in aggregating heterogeneous goods (x 's) with different weights (B 's). I ignore this problem.

⁷Economists often postulate that in equilibrium $w = p$ "at the margin" for any given worker. This equality is not required for W^* , however, because w and p (and W^*) are averages, not marginals.

⁸The ratios of women's to men's incomes are relatively insensitive to the choice among discount rates of 3 to 5 percent, because the period of relative equality in incomes for men and women occurs during middle age, when intact marriages are most common. However, the higher survival rate for women in the older ages, especially above 55, serves to give women an eventual income advantage in these older ages. For this reason, a lower than 5 percent discount rate would raise the ratios slightly. Even a zero discount rate would not, however, raise any of the ratios to unity.

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