BLACK-WHITE DIFFERENCES IN MARRIED FEMALE LABOR SUPPLY:

ESTIMATES FROM THE HOUGHTELING DATA OF 1925

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INTRODUCTION

Much attention has been focused on the increase in labor market activity of women, especially married women, over the course of this century. The labor force participation rate of married women ages fourteen to sixty-four rose from 9 percent in 1920 to 51.2 percent in 1982. In that period, the participation rate for white married women jumped from 6.5 to 48.5 percent. This change was much larger in magnitude than that observed among non-whites. The non-white participation rate was 31.8 percent in 1920, remained virtually unchanged until the 1960s, and rose to 59.7 percent by 1982 [Smith and Ward, 1986]. These extensively studied phenomena have been attributed to a variety of social, technological, and economic developments over this period. Goldin [1990] provides the best summary of work to date in this area.

Perhaps less well understood is the striking difference between the participation rates of black and white married women in the early part of this century. The 1920s, the period from which our data are drawn, appear to be especially interesting for the study of the labor market behavior of women. It was relatively common among younger unmarried women to work outside the home but, once married, the majority left the market. There was a significant social stigma attached to the family if the wife worked. "Even in working class families..., employment for the wife was not the norm but generally a signal of family economic crisis" [Tentler, 1979, 139]. Explicit gender discrimination also reduced the opportunities available to married women. For example, many school districts and larger firms included marriage bars in their personnel practices. They refused to hire married women and in some cases dismissed women upon becoming married [Goldin, 1990, 161-63]. A number of the factors which are thought to have contributed to the increase in the labor participation rate of married women during this century began to emerge in the 1920s. The

labor demands of the World War I economy drew some women into the workplace but more importantly allowed women already working to obtain manufacturing, clerical, and service jobs from which they previously had been excluded [Greenwald, 1980, 13]. Female education levels continued to rise at the same time. A decline in fertility rates and the introduction of labor-saving household appliances altered the relative returns to work done inside and outside the home [Goldin, 1990]. The labor force participation rate of white married women rose by nearly half over the decade to 9.6 percent, yet it was still only a fraction of that observed for non-whites. The non-white labor force participation rate actually dropped from 31.8 to 30.3 percent, over the same period [Smith and Ward, 1986].

Based upon her work and prior studies of this era, Goldin [1977, 90-101] has suggested that the disparity in labor market behavior may be in part a "legacy of slavery." Black men faced lower wages and incurred more frequent spells of unemployment, pushing spouses into the work force out of economic necessity. Work outside of the home for a black married woman was also less likely to be looked upon as being out of the ordinary in light of the practices followed by slaveowners prior to 1865 and then by plantation owners during Reconstruction. As a slave, a woman could be pressed into domestic service or work in the fields at the owner's discretion. Black women in sharecropping families found their situation little changed [Jones, 1985, 52-72]. Black married women in the 1920s faced not only the gender discrimination described above but also racial discrimination in the labor market. While the clerical field had opened up to females, these less onerous whitecollar positions were an option for white native-born women only. As women filled manufacturing jobs vacated by men during World War I, blacks who were hired found themselves generally relegated to the least skilled and most unpleasant positions. Also, most of these meager gains were lost once servicemen began returning from the overseas conflict. By 1930, 63 percent of all black women were still working in the poorly paying service sector [Jones, 1985, Ch. 5].

This paper examines the racial disparity in labor participation behavior using a primary data source gathered in 1925 to aid relief agencies in determining appropriate levels of income support for their clientele. Since the sample includes only low-income households residing in Chicago, we do not attempt to draw any broad conclusions from our results. Rather we hope to provide some interesting insight into the racial disparity in work behavior by using relatively new analytical techniques to explore a data set that has been essentially untouched since the late 1920s.

THE DATA SET

In 1925, Leila Houghteling, then on the faculty of the Graduate School of Social Service Administration at the University of Chicago, undertook a survey of working poor households within the city of Chicago. The survey was initiated by the Chicago Council of Social Agencies which was investigating appropriate levels of relief. In order to determine support levels, the Council needed to determine a measure of the minimum standard budget for area residents. This budget would be one that would

allow for "the full growth, training and development of children and provide for the health and efficiency of adults." The survey was essentially a budget survey, and the data collected were directed to an understanding of the income and expenditures of the household. Data were also collected on the demographic composition of the household in order to estimate their income requirements. Field agents visited 2,354 households thought to fulfill the survey requirements whose names were provided by "representative" employers of unskilled and semi-skilled laborers in Chicago. Complete information was ultimately obtained from 476 households [Houghteling, 1927]. How representative a sample of lower-working class households this is, is difficult to judge. Apart from not knowing whether the firms were truly representative, there is also the likelihood that the low response rate imparted additional bias. Part of the low rate was due to non-cooperation, and this may be related to definable household characteristics such as the ability to speak English and possibly race. Furthermore, the sample group was chosen to include only households with at least one dependent child.

The Chicago labor market of the 1920s was quite dynamic. The city had to rebuild nearly completely after the fire of 1879, and it continued to grow at a rapid pace thereafter. Its manufacturing concerns relied heavily on the wayes of immigrants to fulfill their steadily increasing manpower needs. Northern Europeans, from the 1840s through the 1880s, and then Eastern Europeans, from that time (1890s) up until shortly before World War I, were drawn to those opportunities as an alternative to the political and economic upheavals in their home countries. In 1920, nearly thirty percent of the population was foreign-born, and they and their children constituted a substantial majority of the city's residents [Duncan and Duncan, 1957. Ch. 2]. The confluence of a sharp drop in European immigration that began in the years before World War I, an increase in product demand for the war effort and the entrance of industrial workers into the armed forces produced a manpower shortage. In 1916, Chicago industrial concerns began recruiting in the South. Negroes had resided in Chicago since its early existence, but they comprised only two percent of the population at the turn of the century. The attraction of jobs and the desire to escape the oppressive social and economic conditions that still faced them in the South spurred the northern migration of southern blacks. Approximately 50,000 blacks migrated to Chicago between 1916 and 1920 and continued to move North, though at varying rates, for the next several decades [Cayton, 1962, 3-29].

Women in Chicago, as throughout the rest of the United States at that time, faced significant barriers to working outside the home. Only 9 percent of working women were classified as professionals in 1920, 60 percent of whom were in the female-dominated and thus relatively low-paying teaching and nursing occupations. The rest were employed in manufacturing (25 percent), trade-clerks and salespeople (11 percent), clerical (32 percent), and domestic and personal services (19 percent) [Cayton, 1962, Ch. 9]. Women forced to seek jobs at the bottom end of the job ladder, the group this study addresses, were subject to further stratification along racial lines. Although temporary inroads were made by black women into clerical work during World War I, this field reverted back to becoming predominantly white by

the 1920s. Black women were employed by some department stores, but preference was given to whites for the more visible and desirable position of sales clerk, while blacks most often served as charwomen. Although the mail-order houses did employ black women, it was most often on only a temporary basis. A similar pattern was evident in manufacturing. Most unions overtly discriminated against blacks, and much hostility remained over the use of blacks as strikebreakers during the previous decade [Spear, 1967, Ch. 8]. As white, native-born women first moved into manufacturing, they were placed in the lowest-skilled positions. As they advanced, they were replaced with immigrants from Europe and then by those from the South. The Europeans were preferred to the black migrants, although the latter spoke English and tended to have attained higher levels of education. Black women were placed in un- to semi-skilled positions that were often unpleasant, dangerous, and susceptible to fluctuations in product demand [Jones, 1985, Ch 5]. In spite of these conditions, factory work was seen by many as being preferable to domestic service. Although the earnings were not necessarily higher, jobs in manufacturing got them "out of the kitchen" and away from the oftentimes capricious demands of domestic employers. In 1920, the majority of black working women in Chicago were still employed in service occupations. The vast majority of them were engaged in work in the households of others or in some form of personal service [Cayton, 1962, Ch 9].

Our data set, while not representative of Chicago or the nation as a whole, does allow us to examine the behavior of an interesting subgroup. All households had both spouses present and at least one dependent child. Eighty-one percent were white and the remainder were black. This over-representation of blacks (the 1920 census reported that black adults constituted 4.9 percent of the adult male population of Chicago) reflects the occupational structure that relegated most blacks to unskilled and semi-skilled jobs. Twenty-eight percent of heads of households were native-born (including all blacks); the foreign-born men originated chiefly from eastern and southern Europe. Of the foreign-born men, 23 percent were unable to speak English. Sixty-nine percent of spouses were foreign-born. As we would expect, the percentage of working black women exceeded that of working white women. In fact, 47.1 percent of black women and 17.8 percent of white women worked. These labor participation rates were above the national averages for married women of 31.8 and 9.5 percent, respectively, in 1920. We present analysis of the difference between the labor force behavior of black and white married women in our sample in the following section.

EMPIRICAL ANALYSIS

Methodology

The standard method to model the labor force participation decision portrays the individual woman making a utility maximizing labor-leisure choice by comparing her reservation wage (i.e., the minimum wage that will induce her to work) with the market wage offered.1 The probability of her working reflects the likelihood that the market wage offered exceeds her reservation wage. The reservation wage depends upon family and individual characteristics such as wife's age, education, work experience, race, ethnicity, language, characteristics of her occupation, number and ages of children, family income, and husband's unemployment experience. Since the dependent variable describes the dichotomous choice of working or not working, we estimate the probability of a working woman outside the home by using a logit regression analysis.

LABOR MARKET BEHAVIOR OF MARRIED WOMEN

Since the reservation wage itself is not observable, we must include those family and individual characteristics that influence the reservation wage in the participation function. As for the market wage, it is, of course, only known for those who chose to work. Thus, before we can estimate the participation function, we must estimate the (imputed) market wage that was likely to be offered to those not working.

Data Summary

Eliminating observations due to missing data reduced the sample size to 388. Variable definitions, means, and standard deviations are presented separately for black and white women in Table 1. The labor force participation rates of both groups of women in our sample are substantially higher than the census figures reported for their general populations. This is not surprising given the greater number of opportunities for working outside the home in an urban environment and the greater likelihood that women in low-income families were forced into market work out of economic necessity. A market wage offer is observed only for those individuals who worked during the survey year. We impute the wage offer by estimating an earnings function according to the correction procedure for sample selection bias suggested by Heckman [1979]. The surveys did not provide us with the typical measures of human capital such as experience and education levels. Age appears in the earnings function as an imperfect proxy for market experience. We also include a dummy variable indicating whether the individual lacked the ability to speak English with the expectation that this limitation might restrict the individual's job options and, thus, lower market rewards. Regional dummy variables break the city into five regions of residence. Tentler [1979] has suggested that, at the time period when the survey was taken, married women who entered the labor force due to a financial exigency tended to choose a place of employment that was close by instead of engaging in a far-ranging search for the best package of salary and work conditions available to a person of her skills. Choosing a conveniently located employer would reduce her commuting time and in other ways help her to fulfill her domestic responsibilities. In such a situation, the market wage offered to her might reflect not so much her productivity, but rather her geographic location. We followed the procedure originated by sociologists at the University of Chicago during the 1920s to define five regions similar in family and economic status and in percentages of black and foreign-born.² The only variables with statistically significant explanatory power in the earnings function were those representing area of

TABLE 1 Variable Definitions, Means, and Standard Deviations (in parentheses where appropriate)

		Mean and Standard Deviation (in parentheses) White Black	
Variable	Definition		
LFP	Equals one if the individual worked outside the home for at least one week during the previous year, zero otherwise.	0.158	0.500
WAGE	The imputed weekly salary offer.	16.82 (1.99)	14.43 (2.16)
REGION1	Equals one if the individual lives in the northern part of Chicago, zero otherwise.	0.204	0.117
REGION2	Equals one if the individual lives in the south- eastern section of Chicago, zero otherwise.	0.177	0.0
REGION3	Equals one if the individual lives in the south- east-central neighborhoods, zero otherwise.	0.060	0.650
REGION4	Equals one if the individual lives in the south- central part of the city, zero otherwise.	0.527	0.200
REGION5	Equals one if the individual lives in the southwestern part of the city, zero otherwise.	0.052	0.033
OTHINCOME	Annual earnings of family members other than the wife.	1481.2 (561.3)	1195.7 (265.0)
RENTBOARD	Payments from renters and boarders during the year.	50.07 (163.7)	117.3 (342.6)
WEEKSOUT	The number of weeks during the year that the husband was unable to work.	3.24 (6.21)	3.40 (7.55)
BLACK	Takes on value of one if the individual is black, zero otherwise.	0.0	1.0
KIDS<5	The number of children in the household less than five years of age.	1.00 (0.98)	1.02 (1.06)
KIDS5+	The number of children in the household ages five and up.	2.58 (1.82)	2.01 (1.74)
OTHADULTS	The number of adults present in household other than the husband and wife.	0.02 (0.20)	0.27 (.90)
AGE	Age of the wife.	34.90 (7.06)	31.45 (7.14)
NOTFLUENT	Takes on value of one if the wife is not able to speak English, zero otherwise.	0.344	0.0

residence.³ The parameter estimates were then used to impute market wage offers for all individuals. We found that the average wage faced by a white wife to be about 16 percent higher than that offered to her black counterpart, not surprising in light of the degree of occupational and residential segregation that existed at that time.

The variables that influence the reservation wage were directly accessible from the survey forms. OTHINCOME and RENTBOARD represent annual labor income generated by other family members and the amount of money paid by renters and boarders during the year. It is expected that the presence and magnitude of these income sources should reduce the likelihood of a wife working outside the home. White family members, primarily the father, brought about 24 percent more income into the household than did their black counterparts. It appears that black families on average received more rental income than did white families. However, these averages distort the true situation. Nearly half of the black families generated income by taking in renters or boarders. Receipts averaged \$251 per year. Only 15 percent of white families received this type of income, but of those that did, the average annual receipts were \$355. Related to these income measures is WEEKSOUT which indicates the number of weeks during the prior year that the husband was not working for health reasons or due to a layoff. One would expect that the greater the number of paychecks missed by the husband, the higher would be the probability that the wife would have to enter the labor force to replace those lost earnings.

The remaining variables used in estimating the structural version of the participation function describe personal and family characteristics. *BLACK* is a dummy variable for race. Fifteen percent of the observations describe black families. The presence of young children is expected to reduce the probability of working outside of the home. However, the presence and number of older children (five years old and up) has *a priori* an ambiguous effect on the wife's behavior. On one hand, their presence represents another family member to feed and clothe. On the other, they could take on some or all of the mother's child care and housekeeping responsibilities. The presence of other adults would be expected to exert a similar ambiguous effect. Finally, the age and language skills variables that appeared in the earnings function are also included here.

The Econometric Results

In our attempt to explain this racial difference in participation rates, we first test for a statistical difference in the labor force behavior of wives of the two races. This is accomplished by first estimating a restricted model of the participation equation of the form:

 $\begin{array}{ll} \textbf{(1)} \ \textit{Prob}(\textit{LFP=1}) = \ \textit{f}(CONSTANT, WAGE, OTHINCOME, RENTBOARD, WKSOUT, \\ \textit{KIDS} < 5, \textit{KIDS5} +, OTHADULTS, AGE, NOTFLUENT). \end{array}$

This version constrains the parameter estimates for black and white wives to be equal. Then, creating interaction terms by multiplying the variables in equation (1)

by the race dummy variable, we estimate an unrestricted version of the participation equation which allows parameter estimates to differ across races. We were able to reject the null hypothesis that the interaction terms and separate intercept for race did not jointly affect the participation level at a significance level of 0.005.⁴ The logit estimation of the unrestricted participation function is presented in Table 2.

Although the dummy variable for race had no statistically significant explanatory power, several parameter estimates for the interaction terms did. This suggests that the variance in labor market behavior can be in part attributed to the two groups varying in their family characteristics, economic situations, and reactions to those factors. The market wage offer had no statistically significant explanatory power for either group. This finding is consistent with the notion that these women of low income households were not induced to enter the labor force by the reward of higher wages, but rather were pushed into the labor force in response to financial need. Evaluated at the means, the low wage elasticities of 0.98 and 0.70 for white and black wives, respectively, also reflect a low level of responsiveness to wage offers.

Of the measures included to capture the effect of family financial need, the level of income earned by other family members affected the behavior of wives of both races while WEEKSOUT, the number of weeks the husband was out of work, increased the likelihood of black wives working. The remaining variables of this group had no statistically significant effect on behavior. White wives were less likely to work as family income levels increased. Their income elasticity, evaluated at the white means, was equal to -1.36. We expected black wives to be less responsive to the income measure. The black families tended to be at the lower end of the income scale, and it seemed unlikely that marginal increases in income would alleviate the need for the wife to work. In fact, the positive coefficient estimate for the interaction term not only offset the negative effect that other family income had on white wives working, it caused the income elasticity for black wives to take on a positive value of 1.16. Although the black and white husbands represented in this data set experienced similar amounts of time out of work, 3.40 and 3.24 weeks, respectively, only black wives exhibited a statistically significant increased likelihood of working. An additional week of spouse joblessness would increase the participation probability of black wives by 8.6 percent (from .500 to .543) while having virtually no effect on the behavior of white wives. It may have been that the meager family savings of black families were more quickly exhausted by the disruption of the husband's income stream, necessitating the wife's entry into the labor

The presence of older children or other adults in the household did not affect the likelihood of working in a statistically significant fashion. However, the presence of additional young children greatly reduced probabilities of working, even more dramatically for black wives than for white. In fact, the likelihood of wives of both races working dropped to five percent if there were three children under the age of five (evaluated at the means of the other variables). We found that English-speaking ability actually reduced the probability of labor force participation. Wives

TABLE 2
Logit Estimation of the Labor Force
Participation Function

Independent Variables	$\begin{array}{c} \textbf{Parameter Estimates} \\ \textbf{\textit{t-statistics in Parentheses}} \end{array}$
Constant	-0.0337
	(-0.02)
WAGE	.0695
OMITALGOLER	(0.79)
OTHINCOME	-0.0011
RENTBOARD	(-2.52) b
RENIBOARD	-0.0012
WEEKSOUT	(-0.87) -0.0122
WININGOOT	(-0.44)
KIDS<5	-0.6296
IIID O	(-3.14) ^c
KIDS5+	0.0066
	(0.06)
OTHADULT	0.5070
	(0.80)
AGE	-0.0254
	(-0.81)
NONFLUENT	0.5830
	(1.64) a
BLACK	0.6753
	(0.21)
BLACK * WAGE	0.0282
	(.16)
BLACK * OTHINCOME	0.0030
	(1.96) ^b
BLACK*RENTBOARD	0.0007
	(0.40)
BLACK * WEEKSOUT	0.1912
	(1.65) ^a
BLACK * KIDS<5	0.8640
	(-1.61)
BLACK* KIDS5+	-1.093
DI I OTZ + OMIT I DITT MO	(0.42)
BLACK * OTHADULTS	-0.3270
DI ACIV * ACID	(0.43)
BLACK * AGE	-0.0743
	(-1.12)
n	388
Log-Likelihood	-161.53
Chi-squared	-161.53 77.14
Degrees of freedom	18
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The null hypothesis of no explanatory power was rejected at a significance level of 1 percent. Eighty-three percent of participation decisions were predicted correctly by the model (97 percent for non-participants and 30 percent for participants).

^a Indicates 10 percent level of significance (two-tailed). ^b Indicates 5 percent level of significance (two-tailed). ^c Indicates 1 percent level of significance (two-tailed).

TABLE 3
Difference in Participation Rates by Race

Subgroup of Married Women	Labor Force Participation Rate (%)	
BLACK (observed)	50.0	
WHITE (observed)	15.8	
BLACK-calculated using estimated white responses (predicted) ^a	14.0	
BLACK-evaluated at the average characteristics of whites in the sample (predicted) ^b	66.1	

^a This rate is calculated using the mean values of variables in the participation function observed for blacks and the parameter estimates relevant for whites.

not able to speak English were 60 percent more likely to work than those who could. This might reflect cultural differences between native-born and immigrant white women since most of those unable to speak English were foreign-born and all blacks surveyed were native-born and able to speak English. Finally, the wife's age did not affect labor market behavior in a statistically significant fashion for either race.

To further examine the large difference in participation rates between wives of the two races, we consider the roles played by family characteristics and parameters of the participation equation. This is shown in Table 3. If the average black wife reacted to her family's situation and market wage offer in the same manner as white wives were observed to do, the probability of her working would be 14 percent, nearly identical to the 15.8 percent participation rate of the white wives in the data set. This result is obtained even though the average black wife faced a lower market wage and had to tolerate lower levels of household earnings contributed by other family members. If black wives had the same average characteristics as whites, the average black wife would have a 66 percent likelihood of working.

CONCLUSION

The study of labor market behavior of women prior to 1940 has been limited by the lack of suitable data. We are able to shed light on some aspects of the labor-leisure choice facing married women using a micro-level data set describing the conditions faced by low-income Chicago families in the mid-1920s. Our results do not contradict the contention that the disparity in labor force participation rates between black and white married women could be partly attributable to the "legacy of slavery" [Goldin, 1977]. Although white husbands in our sample did have higher annual earnings than their black counterparts, it was the strikingly different

magnitudes of response to relatively similar family circumstances that seem to have caused black and white participation rates to differ so greatly. As shown in Table 3, black women would have been less likely than whites to be labor force participants if they reacted in the same fashion (i.e., if the parameters of the participation function for blacks were identical to those for whites). Black married women were found to be more responsive to work time lost by their husbands. Higher earnings by other family members did not reduce the likelihood of black women working as it did for whites, suggesting a more permanent labor force attachment. The presence of young children strongly influenced the likelihood of women of both races working, even more so for blacks than whites. We are prevented from generalizing our results due to the nature and size of our sample, but do find them to be consistent with Goldin's contention that historic differences in the labor force participation rates of black and white women may be in part an indirect legacy of slavery.

NOTES

1. More specifically, let W_i^M be the market wage and W_i^R be the reservation wage for individual i. If individual i participates, then $P_i = 1$, and if not, $P_i = 0$. Then the probability of participating is $Prob(P_i = 1) = Prob(W_i^M > W_i^R)$ which is equivalent to $Prob(P_i = 1) = Prob(W_i^M - W_i^R) > e_i$. If the error term, e_i , is assumed to follow a logistic distribution, then the $Prob(P_i = 1)$ can be estimated with logit regression analysis.

We used ward maps from the period to group neighborhoods into regions that were as similar as
possible. A description of a process used to define Chicago neighborhoods can be found in Hunter
[1974].

3. The wage regression estimated, correcting for the sample selection bias, is as follows:

$$WAGE = 14.246 + 0.128 * AGES - 0.672 TUNGS - 0.508 * REGION2 - 5.069 * REGION3$$
(3.79) (1.28) (.46) (.17) (2.52)

The absolute values of the t-statistics are in parentheses. There were 69 observations in the selected sample. The measured F, 2.1 allows us to reject the null hypothesis at a 10 percent significance level. The R-squared was 0.195. MILLSRATIO is the correction factor for sample selection bias.

4. Let L(R) be the log of the likelihood function of the restricted model and L(UR) be the log of the likelihood function of the unrestricted model. The likelihood ratio test statistic is -2{L(UR) - L(R)} = 35.5 at 9 degrees of freedom, and this allowed us to reject the null hypothesis of no racial differences in the parameter estimates at a significance level of 0.005.

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