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A Comparison of Labor Supply Behavior among Single and Married Puerto Rican Mothers

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When the U. S. Census figures from 1960 to 1980 showed an increased number of female-headed households among all ethnic/racial groups, economists assumed that other things being equal, the lack of a second, male wage-earner would motivate many single mothers to enter the labor force, and supply more labor than would otherwise be the case. Among white women, female heads of households with minor children are more likely to be in the labor force than married women with children who live with their spouse (Kamerman & Kahn, 1988). Paradoxically, among black and Puerto Rican female householders with minor children, participation rates since 1960 appear to have stayed well below those of their spouse-present counterparts (Tienda & Glass, 1985). The literature has not specified why headship status *per se* should cause some women to work more and other women to work less.

LABOR SUPPLY DIFFERENCES BETWEEN SINGLE AND MARRIED MOTHERS

In a paper on poverty and the family, Smith (1988) noted that "women heading families are unlikely to be random draws from the population, but are

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more likely to come from impoverished backgrounds" (p. 161). His research on household composition changes showed that between 1960 and 1980, the characteristics of both black and white female householders had changed. In 1980, female heads were more likely to be young and never married than those women who headed families in the 1960s. He concluded that "more so than in the past, these families are now [headed by] young unwed mothers, women with low earning capacities" (p. 162). Smith does not provide any empirical evidence for this conclusion. However, both the younger age and never-married status of this group suggest the existence of time and money constraints that can only exacerbate labor market entry problems.

It is important to determine whether the variation in labor market behavior between married and single mothers is more a function of personal characteristics or of differing individual circumstances. Spouse-present women are assumed to be able to realize the benefits of joint-household production and consumption activities, as well as increases in the household's resource base resulting from their husband's earnings. For married mothers who live with their husbands, the decision to work for pay and to work full or part time is assumed to be an interdependent family decision that takes into account the cross-effects of the husband's labor supply choices.

Female heads, however, may live alone with their children and be solely dependent on their market earnings for their family's economic well-being. If these earnings are inadequate for family support, then they may seek eligibility for state-provided assistance. Undoubtedly, single mothers have greater access to public-income assistance when compared to married mothers with husbands. Rexroat's study (1990) on the effect of household structure on female family heads showed that women living in extended families were much less likely to be receiving assistance than were heads living alone with their children. Therefore, while household labor supply may fall because of an income maintenance program, female heads may actually increase their labor supply if they live in an extended family arrangement.

The wide variation evidenced in women's labor supply suggests that fixed costs are probably operating to constrain workers to work a minimum number of hours per week or weeks per year. Working mothers must earn enough to pay for child care expenses and many other services that they traditionally perform in the home. Yet many of the services provided by the mother (and this is especially the case for the single mother) cannot easily be substituted with goods and services bought in the marketplace. Therefore, family living arrangements in which there are other individuals who can substitute for the working mother or who, through their earnings, can increase the flexibility of the household in procuring needed goods and services are expected to play a large role in constructing the work decisions of single women with children at home.

This chapter will examine the significance of household composition char-

acteristics that contribute to the variations in labor force participation and annual hours and weeks worked among a sample of Puerto Rican single and married mothers. Results from the empirical tests indicate that extended household forms are more important in explaining the probability of labor force entry and the variation in annual hours and weeks worked among Puerto Rican single mothers.

In the first section of this chapter, I will broadly look at the descriptive evidence on the labor market behavior of women who are distinguished by their headship status. In the second section, I will discuss the labor market behavior and individual characteristics of Puerto Rican women living in New York City. In the third section, I will describe the data used in the probit and regression estimates and present a theoretical model of labor supply choice in which the labor-force participation, annual hours-worked, and annual weeks-worked decisions are analyzed separately. Lastly, I will summarize the empirical results and suggest areas for future research.

IS HEADSHIP STATUS REALLY THE PROBLEM?

Investigations of the labor supply decisions of married women with children whose spouse is present have been the focus of the majority of labor supply studies written during the last twenty years. However, increased research on the employment problems of female householders in the 1980s paralleled the growing interest in welfare reform and workfare programs. The current literature on this group shows that the female headship category captures a number of diverse individuals, some of whom are lacking on-the-job training, education, assistance from the absent parent, and general support from both inside and outside the home (Kamerman & Kahn, 1988, p. 22).

The economic significance of the headship-status distinction in differentiating women's labor force participation and/or the number of hours worked has not been researched enough to allow any conclusions to be drawn. However, studies on the effect of government tax and transfer programs (Hausman, 1981; Levy, 1979; Masters & Garfinkel, 1977), household composition patterns (Rexroat, 1990; Stewart, 1981; Tienda & Glass, 1985), the significance of child-care costs for working mothers (Prescott, Swidinsky, & Wilton, 1986), and the employment opportunities that result from industrial restructuring (Cooney & Colon-Warren, 1979) have provided evidence suggesting that married mothers have different responses than do single mothers to identical economic incentives and constraints. Additionally, research by Blank (1988) and Ellwood (1988) support the contention that working female householders confront unique obstacles to choosing low levels of weeks or hours.

We know that recent studies on changing family structure and the "feminization of poverty" have highlighted important differences in the economic

circumstances of single and married mothers, as well as variations among white, black, and Hispanic female heads of household. The dramatic increase in Puerto Rican family poverty is of particular concern. In 1988, 38% of all Puerto Rican families lived below the poverty level. A low rate of labor force participation among all Puerto Rican women and a large percentage of families that are female-headed are thought to be two major factors contributing to this high poverty rate (Smith, 1988). Therefore, it is important that policymakers gain more insight into the labor market behavior of Puerto Rican women in general and Puerto Rican female householders in particular.

Between the years 1960 and 1985, the rate of female headship among Puerto Rican families increased dramatically from 16 to 44%, with a correspondingly large increase for black families of from 21 to 44% and for non-Hispanic white families of from 8 to 12% (Sandefur & Tienda, 1988, p. 10). During this same period, the proportion of single-parent families (most headed by females) with the head not employed rose from 10 to 34% for Puerto Ricans, from 12 to 25% for non-Hispanic blacks, and from 5 to 6% for non-Hispanic whites (Tienda & Jensen, 1988, pp. 55–56).

Thus, it was not merely the rise in the number of female-headed families that hurt Puerto Rican family income so much more than that of other groups, but rather the greater probability that Puerto Rican female householders would be out of the labor force.

Female householders who receive means-tested transfers such as Aid to Families with Dependent Children (AFDC) are assumed to have a lower earnings capacity relative to those single mothers who do not receive aid. This is due to the fact that the program imposes high marginal tax rates on earnings, and thus reduces work incentives for those who could expect to earn only minimal wages (Ellwood & Summers, 1986). The percentage of female householders who received AFDC payments varies by racial and ethnic classification, but recently, Puerto Rican female-headed families are more likely than other groups to be receiving this form of income assistance (Bean & Tienda, 1987, p. 359).

Both Levy and Michel (1986) and Ellwood (1988) have argued that the present accounting structure of the welfare system forces low-income householders to choose between full-time work or no work at all. Further, according to Ellwood's figures (1988, p. 43), full-time work only makes sense for a single mother if she can earn a relatively high wage and has modest day-care costs. Low-waged householders may rationally calculate that the implicit value of their eligible benefits, which include health insurance, is greater than the total compensation they could earn if they worked at a full-time job. Assuming that those single mothers with higher earnings capacities are already in the labor force and generally working full time, then the problem of nonlabor force participation evidenced among Puerto Rican householders is in part due to their human capital deficiencies rather than to their headship status *per se*.

THE EMPLOYMENT SITUATION OF PUERTO RICAN WOMEN IN NEW YORK CITY

In 1987, Puerto Ricans comprised 13% of New York City's population and they constituted its largest group of Hispanic residents. According to data from the 1987 *Current Population Survey,* they remain one of the city's most economically disadvantaged groups, with almost 50% of the population realizing an income that was below the census-defined poverty level in 1987. In 1987 New York City labor-force participation rate for Puerto Rican females was 31.0%, well below the comparable rates for non-Hispanic black and white women.

The relative constancy of the labor-force participation rate for Puerto Rican women living in New York City between the years 1970 (29.2%) and 1987 (31.0%) and the recorded declines in their participation between 1950 and 1970 are considered anomalous because their trends of increasing education, lowered fertility rates, increases in the percentage born in the United States, increases in the proportion heading a household, and decreases in the number of primary child-bearing age should have increased participation rates over time (Cooney & Colon, 1980).

By 1980, the relative occupational status of employed Puerto Rican women living in New York City had improved. The 1980 Census data showed a greater percentage working in lower and upper white-collar jobs than in the lower blue-collar jobs that this group had held traditionally. But the high rates of nonlabor force participation among Puerto Rican women limit the overall significance of this movement from blue- to white-collar jobs among the employed population.

Studies have found that differences in productive characteristics and hours worked provide a large part of the explanation for Puerto Rican women's lower participation rates and earnings when compared to their non-Hispanic white or Asian counterparts (Carliner, 1976, 1981; Carlson & Swartz, 1988). Working from within the human capital framework, ample research exists on the importance of English language skills, education, and job-specific experience for obtaining better employment opportunities and wages. Yet, for some analysts, the disadvantaged economic status of Puerto Rican women points out the need to consider important demand-side factors that also are shaping labor market outcomes. These factors include the decline in the number of light-manufacturing jobs in New York City, which had the effect of displacing large numbers of Puerto Rican women from their workplace (Bean & Tienda, 1987, p. 282; Cooney & Colon, 1980).

Mothers' Responsiveness to Economic Incentives and Constraints

An important question that I address in this chapter is whether female heads have greater or less responsiveness than married mothers to "economic" incen-

tives and constraints, such as wages, exogenous income, young children at home, and other adults living in the household when making their labor supply decisions. To test this hypothesis, I created two samples by distinguishing all spouse-present, married Puerto Rican women aged 18–64 who had children under the age of 18 living at home from those women who had identical characteristics, but were female heads of households (single mothers).

The data used in this analysis are taken from the 1980 U. S. Census 5% Public Use Microdata Sample (PUMS) for New York City. The regional/urban focus of much of the recent work on the employment prospects of the disadvantaged, in combination with New York City's large Puerto Rican population, informed my decision to use New York City data.[1] Table 1 provides the mean characteristics of the working and the total populations.

The data show that Puerto Rican single mothers living in New York City had much lower employment levels (22%) than Puerto Rican wives (35%). According to the table, single mothers have lower levels of education, exogenous income, lower rates of English language proficiency and higher rates of work disabilities. They also report having larger numbers of children (aged 7–17) and other adults living in their households. And they are more likely to report unemployment. The raw differences in Table 1 for the working population show that annual hours and weeks worked are similar for both groups. Yet a breakdown of the pattern of hours and weeks worked over the year shows that 55% of all Puerto Rican single mothers worked full time/full year (35 hours or more a week and between 47 and 52 weeks a year) while only 49% of all married mothers did the same. Thus, the two samples differ with regards to their participation rates and their propensity to work full or part time, which refers to weekly hours, and full or part year, which refers to annual weeks. In the next section, I will discuss the factors that can account for these differences.

A MODEL FOR ESTIMATING WOMEN'S LABOR SUPPLY

A work-not-work function, based on a comparison between the wage and the reservation wage, and an hours and weeks-of-work function were estimated for the labor supply analysis. Both hours and weeks of work are conditional on the decision to be in the labor force. Blank's (1988) research on the labor supply of female household heads showed that the weeks and hours decisions are separate from the labor-market participation decision, but are also different from each

[1]The more recent 1987 *Current Population Survey* (CPS) was not chosen for my analysis because the Puerto Rican sample size was inadequate for my regional focus. Additionally, the Census Bureau has stipulated that the 1980 Census remains the best source for data on Puerto Ricans because of undercounting problems in the CPS sample.

Table 1. Variable Means for Puerto Rican Women[a]

Variable	Working		Total population	
	Married mother	Single mother	Married mother	Single mother
Wagert	5.01	5.06	2.12	1.31
	(1.70)[b]	(1.76)[b]	(4.37)[b]	(4.61)[b]
AnnHrs	1328	1359	491	299
	(681)	(728)	(777)	(667)
WeeksWrk	40.2	41.0	14.3	8.57
	(15.4)	(15.7)	(21.3)	(18.4)
LnWageRt	1.61	1.62	.565	.334
	(.532)	(.566)	(.831)	(.705)
ExogInc	1895*	1534	2315	1412
	(4069)	(3495)	(4903)	(4045)
LnExogInc	3.23	2.75	3.47	2.25
	(3.87)	(3.75)	(3.99)	(3.62)
Unemp	.192*	.247	.093	.094
	(.394)	(.431)	(.291)	(.292)
HusInc	11746	—	.05E-04	—
	(8063)	(—)	(8086)	(—)
HomeOwnr	.229*	.046	.168	.016
	(.420)	(.210)	(.374)	(.129)
ForBir	.700*	.755	.228	.198
	(.458)	(.430)	(.419)	(.398)
Exp	16.0*	17.3	17.9	18.1
	(9.14)	(9.24)	(10.1)	(10.2)
ExpSq	341*	387	424	432
	(368)	(389)	(447)	(465)
NoEnglish	.134	.144	.238	.321
	(.341)	(.352)	(.426)	(.466)
Education	11.2*	10.5	10.1	8.99
	(2.80)	(3.17)	(3.18)	(3.36)
Hus>65	.005	—	.006	—
	(.069)	(—)	(.081)	(—)
HusEmp	.038	—	.031	—
	(.190)	(—)	(.173)	(—)
Kids≤6	.690*	.485	.802	.764
	(.734)	(.676)	(.862)	(.871)
Kids7–11	.486	.501	.591	.633
	(.682)	(.678)	(.760)	(.801)
Kids12–17	.610*	.734	.705	.782
	(.845)	(.909)	(.938)	(1.02)
AdltR≥16	.280*	.342	.328	.303
	(.607)	(.675)	(.697)	(.670)
AdltR>65	.036*	.013	.023	.009
	(.207)	(.114)	(.163)	(.098)
AdltNonR	.014*	.090	.012	.056
	(.141)	(.296)	(.123)	(.243)

(*continued*)

Table 1. (*Continued*)

Variable	Working		Total population	
	Married mother	Single mother	Married mother	Single mother
FemAdltR	.033	.032	.041	.052
	(.226)	(.204)	(.356)	(.241)
EmpAdltR	.151	.179	.168	.123
	(.446)	(.462)	(.481)	(.394)
Notable	.028*	.063	.083	.180
	(.165)	(.244)	(.277)	(.384)
NevMarr	—	.256	—	.337
		(.437)	(—)	(.472)
Separate	—	.335	—	.371
	(—)	(.472)	(—)	(.483)
Widow	—	.056	—	.048
	(—)	(.231)	(—)	(.215)
Married	—	.039	.100	.041
	(—)	.195	(—)	(.200)
Divorced	—	31.1	—	.200
	(—)	(—)	(—)	(.400)
Labor force participation rate (%)	.35	.22	—	
n=	1,248	755	3,560	3,660

[a]Includes all women 18–64 years of age with children under age 18 living at home.
[b]Standard deviations are in parentheses.
*Difference in means significant at ≤.05 (2-tail prob.).

other. For that reason, annual hours and weeks worked are treated as separate variables in the labor supply model.

The procedure used in this model of the labor market accounts for the simultaneous nature of the participation and annual hours and weeks-worked decisions, and for the possibility of sample selection bias. In a single-period decision model, the decision to work and the number of hours or weeks that an individual works are the result of both supply and demand factors. On the demand-side specification, market wages (Equation 1) are assumed to be given independently of hours or weeks and are determined by a semi-log earnings function which includes years of completed schooling, English language proficiency, a proxy for labor market experience and its square, and a control for work disabilities. These variables are defined in Table 1.

The first equation shows

$$ln(W_i) = X_{1i}b + u_i \tag{1}$$

where $ln(W_i)$ is the natural log of the wage offer available to individual i, and X_{1i} is a row vector of observed individual characteristics with the associated parameter vector b. The mean-zero random disturbance term u_i represents the effects of unobserved factors (e.g., motivation) on market wages and is assumed to be a normal variate with classical properties for all i.

On the supply side we have

$$ln(W_{*i}) = X_{1i}c_* + X_{2i}d_* + u_{*i} \quad (2)$$

where $ln(W_{*i})$ is the ith individual's reservation wage. Working women maximize their utility by combining household production time with market goods and services. The amount of labor supplied will depend on the value of the reservation wage, and this is a function of individual characteristics contained in X_{1i}, where c_* is the associated coefficient vector. The other observed variables measure property income, characteristics of other household members, and taste factors relating to household composition and leisure time. These variables are contained in the row vector X_{2i}, and d_* is the associated coefficient vector. The random disturbance term u_{*i} refers to unobservable factors and is assumed to be a normal variate with classical properties for all i.

The reservation wage (Equation 2) reflects the fixed costs of working in the market and the value given to nonmarket time. In this specification, the greater the amount of the husband's income (if the woman is married) or level of exogenous income, the greater the probability that the benefits of extra wage income diminish. Home ownership, an asset proxy, is usually assumed to increase the value of nonmarket time, although this variable may capture the association between past labor supply and ownership ability.

The number of children in the household under the age of 6, between the ages of 7–11, and between the ages of 12–17 is assumed to affect the reservation wage through increasing the fixed time and money costs associated with working. Household composition variables, including the number of adult relatives aged 16–64 and over age 65 who live in the household, as well as controls for the number of adult nonrelatives (fictive kin), female adult relatives, and employed adult relatives, are included to test for intrahousehold labor supply patterns and the possible substitution of other household members for the mother in domestic production tasks.

The distinction made concerning the gender and employment status of the adult relatives residing in the household, as well as the differentiation involving the number of adult nonrelatives in residence, acknowledges the recorded variation in the household extension mechanisms available to single and married mothers (Tienda & Glass, 1985; Rexroat, 1990). Nativity is included to control for the effect of birth on the island of Puerto Rico. Marital status is used in the sam-

ple of single mothers to control for reasons for female headship. Other control variables thought to affect the reservation wage, but not of primary interest for this estimation are defined in Table 1.[2]

The procedure used here allows for the possibility that the lowest number of hours a worker will work may be greater than zero. Thus, there is a discontinuity in the labor supply function at the point of equality between $ln(W_i)$ and $ln(W_{*i})$ that may result from fixed costs of labor market entry or labor market constraints (Blank, 1988; Killingsworth, 1983). Reported unemployment by those both in and out of the labor force who are looking for work or are on layoff from a job is included in both the annual hours and weeks regressions. As Blank argued (1988, p. 183) this variable could capture preferences of those who wish to work only part-year for reasons associated with children's school schedules, the nature of the job, or with eligibility constraints imposed by certain government transfer programs (e.g., unemployment compensation, welfare). However, Blank's study also suggests that slack labor demand may keep employees from working as many weeks as they want, thereby creating a discontinuity between desired and observed weeks of work.

Thus, the final equation shows that the number of hours supplied is a discontinuous function of the market wage,[3] where

$$H_i = a\ ln(W_i) + X_{1i}c + X_{2i}d + e_i \text{ for } ln(W_i) > ln(W_{*i})$$

and

$$H_i = 0 \text{ for } ln(W_i) < = ln(W_{*i}) \tag{3}$$

But if only those women with positive hours in the sample are observed, our dependent variable is limited (censored), and the use of ordinary least square (OLS) to estimate the parameters of both the wage and hours/weeks equations will cause biased estimates, as the conditional mean of the error term in the sample of workers is generally not zero. Additionally, the use of OLS to estimate the labor supply function can give inconsistent estimates of the parameters because of the possibility of a nonzero covariance between e_i (Equation 3) and u_i (Equation 1).

Thus, we first estimate a reduced-form probit equation for labor force

[2]In the samples of spouse-present women, controls for husband's age (over 65) and for his self-employment status are included in the regression analysis. A control for a work disability is also added.

[3]The relationship between Equations 2 and 3 arises from the fact that since reservation wage W_{*i} equals the greatest wage offer consistent with zero hours of labor supply, then $c_* = -c/a$, $d_* = -d/a$, and $u_{*i} = e_i/a$. See Prescott, Swidinsky, and Wilton (1986), p. 136; also see Killingsworth (1983), pp. 157–161.

participation, and then use the estimated coefficients to compute a selection bias correction variable (λ_i). The dependent variable in the probit model signifies employment for at least one week in 1979 and positive reported 1979 hours and earnings. The second stage of this procedure uses a selection bias-corrected regression to estimate the market wage, using only the data on workers, There are no right-hand-side endogenous variables in this reduced-form equation which includes the set of regressors contained in X_{1i} and lambda. The third stage of this procedure involves estimating the parameters of the both the annual hours and weeks equation, again using a selection bias-corrected regression on the sample of working women to acknowledge the nonrandom process by which subsamples of workers and nonworkers get constructed. Lastly, predicted wages for working women were used as an instrument for actual wages in the estimation of the annual-hours and weeks regression to correct for the simultaneous equation bias of the OLS estimator.

LABOR FORCE PARTICIPATION FINDINGS

Table 2 provides the probit estimates for Puerto Rican married and single mothers, respectively. Of particular interest is the finding that participation in the labor force is more likely for single mothers if there are adult nonrelatives and employed adult relatives living in the household. It is assumed that the presence of adult nonrelatives (fictive kin) in the home increases work probabilities because other household members substitute their domestic production skills for those of the mother. Having employed adult relatives living in the household could indicate the household's greater ability to purchase day-care services, or it could signify increased access to a job-information network via the employed family member. Both of these situations would increase the work probabilities of the single mother.

Married mothers with adult relatives over age 65 living in the household were also more likely to work. The positive impact of older family members on the participation probabilities of married mothers could reflect either the greater need to generate income to support elderly dependents or the substituting of these family members for the mother in household tasks. Although household structure affects participation probabilities of both married and single Puerto Rican mothers, extension mechanisms are more important in determining the work decision of single mothers.

As the greater difference between the two groups is found in their rates of participation, it is somewhat surprising that the probit results show a fair amount of similarity. However, labor market experience is not significant in explaining participation probabilities for married mothers, but is important for understanding the labor force entry of single mothers. The presence of children in the

Table 2. Coefficients of Probit Model for Labor Force Participation for Puerto Rican Women[a]

Variable	Married mother	Single mother
Constant	−.707**	−1.13**
	(.171)[b]	(.198)[b]
LnExogInc	−.005	.010
	(.006)	(.008)
HusInc	.00001**	—
	(.00003)	(—)
HomeOwnr	.285**	.805**
	(.063)	(.187)
Experience	.015	.033**
	(.010)	(.012)
ExpSq	−.0005**	−.0005**
	(.0002)	(.0002)
ForBir	−.109	−.081
	(.060)	(.071)
NoEnglish	−.238**	−.419**
	(.065)	(.069)
Education	.071**	.092**
	(.010)	(.010)
Hus>65	.333	—
	(.335)	(—)
HusEmp	−.028	—
	(.126)	(—)
Kids≤6	−.377**	−.515**
	(.037)	(.047)
Kids7–11	−.264**	−.287**
	(.035)	(.040)
Kids12–17	−.148**	−.182**
	(.032)	(.035)
AdltR≥16	−.103	−.078
	(.060)	(.065)
AdltR>65	.324**	−.132
	(.142)	(.248)
AdltNonR	.115	.335**
	(.183)	(.098)
FemAdltR	.028	−.049
	(.070)	(.128)
EmpAdltR	.063	.213**
	(.083)	(.095)
Unemp	.989**	1.07**
	(.080)	(.077)
NevMarr	—	−.321**
	(—)	(.077)

(*continued*)

Table 2. (*Continued*)

Variable	Married mother	Single mother
Separate	—	−.195**
	(—)	(.071)
Widow	—	−.090
	(—)	(.134)
Married	—	−.234
	(—)	(.146)
Notable	−.642**	−.813**
	(.107)	(.098)
Loglikelihood	−1949	−1424
n	3,560	3,660

[a]All women are aged 16–64 and have children under 18 living at home.

[b]Standard errors in parentheses. Dependent variable-employed; estimation method: maximum likelihood.

**≤.01; *≤.05.

household has a greater negative impact on the work probabilities of single mothers which suggest the unique problems faced by the single parent. Home ownership is a positive factor in determining participation probabilities, especially among single mothers. But the raw averages show that this form of asset-holding is more prominent in the married mothers sample.

Reported unemployment which was, on average, comparatively higher for working single mothers has a more significant impact on increasing their probabilities of being in the work force. English language skills, work disabilities, and educational level are also particularly important in determining work probabilities among single mothers. Overall, the results show similarity in the variables that determine participation probabilities for both groups. However, the magnitude of the associated coefficients differs between the two samples.

The wage–rate regression results (not shown here) showed English language proficiency to be important in explaining wage variations among Puerto Rican spouses, but not among female family heads. This may partly reflect the occupational distribution of working female householders, who, according to the Census data, tended to be more concentrated in lower blue-collar jobs where proficiency skills are not as highly valued. Additionally, labor market experience and its square explained a significant amount of the variation in wages only in the single mother's regression, giving support to the idea that female family heads may be working in different jobs from those of married mothers.

Table 3. Estimates of Annual Hours and Weeks, Conditional on the Labor Force Participation of Puerto Rican Women[a]

Variable	Annual hours		Annual weeks	
	Married mother	Single mother	Married mother	Single mother
Constant	1583**	1176**	21.0	36.9**
	(760)[b]	(610)[b]	(16.6)[b]	(12.1)
LnExogInc	−14.3**	−1.16	−.352**	−.202
	(5.60)	(7.80)	(.122)	(.154)
HusInc	.003	—	−00006	—
	(.002)	(—)	(.00006)	(—)
HomeOwnr	19.8	−45.1	1.45	−.173
	(62.0)	(136)	(1.35)	(2.68)
ForBirth	−11.3	69.3	−.661	.704
	(47.5)	(57.4)	(1.04)	(1.13)
PredWage	115	355	14.75	8.62
	(368)	(318)	(8.06)	(6.30)
Hus>65	277	—	8.03	—
	(263)	(—)	(5.78)	(—)
HusEmp	71.9	—	.261	—
	(95.3)	(—)	(2.09)	(—)
Kids≤6	−21.8	−38.4	−2.66	−4.76**
	(66.0)	(75.4)	(1.44)	(1.49)
Kids7–11	−16.9	40.8	−1.73	.021
	(52.1)	(51.7)	(1.14)	(1.02)
Kids12–17	32.7	21.2	.046	.066
	(39.3)	(39.2)	(.863)	(.719)
AdltR≥16	36.4	140**	1.33	2.54**
	(54.9)	(60.1)	(1.20)	(1.19)
AdltR>65	25.8	169	2.60	3.27
	(10.3)	(205)	(2.25)	(4.08)
AdltNonR	−77.0	−80.1	−1.55	−2.26
	(129)	(86.8)	(2.82)	(1.72)
FemAdltR	103	95.4	2.78	1.90
	(84.1)	(117)	(1.84)	(2.33)
EmpAdltR	13.9	−183**	−1.02	−1.83
	(66.6)	(86.0)	(1.46)	(1.70)
Unemp	−723**	−800**	−14.2**	−18.8**
	(158)	(123)	(3.47)	(2.44)
NevMar	—	−60.9	—	1.32
	(—)	(72.7)	(—)	(1.52)
Separate	—	−129**	—	−2.71**
	(—)	(63.7)	(—)	(1.26)
Widow	—	−53.2	—	−.560
	(—)	(108)	(—)	(2.15)
Married	—	−42.5	—	.094
	(—)	(127)	(—)	(2.52)

(continued)

Table 3. (*Continued*)

Variable	Annual hours		Annual weeks	
	Married mother	Single mother	Married mother	Single mother
Notable	−253	−15.6	−9.26**	−1.43
	(174)	(130)	(3.83)	(2.59)
Lambda	−249	−198	−2.72	−1.91
	(254)	(159)	(5.57)	(3.16)
Adjusted R^2=	.13	.22	.19	.35
n=	1,248	755	1,248	755

[a]All women are aged 18–64 and have children under 18 living at home.
[b]Standard errors are in parentheses.
**≤.01; *≤.05.
SOURCE: 1980 United States Census, 5% PUMS for New York City.

HOURS AND WEEKS WORKED ESTIMATES

Table 3 provides information on the annual hours and weeks-worked estimates for both groups. The dependent variable is either the average number of hours worked per year during 1979 or the average number of weeks worked per year. Working Puerto Rican householders and married mothers appear to have different responses to economic incentives and constraints. After controlling for labor force participation, such factors as the number of children six years or younger living at home, the number of adult relatives living in the household, the level of asset (exogenous) income flowing into the household, and work disability status all have mixed impacts on the hours and weeks worked by each group.

The annual hours regressions show that household composition factors are significant in explaining hours variations for single mothers, but not married mothers. Controlling for all other factors, the presence of adult relatives increases work hours significantly. The presence of employed adult relatives, conversely, decreases work hours suggesting that single mothers and other family members are substitutes in household production. However, the adult relative variables (e.g., AdltR ≥16, FemAdltR, and EmpAdltR) all increment each other, so that the impact of a working grandmother under the age of 65 would be the sum of the above variable coefficients. In such a case, the negative cross-substitution effect of an employed adult relative would be outweighed by the positive impact of other household members on the hours worked by the householder.

The estimation of a separate annual weeks equation increases the explanatory power of the model. After accounting for the labor force participation deci-

sion, the impact of adult relatives on the weeks-worked decision of single mothers remains strong, but the presence of employed adult relatives no longer significantly affects this decision. The presence of young children at home significantly diminishes the number of weeks worked supporting the contention that single mothers with small children may face constraints in working full-year jobs.

Estimates from the weeks-worked regression for married mothers show that work disabilities affect weeks but not hours worked. This may reflect budget constraints imposed by disability insurance programs. In addition, the wage just barely escapes significance (at 0.06) in the married mother's sample this time, suggesting that wage rates play a more important role in determining weeks rather than hours worked other things being equal.

The unemployment variable in both the annual hours and weeks equations are associated with significantly lower hours and weeks worked for both groups, although the impact is more pronounced in the regressions for single mothers. This could be due to the fact that 22% of the single mothers who worked in this sample received public assistance. If a woman receives assistance, such as AFDC, she is likely to work less, and net wages will be lower because of the implicit earnings tax contained in the program. The attempt to integrate work, welfare, and parenting, as a significant number of part-year, part-time Puerto Rican mothers do, is a difficult combination.

Even after controlling for individual and household characteristics, the unemployment variable accounts for a large proportion of the negative residuals in the hours and weeks equations. However, the interpretation of this variable is not straightforward. It could be capturing preferences and household constraints that are omitted from the present model or it could reflect the existence of labor rationing at high levels of weeks. Census data does confirm that in 1980, Puerto Rican women living in New York City had significantly higher unemployment rates than non-Hispanic black and white women and that unlike the other groups, these rates were higher in 1980 than those observed in 1960.

Although the explanatory power of the estimated labor supply equations are comparable to other results provided in the literature, there is still a significant amount of information that is not captured with these models. We do know that after accounting for the labor force participation decision, employed female heads and married mothers are not deterred from longer work hours by the presence of young children at home, although young children do diminish the number of weeks worked by single mothers. The findings also indicate that single mothers benefit from an intrahousehold labor supply pattern and that other household members contribute to her ability to vary the number of hours or weeks worked over the year. Increases in the level of exogenous income diminish the hours and weeks worked by married mothers, and work disabilities cause this group to work part-year. Single mothers who are separated work fewer hours and

weeks than do divorced single mothers, and both single and married mothers who report unemployment work less hours and fewer weeks.

SUMMARY

The participation regressions for single and married mothers reveal a large degree of similarity in the factors determining the work decision. Alternatively, the factors influencing the number of weeks and hours worked are rather different between the two groups. Of particular interest is the finding that single mothers who have other adults living in the household are more likely to participate in the labor force and to increase their working hours and weeks, although controlling for other factors the presence of employed household members acts to decrease the number of hours worked. Overall, these results support the contention (traditionally made most strongly in the research on black women) that household extension mechanisms can serve as an economic lifeline for female heads of household (MacPherson & Stewart, 1989; Tienda & Glass, 1985).

A comparative analysis of working Puerto Rican, non-Hispanic white, and non-Hispanic black female heads living in New York City showed that access to extended family networks had a consistently significant impact on the participation and hours/weeks decisions of black and Puerto Rican single mothers. However, extended households were not as important in determining the labor supply of married mothers or white householders, suggesting the need for further research into the economic importance of familial functioning and structure between household types and across racial and ethnic groups (Melendez & Barry Figueroa, 1990).

The present study of Puerto Rican female labor supply is regionally specific and the findings on the determinants of the participation and hours and weeks-worked decisions may be distinguishing particular patterns of economic survival that are unique to Puerto Rican women living in New York City. A recent study shows a tremendous diversity in family structure, employment status, income, and poverty rates among Puerto Ricans who live in areas outside of New York City (Bose, 1989). A few researchers have argued that economic strategies for Puerto Ricans seem to change on the basis of housing and transportation proximity, access to social service agencies, and employment opportunities in the local economy (Pelto, Roman, & Liriano, 1982; Rodriguez, 1989).

The public's increased expectation that single mothers not only work, but work enough hours and weeks to be able to support themselves and their children, implies that more information on the factors that affect this group's labor supply is needed. It is possible that housing constraints, social service agency rules on cohabitation, inadequate day-care services, low wage levels, and slack labor demand have acted to keep more Puerto Rican single mothers from par-

ticipating in the New York City labor market, and from working full time, full year, than would otherwise be the case. The findings on the effect of reported unemployment imply the need for more studies into preferences for part-year work and the extent of labor-market rationing.

The findings do support the need for further inquiry into the factors encouraging extended household arrangements. Housing programs that provide the space for extended families to live together, if they so choose, could have a positive employment impact on single mothers. The empirical results indicate that working single mothers are depending on family and friends for their child-care needs. As MacPherson and Stewart (1989) noted, increasing the supply of low-income housing could encourage extended family arrangements that would allow participants to pool resources and capture the benefits of the scale economies.

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APPENDIX

Variable Definitions for Table 1

Employed = 1 if respondent worked at least one week during 1979 and reported positive hours and earnings; 0 otherwise.

WageRt = real average hourly earnings in 1979, computed as annual earnings divided by weeks worked in 1979 × hours worked in 1979.

AnnHrs = weeks respondent worked in 1979 × hours worked in 1979.

WeeksWrk = weeks respondent worked in 1979.

LnWageRt = natural logarithm of real average hourly 1979 earnings.

ExogInc = other household income excluding all earning of respondent or husband (if applicable) or public assistance payments.

LnExogInc = natural logarithm or exogenous income.

Unemp = 1 if respondent reported looking for work or was on layoff from a job; 0 otherwise.

HusInc = husband's 1979 annual income (includes wages, salary, and self-employment income).

HomeOwnr = 1 if respondent owned the home in which she resided; 0 otherwise.

ForBir = 1 if born outside of U. S. mainland; 0 otherwise.

Exp = age of respondent in years minus completed education minus six.

ExpSq = experience squared.

NoEnglish = 1 if respondent's English proficiency was poor; 0 otherwise.

Education = number of years of education completed.

Hus >65 = 1 if respondent's husband was 65 years or older.

HusEmp = 1 if husband was self-employed; 0 otherwise.

Kids ≤ 6 = number of children 6 years or younger living in household.

Kids 7–11 = number of children 7–11 years old living in household.

Kids 12–17 = number of children 12–17 living in household.

AdltR≥16 = number of nuclear adults aged 16–64 living in household (does not include respondent, husband, or children aged 16–17).

FemAdltR = number of female nuclear adults living in household.

EmpAdltR = number of employed nuclear adults living in household.

AdltR>65 = number of nuclear adults over age 65 living in household.

AdltNonR = number of nonnuclear adults (fictive kin) aged 16–64 living in household.

Notable = 1 if respondent reported work or transportation disability; 0 otherwise.

NevMarr = 1 if single mother was never married; 0 otherwise.

Separate = 1 if single mother was separated from spouse; 0 otherwise.

Widow = 1 if single mother was widowed; 0 otherwise.

Married = 1 if single mother was married, but not with spouse; 0 otherwise.

Divorced = 1 if single mother was divorced; 0 otherwise.