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The Influence of Children on the Wage Rates of Married Women

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I. Introduction

The relationship between children and the earnings of married women is not well established in the labor literature. Human capital theorists, in general, argue that the presence of children may reduce the amount of training and work experience acquired by married women and hence the level of their current wage rates. In the most rigorous formulation of this argument, Mincer and Polachek (24) found that adding the number of children to their general women's earning equation, after accounting for experience, education, and depreciation of human capital, failed to enhance the explanatory power of their model. This result has been widely interpreted to mean that children only influence mothers' earnings indirectly, through the depreciation of their stock of human capital during the time they are out of the labor force and through the foregone accumulation of additional human capital, especially work experience. In a number of studies, age and experience variables have been presumed to capture the children factor (see: Cohen (11), Blinder (5), and Struyk (32)), and Oaxaca (26) recently used the number of children as a proxy for the number of years of lost work experience.

Despite this interpretation, the relationship between children and the earnings of mothers has not been absolutely determined. Mincer and Polachek also reported that the number of children variable may have some influence on earnings for sub-groups of highly educated women and women with stronger labor force attachments. In addition, Moore (25) recently showed that the number of children has a small but significant negative influence on the wage rates of mature married women, holding actual work experience, level of education, and a number of other factors constant. He also showed that the number of children may influence the earnings of women through their occupational distribution.

Polachek (28) also used a human capital approach within a family decision-making framework, to examine the effect of children on wage rates. His model explained different labor force and investment patterns between husbands and wives, but three of the ideas expressed are applicable to the different patterns between childless women and mothers. First, as mentioned above, the presence of children could truncate the educational and the work experience levels of mothers causing differences in wage levels and in market versus non-market uses of time between them and childless wives. Second, if the existence of children increases the non-market productiv-

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ity of mothers relative to childless wives, then the differences in the uses of time among the women will be intensified (see Gronau (15) and Heckman (19)). Third, the presence of children may cause working mothers to invest less in human capital while on the job. Sawhill (31), following the arguments of Becker (1) and Mincer (22), also suggested that married women tend to exclude themselves from occupations which embody a lengthy process of general training- the costs of which they must bear- unless they plan to work throughout the greater part of their life span. Also, employers may tend to exclude mothers from occupations which embody lengthy firm-specific training processes—the cost of which firms must pay—because of actual or perceived higher turnover rates for that group relative to other workers. Fleisher and Rhodes (12) attempted to measure the intensity of on-the-job training during a woman's market work experience, and concluded that women with high fertility invest relatively little of their market work time in training.

In this paper we examine the quantitative impact of children on the wage rates of married women with their spouse present. We estimate the direct effect over and above that due to the curtailment of our measures of levels of human capital, then explore the issues brought up by Polachek and Sawhill by showing the market's payoffs for training and experience to women with different numbers of children.[1] We attempt to capture the effect of children on wage rates under alternative specifications, each of which is designed to analyze a certain type of effect. Specifically, first a simple dummy variable having the value of one if the woman has children and zero otherwise is used to measure the direct effect of the presence of children in the context of a standard human capital model. Second, the total number of children is included to determine the average effects of children on wage rates. Third, a number of dichotomous variables measuring the number of children are used to test for non-linear effects of children on wage rates. Next, separate equations are estimated for married women having different sized families. This technique avoids the common pitfalls of using a single children variable or permitting only partial interaction between children and other determinants of wages. Finally, we use these separate equations to compute the logarithmic differential in the wage rates between childless married women and married women having families with various numbers of children. In this way we can determine how much of the wage differential between childless wives and mothers can be attributed to differences in worker qualifications and how much can be attributed to differences in coefficients.

In the second section of this paper the model and data employed to estimate the equations are discussed. The model developed is similar to the human capital model of income distribution in Becker (2) and Mincer (22) and widely used in the literature. Analysis of the results obtained with this model follows in the third section, and the fourth section is a summary.

II. The Data and the Variables

Our observations are taken from the National Longitudinal Surveys (NLS)[2] of mature women aged 30–44 in 1967 and are limited to married women with spouses and holding full-time jobs in 1972. The NLS provides micro data on a large number of socio-economic and personal characteristics of the respondents which are necessary for evaluating the influence of children on the wage rates of married women whose work experience is likely to be interrupted by periods of withdrawal from the labor force.

The dependent variable in our wage equations is the natural logarithm of each individual's hourly wage rate. Thus, the coefficients of the independent variables in our wage equations may be interpreted as the percentage change in the wage rate effected by unit changes in the explanatory variables.[3] The independent variables controlled for in this paper include the following:

1) Educational attainment measured as the number of years of formal schooling, without regard for type (academic versus vocational curricula) or quality.

2) Total experience measured by the total number of years in which the respondent worked more than six months since leaving school.

3) Current experience measured by the number of weeks the respondent has been working at her current job. Both experience variables should have a positive influence on earnings, but their relative strength is unclear. Mincer (22) suggests that the size of the experience coefficients may decline continuously if work experience is expected to be continuous and the purpose of investment is acquisition and maintenance of market earning power.[4] On the other hand, there is reason to doubt that the investment profile of married women is monotonic. Women who have returned to the labor market on a more permanent basis may have strong incentives for investments in human capital which may result in earnings profiles which are double-peaked and in a current experience coefficient which is larger than the total experience coefficient.

4) Training identified by a dummy variable whose value is one if the respondent has completed a training program and zero if not. This variable is expected to have a positive influence on wage rates.

5) A certificate dummy variable having a value of one if the respondent indicates whether a respondent "ever obtained a certificate required for practicing any profession or trade such as teacher, registered nurse, or beautician," and zero if not. An occupational certificate may enable the practitioner to earn monopoly rents (see Friedman (13), Rottenberg (30), and Maurizi (21)).

6) A dummy variable having the value of one if the respondent is black and zero if white is added to the model to isolate the influence of racial factors. Race must be held constant, or estimates of the other parameters will be biased because of the greater incidence of large and childless families and the higher female participation rates among black wives.[5]

7) Two zero-one dummy variables having the value of one if the respondent lives in the Central City of the SMSA and zero if not and one if the person lives in an SMSA but not the central city and zero if not are included. The reference group for judging the significance of these coefficients is persons not living in SMSA's. Also, another dummy variable (non-South) having a value of one for respondents living in the non-South and zero for others is used to control for the effects of geographic regions. Both the urban variables and the non-South variable are expected to have a positive influence on wage rates.

[1] We should point out that the direct effects of children that we find are essentially residual effects over and above those indirect effects that we are able to account for. These direct effects may measure discrimination or omitted indirect effects that the variables in our model have not captured. For example, if employers have information through interviews or experiences that productivity differences exist between mothers and non-mothers, perhaps due to absenteeism or quit rates, that justify wage differences, these differences would contribute to the direct effects that we measure.

[2] For a brief description of the NLS, see Parnes (27).

[3] The coefficients of dummy independent variables are actually approximations to the percentage changes in the dependent variable. Since the percentages in this study are relatively small, our approximations are quite close. See Halvorsen and Palmquist (16).

[4] This conclusion follows from Becker's (2) and Ben Porath's (4) models of optimal distribution of investment expenditures over the life cycle and the simple fact that, with finite lifetimes, later investments produce returns over a shorter period, so total benefits are smaller.

[5] See: Cain (8), Bowen and Finegan (7), and Bell (3).

TABLE 1. Earnings Functions of Wives Working Full-time, 1972

Dependent Variable Log (Hourly Wage) (1)	*Mature Women* (2)	(3)	(4)
Race	.0134	.0361	.0293
	(.033)	(.033)	(.028)
Education	.0288+	.0277+	.0281+
	(.006)	(.006)	(.006)
Non-South	.1080+	.1092+	.1102+
	(.026)	(.026)	(.026)
Training	.0658+	.0679+	.0688+
	(.030)	(.030)	(.030)
Current Experience	.00023+	.00022+	.00022+
	(.00004)	(.0000)	(.00004)
Certificate	.0244	.0250	.0253
	(.037)	(.037)	(.037)
Hours Worked	−.0198+	−.0198+	−.0199+
	(.002)	(.002)	(.002)
Total Experience	.0035	.0029	.0029
	(.002)	(.002)	(.002)
SMSA Central	.1584+	.1533+	.1546+
	(.030)	(.030)	(.030)
SMSA Non-Central	.0728+	.0723+	.0719+
	(.029)	(.028)	(.029)
Other Family Income	.00001+	.00001+	.00001+
	(.0000)	(.0000)	(.0000)
Professional	.2197+	.2199+	.2198+
	(.046)	(.045)	(.046)
Managerial	.1349+	.1311+	.1277+
	(.060)	(.059)	(.060)
Sales	−.2464+	−.2512+	−.2502+
	(.075)	(.074)	(.075)
Craft	−.1517	−.1582+	−.1614+
	(.078)	(.078)	(.078)
Operatives	−.0729	−.0763+	−.0773+
	(.038)	(.038)	(.038)
Private Household	−.9204+	−.9033+	−.9169+
	(.096)	(.095)	(.095)
Service	−.2322+	−.2251+	−.2326+
	(.042)	(.041)	(.041)
Farm Laborers	−.3293	−.3289	−.3311
	(.172)	(.170)	(.171)
Labor, except Farm and Mine	.0567	.0555	.0628
	(.129)	(.129)	(.129)
Presence of Children	−.0492	—	—
	(.030)		
Number of Children	—	−.0212+	—
		(.007)	
One Child Dummy	—	—	−.0128
			(.037)
Two Child Dummy	—	—	−.0472
			(.038)

TABLE 1. (Continued)

Dependent Variable Log (Hourly Wage) (1)	*Mature Women* (2)	(3)	(4)
Three Child Dummy	—	—	−.0727
			(.040)
Four or More Child Dummy	—	—	−.0947+
			(.039)
Constant	1.114	1.1399	1.1410
$\bar{R}^2$	.5881	.5931	.5894
S.E.E.	.2815	.2798	.2811
N	599	599	599

+Coefficients are significant at the .05 level with standard errors given in parentheses.

8) The number of hours worked per week (HOURS) as a separate independent variable in the model. Mothers may be limited in the hours they wish to work and willing to trade higher wages for more flexible hours of work (see Cohen (11), Mincer and Polachek (24), and Struyk (32)). Most, but not all (see Bognanno, Hixson, and Jeffers (6), Moore (25), and Struyk (32)), empirical studies of women in the labor force have concluded that the substitution effect dominates the income effect.

9) Zero-one dummy variables are used for ten census occupational categories with the Clerical Workers Group being omitted to serve as the reference base for measuring the statistical significance of these variables.[6] We realize these categories are broad, but they are the standard classifications used in this type of empirical model where the categories serve as general control variables.

10) A number of alternative formulations for the children independent variable are considered. Mothers who dropped out of the labor force, because the presence of children made their reservation wages higher than their market wages, are omitted from the sample. This may bias our measurement of the effects of children on female market wage rates downward although Heckman found no statistically significant selectivity bias when he estimated the wage rates of women (see Heckman 18)).

11) We predict a positive correlation between other family income and the wage rates of married women.[7]

III. Empirical Results

Table 1 shows the regression coefficients for our human capital model using our three different measures of the children variable. In Column 2 the presence of children is tested

[6]Because of the potential intercorrelation between occupation and education (Hanoch (17)) and the number of children (Moore (25)), one must be careful in interpreting the coefficients of these variables since they are presumed to be independent under ordinary least-squares regression analysis.

[7]We interpret a positive coefficient on other family income to imply that, *ceteris paribus,* it will take a higher wage to induce a woman whose spouse has a high income level to participate in the labor force, and we would not expect interaction terms between family income and the other independent variables in the model to have significant coefficents. Hence a positive coefficient does not imply that the market would reward a woman with a large amount of other income more highly than a woman with a lower amount of other income for the same level of endowments. The general problem of whether results are biased due to selecting a sample comprised only of working women has been studied by Heckman. In Heckman (18), he found no statistically significant effects of the potential bias in his wage equation, although he did find bias in his estimation of hours of work.

using a dummy variable having the value of one if the woman had children and zero otherwise. Column 3 includes the number of children as a variable to detect the average influence of additional children on the wages of these married women. In Column 4 zero-one dummy variables are included for different family sizes to examine the effects of different numbers of children on wage rates.

Our major findings are: (1) The model explains approximately 59 percent of the variance in the wages of mature women, regardless of which children variable is included. (2) The magnitude and significance of the other independent variables are approximately the same no matter which children variable is used. All of the significant coefficients in these regressions have the anticipated influence on wage rates. (3) The coefficient on the children dummy variable in Column 2 fails to obtain statistical significance. This suggests that the influence of children on married women's wage rates is primarily indirect through a reduction in education, training, or work experience. (4) On the other hand, the number of children variable listed in Column 3 is significant. An increase of one child, in family size on average, directly reduces the hourly wage rate by 2.12 percent, *ceteris paribus*.[8] Finally, (5) the zero-one dummy variable coefficients for the number of children in Column 4 uniformly increase in size and statistical significance as the number of children rises. The three child dummy variable is significant at the .10 level and the four or more child dummy variable is significant at the .05 level. The effects of these variables are quite large. According to our estimates, married women having three children or four or more children earn 7.27 percent and 9.47 percent lower wages than married women with no children, other variables held constant. This strong effect of large numbers of children on the wage rates could imply that these mothers are less career-oriented in the labor market than mothers with fewer children. This lower level of career-orientation may be accompanied by lower levels of investment in human capital (the indirect effect of children), and perhaps a reluctance on the part of employers to hire mothers of several children in high-paying jobs.

In Table 2 we report estimates of separate equations for different sized families.[9] Among the individual coefficients, the training and managerial variables have statistically significant larger values for the no child group than for most of the other groups. These results are consistent with Section I. Since the effects of education, experience, hours worked, and other variables are held constant, these differences suggest three possible interpretations. First, if all women are in similar training programs and similar managerial occupations, employers may be discriminating against mothers on the basis of pay. Second, employers may be excluding mothers from certain types of training programs and from certain types of managerial positions. Third, mothers may be choosing different types of training programs or different kinds of managerial jobs which are more compatible with raising children.

Two results are not predicted in Section I. The first is the relatively low predictive power of the mothers-of-two-children equation. The

[8]Regressions 1 and 2 were also run on data for young married women, aged 19–29 in 1972, and are available from the authors upon request. The results were similar to those for the mature women, except the number of children variable was not significant for the young women. Since a primary effect of children on young mothers is to cause them to leave the labor force, young mothers most affected by family size are not included in our sample of full-time workers. For this reason, we focus our attention on the mature women.

[9]Chow (9) tests confirm that the wage structures for childless wives are significantly different from those of married women having three or more children. Due to empty occupation categories, coefficients could not be completely matched up for Chow tests between childless wives and wives with other numbers of children.

TABLE 2. Earnings Functions Of Mature Working Wives by Number of Children, 1972

Dependent Variable Log (Hourly Wage) (1)	*No Child* (2)	*One Child* (3)	*Two Children* (4)	*Three Children* (5)	*Three or more Children* (6)
Race	−.0550	−.0171	.0530	.1237	.1080+
	(.072)	(.076)	(.104)	(.075)	(.050)
Education	.0292+	.0358+	.0298	.0108	.0210+
	(.012)	(.014)	(.016)	(.015)	(.010)
Non-South	.0182	.0752	.1331+	.1429+	.1703+
	(.054)	(.060)	(.059)	(.064)	(.045)
Training	.2997+	−.0052	.0336	.0029	.0192
	(.064)	(.066)	(.079)	(.075)	(.048)
Current Experience	.00023+	.00021+	.00024+	.0004+	.00023+
	(.00007)	(.00009)	(.00012)	(.00014)	(.00009)
Certificate	−.0148	−.0341	−.0221	.1699	.0446
	(.082)	(.084)	(.084)	(.093)	(.061)
Hours Worked	.0028	−.0255+	−.0146	−.0294+	−.0233+
	(.006)	(.006)	(.008)	(.004)	(.003)
Total Experience	.0020	−.0038	.0078	−.0075	.0018
	(.004)	(.004)	(.005)	(.006)	(.003)
SMSA Central	.0601	.0623	.1067	.3421+	.2621+
	(.067)	(.067)	(.074)	(.071)	(.047)
SMSA Non-Central	.0333	.0561	.0375	.1010	.1091+
	(.062)	(.069)	(.064)	(.067)	(.046)
Other Family Income	.00001+	.00002+	.0000	.00001+	.00001+
	(.00001)	(.0000)	(.0000)	(.0000)	(.00000)
Professional	.1259	.3261+	.1827	.1512	.2797+
	(.090)	(.103)	(.099)	(.107)	(.080)
Managerial	.4306+	.0544	−.1201	.2632	.3135+
	(.139)	(.116)	(.113)	(.287)	(.128)
Sales	−.1689	−.3527	−.2774	−.0743	−.3707+
	(.112)	(.219)	(.168)	(.273)	(.156)
Craft	−.0297	.0021	−.2136	−.6496+	−.3492
	(.116)	(.178)	(.185)	(2.80)	(.192)
Operatives	.0608	−.1213	−.1198	−.0699	−.0694
	(.080)	(.085)	(.091)	(.091)	(.060)
Private Household	−.7731+	−.0971	—	−.6997+	−1.1826+
	(.145)	(.310)		(.285)	(.134)
Service	−.2403+	−.2176+	−.1987	−.2699+	−.2815+
	(.091)	(.107)	(.102)	(.102)	(.059)
Farm Laborers	−.4419	—	−.2454	—	−.3409
	(.286)		(.335)		(.234)
Labor, Except Farm & Mine	.4864	—	−.0693	.1465	.0074
	(.276)		(.227)	(.272)	(.194)
Constant	.1109	1.4310	.9306	1.6171	1.21476
$\bar{R}^2$	.6734	.5207	.3950	.6672	.6837
S.E.E.	.2588	.2790	.2933	.2596	.2628
N	132	118	129	100	220

+Coefficients are significant at the .05 level with standard errors given in parentheses.

$\bar{R}^2$ of .395 is far below the $\bar{R}^2$s of the other regressions, and only two coefficients, those on the current experience and the non-south variables, are significantly different from zero. The behavior of the women in our two-child sample conforms less to the theoretical predictions than does the behavior of the women in the other samples.

The second result concerns the significance of the coefficients on the current experience variable and the lack of significance of the coefficients on the total experience variable. The coefficients on the current experience variable are significantly different from zero in all five samples, but none of the coefficients on the total experience variable are significant. Apparently women either become employed in jobs early in their labor market careers that do not add much to later earnings, or our total experience variable is not suitable for capturing the effect.

Another interesting result listed in Table 2 is that hours worked is significantly negatively related to wages for mothers of one child or for mothers of large families (three children or three or more children) and is positively, but not significantly related to wages of childless wives and mothers of two children. This could suggest different strengths of income and substitution effects for childless wives versus women with children. Mincer (23, p. 67) has suggested that the same increase in income may influence the hours worked of mothers less than those of childless wives because substitutes for wife's time are more difficult to find when children are present, causing a greater proportion of leisure to be taken away from market, rather than non-market, work time. If the effect is strong enough, married women with children will take more leisure when given a wage increase, because the substitution effect is less than the income effect on market work, whereas childless wives could respond by working more in the market. Moore (25) found exactly these results in his study of married women; and Struyk (32) and Bognanno, Hixson, and Jeffers (6) present results suggesting that certain groups of women have backward-bending labor supply curves.[10]

To shed further light on the influence of children on the wages of married women, we can use Table 2 and write the difference between the estimated average wage of those with no children and those with any number of children as:

$$\log W_i^o - \log W_i^c = (\beta_o^o - \beta_o^c) + \Sigma_j \beta_j^o (\bar{x}_j^o - \bar{x}_j^c) + \Sigma_j \bar{x}_j^c (\beta_j^o - \beta_j^c),$$

where the superscripts o and c represent respondents without and with children, respectively. The $\bar{x}_j$ are the average values of the characteristics used as independent variables, and the β_j are the corresponding regression coefficients. On the right hand side of the equation, the first term is the difference in shift coefficients, representing the unexplained portion of the difference in the dependent variables. The second term is the value in the no child equation of the differences in the average characteristics of the two groups. The third term is the difference between how the no child equation would value the characteristics of the child group and how the child equation actually values them, reflecting different market evaluations of the same bundle of characteristics. The sum of the first and the third terms is typically attributed to discrimination.[11] However, to the extent that the

[10]One other result in Table 2 and also in Table 1, that should be mentioned is that the craft occupation coefficient is negative in seven, and significantly negative in three, of the eight regressions. Since the occupation categories are broad, and the craft worker category includes several low-paying occupations, we do not attribute much information the the variable, except for the vague suggestion that women are employed in lesser craft-type jobs compared to their positions in clerical jobs (i.e. the base group).

[11]See Blinder (5) for a further explanation of this decomposition technique. Also see Thurow (33, Chp. 5).

included variables do not fully capture the concepts they represent and that other quality considerations are not proxied, one should be careful about this interpretation. Another problem with this decomposition technique is that the proportions of the wage differential attributed to differences in slope coefficients and to the difference in the shift coefficients may be sensitive to the reference group selected. When the distribution of average characteristics differs between the two groups, alternative choices of the reference group may cause a change in the differences of the slope coefficients and an off-setting change in the differences in the shift coefficients—the first and the third terms in the above equation. The total typical measure of discrimination, the first plus the third term, however, is insensitive to which reference group is selected.

Results of the decomposition of the wage advantage for childless women over women having three or more children are summarized in Table 3. We find that the regression coefficients (other than the constant) account for a 113.53 percent wage differential in favor of childless married women. That is, given the average characteristics of the three or more children women in the sample, the difference between how the no child equation would value those characteristics and how the three or more children equation actually values them gives childless women this large advantage. Table 3 also shows a small (7.64 percent) endowment, i.e., qualification, advantage in favor of childless wives. Almost all of this endowment effect, 7.03 percent, can be attributed to the two experience variables. Women with three or more children acquire less total labor force experience and less experience on the current job than do childless wives, indicating that the presence of children does curtail the accumulation of some types of human capital. It is interesting that the wage advantage of experience is due to endowment not to coefficient effect. Employers apparently reward both groups of women equally for their work experience.

In contrast, differences in coefficients reveal different payoffs for similar education and training. Despite negligible differences in educational endowments (−.23 percent), childless women have a 9.01 percent wage advantage due to education. This raises the issue of whether mothers of large families have let their educational skills depreciate or whether employers believe they have. Although their completion rates of training programs are virtually identical, married women without children have an 18.49 percent wage advantage over married women having three or more children. This suggests that mothers of large families select training programs with flatter age-earnings profiles or employers restrict their entry into training programs which will provide steeper age-earning profiles. It may also be possible that childless women completed their training programs substantially earlier than mothers of large families and the wage differential on this coefficient reflects differences in the pay out period on the investment in this type of human capital.

The occupational variables collectively account for a 3.71 percent wage advantage in favor of childless women. Only .34 percent is caused by differences in occupational distributions. However, it does appear that mothers are more often employed in service jobs than are childless wives. The other 3.37 percent is caused by differences in the way these groups of workers are rewarded within the occupational categories.

The coefficient effect on the location variables dominates the small endowment effect and favors mothers. The coefficient effect arises from the differences between the significant coefficients on the non-south and the two SMSA variables for mothers and the insignificant coefficients on those variables for childless wives. The coefficient effect on the eco-

TABLE 3. Analysis of No Child Versus Three or More Children Wage Differential

Independent Variables	*Total Amount Attributable* $\Sigma_i \beta_i^o \bar{X}_i^o - \Sigma_i \beta_i^c \bar{X}_i^c$	*Amount Attributed To Endowments* $\Sigma_i \beta_i^o (\bar{X}_i^o - \bar{X}_i^c)$	*Amount Attributed To Coefficients* $\Sigma_i \bar{X}_i^c (\beta_i^o - \beta_i^c)$
Education	9.01%	−.23%	9.24%
Training	18.49	0	18.49
Current Experience	5.75	5.75	0
Total Experience	1.55	1.28	.27
Location Variables[1]	−15.29	.65	−15.95
Economic Variables[2]	97.96	−.14	98.11
Professional	−2.60	−.23	−2.37
Managerial	.59	.33	.26
Sales	−.39	−.66	.27
Craft	.18	−.11	.29
Operatives	2.42	−.30	2.72
Private Household	.34	−.59	.93
Service	2.97	2.11	.86
Farm Labor	−.18	−.14	−.04
Labor, except Farm	.38	−.07	.46
Subtotal	121.18	7.64	113.53
Shift Coefficient	−110.39		
Total	10.79		

[1]Location variables include the Non-South variable and the two SMSA variables.
[2]Economic variables include: Race, Certificate, Hours Worked, and Other Family Income.
Note: A positive sign indicates an advantage for childless women; a negative sign denotes an advantage for three or more children women.

nomic variables gives a large advantage to childless wives, and is due almost entirely to the hours worked effect discussed earlier. The coefficient on hours worked in the no child equation is not significantly different from zero, reflecting roughly offsetting income and substitution effects. The significant negative coefficient in the equation for mothers shows the income effect outweighting the substitution effect. This relationship may be due to mothers preferring to take additional leisure away from market, rather than non-market, work time.

Together the coefficient and endowment effects cause the regressions to yield a 121.18 percent wage differential in favor of childless married women, exclusive of the constant term. However, this advantage is substantially offset by the 110.39 percent shift coefficient in favor of the married women having large families. The size of this shift coefficient effect can be influenced by a variety of factors. Misspecified variables, the choice of which alternatives are used as the base groups for the dummy variables, other unmeasured quality aspects of the model, and discrimination are among the factors. The sum of endowment plus all coefficient effects leave childless women a net 10.79 percent advantage in wage rates. Since the average number of children in the three or more child families was 4.17, this implies a 2.59 percent decrease, on average, per child in the wage rates of mothers of large families. This result is, of course, consistent with our earlier findings.

Thus far we have focused on the factors accounting for wage differentials between married women having no children and mothers of large (three or more children) families. Whether our findings are equally applicable to mothers having only one or two children remains to be seen. Table 4 presents a summary of the decomposition of the wage differentials for several of the pairs of regressions reported in Table 2. Examination of Table 4 reveals that the education variable has very large positive coefficient effects favoring childless women compared to mothers having large families, but negative coefficient effects for childless women compared to mothers having one or two children.

Further, the training variable shows a very consistent pattern with childless wives receiving a large total wage advantage (17 to 20 percent) for this factor despite very small differences between training completion rates for the various groups of women (i.e., the endowment effects are small). Either married women having children are participating in different types of training programs, or employers are discriminating against them with respect to wage payments. As noted previously, the differences in wage payments for this factor could result from training being undertaken at different times. However, since the wage disadvantage is just as great for mothers with a few children as mothers having large families this interpretation seems less likely. It appears that mothers are systematically excluded from some types of training programs or they choose to enter training programs more compatible with their greater home time requirements.

As expected, children tended to reduce the current and total work experience of mothers and yield a positive wage advantage for childless wives. All of the endowment effects for the two experience variables are positive, indi-

TABLE 4. Decomposition Analysis of Wage Differentials Between Groups of Married Women

Groups (1)	*Education (2)*	*Training (3)*	*Current Experience (4)*	*Total Experience (5)*	*Location[1] Variables (6)*	*Economic[2] Variables (7)*	*Occupation Variables (8)*
0-Child vs. One Child							
Endowment	−.55	1.50	1.19	.45	.67	−.94	−4.06
Coefficient	−7.51	18.60	.92	10.38	−3.73	104.35	3.62
Total	−8.06	20.07	2.11	10.83	−3.06	103.41	−.44
Net Wage Differential Including Constant = −7.14							
0-Child vs. Two Child							
Endowment	−2.36	−1.16	4.72	1.12	.23	−2.92	−6.36
Coefficient	−.72	18.57	−.31	−8.42	−8.41	80.76	7.04
Total	−3.08	17.41	4.41	−7.31	−8.18	77.89	.13
Net Wage Differential Including Constant = −.65							
0-Child vs. Three Child							
Endowment	−1.90	−2.43	4.84	1.14	.34	−1.28	−2.79
Coefficient	21.79	21.96	−5.12	12.28	−17.97	119.35	3.60
Total	19.89	19.54	−.28	13.73	−17.63	118.07	.83
Net Wage Differential Including Constant = 4.83							
0-Child vs. Three or More Child							
Endowment	−.23	0	5.75	1.28	.65	−.14	.34
Coefficient	9.24	18.49	0	.27	−15.95	98.11	3.37
Total	9.01	18.49	5.75	1.55	−15.30	97.96	3.71
Net Wage Differential Including Constant = 10.79							

[1]Location variables include Non-South and the two SMSA variables.
[2]Economic variables include Race, Certificate, Hours Worked, and Other Family Income.
Note: A positive sign indicates an advantage of 0-Child women; a negative sign denotes an advantage for the children group.

cating a substantial advantage for married women having no children. The total wage advantage due to the experience variables, including coefficient and endowment effects, but excluding the effect of the constant term, for childless wives was 12.94 percent compared to one child mothers, 13.45 percent compared to mothers having three children, and 7.30 percent compared to mothers having three or more children. The positive endowment effect for childless wives relative to women having two children is more than offset by the large negative coefficient effect on these experience variables. The results of the occupation variables indicate fairly weak effects, but a somewhat consistent pattern with the endowment effect tending to favor mothers and the coefficient effect favoring childless wives. That is, the results show mothers tend to take jobs in the higher-paying occupational categories, but are paid less than childless wives within each category. The lower wages may be due to employer beliefs about absenteeism or probability of turnover on the job, or due to the quality of training obtained. Since the occupational categories are so broad, caution must be used in interpreting these effects. The net result of the effects, however, is a very small wage advantage from the occupation variables favoring the childless women. Finally, the coefficient effects on the location and the economic variables tend to follow the same pattern for the one and two child estimations as they do for mothers with three or more children. The coefficient effect on the location variables favors mothers, and the effect on the economic variables gives a large advantage, primarily through the hours worked coefficient, to childless wives.

One other point is highlighted in Table 4. The net wage differential favoring married childless women, including the constant term from the regression, increases steadily from −7.14 percent over one child mothers to +10.79 percent over mothers having three or more children. The market seems to accept one and two-child families as the norm, but additional children appear to cause substantial wage disadvantages to married women.

IV. Summary and Conclusions

This paper used a post-schooling investment model of human capital to isolate the influence of children on the current wage rates of married women who work full-time. Using ordinary-least-squares regression analysis, we found that a simple zero-one dummy variable indicating the presence of children in the household failed to have a significant direct influence on wage rates, but that a continuous number of children variable had a small but significant direct negative influence. Using zero-one dummy variables for different family sizes we found significant effects of children on wage rates. According to our estimates, married women having three children or four or more children earn approximately 7.29 percent and 9.47 percent lower wages than married women with no children, while women with one or two children earn about the same as, or a little more than, childless women, *ceteris paribus*.

We estimated separate equations for married women having different sized families, and used decomposition analysis to compute the logarithmic differential in the wage rates between childless married women and married women having different numbers of children. Our analysis showed that having a large (3 or more children) family markedly reduced investment in education and/or that employers believe it has this effect. Childless married women are compensated for completing training programs at a much higher rate than are women with children. This result is the same for mothers of small or large families and suggests that mothers are systematically excluded from some types of training opportunities or that their greater home-time requirements force them to choose less rewarding training alternatives.

As expected, children tend to reduce the current and total work experience of mothers causing them to earn lower wage rates than childless women. Very little of the difference in the wage rates of childless women and mothers was associated with their occupational classification. There was a slight tendency for mothers to be employed in the higher paying occupational categories, but within each category, on average, mothers received somewhat lower wage rates.

As a general conclusion, we found that mothers of three or more children earned substantially lower wage rates than childless wives, whereas mothers of one or two children earned about the same as or slightly more than childless wives. It would appear that married women who plan to reenter the workforce after family formation should limit their family to two or fewer children or plan to suffer significant economic consequences.

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