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CONTRIBUTIONS TO FAMILY INCOME: PROPORTIONS AND EFFECTS

MARIA SOPHIA AGUIRRE*

INTRODUCTION

Beginning in the late fifties and early sixties the demand for childcare significantly increased as women moved into the workforce. Since then, both the number of women leaving the home and the number of children entering day care has steadily increased.¹ Both movements have resulted in new expenses being incurred on the part of families with two working parents, including, but not limited to, childcare. Much research has been carried out regarding both the cost and quality of childcare in the United States,² as well as the determinants behind a woman's

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1. For the U.S. in 2004, the number of mothers of children under six who worked full-time was 40%, part-time was 17%, unemployed was 4%, and not in the labor force was 39%. These numbers, while significantly higher than in the late fifties, in fact reflect a decline in the number of women working full-time when young children are present in the household, which began in the late 1990s. In fact, this decline is more accentuated when children twelve months or younger are present. In 2004, mothers' labor force participation was 52.9%, a decline from 59% in 1998. BUREAU OF LABOR AND STATISTICS, U.S. DEP'T OF LABOR, WOMEN IN THE LABOR FORCE: A DATABOOK 1 (2005), available at <http://www.bls.gov/cps/wlf-databook-2005.pdf>.

2. The literature has extensively studied child-care including its availability, quality, cost, the appropriate role of the government and the family in providing care for children, and the labor supply and child care demand, among other topics. It has also extensively studied the conditions under which women are working. For a review of the literature and findings on quality of childcare see generally THE ECONOMICS OF CHILD CARE (David Blau ed., 1991), MARCY WHITEBROOK, CHILD CARE EMPLOYEE PROJECT, WHO CARES? CHILD CARE TEACHERS AND THE QUALITY OF CARE IN AMERICA (1990); JOHN M. LOVE ET AL., MATHEMATICA POLICY RESEARCH, ARE THEY IN ANY REAL DANGER? WHAT RESEARCH DOES—AND DOESN'T—TELL US ABOUT CHILD CARE QUALITY AND CHILDREN'S WELL-BEING (1996); JULIA OVERTURF JOHNSON, U.S. CENSUS BUREAU, WHO'S MINDING THE KIDS? CHILD CARE ARRANGEMENTS: WINTER 2002 (2005), available at <http://www.census.gov/prod/2005pubs/p70-101.pdf>; Nat'l Inst. of Child Health and Human Dev. (NICHD) Early Child Care Research Network, *Familial Factors Associated with the Characteristics of Nonmaternal Care*, 59 J. MARRIAGE & FAM. 389 (1997), [hereinafter NICHD, *Familial Factors*]; EARLY HEAD START RESEARCH, U.S. DEP'T OF HEALTH & HUMAN SERVS., LEADING THE WAY: CHARACTERISTICS AND EARLY EXPERIENCES OF SELECTED EARLY HEAD START PROGRAMS (2000), available at http://www.acf.hhs.gov/programs/opre/ehs/ehs_

decision to work outside the home.³ The literature thus far suggests that the use of childcare, or of some close relative, as a substitute for the presence of one of the spouses (for the most part this spouse is the mother) in the rearing of children is far from optimal.⁴ The reasons why households continue to seek child-

resrch/reports/leadingvol_3/leading_vol3.pdf. For a review of the literature on family factors related to the use of childcare see SANDRA L. HOFFERTH ET AL., URBAN INSTITUTE REPORT 91-5, NATIONAL CHILDCARE SURVEY 1990 (1992); and Nat'l Inst. of Child Health and Human Dev. Early Child Care Research Network, *Early Child Care and Self-Control, Compliance, and Problem Behavior at Twenty-Four and Thirty-Six Months*, 69 CHILD DEV. 1145 (1998). For policy related studies see James Alm et al., *Policy Watch: The Marriage Penalty*, 13 J. ECON. PERSPECTIVES 193 (1999); Edward F. Zigler & Elizabeth Gilman, *Not Just Any Care: Shaping a Coherent Child Care Policy*, in CHILDREN, FAMILIES, AND GOVERNMENT 94 (Edward F. Zigler et al. eds., 1996); and IEL POLICY EXCH., INST. FOR EDUC. LEADERSHIP, FEDERAL PROGRAMS FOR CHILDREN & FAMILIES: A TOOL FOR CONNECTING PROGRAMS TO PEOPLE (2000), available at <http://www.iel.org/pubs/pubs/fedprogs.pdf>.

3. Typically the secondary earner in a family is the mother. There have been four main reasons raised by the literature for women entering the labor force: insufficient income of the husband, alternative to poverty if a woman is a single parent, sense of fulfillment, and the desire on the part of a woman for bargaining power. For a review of the literature on these factors see GENDER, FAMILY, AND ECONOMY: THE TRIPLE OVERLAP (Rae Lesser Blumberg ed. 1991) [hereinafter GENDER, FAMILY, AND ECONOMY]; ARLIE RUSSELL HOCHSCHILD, *THE TIME BIND: WHEN WORK BECOMES HOME AND HOME BECOMES WORK* (1997); JENNIFER ROBACK MORSE, *LOVE & ECONOMICS* (2001); BRIAN C. ROBERTSON, *THERE'S NO PLACE LIKE WORK* (2000); Irwin Garfinkel, *The Child-Support Revolution*, 84 AM. ECON. REV. 81 (1994); Veronica Jaris Tichenor, *Status and Income as Gendered Resources: The Case of Marital Power*, 61 J. MARRIAGE & FAM. 638 (1999) [hereinafter Tichenor, *Status and Income as Gendered Resources*]; and Jennifer Roback Morse, *Competing Visions of the Child, the Family, and the School*, in EDUCATION IN THE TWENTY-FIRST CENTURY 147 (Edward P. Lazear ed., 2002). It is worth noting that women work more hours than men in both developed and developing countries and spend more hours in non-market activities, mainly in their homes. The 2003 *Human Development Report* indicates that, on average, women in developing countries work at least 20% more hours per day than men and they allocate about 60% of their time towards the family. In developed countries, the difference is 5%, but they still allocate 64% of their time towards the family. UNITED NATIONS DEV. PROGRAMME (UNDP), *HUMAN DEVELOPMENT REPORT 2003* (2003), available at http://hdr.undp.org/reports/global/2003/hdr03_complete.pdf.

4. Literature shows detrimental health, cognitive, behavioral, psychological, and emotional effects on children. See generally Nat'l Inst. of Child Health and Human Dev. Early Child Care Research Network, *Child Care and Mother-Child Interaction in the First 3 Years of Life*, 35 DEVELOPMENTAL PSYCH. 1399 (1999); Nat'l Inst. of Child Health and Human Dev. Early Child Care Research Network, *Early Child Care and Self-Control, Compliance, and Problem behavior at Twenty-Four and Thirty-Six Months*, 69 CHILD DEV. 1145 (1998); NICHD, *Familial Factors*, *supra* note 2; Claudio Violato & Clare Russell, *Effects of Nonmaternal Care on Child Development: A Meta-Analysis of Published Research*, in THE CHANGING FAMILY AND CHILD DEVELOPMENT 268-301 (Claudio Violato et al. eds., 2000); Mag-

care in spite of such evidence are many and diverse. Among them, three relevant ones are often advocated: economic needs of the family, access to health benefits, and the needs of mothers to develop professionally outside the home.⁵ Among the economic needs, especially difficult is the situation of single mothers and their children, all of whom are at high risk of falling into poverty.⁶ In order to be able to work, single mothers require, for the most part, the use of some type of paid childcare. In the case of married couples, economic need has taken the lead among the reasons provided by the second earner as to why they entered the work force.

A number of studies have attempted to assess the magnitude of the contributions of wives' earnings⁷ to family income.⁸ Overall, findings show that earnings generally remain relatively low, ranging from one-fourth to one-third of total husband-wife earnings. Nevertheless, wives' incomes are seen as benefiting the family in other ways. These include increasing the chances that the family will make an income that keeps them above the poverty line,⁹ the provision of a buffer against economic hardships associated with family crises such as unemployment, illness, or family dissolution through death or divorce,¹⁰ and access to health insurance.¹¹ Another potential benefit of maternal

gie Gallagher, *Day Careless*, NAT'L REV., Jan. 26, 1998, at 37; Sandra Scarr, *American Child Care Today*, 53 AM. PSYCHOLOGIST 95 (1998).

5. See *supra* note 2.

6. See Maria Sophia Aguirre, *Family, Economics and the Information Society—How Are They Affecting Each Other?*, 28 INT'L J. SOC. ECON. 225 (2001); Maria Sophia Aguirre, *The Family and Economic Development: Socioeconomic Relevance and Policy Design*, in THE FAMILY IN THE NEW MILLENNIUM (A.S. Loveless & T.B. Holman eds., forthcoming 2006).

7. Given that in most cases, the secondary earner is the woman, for narrative simplification we will identify hereon the wife with the secondary earners.

8. A review of the literature can be found in Sandra L. Hansen, *The Economic Costs and Rewards of Two-Earner, Two-Parent Families*, 53 J. MARRIAGE & FAM. 622 (1991).

9. See Sheldon Danziger et al., *Work and Welfare as Determinants of Female Poverty and Household Headship*, 97 Q. J. ECON. 519 (1986).

10. See Marianne A. Ferber & Bonnie Birnbaum, *One Job or Two Jobs: The Implications for Young Wives*, 7 J. CONSUMER RES. 263 (1980).

11. There is fairly compelling evidence from the literature that health insurance plays an important role in the labor supply decision of secondary earners. See Jonathan Gruber & Brigitte C. Madrian, *Health Insurance, Labor Supply, and Job Mobility: A Critical Review of the Literature* (Nat'l Bureau of Econ. Research, Working Paper No. 8817 (2002)), for review of the literature in this point.

employment is increased savings; however, little research has been carried out on this last topic.¹²

Most studies have evaluated the wife's contribution by using disposable income rather than net income. As mentioned previously, when the mother enters the labor force these families incur expenses that were not present before. Consequently, it is important to evaluate these earnings in terms of net income rather than disposable income to assess the net contribution of the mother to family income. This paper aims to fill a gap in the literature by analyzing the net income contribution of the secondary earner—or sole earner in the case of single mothers—to the total income of the household. Net secondary income is defined here as the difference between disposable income of the secondary earner, childcare expenditures, and other expenditures directly incurred due to the work carried out outside of the home for pay by the mother or second earner. Concretely, we seek to shed some light on the question of whether the income that women earn working outside the home significantly increases the welfare of the family. If it is worthwhile economically, this income should be greater than zero unless other benefits not included in income, such as health insurance, are considered. To see how households of married couples fare vis-à-vis single parent ones, we include this last group in our analysis. The data used for this purpose comes from the 1997 National Survey of Income and Expenditures.¹³

We find that, on average, the net income that the mother contributes to the total family income is significantly different than zero.¹⁴ However, it is economically insignificant, independent of marital status or ethnic background.¹⁵ For example, for it to be four-thousand dollars per year or higher, the second earner's disposable income must be above thirty-nine thousand dollars with a total household income greater than ninety-seven thousand dollars per year.¹⁶ As could have been expected, net secondary income depends on the levels of income and education.¹⁷ Childcare expenditures constitute the largest direct expense of the secondary earner (on average eighty-nine percent of secondary earner's income) and the amount spent in child-

12. COLIENE HEFFERAN, FAMILY SAVINGS: ANOTHER VICTIM OF INFLATION (1979).

13. BUREAU OF LABOR STATISTICS, U.S. DEP'T OF LABOR, CONSUMER EXPENDITURES IN 1997 (1997).

14. See *infra* Part III, Tables 2 & 3.

15. *Id.*

16. *Id.*

17. See *infra* Figures 6 & 7 and accompanying text.

care is a function of income levels, marital status, and education.¹⁸ We also find that at lower income levels, the net contribution of women tends to be negative once other related work expenditures are included.¹⁹ This suggests that from an economic point of view the use of childcare in lieu of mother care is hindering the welfare of the family instead of helping, and that alternative solutions need to be sought both at the microeconomic level and at the public policy level. Understanding the dynamics between household types and childcare is relevant from a policy point of view, as both taxes and welfare policies are designed based on this information. Also, for policy-making purposes it is important to understand how different household characteristics affect the contribution of the secondary earner to the total household.

This paper is divided into five sections. Following the introduction, the first section provides a theoretical framework. Section two presents the data and methodology. This section is followed by an analysis of the empirical results. Section four discusses some policy implications. The last section presents the conclusions.

I. THEORETICAL FRAMEWORK

For a family with young children, the employment of both parents outside of the home requires ensuring the care of the children while they are not in school. In addition, other expenses are incurred such as clothing, transportation, house-keeping, and meals outside the home. The model is intended to apply to households in which young children requiring continuous childcare are present and in which the one or two adults present in the house are employed. This assumption does not eliminate the possibility of every household having some source of free care, but it does exclude the possibility of having access to all the needed childcare from a free source. This source can include, within our sample, teenagers or other relatives and friends who live elsewhere.

The household is assumed to maximize the value of the utility function $U = U(M_L, C_L, G, Q)$, where M_L is the mother's time spent with their children (i.e., all non-market activity), C_L is the non-market activity of the potential childcare provider, G is the composite market good, and Q is the average childcare per

18. See *infra* Figures 9–11 and accompanying text.

19. See *infra* Figure 6 and accompanying text.

hour.²⁰ The three potential sources of childcare are the mother (M), the potential free childcare provider (T), and market childcare (Q_p). Every hour that the mother works in the market requires an hour of care by someone else.²¹ The free childcare provided is denoted by T_0 . Finally, it is assumed that a continuum of market childcare is available at price P_Q per unit and Q_p is the childcare purchased.²²

The household faces the following constraint: $M_L + M_W = C_L + C_W + T_0 = 1$, where M_W and C_W are hours worked by the mother and other, respectively. Given the normalization of total available time to unity, average childcare, Q , is just a weighted sum of the different sources of childcare provided. $Q = M_L Q + Q_p (M_W - T_0) + T_0$, where the weights are the number of hours of each type of care used and are sum to one and where $M_W - T_0 \geq 0$. The budget constraint if the work of the secondary income is to help economically is $G = W_M M_W + W_o C_W - N P_Q Q_p (M_W - T_0) - E$, where E represents other expenses related to the secondary earner's work, W_M and W_o are exogenous wage rates for the mother and the potential child care provider respectively, and G is the total net income.

The household chooses M_L , T_0 , and Q_p to maximize the utility function subject to the time and budget constraints. Two possible solutions given the constraints included in the model are: (1) the mother works and all childcare is purchased in the market and (2) the mother works and some care is provided by the market and some by the mother and/or the free provider.

One can derive the effects of changes in the choice of childcare providers and the hours worked in the market by the secondary earner on the total net income of the household. Presumably, given the empirical evidence of the poor quality and harmful effects that the use of market childcare has on children,²³ the main reason for a potential secondary earner to work in the market place is an economic need. Thus, it is relevant to determine whether this contribution is significantly different from zero, and if so, what are the relevant factors affecting the behavior of the net secondary earner's income.

20. For simplicity all children in a given household are assumed to receive the same quality childcare and the number of children requiring care is taken as exogenous and given by N .

21. This is a simplified assumption but seems to be consistent with customary practice, in which the mother is the main child-care provider.

22. It is straightforward to incorporate into the model a fixed price of using market or informal childcare in addition to the variable cost P_Q , but this would leave the analysis essentially unchanged.

23. See *supra* notes 1, 3.

II. DATA AND METHODOLOGY

Net income is calculated by deducting taxes, other expenses of the secondary earner related to her work, and childcare from the income received.²⁴ Other work related expenses include housekeeping expenses, clothing related to work activities, and transportation.²⁵ A one-period approach is used.

The quarterly data used is from the 1997 Consumer Expenditure Survey. The Survey collected extensive information from a sample of 22,184 households on family labor, childcare expenditures and use, and a wide variety of other relevant variables.²⁶ This empirical analysis is performed on a sample of 1623 households in which there were two earners if two adults were present in the household or one earner if the head of the household was single or separated/divorced/widowed, where children were present and all were under six, and where non-familial institutional (as opposed to home-childcare) paid childcare was used. Hence, our criterion for selection requires not only the absence of any adult other than the parents, but also that at least some of the childcare is paid for.²⁷ In summary, the selection criteria require that all of the families selected do not have any other adult (besides the mother and the father) providing care and that they do not use at-home paid care if two adults are present in the household. If a single parent heads the household, it requires that no other adult be present and that she uses paid care. Therefore, the non-married households include both single parents and co-habiting couples. Of the 1623 households included in the study, 79% belong to married couples and 21% do not. Of these, 19% are single households and 2% are co-habiting couples. The ethnic distribution of the survey includes 84% White, 12% Black, 12% American Indian, and 3% Asian.

24. In this study, disposable income does not include any childcare tax credit received by the household, as this data was not available.

25. Outside meals that can constitute a significant expense in these cases are not included, as data was not available. In this sense, we can say that the results of this study are overestimated.

26. The sample is not random with respect to the national population. Low-income households are overrepresented. It also oversamples and under-samples certain demographic groups. Weights are available, however, that permit nationally representative estimates to be obtained. These were used.

27. The literature has suggested that the presence of relatives as a substitute for the presence of the mother is more helpful for the normal development of the child than external childcare. In addition, the childcare provided by grandparents is typically free, and thus no cost is involved in such childcare. When a co-habiting situation is found, the other adult might not be the parent of the child present. See LEADING THE WAY and NICHHD, *Familial Factors*, *supra* note 2.

The education distribution is more even: 15% of the households have only primary education, 29% high school education, 33% some level of college education but no degree, 25% a bachelor's degree, and 13% masters degrees or higher.²⁸

The data used is quarterly, seasonally adjusted. The survey provides the amount of childcare spent, as well as data that allows for the calculation of income and expenditures related to the secondary earner's income. When only one adult heads the household, the secondary income is equal to the net income of the household. It also provides, among other things, information on marital status, race, income level, and education; however, it does not provide information about health benefits earned by the second earner or childcare credits.²⁹ Thus, although health benefits are known to be a relevant economic reason for women to enter the labor force, they are excluded from this analysis. As for childcare credits, this amount cannot exceed the secondary earner's income. Since, for the most part, we find in our sample that child care expenditures are significantly higher than the income of the secondary earner, the results of this study remain valid although underestimated. Table 1 presents the characteristics of income and expenditures of the households in our sample.

Disposable income for two-income earners on average is two times that of single parents (Column 1). It ranges from \$20 to \$29,471 per quarter for the first group, while for the second group the range is \$20 to \$4789 per quarter (Columns 2 and 3), significantly lower. By contrast, the primary earner's disposable income for a two-earner household ranges from \$10 to \$19,727 per quarter, four times higher for the upper range than the single-parent earnings (Columns 2 and 3). Household net income for the case of two-earners ranges from a deficit of \$14,601 to \$7926 per quarter while for single parent households ranges from a deficit of \$13,636 to \$1524 for the same period, once again significantly lower (Columns 2 and 3). To calculate net income, all income and all household expenses are included.

When looking solely at the data for the secondary earner, the income's mean is only \$547.68 per quarter (Column 1). The sample includes families whose primary income ranges from \$160 to \$78,908 per year and whose secondary income ranges from \$74.04 to \$36,576 dollars per year. When considering the net income contribution of the secondary earner, the range is -

28. As previously mentioned, weights have been used that permit nationally representative estimates to be obtained. See *supra* note 26.

29. See *supra* note 24.

\$4348 to \$17,560 *per year* (Columns 2 and 3). In terms of childcare expenditures, the lowest expenditure for two-income earners included in the data is \$20 and the highest is \$37,760 *per year*, while for single parents it is \$40 to \$10,160 for the same period (Columns 2 and 3). While in the lower end of childcare expenditures the expense is not much different, at the highest levels of expenditures married couples spend 3.7 times more than single-parent households. Such a difference reflects quality in the childcare used if one considers that single parents typically require longer hours of childcare than married couples. Finally, other work related expenditures for the secondary earner range from zero to \$5840 per year.

TABLE 1
GLOSSARY OF INCOME AND EXPENDITURES
(DOLLARS PER QUARTER)

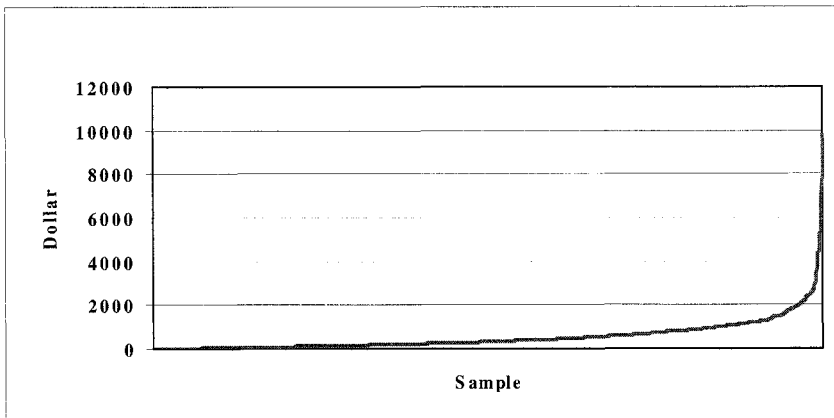
Variable	Mean (Dollars per quarter) (1)	Largest amount (Dollars per quarter) (2)	Smallest Amount (Dollars per quarter) (3)	Standard Deviation (4)
Two-earners Household Disposable income	1942.37	29,471.00	20.00	2177.28
Net Household Disposable Income	-5455.82	7926.00	-14,601.00	2071.93
Total Household Expenditures	6360.78	19,457.00	142.00	1719.19
Primary Disposable Income	1394.57	19,727.00	10.00	1544.40
Secondary Disposable Income	547.68	9744.00	18.51	731.62
Net Secondary Disposable Income	42.68	4390.00	-1087.00	209.17
Childcare Expenditures	489.62	9440.00	5.00	655.22
Other Work Related Expenditures	15.38	1460.00	0.00	74.05
Single Parents Disposable Income	799.77	4,789	20.00	48.25
Single Parents Net Income	-6411.88	1,524	-13,636	2315.62
Single Parents Childcare Expend.	390.22	2540.00	10.00	408.90

On average, childcare and work related expenditures of the secondary earner constitute 8.1% of the households' total expenditures but 92% of the household's secondary income. This means that, on average, 89% of the secondary earner's income is spent on childcare, and 3% on other work related

expenses. Furthermore, when analyzing the breakdown of childcare expenditures, we find that the share of childcare expenditures in the secondary income increases as the income falls to the point of exceeding 100%, thus constituting a larger burden in those households that are more economically needy. In our sample, only 29% of the households are able to fully deduct childcare expenditures. As the income tax childcare credit for childcare expenditures sets as a limit the lowest income of the two spouses, the fact that, in a majority of the cases, childcare expenditures exceed secondary income signals it as a relevant burden for families where the two spouses work for pay outside the home. In the case of single parent households, on average, childcare expenditures constitute 49% of disposable income.

Figure 1 presents the quarterly distribution of a household's secondary earner's income. For 95% of the sample, the quarterly secondary income is below \$2000 per quarter. Those receiving above \$2000 fall in the highest three income brackets (\$50,000 and higher per quarter).

FIGURE 1
QUARTERLY SECONDARY INCOME

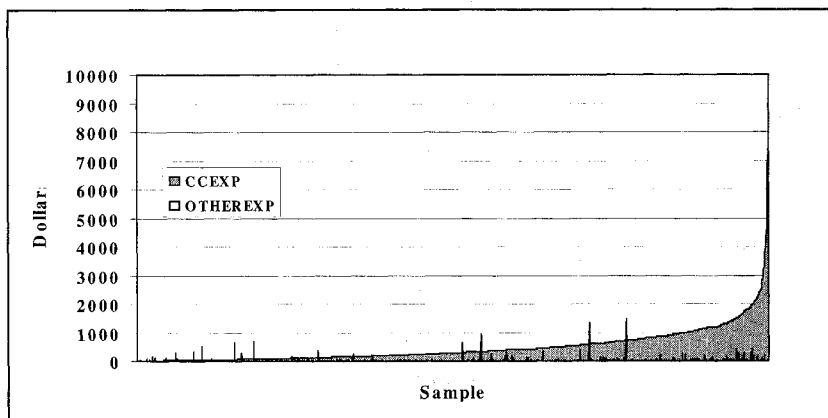


Source: 1997 Consumer Expenditure Survey

Secondary income corresponds to households where only two adults and children under 18 are present.

Figures 2 and 3 present the quarterly distribution of a household's childcare together with other work related expenditures and net secondary earner income, respectively.

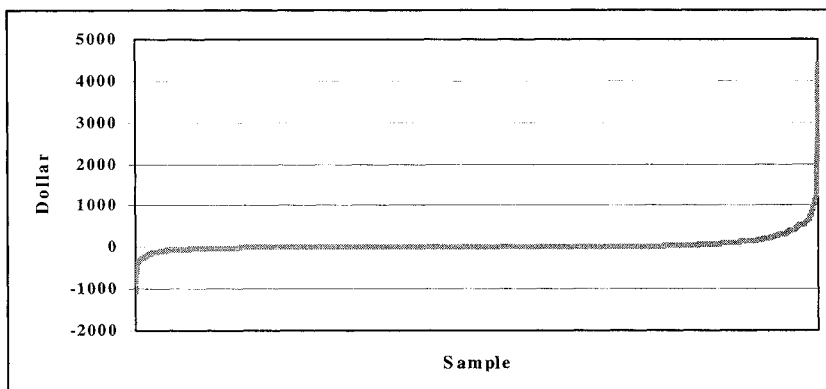
FIGURE 2
QUARTERLY CHILDREAR AND OTHER WORK
RELATED EXPENDITURES



Source: 1997 Consumer Expenditure Survey

These expenses correspond to households where only two adults and children under 18 are present.

FIGURE 3
QUARTERLY HOUSEHOLD SECONDARY NET INCOME



Source: 1997 Consumer Expenditure Survey

Secondary income corresponds to households where only two adults and children under 18 are present.

When analyzing the childcare cost (CCEXP) together with other related expenditures (OTHERXP), the range closely follows that of the secondary income (Figure 2). As presented in Table 1, childcare expenditures range from as high as \$9440 to as low as \$5 per quarter. Work related expenditures are significantly lower, reaching at most \$1460 per quarter. These figures provide an indication of the significant burden that childcare

costs have on the capacity of the secondary income to significantly increase the household income.

Given the data previously presented, the shape of the curve for the quarterly net secondary earner's income is not surprising (Figure 3). For the most part, the net income contributed is close to zero with the exception of the highest and lowest income levels. The lowest one actually generates negative net incomes.

After this brief presentation of the data, we turn to the econometric analysis.

III. EMPIRICAL ANALYSIS

We first test for the statistical significance of the net monetary contribution of the secondary earner to total household income. As previously mentioned, the data suggests that this is close to zero. We therefore carried out a t-test with the following null and alternative hypothesis: $H_0: \mu=0$ versus $H_A \neq 0$. We find significant results at the 1% level; on average, the income contributed by the secondary income earner increases the total net income of the family. Yet, in absolute numbers, the mean is \$42.68, and therefore, economically insignificant. It would be a mistake, however, to conclude that the contribution of the secondary earner's income is always economically insignificant, as can be observed in Figure 3. This suggests that other factors play an important role in determining the secondary earner's income level. We also tested for the statistical significance of average childcare costs.³⁰ Again we found this to be significant at the 1% level.

In order to further understand the dynamics of both net income from secondary earners and childcare costs, some of the variables identified by the literature as factors determining the demand for childcare and women's wages were incorporated into the analysis.³¹ Specifically, we controlled for levels of education, marital status, race, and income levels. We first tested for the independent impact of each of these variables on net income and childcare expenditures. Then, we examined the interactions of these variables. To test the significance of the effect of these variables on households' net secondary income, we used one and

30. Means and standard deviations are reported in Table 1.

31. See GENDER, FAMILY, AND ECONOMY, *supra* note 3; Nat'l Inst. of Child Health and Human Dev. Early Child Care Research Network, *Early Child Care and Self-Control, Compliance, and Problem Behavior at Twenty-Four and Thirty-Six Months*, 69 CHILD DEVELOPMENT 1145 (1998); Garfinkel, *supra* note 3; Hofferth, *supra* note 2; Robertson, *supra* note 3; Tichenor, *Status and Income as Gendered Resources*, *supra* note 3.

two way ANOVA tests respectively. These results are reported in Tables 2 and 3 respectively.

TABLE 2
TEST FOR INDEPENDENCE OF VARIABLES ON NET INCOME
AND CHILDCARE EXPENDITURES
(ONE-WAY ANOVA)

Net Secondary Earner's Income			
Variable	F statistic	p-value	Null Hypothesis Tested
Marital Status	2.26	0.024	$\mu_M = \mu_{NM}$
Race	3.95	0.09	average income equal among races
Level of Income	97.14	0.00	average income equal levels of income
Education	66.53	0.00	average income equal among different levels of education

TABLE 3
CHILDCARE EXPENDITURES

Marital Status	23.52	0.00	$\mu_M = \mu_{NM}$
Race	84.97	0.00	average expenditure equal among races
Level of Income	107.23	0.00	average expenditure equal levels of income
Education	251.54	0.00	average expenditure equal among different levels of education

Notes: All variables follow the Consumer Expenditure Survey category's breakdown.

μ_M stands for married and μ_{NM} for not married. Non-married includes widowed, divorced, separated, and never married—both single-parent households and co-habiting.

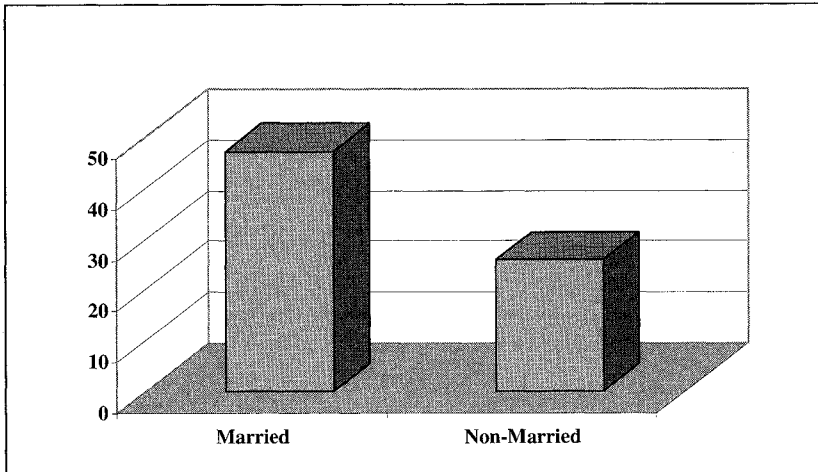
Race includes White, Black, Asian, and Hispanic.

Level of Income is broken into 13 categories, ranging from less than \$5000 to \$75,000 and over.

Education is divided into 9 categories starting with no education and ending with Professional/doctoral degree.

When analyzing the impact of each of these variables on net secondary income we find that all but the variability between marital status and race are significant in determining it (Table 2). Overall, we find that married couples consistently perform better than non-married couples in terms of net secondary income earnings. On average, the former is twice as high as the latter (Figure 4). When non-married couples are separated into co-habiting and single-parent households, we find that the net income earnings of single-parent households are four times higher than the secondary income of co-habiting households.

FIGURE 4
AVERAGE NET SECONDARY INCOME



Notes: The variables follow the Consumer Expenditure Survey category breakdowns.

Non-married includes widowed, divorced, separated, and never married—both single-parent households and households headed by co-habiting couples.

Race and education, although they provide different levels of income, do not significantly differentiate the level of income of married versus non-married secondary earners.³² The level of income, however, significantly differentiates net income of married versus non-married couples. The former of these groups performed significantly better than the latter.³³ Single-parent households whose income is above fifty-thousand dollars are an exception to this case. Figure 5 (a and b) presents two graphical representations of these results.³⁴ Once again, on average, we see that net secondary income is very low and thus the economic contribution is insignificant, it ranges between ten and sixty dollars. Figure 5 (a) compares net secondary earner's incomes for marital status *vis-à-vis* levels of income and Figure 5 (b) compares it *vis-à-vis* race.³⁵ The highest income corresponds to married White households (W) followed by Asian American households (AS). The contribution of Black (B) secondary earners in households headed by married couples is one-fourth of White secondary earner contributions for married couples and this disparity is even more accentuated among non-married couples. For both

32. See *supra* Table 3, Row 1.

33. See *supra* Figure 4.

34. See *infra* Figure 5.

35. *Id.*

racess, non-married net income declines, but among Blacks, the fall is more severe.³⁶ Results also suggest that the difference in net secondary earner's income caused by race, although significant, is not as strong as the difference caused by marriage since the difference attributable to race has only a ten percent level of significance.³⁷ Asian Americans and Whites perform significantly better than Blacks and Native Americans, who report the lowest incomes.³⁸

Household level of income is also a significant factor in the determination of the net secondary income. The variable is significant in all cases.³⁹ The higher the level of household income, the higher the net secondary income. This pattern holds even when one controls for race⁴⁰ and for levels of education.⁴¹ Once again, married households fare the best. The highest secondary earner net incomes are found among Whites, then Asian Americans, followed by Blacks and Native Americans. When levels of education are combined with race and levels of income, Whites register the highest net secondary income and highest education, followed by Asian Americans and Blacks.

After the household income level, it is the secondary earner's education level which most significantly affects the net secondary income.⁴² As Figure 6 (b) clearly depicts, the higher the level of education, the higher the net secondary income for every single income level bracket.

36. See *infra* Figure 5(b).

37. See *supra* Table 2.

38. See *infra* Figure 5(b).

39. See *supra* Table 3, Rows 1-3.

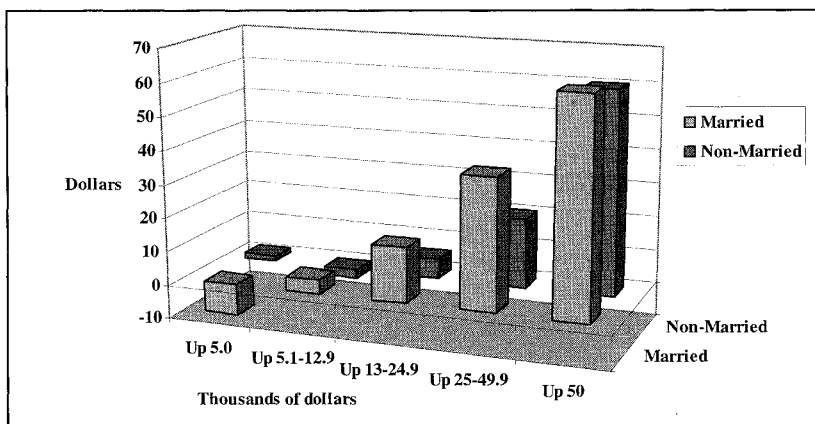
40. See *infra* Figure 6(a).

41. See *infra* Figure 6(b).

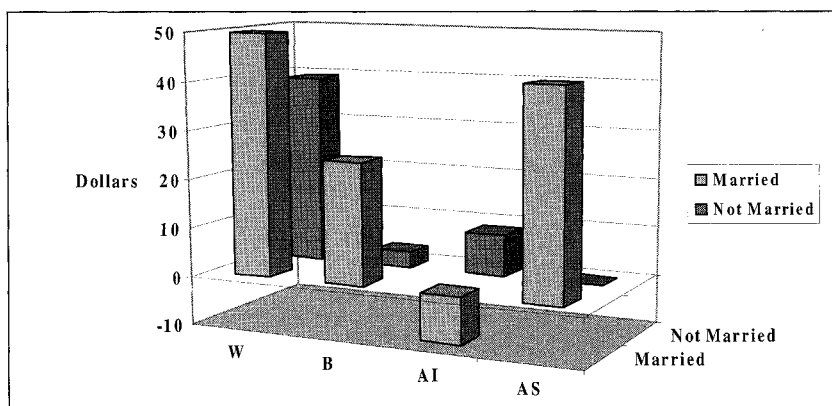
42. See *supra* Table 3, Row 3 & Col. 3.

FIGURE 5
AVERAGE QUARTERLY NET SECONDARY INCOME BY MARITAL
STATUS INTERACTIONS

(a)



(b)



Notes: The variables follow the Consumer Expenditure Survey category's breakdown. For presentation purposes, some categories have been grouped.

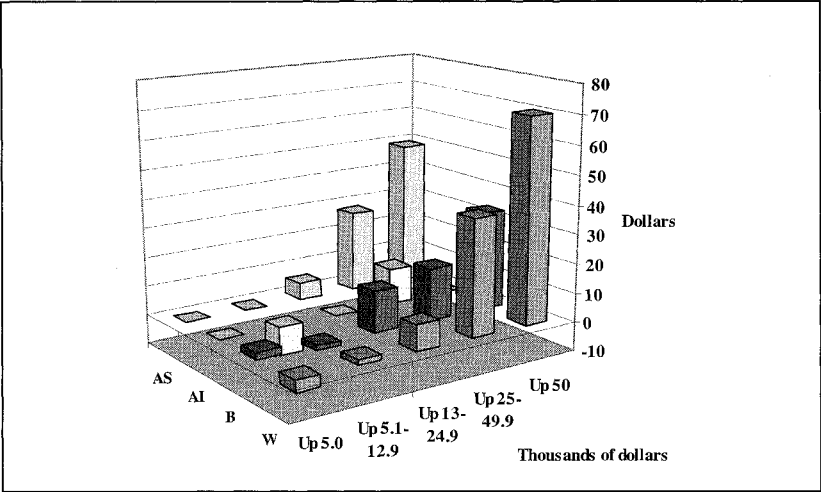
Non-married includes widowed, divorced, separated, and never married—both single-parent households and households headed by co-habiting couples.

Level of Income is broken into five categories, ranging from less than \$5000 (up 5) to \$50,000 and over (up 50).

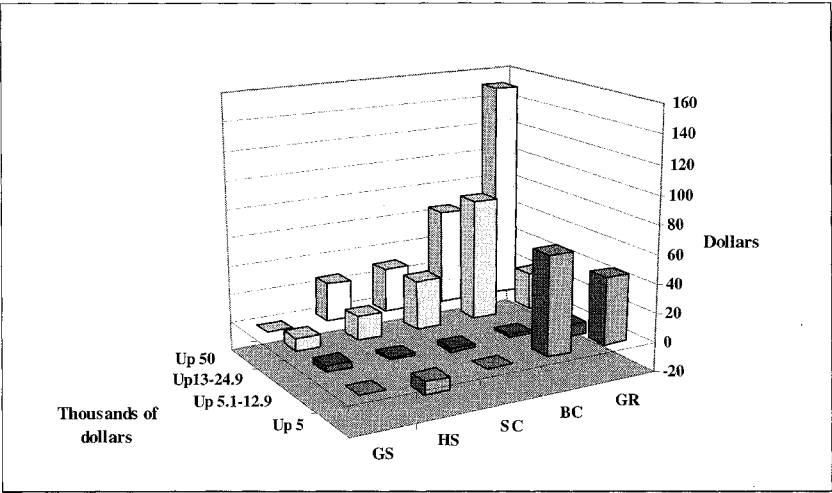
Race includes White (W), Black (B), Asian American (AS), and Native American (AI).

FIGURE 6
AVERAGE QUARTERLY NET SECONDARY INCOME PER HOUSEHOLD
INCOME LEVEL INTERACTIONS

(a)



(b)



Notes: The variables follow the Consumer Expenditure Survey category breakdowns. For presentation purposes, some categories have been grouped.

Level of Income is broken into four categories, ranging from less than \$5000 (up 5) to \$50,000 and over (up 50).

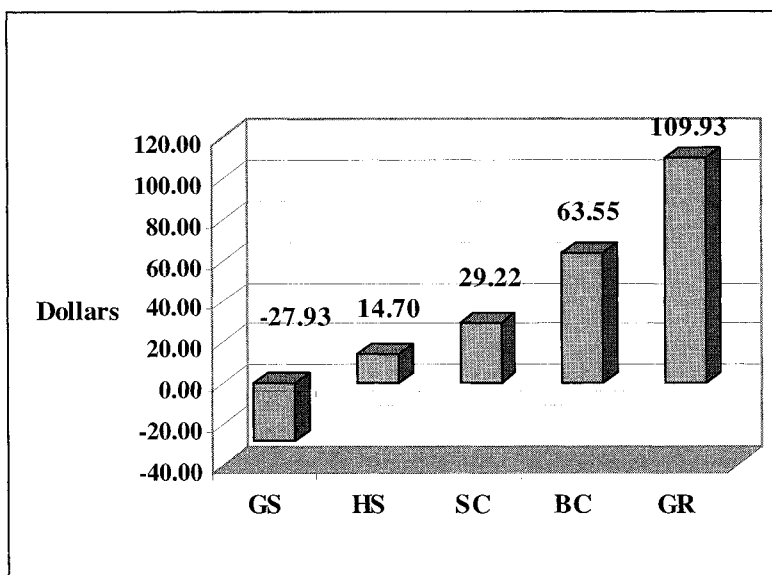
Race includes White (W), Black (B), Asian American (AS), and Native American (AI).

Education is divided into grade school or less (GS), at least high school (HS), some college (SC), Bachelor's degree (BC), and professional/graduate degree (GR).

Secondary earners with only grade school education have an average net income that is negative, and it increases by a factor of five when an earner possesses a graduate degree.⁴³

When the level of education is compared *vis-à-vis* marital status, on average, married secondary earners have a higher income than those who are not married if they have a junior college degree or lower. The situation reverses when the secondary earner possesses a Bachelor's degree or higher and they are not in a co-habiting situation. Because single-parent households have only one source of income, earners in these homes tend to dedicate themselves to their careers with more continuity than their married counterparts.⁴⁴ This is reflected in a higher income received by income earners in single-income households.⁴⁵

FIGURE 7
AVERAGE SECONDARY EARNER'S INCOME PER LEVEL OF EDUCATION



Notes: The variables follow the Consumer Expenditure Survey category breakdowns. For presentation purposes, some categories have been grouped.

Education is divided into grade school or less (GS), at least high school (HS), some college (SC), Bachelor's degree (BC), and professional/graduate degree (GR).

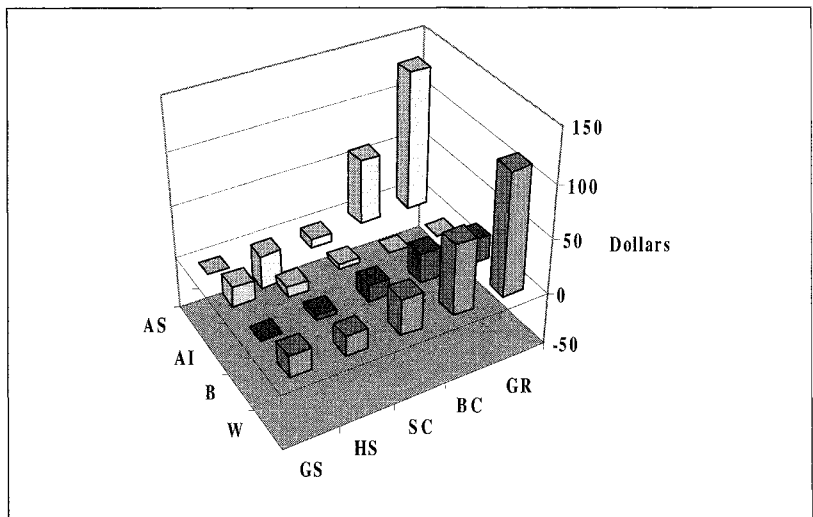
43. See *infra* Table 7.

44. Note that in Figure 6, only single-households are included.

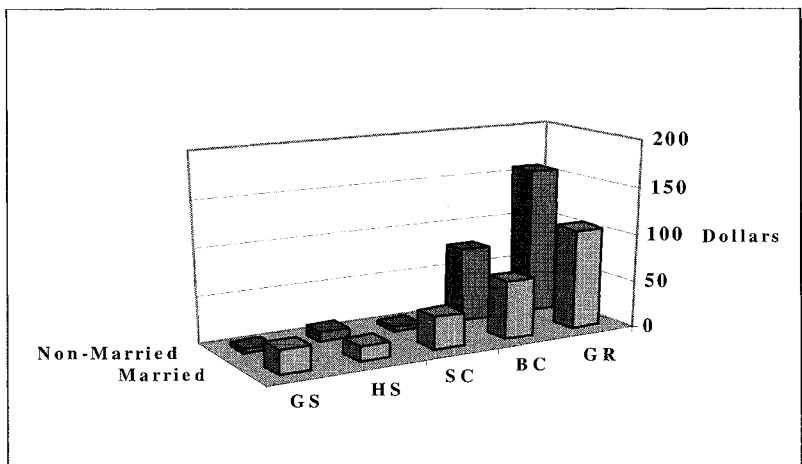
45. See *infra* Figure 8(a) & (b).

FIGURE 8
AVERAGE QUARTERLY NET SECONDARY INCOME PER EDUCATION
LEVEL AND RACE

(a)



(b)



Notes: The variables follow the Consumer Expenditure Survey category breakdowns. For presentation purposes, some categories have been grouped.

Non-married includes widowed, divorced, separated, and never married—both single-parent households and households headed by co-habiting couples.

Race includes White (W), Black (B), Asian American (AS), and Native American (AI).

Education is divided into grade school or less (GS), at least high school (HS), some college (SC), Bachelor's degree (BC), and professional/graduate degree (GR).

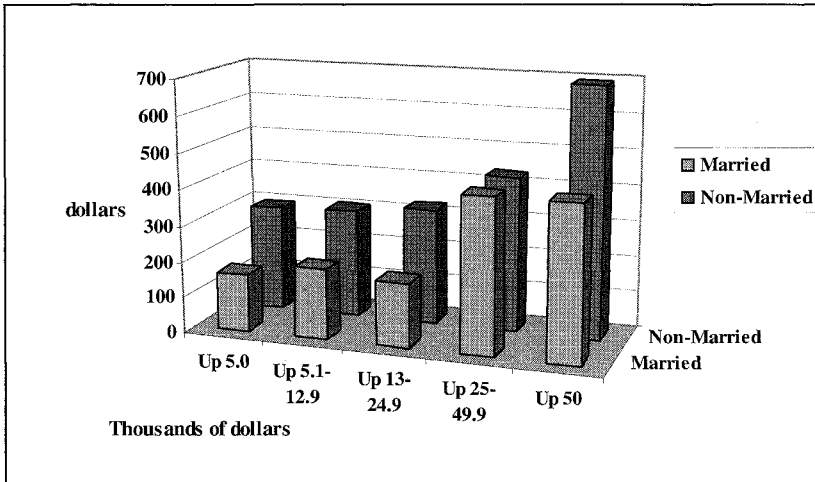
So far the data seems to suggest that, though significant, the net secondary income provided by the second earner, on average, does not amount to much at lower income levels. The data also seems to suggest that marital status contributes to increasing the value of this secondary contribution. The level of education as well as the level of household income is also relevant.

We now turn to childcare expenditures. The data suggests that childcare is the single most important expense incurred by households where both the mother and the father work. As previously mentioned, the sample used in this study assumes that parents buy, to some degree, childcare in the market, as they were not considered if they had access to a full-time free childcare provider. Turning back to Table 2, we can find the results from the One-Way ANOVA test carried out on marital status, race, level of income, and education. All variables are found to be significant in explaining different levels of childcare expenditures. Table 3 presents the Two-Way ANOVA results, which shed some light on the interaction between these variables and childcare expenditures. With the exception of the overlap between race and education, all other statistics are significant at the five percent significance level. As could have been expected, childcare expenditures increase with the level of education of the secondary earner.

The gap between the average amount spent per quarter by a worker with a grade-school level education (\$310) and a worker who possesses a graduate degree (\$550) is \$240 per quarter, an increase of almost forty-four percent in expenditures. Yet the amount spent is also affected by the marital status and income level of the household. On average, when controlled by marital status and levels of income, non-married households spent more on childcare than married couples.⁴⁶ This is especially true for the lowest three income brackets. Furthermore, when co-habiting couples are separated from single-parent households, their childcare expenditures, on average, amount to \$352.26 for co-habiting couples, while single-parent households spend an average of \$645. Not only does the non-married head of household typically have a lower income than the married secondary income earner, but they need to pay for longer childcare hours. This puts additional pressure on the net income that a non-married household is able to produce. Figure 9 shows these results in graphical form.

46. See *infra* Figure 9.

FIGURE 9
AVERAGE QUARTERLY CHILDCARE EXPENDITURES PER INCOME
LEVELS AND MARITAL STATUS



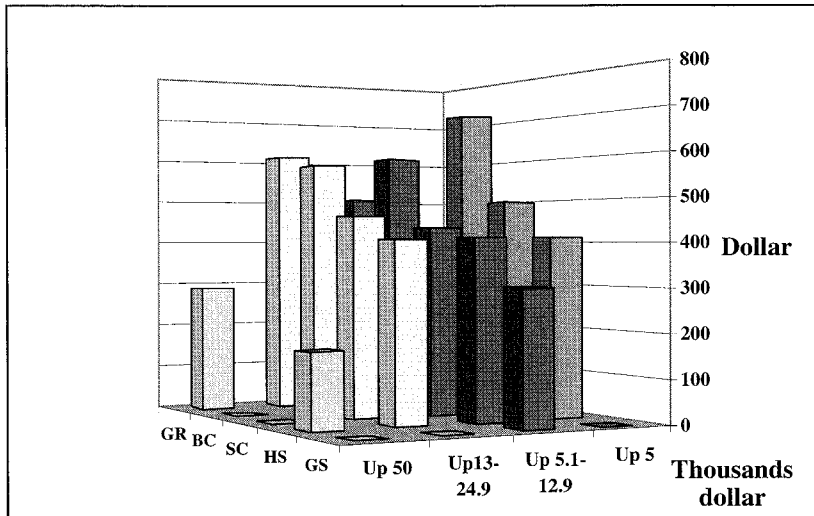
Notes: The variables follow the Consumer Expenditure Survey category breakdowns. For presentation purposes, some categories have been grouped.

Non-married includes widowed, divorced, separated, and never married—both single-parent households and households headed by co-habiting couples.

Level of Income is broken into five categories, ranging from less than \$5000 (up 5) to \$50,000 and over (up 50).

This pattern is also captured when levels of income and education are combined. Independent of the level of education, the lower the income level, the higher the amount spent on childcare. Yet, the higher the level of education, the higher the amount spent on childcare. An exception to this was found in the highest income bracket (\$50,000 a quarter or higher). One explanation for this could be that secondary earners in this bracket have full-time help at home, and thus, do not require additional childcare (Figure 10).

FIGURE 10
AVERAGE QUARTERLY CHILDCARE EXPENDITURES PER LEVEL OF
INCOME AND EDUCATION



Notes: The variables follow the Consumer Expenditure Survey category breakdowns. For presentation purposes, some categories have been grouped.

Education is divided into grade school or less (GS), at least high school (HS), some college (SC)

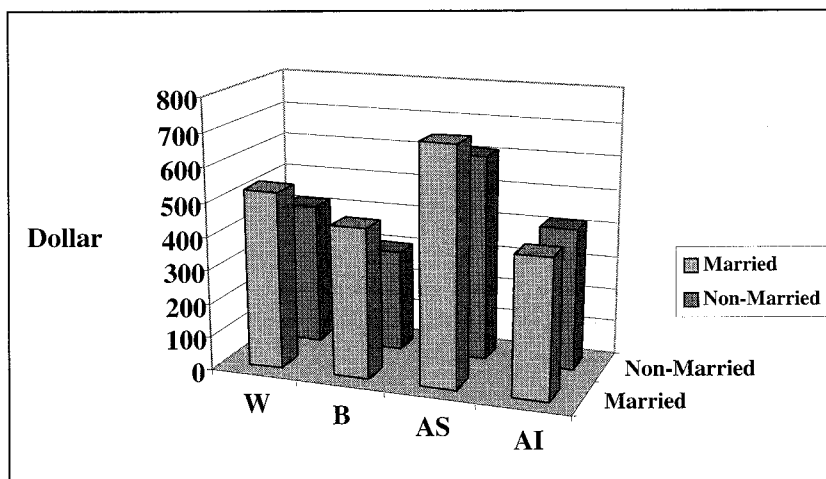
Bachelor's degree (BC), and professional/graduate degree (GR).

Level of Income is broken into 5 categories, ranging from less than \$5000 (up 5) to \$50,000 and over (up 50).

Turning back to Table 3, results regarding the role of race in determining childcare expenditures suggest that, on average, the effect of ethnicity on the expenditure is not due to the interaction between race and either the level of income or education, but to the interaction between race and marital status. Figure 11 depicts these findings. Independent of ethnic background, childcare expenditures are higher for married couples than for non-married couples. Asian American married couples spend, on average, the highest amount (\$702), followed by Whites (\$527), Blacks (\$444), and Native Americans (\$412). For the case of non-married couples, the lowest amount is found among Blacks (\$302). The prevalence of single-parent households, especially single mothers, among the black population might explain part of these results, as single-parent households are at higher risk of poverty and have the highest childcare burden.⁴⁷

47. See generally Aguirre, *The Family and Economic Development*, *supra* note 6. Specifically, in our sample, of the single-household families under the poverty level (thirty-five percent of the sample), sixty-three percent were black. *Id.* Of these, ninety-seven percent were single mother households. *Id.*

FIGURE 11
AVERAGE QUARTERLY CHILDCARE EXPENDITURES PER RACE AND
MARITAL STATUS



Notes: The variables follow the Consumer Expenditure Survey category breakdowns. For presentation purposes, some categories have been grouped.

Non-married includes widowed, divorced, separated, and never married—both single-parent households and households headed by co-habiting couples.

Race includes White (W), Black (B), Asian American (AS), and Native American (AI).

IV. POLICY IMPLICATIONS

At least four issues seem to have emerged from the previous analyses that are relevant for policy design. The first one relates to the fact that, given the reality of their financial contribution, the data seem to suggest that reasons other than economics constitute the driving force for a mother to work for pay outside the home. On average, net secondary income is economically insignificant. Yet most of the literature on childcare seems to suggest that the main reason for married women to work for pay outside the home is economic.⁴⁸ The second and the third issues relate to the importance of family structure and education in determining the significance of the net secondary income as well as the quality of childcare used by families. Results seem to suggest that, overall, children are better off in an intact family than a single parent family or a household headed by a co-habiting couple. In fact, co-habitation tends to provide the worst results. Furthermore, the higher the level of education of the secondary income earner the better off the child will be in terms of access

48. See *supra* note 3.

to childcare. Finally, the data underline the significance of childcare costs in determining the net income that women are able to contribute towards their families.

In contrast to European countries, where work structure and leave policies are dictated by governments' regulations, the U.S. follows a more *laissez faire* approach. At the same time, it is a documented fact that Americans work the second longest hours among the industrialized countries⁴⁹ and that two-income families in the U.S. work longer hours than Europeans.⁵⁰ Notwithstanding, the evidence from Europe and from the U.S. shows that neither an intensely individualistic approach as the one prevailing in the U.S. nor the welfare states of Europe have been able to create the conditions to meet the needs of two-income earner families.⁵¹ The welfare state to some extent has helped soften the economic impact of the expenses incurred by the mother working outside the home, but it has been unable to solve the negative impact of childcare on children or to alleviate the stress generated in a household where underage children are present and the two parents work for pay outside the home.⁵² In fact, in the U.S. until the welfare reform⁵³ as well as in most

49. See, e.g., JANET C. GORNICK & MARCIA K. MEYERS, *FAMILIES THAT WORK* 59 (2003) ("the American workforce reports the longest annual hours of any in the industrialized world") (citing data from the International Labor Organization). But see ORG. FOR ECON. CO-OPERATION AND DEV., *OECD in Figures: Statistics on the Member Countries* 84 (2004) (showing that South Korea, the Czech Republic and the Slovak Republic are the top three OECD member countries in terms of overall hours worked per worker and per capita, while the U.S. is just ahead of Japan and about equal to New Zealand and Australia).

50. See GORNICK & MEYERS, *supra* note 53, at 60–61.

51. For a discussion of family policies in Europe *vis-à-vis* the U.S., see FRIEDRICH EBERT STIFTUNG, *SUMMARY REPORT, WORKING TIME FOR WORKING FAMILIES: EUROPE AND THE UNITED STATES* (Antoine Boessenkool & Ariane Hegewisch eds., 2004) (hereinafter *FES SUMMARY REPORT*). For a review of general data on marriage, family, and day care in the U.S., see *THE FAMILY PORTRAIT* (Bridget Maher ed., 2d ed. 2004).

52. See generally NAT'L MARRIAGE PROJECT, *THE STATE OF OUR UNIONS* 2005, at 14 (David Popenoe & Barbara Dafoe Whitehead eds., 2005) (discussing general social, economic, and political trends in Scandinavian countries and in the U.S. and their impact on marriage). "[The government policies of the welfare state] may help to soften the impact of family breakup, but the state appears relatively powerless to contain family decline and often even contributes to it." *Id.* Also, for the specific case of Europe, see, for example, *FES SUMMARY REPORT*, *supra* note 55, at 9 (Jeanne Fagnani commenting on work-life balance in France).

53. This welfare reform was called the *Personal Responsibility and Work Opportunity Act of 1996* and established as one of its goals to increase the number of children living with their biological parents and to reduce the number of out-of-wedlock children. See H.R. 3734, 104th Cong. (1996).

European countries, welfare policies were not designed to support the family. Rather, they penalized those who wished to married and have children. To make up for the negative impact of these approaches on children, welfare policies have provided significant benefits to children in European countries.

Perhaps the explanation of this failure can be found in the fact that this study and others seem to suggest that the family structure is a relevant factor in determining the quality of childcare; the level of education of the secondary earner is relevant as well. It follows that government policy, if it is to be effective, needs to address both of these issues.

Both in the U.S. and in Europe, some businesses have introduced changes in working conditions and organization of work schedules to facilitate a better balance between work and family for employees. For the most part, in Europe these changes have taken place due to legislation while in the U.S. these changes have been generated by business often in an effort to retain valuable women.⁵⁴ Often, however, their employees have not found these changes helpful. Employees report that frequently, although the working time has been reduced, the workload has not and that the new work schedule often is less compatible with their family needs. The aftermath of these changes in working conditions often leads to a higher reliance on childcare arrangements, thus complicating the management of their family life, increasing parents' stress, and raising childcare costs. Not surprisingly, Europeans are not happy with the present legislation and Americans for the most part perceive their working structure as unfriendly to the family and tend to support tax relief for stay-at-home parents⁵⁵ as well as more leave time for maternity.⁵⁶

What is required at both the microeconomic and the macroeconomic level is to reconsider the working structure itself. This analysis, in line with what is now a vast body of literature across social sciences, suggests the suitability of children coming into the world within a stable married family. The data consistently reveal that it is within this structure that the net secondary income is maximized, and where more childcare expenditures can be best allocated. It follows that it is not enough to intro-

54. FES SUMMARY REPORT, *supra* note 51, at 16–17 (assessing the motivations for employer-driven flex-time arrangements in the U.S.).

55. *CBS News Poll*, July 13–14, 1999.

56. STEVE FARKAS ET AL., PUBLIC AGENDA, NECESSARY COMPROMISES 30 (2000). In fact, this same survey reports that sixty-two percent of parents with children age five or under prefer public policies that make it easier for one parent to stay at home rather than policies for improving the cost and quality of child care. *Id.* at 28.

duce flexibility into the workplace. A change in paradigm is needed if these efforts are to effectively address family needs. Now that men and women participate in the labor force, rather than focusing on the needs of the different individuals that compose the household in an isolated manner, government, business and individuals should focus on the employee's family as a whole. This would facilitate ensuring that work structures attend not to the needs of only men, women, or children, but to the spouses and their children together as members of the basic social unit that is the family. It is only then that microeconomic initiatives such as flexible working hours for men and women, work sharing, the provision of facilities to allow women to work from their home some days of the week, in-house childcare, and the extension of maternity leave with an option to work on a part-time basis for some additional time, to mention a few, will truly address the family's needs. This might help parents overcome the present situation in which they find themselves where the possibility of obtaining a secondary income must be weighed by contrasting a potential meager income versus the well-documented negative effects that the absence of a parent can have on the normal development of children when inadequate childcare is available.

From a macroeconomic policy point of view, the results of this study speak not only to the importance of changing the paradigm of analysis if families are to be effectively served, but to the importance of reinforcing, fostering and protecting the institutions of marriage through public programs as well as private sector initiatives. Similarly, results suggest that programs that target the improvement of the educational level of parents are also of importance. In the United States, as part of the 1996 welfare reform law, the government has been engaged in systematic efforts to reduce welfare dependency at all levels. In this, its approach differs from that followed by most of the European countries.

Specifically, while the U.S. government is committed to support the work efforts of current and former welfare-dependent families, it does so with the aim of helping them achieve self-sufficiency. The present approach to the provision of childcare benefits is an example where the U.S. government has been trying to address both the need for healthy families as well as the need to improve the level of parents' education if ensuring quality childcare is the long-term goal. The Child Care and Development Fund (CCDF) provides federal funding to support child care services for low-income children whose parents are working or attending job training or educational programs. By doing so,

the U.S. supports the education of parents. Furthermore, in conjunction with this initiative, the Healthy Marriage Initiative seeks to strengthen and support healthy families, i.e., structures of families where there is a mother and a father with children in a stable relationship.

Furthermore, the assistance provided by the government to eligible families takes the form of subsidies for childcare through a voucher program. The fact that vouchers are used over the provision of free childcare institutions is most beneficial as it allows parents to choose the supplier of their preference for their children while stimulating quality in childcare providers through market competition. The results previously presented suggest that such an approach is beneficial, as studies on childcare services provide evidence against government provision of these services, which seem to be of poor quality.⁵⁷ The lack of viable childcare provisions not only hampers the normal development of a child, but also undermines the effort made by the secondary-income earner to help her family overcome poverty or improve her family's welfare. In this sense, the present efforts on the part of the government, when needed, to actively foster the provision of childcare services by relatives, faith-based initiatives, and community-based services, or private employers seem to be supported by the results of this study as well as the literature as a whole and suggest that this approach has potential to help households to achieve a net positive secondary income rather than a negative one.

CONCLUSION

Significant research has been carried out regarding both the cost and quality of childcare in the United States, as well as the determinants behind a woman's decision to work for pay outside of the home. The literature thus far suggests that the use of childcare, or of some close relative, as a substitute for the presence of the mother in the rearing of children is far from optimal.⁵⁸ The reasons households continue to seek childcare in spite of such evidence are many and diverse. Among them, three relevant ones are often advocated: economic needs of the family, access to health benefits, and the needs of the mothers to develop professionally outside the home.⁵⁹ In the case of married couples, economic need has taken the lead among the reasons provided by the second earner as to why they entered the

57. See *supra* Introduction.

58. See *supra* note 4 and accompanying text.

59. See *supra* note 3.

work force. However, the situation of single mothers and their children is especially difficult because they are at a higher risk of falling into poverty. In order to be able to work, single mothers require, for the most part, the use of some type of paid childcare.

This paper aimed to fill a gap in the literature by analyzing the net income contribution of the secondary earner—or only earner in the case of single mothers—to the total income of the household. Net secondary income has been defined as the difference between the disposable income, the childcare expenditures, and other expenditures directly incurred due to the work carried out outside the home and for pay by the second earner. To be economically worthwhile, this income should be greater than zero. We find that this is, in fact, the case. Yet, we also find that, for the most part, the net income is economically insignificant. Furthermore, the results suggest that the lower the income and the education of the secondary earner, the higher the probability of the net contribution to the total income of the household to be zero, or possibly negative.

This is relevant at both the microeconomic and the macroeconomic level. Results suggest that for the economy to address the needs of both parents and children, a shift of paradigm from the focus on individuals to a focus on the family as a unit needs to take place if healthy families are to be fostered and promoted at both levels.

On a microeconomic level, results are relevant because they indicate that a mother working outside the home does not necessarily increase the net positive income of her family but instead she might decrease it precisely when they need it the most, i.e., at lower income brackets. They also suggest the suitability of children coming into the world within a stable married family, as the data consistently reveal that it is within this structure that the net secondary income is maximized, and where more childcare expenditures can be allocated.

From a policy point of view, the results of this study speak to the importance of reinforcing marriage through public programs, as well as through private sector initiatives. Such policies not only respond to a normal development of society, but to an optimal way of preventing future social ills and high welfare costs. In doing so, the government contributes to the maximization of the human and social capital of society, while minimizing its social welfare costs. Lack of viable childcare provisions not only hampers the normal development of a child, but also undermines any effort to help single mothers overcome poverty. Studies on childcare services, however, suggest against government

provision of such services.⁶⁰ A viable alternative is the use of vouchers as they allow the parents to choose the service for their children and provide incentives, through market competition, to childcare providers to deliver quality services. Finally, childcare programs that facilitate an improvement in the education of low-income parents seem to address another important factor for improving the well-being of the family.

60. See *supra* Introduction.

