Families of working wives spending more on services and nondurables

When a wife becomes a second earner, husband-wife families spend more on work-related and timesaving items such as child care and food away from home, according to the Consumer Expenditure Survey

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During the post-World War II era, there has been a dramatic increase in women's labor force participation. This has generated a great deal of public interest in the social and economic consequences of the employment of women. High rates of labor force participation are prevalent for women both with and without children. Today, more than half of all mothers with children under age 3 work outside the home, compared with fewer than one-fourth of such mothers in 1967. (See table 1.)

The Consumer Expenditure Survey provides data that permit us to examine the effects of a wife's labor force participation on the income and expenditures of her family. The data used in this study are from the 1984–86 Consumer Expenditure Survey.[1] To determine the economic effects on the family of a wage-earning wife, two groups of consumer units[2] are compared: (1) husband-wife families in which only the husband is an earner, and (2) husband-wife families in which both the husband and wife (and no others) are earners. These families will be referred to as one- and two-earner families, respectively. Families in which the wife is the only earner are not included in this study. In our analysis, expenditures generally perceived to be associated with the wife working outside the home are studied; these include expenditures on women's apparel, child care, purchase of vehicles, gasoline, public transportation, housing, and Social Security and pension plan costs. We will also discuss the additional income received from the wife's employment.

There are two parts to this analysis. First, we compare the average annual income and expenditures of those consumer units in which the wife became employed during the period the consumer unit was in the survey with similar consumer units in which the wife was not employed. The economic costs and benefits from the wife's employment are defined in terms of the changes in expenditures and income that result from the change in the employment status of the wife. In the second part, we use multivariate regression analysis to measure the effect of the wife's employment on consumer-unit expenditures for all husband-wife units. In this part, we examine all one-earner and two-earner families and also make the distinction between part-time and full-time working status of the wife. Each part of the study will be described in turn.

The price of time

Intuitively, one would expect two-earner households to spend their money differently than do one-earner house-

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holds. First, households in which both the husband and wife work have less time available for household-related activities such as cooking and cleaning. This increased demand on a couple's time raises the value of time as a factor of production in household activities. Second, there is an income effect by which the wife's additional income increases expenditures in accordance with the relevant income elasticities. In addition, the wife's contribution to the family income may play an enhanced role in the decision about how to allocate income among expenditures. One can envision a pooling of income in which individual preferences are weighted differently when the wife works. The relative weighting of these preferences may be altered by the wife's decision to work. Vicki Schram Fitzsimmons found that there was a greater incidence of joint responsibility for money management tasks in two-earner families than in one-earner families.[3]

Household production time, we assume, would be a more valuable "commodity" to two-earner families than to one-earner families. Some studies suggest that time may be more valuable today in the United States than in the past or in other countries. For example, Victor Fuchs found that women were working 20 minutes longer per day in 1983 than in 1959, if one includes working for pay, housework, and child care.[4] As early as 1965, Gary S. Becker pointed out that Americans are much more wasteful of food and other goods than persons in poorer countries and much more conscious of time: "The tendency to be economical about time and lavish about goods may be no paradox, but in part simply a reaction to a difference in relative costs."[5]

The substitution of goods and services for time induced by an increase in the cost of time would often include substitution of more expensive goods and services. For example, an increase in the value of a mother's time may induce her to enter the labor force and spend less time cooking by using prepared foods and less time on child care by using day care centers or babysitters. During the busiest years of raising a family and working, the value of time is relatively high. It is during the working–child caring phase of the life cycle that the individual works more and has less leisure time.[6] If the wife works outside the home, she will be more inclined to pay for services than the nonworking wife. The value of time also changes for an individual at various states in his life and, later in the life cycle, these changes induce substitution of relatively cheaper means of household production for purchased goods and services.

Don Bellante and Ann C. Foster used this theory of the allocation of time as the primary rationale underlying their 1983 study.[7] Because working wives spend fewer hours per week in housework, Bellante and Foster examined the influence of the wife's employment on expenditures for services. They also controlled for a variety of demographic variables. Their results were mixed, in that there was a positive relationship between employment and some relevant services, such as child care, but not between employment and domestic services.

Table 1. Labor force participation rates of women by age, selected years, 1948–87

Age	Participation rate in—			
	1948	1967	1977	1987
Total, 16 years and over	32.7	41.1	48.4	56.0
16 to 19 years	42.0	41.9	51.2	53.3
20 to 24 years	45.3	53.3	66.5	73.0
25 to 34 years	33.2	41.9	59.7	72.4
35 to 44 years	36.9	48.1	55.8	74.5
45 to 54 years	35.0	51.8	55.8	67.1

Using data from the 1972–73 Consumer Expenditure Survey, Elizabeth Waldman and Eva E. Jacobs found that "it is not employment or nonemployment of the wife that per se accounts for difference in expenditures, but rather the interaction between earner status and the contribution to income of the second earner."[8]

Longitudinal aspects of the study

The Consumer Expenditure Survey, which has been continuous since 1980, has a limited longitudinal aspect. For the Interview portion of the survey, a sample of consumer units is interviewed every 3 months over five consecutive quarters, with the number of interviewed cases expected to be about 5,000 per quarter. For reasons of operational efficiency, the sample is rotating—one-fifth of the consumer units are replaced by new units every quarter. Each quarter of data is treated as statistically independent. If a survey respondent moves, the new residents at that address become the sample unit. Movers are not followed. About 70 percent of the consumer units participate for all five interviews.[9]

The interviewer collects extensive expenditure data and information on the characteristics of the consumer unit. Among these are the age, income, and work experience of all the members. Because the interview is lengthy and time-consuming, the work and income questions are asked only in the second and fifth interviews.

We have not heretofore explored the possibilities of using the limited longitudinal aspect of the Consumer Expenditure Survey. However, we have investigated the types of questions we could attempt to answer by following the same household over time. Because one of the current issues being widely discussed is the prevalence of the two-earner family, we decided to investigate what happens to the expenditures of a consumer unit when the wife goes to work during the survey period. For this part of the study, we examine the income and expenditures of husband-wife consumer units in which the wife began working between the second and fifth interviews and consumer units in which the wife was not working during either the second or fifth interview periods.[10]

We identified the first group as "new earner" consumer units. The second group we called the "control" consumer units. The control households, in which the wife was not employed in either the second or fifth interview, were selected based on characteristics such as age, family size, family type, and income that made them similar to the new earner group. To obtain a sample of sufficient size for analysis, consumer units were selected from the years 1984–86. The resulting sample in each group was 175 consumer units. We first examined the changes in income and expenditures between the second and fifth interviews within each group, and then compared the changes between the two groups. It should be noted that, for this study, we did not take account of the actual date on which the wife started working. Therefore, by the fifth interview she may have been working for as little as 1 month or as much as 9 months.

It was hypothesized that income and those expenditures which are commonly associated with working would be higher in the fifth interview than in the second interview for the new earner households. The expenditures are for food away from home, women's apparel, child care, vehicles, gasoline, and mass transit. In addition, we looked at housing, because the desire for homeownership is frequently given as a reason for wives returning to work, and at Social Security taxes and pension contributions, which are directly associated with earnings.

The results as shown in table 2 are mixed. For the new earner group, the components that met expectations are income, with an increase of 17 percent from interview 2 to interview 5; food away from home, with a 16-percent increase; and child care, with a 30-percent increase. Because gasoline prices were declining during the reference period, the 7-percent rise in that component reflects a much larger real increase and can be included as well. Housing and pension costs also increased, but at a lower rate, and expenditures on women's apparel increased only a small amount. The result for vehicles can probably be explained by the small number of reports for this category, which leads to a high variance. For example, if one or two consumer units purchase an expensive automobile or truck in interview 2 and not in interview 5, a high variance could result with such a small number of observations. Expenditures for mass transit are a small value, in addition to being sparsely reported.

It is noteworthy that the average age of the wife in the new earner group is 42, near the upper age limit of the high labor force participation group. Considering the large proportion of younger women employed in the total population, it appears that a few women are leaving and rejoining the labor force but that more are employed continuously. On the other hand, the expenditures show that those in the younger group often require child care as soon as they enter or reenter the employed labor force.

When comparing the new earner and control groups, we run into unexpected anomalies. The increase for the control group is much larger for food away from home and women's apparel. This may be just an aberration. For most of the categories, the results are generally satisfactory, with the new earner group showing larger changes than the control group.

If these results reflect reality, one can rationalize the discrepancy between the increase in income and the increase in expenditures. The new earner group wives could have entered the labor force to help pay for the earlier or prospective purchase of a car or house or college tuition, or to repay previously incurred debts. The improvement in the financial position of the new earner group, going from expenditures equalling income after taxes in interview 2 to a surplus in interview 5, may be used for these purposes. The control group, on the other hand, has a similar surplus in both periods.

This is our first attempt at using the longitudinal character of the Consumer Expenditure Survey. We hope to investigate the effect of other events. One approach would be to examine the reverse of the labor force movement we have examined here, that is, to look at consumer units in which the reference person has retired during the consumer unit's participation in the survey. Other possibilities are to compare the expenditures of consumer units with members moving in, newly born members, or other additions to the unit with consumer units of constant size. However, the sample size may be statistically inadequate for some of these investigations until we accumulate more years of data.

Characteristics of families

Following are our findings about the differences in expenditures between all one-earner and two-earner consumer units obtained from regression analysis. First,

Table 2. Longitudinal comparison of selected characteristics and expenditures of one- and two-earner husband-wife families, 1984–86

Item	New earners			Control group		
	Interview		Percent change	Interview		Percent change
	2	5		2	5	
Income before taxes	$27,951	$32,425	16	$27,480	$28,081	2
Income after taxes	$26,006	$30,482	17	$25,237	$25,913	3
Age of wife	—	42.0	—	—	43.3	—
Family size	—	3.8	—	—	3.9	—
Total expenditures	$26,160	$27,912	7	$23,744	$23,796	0
Food away from home	937	1,092	17	733	1,024	40
Women's apparel	456	469	3	385	429	11
Child care	122	158	30	130	118	−9
Vehicles	2,423	1,398	−42	1,904	1,494	−22
Gasoline	1,101	1,180	7	1,081	1,066	−1
Mass transit	41	35	−15	33	18	−46
Shelter	2,593	2,736	6	2,284	2,363	3
Social Security, pensions	2,256	2,380	5	2,135	2,124	0

Table 3. Demographic characteristics of husband-wife families[1] classified by wife's employment status, 1984–86

Characteristic	All husband-wife families			Family income and wife's employment status								
				Less than $20,000			$20,000–$34,999			$35,000 and over		
	Not working	Part-time	Full-time	Not working	Part-time	Full-time	Not working	Part-time	Full-time	Not working	Part-time	Full-time
Number of consumer units (in thousands)	14,052	9,351	18,774	6,178	3,414	4,553	4,674	3,562	7,436	3,200	2,375	6,786
Income before taxes	$28,923	$30,820	$36,282	$12,807	$12,582	$14,216	$28,914	$29,884	$30,863	$64,140	$58,439	$57,114
Income after taxes	$26,439	$28,221	$32,573	$11,725	$11,673	$12,879	$26,184	$26,943	$27,846	$58,973	$53,923	$51,441
Size of consumer unit	3.4	3.4	3.0	3.3	3.2	3.1	3.4	3.5	3.0	3.3	3.5	2.9
Age of reference person	44.5	38.3	37.9	44.1	38.1	36.6	43.8	36.8	36.6	46.5	41.0	40.1
Number in consumer unit:												
Earners	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Vehicles	2.2	2.5	2.5	1.9	2.2	2.2	2.4	2.6	2.6	2.5	2.8	2.7
Children under 18	1.3	1.4	1.0	1.3	1.2	1.1	1.3	1.5	1.0	1.3	1.4	0.9
Percent reporting												
Housing tenure:												
Homeowner with mortgage	50	60	62	33	39	38	56	66	62	72	82	78
Homeowner without mortgage	26	15	12	28	20	18	24	13	11	20	10	9
Renter	24	25	26	39	41	44	20	21	27	8	8	13
Race of reference person:												
Black	5	5	9	8	9	12	3	3	9	2	3	7
White and other	95	95	91	92	91	88	97	97	91	98	97	93
Education of reference person:												
Elementary (1–8)	10	4	5	17	10	9	5	1	4	1	1	2
High school (9–12)	47	39	43	55	53	59	53	44	48	24	21	27
College	43	57	52	28	37	32	42	55	48	75	78	71

[1]Data are for complete income reporters. See text footnote 10.

however, we examine the characteristics of all husband-wife families classified by the wife's earner status.

Families in which both the husband and wife work are a major and growing segment of American society. In almost 70 percent of husband-wife families, the wife works outside the home. Two-thirds of these women work full time, while one-third work part time. (See table 3.)

There are differences in the characteristics of families in which the wife works full time and those in which the wife is not employed. For example, families in which both the husband and wife work full time are younger, are more likely to have attended college, and have fewer children. The homeownership rate is about the same for the two types of families, but the two full-time earner family is only half as likely to own its home mortgage free. A higher proportion of families with two full-time workers are black. Also, two full-time earner families own more vehicles than one-earner families, although both average at least two.

Families in which the wife works part time exhibit some of the characteristics of families in which the wife works full time and some of the characteristics of those in which the wife does not work outside the home. Families in which the wife works part time are, on average, the same age and own the same number of vehicles as two full-time earner families. However, two-earner families in which the wife works part time are more like one-earner families in that, on average, they have about the same number of children. This may explain, in part, why the wife works part time, as it may not be economically feasible to pay for extra child care. She may arrange her work schedule around the schoolday or her husband's work schedule, or both.

A look at the characteristics presented in table 3 shows that approximately the same relationships hold across all income levels. However, there are some interesting differences. Not surprisingly, the wife works full time in more than half of the families in the highest income group, compared to only one-third of the families in the lowest income group. The average age of the highest income group is higher. It is possible that the children are also older, permitting more women to work full time.

On average, women contributed substantially to family income. Earnings of women working part time represented about 29 percent of their families' total income. Women who work full time contribute 40 percent of their families' income.[11]

The sources of income are somewhat different in general between one-earner and two-earner households. (See table 4.) Two-earner families obtain a higher share of their income from wages and salaries and a lower share from self-employment income than one-earner families. As one would expect, one-earner families receive a higher share of their income from Social Security, private, and govern-

ment retirement. This reflects the higher average age of the head of the one-earner consumer unit, in which one spouse may be retired and the other still working. Heads of one-earner households are, on average, 6 years older than heads of two-earner households.

One-earner families earn two to three times more from interest and other property income, both as a share of income and in absolute dollar terms, than two-earner families. This may be because one-earner families are older and therefore more likely to have accumulated wealth. It may also be because single-earner families may invest and save more than dual-earner families to offset somewhat their reliance on a single paycheck. A wife's earnings may diminish a family's motive to save as a hedge against a husband's possible job loss. In addition, if a working wife is covered by a pension plan, which is in part employer financed, the family's motivation to save for retirement may be lessened.[12]

Income is 23 percent higher for two full-time earner families when compared to one-earner families, whereas it is only 7 percent higher for two-earner families in which the wife works part time. Income for one-earner and two-earner (wife works part time) families are about the same for the two lowest income groups. If the wife works full time, income is between 6 and 10 percent higher than the income of one-earner families in the two lowest income groups. In the highest income group, the one-earner family appears to be a different type. Income is 14 percent higher than that of families in which the wife works full time and 9 percent higher than that of families with wives employed part time. This can be explained by the fact that the higher income group is open ended. One-earner families in this income group have more self-employed earners, and interest, dividends, and other property income are also substantial.

In families in which the husband earns an income that is considerably above average, a high proportion of the wives do not work. The benefit of additional income from the wife is probably relatively low. Also, if the wife does not have the training or inclination for professional work, it may be relatively difficult for her to find work that befits the social status she derives from her husband. According to Barbara R. Bergmann, "Such families constitute the last bastion of the full-time housewife."[13]

This review of the characteristics and income of these households emphasizes that there are other variables besides earner status that influence spending patterns, and that many of these variables are related to each other.

Regression analysis

Multivariate tobit regression analysis was used to examine whether expenditure differences exist between one- and two-earner families after controlling for differences in demographic characteristics.[14] The tobit statistical procedure is particularly well suited to the analysis of data when some consumer units incur no expenditures for some items during the interview period. Weights were used in the regression analysis, so that the results apply to the total population.

The analysis was limited to those expenditures generally perceived to be influenced more by the earner status of the wife than by other demographic characteristics. Eight equations were estimated. The eight dependent variables were expenditures[15] for food away from home, child care and babysitting, gasoline and motor oil, purchase of new vehicles, purchase of used vehicles, women's apparel, public transportation, and shelter.

Independent variables and hypotheses. We are investigating whether the working status of the wife accounts for differences in expenditures among husband-wife families or whether the differences are due to income, family size, the presence of children, or some other characteristic. The working status of the wife is the variable of interest for this study. To isolate the effect of that variable, we are

Table 4. Percent distribution of income by source for husband-wife families[1] classified by wife's employment status, 1984–86

Income by source	All husband-wife families			Family income and wife's employment status								
				Less than $20,000			$20,000 to $34,999			$35,000 and over		
	Not working	Part-time	Full-time	Not working	Part-time	Full-time	Not working	Part-time	Full-time	Not working	Part-time	Full-time
Income before taxes ...	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Wages and salaries	77.3	86.2	91.0	79.4	82.2	87.3	86.1	92.6	91.8	78.4	82.8	87.3
Self employment	9.2	7.3	4.7	4.7	5.2	4.2	5.1	3.4	4.0	9.7	11.7	8.1
Social Security, private, and government retirement	7.4	2.6	1.6	9.1	5.9	3.1	5.0	1.8	1.8	4.8	2.0	1.4
Interest, dividends, rental income, and other property income ...	4.6	2.4	1.4	2.1	2.0	1.1	2.8	1.3	1.2	6.6	2.6	2.2
Other income[2]	1.6	1.4	1.3	4.6	4.6	4.3	1.0	0.9	1.2	0.5	0.8	1.0

[1]Data are for complete income reporters. See text footnote 10.

[2]Other income includes unemployment and workers' compensation, veterans' benefits, public assistance, supplemental security income, food stamps, and regular contributions for support.

Table 5. Tobit regression coefficients

Independent variable[1]	Dependent variables							
	Food away from home	Child care[2]	New vehicles	Used vehicles	Gasoline and motor oil	Public transportation	Women's apparel	Shelter
Employment status of wife (not working):								
Part-time	19.00**	523.37*	-1198.57	-70.44	12.30*	40.59	-36.19**	-25.48
Full-time	27.74*	785.04*	870.19	20.25	24.89*	29.40	36.23*	41.77**
Total expenditures[3]	3.31*	1.79*	144.55*	30.38*	0.56*	3.89*	1.65*	11.42*
Age of reference person	5.12*	46.62*	-699.29*	-405.71*	7.11*	9.00**	2.33**	11.16*
Age-squared	-0.04*	-0.53*	6.22*	3.19*	-0.08*	-0.06	-0.03*	-0.23*
Age* part-time employment status of wife	—	-8.86*	—	—	—	—	1.52*	—
Age* full-time employment status of wife	—	-13.64*	—	—	—	—	-0.34	—
Family size	-5.11	-14.90**	-1553.68	212.62**	18.98*	17.67	-12.48*	-21.05**
Presence of children (age 12 or over):								
Under age 6	-79.00*	822.16*	—	—	-28.88*	-141.64*	-28.40*	47.57**
Ages 6-11	6.45	208.96*	—	—	-18.52*	-75.00*	-27.08*	32.77
Education (high school):								
Less than 12 years	-83.76*	-87.08*	-1385.39	1274.55*	-16.42*	15.27	-40.67*	-43.93
Some college	50.24*	82.08*	-874.15	-1574.48*	2.92	109.33*	27.54*	90.59*
College graduate or more	99.03*	166.42*	-3800.40*	-2461.19*	-10.85*	293.42*	57.01*	445.23*
Seasons (Fall: October-December):								
Winter (January-March)	-45.35*	—	11.20	-449.43	8.47	-11.06	46.81*	-46.48**
Spring (April-June)	-8.72	—	697.57	518.29	5.94	-3.17	-7.73	-117.68*
Summer (July-September)	12.37	—	932.17	-103.24	33.57*	108.72*	-13.02**	-47.41**
Region (South):								
Northeast	33.32*	-46.82*	645.68	—	-53.09*	222.62*	15.75*	92.84*
Midwest	27.93*	25.73	-24.18	—	-34.75*	28.43	11.73	9.95
West	14.13	18.05	-2856.01*	—	-11.38*	213.55*	-0.09	336.26*
Urbanization (urban):								
Rural	-44.69*	-36.31*	139.42	-312.16	22.99*	-300.53*	-29.15*	-315.08*
Number of vehicles	—	—	2006.12*	1328.87*	32.85*	-76.98*	—	—
Housing tenure (renter):								
Homeowner	—	—	—	—	—	—	—	32.34
Constant	-75.63**	-2149.00*	-21401.44*	-6608.70*	4.54	-1261.17*	-84.11*	227.31*

[1]Where appropriate, characteristics of the reference group are indicated in parentheses.
[2]Child care includes day care and babysitting.
[3]Values have been multiplied by 100.

*Significant at the alpha = .01 level.
**Significant at the alpha = .05 level.
NOTE: Dash indicates that the variable was not used in the model.

controlling the other socioeconomic variables. These variables are listed in table 5 and are similar, although not identical, for each of the eight models being estimated.

Where appropriate, the characteristics of the reference group are indicated in parentheses in the table. The reference group is the group to which the comparison is made. For instance, in table 5, the reference group is "wife not working." The coefficients for "Part-time" and "Full-time" are compared to the "not working" group. By way of example, the coefficient of 19.00 for food away from home for wives working part time indicates that these women's families spend more on food away from home than families in which the wife does not work. Unlike ordinary least squares regression estimates, tobit regression coefficients indicate only the direction, and not the magnitude, of the differences between groups.

The working status[16] of the wife is defined as follows: (1) the wife is not employed outside the home (the reference group); (2) the wife is working part time; or, (3) the wife is working full time. Working part time is defined as working fewer than 35 hours per week or working full time for part of the year. Working full time is defined as working 35 hours or more per week for at least 50 weeks. It is hypothesized that working will be positively related to the expenditures under study.

Consistent with classical consumption theory and the results of previous research, income is hypothesized to be positively related to expenditures. Total expenditures are chosen as a proxy for income for three reasons.[17] First, the permanent income hypothesis suggests that total expenditures are an appropriate measure of income because, in the short run, families have more control over expenditures than over incomes. Second, total expenditures have been shown to give a better fit than income in models designed to predict expenditures in a number of expenditure categories.[18] Third, in addition to the economic reasons, there are

operational reasons for using total expenditures. Income data are only collected during interviews 2 and 5. Income data are collected for the previous year while expenditure data are collected for the previous 3 months. Thus, there is a lag between reports of income and expenditures that disappears at the aggregate level but may distort results at the micro level. Using total expenditures as proxy for income corrects this timelag problem.

The presence of children by age group is included in the model because it affects expenditures, particularly for child care and food away from home. This variable is entered as a categorical variable and is defined as (1) the presence of children under age 6; (2) the presence of children ages 6 to 11; or, (3) the presence of children age 12 or older (the reference group).

Age and age-squared are included in the model to measure changes in expenditure patterns over the life cycle.[19] (Recall that one-earner families are, on average, older.) Family size is also included because it is a major determinant of household consumption patterns,[20] although the direction of its effect may differ depending on the item—expenditures probably vary negatively with family size for food away from home, and positively for child care. It is not clear what the effect on the other expenditure categories will be. Housing tenure is included in the shelter model because of the inherent differences in the cost of renting versus owning a home. Education is controlled for because previous research indicates that education increases efficiency in all nonmarket activities.[21] This greater efficiency increases a household's real income. Education also is used as a variable in consumer research to measure social status.

Regional variation in the availability of and need for goods and services as well as regional price differences makes it necessary to control for the region of the country in which the consumer unit lives. The same is true for urban and rural differences.

Results

Results of the regression analysis are displayed in table 5. To test the overall significance of the set of variables included in each expenditure model, the likelihood ratio test statistic was used.[22] The resulting chi-square values were statistically significant at the 0.01 level. This allowed for the rejection of the null hypothesis that all of the coefficients (except the intercept) are equal to zero for all the models considered. The coefficients from the tobit regression models were used to calculate the predicted expenditures and to determine changes in expenditure patterns over the life cycle.

Expenditures for households in which the wife works full time or part time were significantly greater for most of the items under study than for households in which the wife is not employed, after accounting for the other differences. Families in which the wife is employed spend significantly more on food away from home, child care, women's apparel,[23] and gasoline and motor oil than do families in which the wife does not work outside the home. If the wife works full time, her family also spends significantly more than the one-earner family on shelter.

Child care expenditures include all expenses for nursery school, day care, babysitting, camp, and so on. Child care expenditures are a necessity for mothers employed outside the home. Whether the wife works part time or full time, child care expenditures are significantly more than for families in which the wife is not employed. However, this difference narrows as these women get older. This makes intuitive sense because older women are more likely to have older children, who require less outside care. It is also confirmed by the presence-of-children variable that shows families with children age 11 or younger spending significantly more for child care than families with children age 12 or older. Based on results from the regression equation, child care expenditures for families in which the wife works full time increase until age 30 and continue at that level until about age 35, at which point they begin to decline steadily. Child care expenditures for families in which the wife works part time increase through age 35, when they level out until age 40 and then begin to decline. The wives in these families have more children and return to work later or work part time longer.

Households in which the wife works spend significantly more on food away from home than the one-earner household. The working wife often buys lunch or breakfast, or both, at work. In addition, she may be inclined to cook dinner less often, due to lack of time. This means her family will often eat dinner out as well.

Expenditures for vehicles, both new and used, are the same for one- and two-earner families despite the fact that two-earner families own more vehicles than do one-earner families (2.5 versus 2.2 vehicles). Ownership of more vehicles is one reason why gasoline and motor oil expenditures are higher for two-earner families. In addition, the accrued mileage that occurs from daily commuting increases gas and motor oil consumption.

Wives who work full time spend more on clothing than wives who are not working, although the difference closes with increasing age. Wives who work part time spend more on apparel than nonworking wives after age 24.

Expenditures for shelter, including both owned dwellings and rental units, are significantly higher for families in which the wife works full time. These families are younger and have higher mortgages. Also, fewer two-earner families own their homes without mortgage—12 percent versus 24 percent of one-earner families. Two full-time earner families who are renters also have higher average rental costs. If the wife works part time, shelter costs are about the same as for families in which the wife is not employed. This may be explained by the fact that

one-earner and two-earner families in which the wife works part time have the same number of children, on average, and thus have similar space requirements and housing needs. In addition, the average income of families in which the wife works part time is only slightly higher than that of one-earner households.

While the employment status of the wife is statistically significant in explaining differences in the levels of expenditures for child care, food away from home, gasoline and motor oil, women's apparel, and shelter, it is important to note the relative impact of the wife's working status on expenditures. One way to do this is by looking at the effect of the wife's working status on the predicted expenditures. After controlling for other explanatory variables, the working status of the wife has a small, although significant, impact on the predicted expenditures for these items. For example, families of employed wives spend an average of 17 to 18 percent more per year on child care and about 4 percent more on women's apparel than families of wives who are not employed. Expenditures on food away from home are between 2 and 3 percent higher if the wife works. Thus, the relative impact on expenditures of the wife's working appears small. This is supported by previous studies that yielded similar results, in that significant differences are found but the actual dollar differences are relatively small.[24] What appears to be happening is that these same expenditures rise as the income of the one-earner family rises. Therefore, the difference in expenditures at the same income level is not as great as might be expected.

What about the expenditure categories for which the wife's earner status is not significant, such as for the purchase of vehicles? All husband-wife families own more than two vehicles, on average. Purchase of new vehicles is determined by income and age while purchase of used vehicles is determined by income, age, family size, and education. A similar finding about other consumers' durable goods was made by Myra H. Strober: " . . . although initial labor force participation may be associated with an increase in the durables to income ratio, after wives have been at work for a few years, most of the substitution out of home production is likely to be into the time-saving nondurables and services."[25]

Public transportation is another expenditure category for which the wife's earner status is not significant. In the regression equations, public transportation includes large ticket items which are often used as vacation transportation, such as airline fares, train tickets, and ship fares, as well as local transit. The commuter component is relatively small. Therefore, it is not surprising that the wife's earner status is not significant. Public transportation expenditures for husband-wife families are positively related to income and age and negatively related to the presence of children under age 12. Another indication that this is vacation transportation is that the regression results indicate that expenditures are highest in the summer.

Summary

The results from the longitudinal analysis and regression analysis are similar although not identical. Both analyses yield similar findings for expenditures on child care, gasoline, and vehicles. Child care and gasoline expenditures were found to be higher for the families of working wives, while vehicle purchases and public transportation expenditures were comparable for all husband-wife families regardless of the wife's employment status. The low increases in shelter in the longitudinal analysis may be explained in part by the mixed result in the regression analysis section. Two full-time earner families do spend significantly more than one-earner families on shelter, while two-earner families in which the wife works part time spend the same amount on shelter as one-earner families.

Expenditures for food away from home and women's apparel are significantly higher for all two-earner husband-wife families when compared to one-earner husband-wife families, according to the regression results. The longitudinal analysis also shows increases in expenditures for food away from home and women's apparel for families in which the wife returns to work. The only puzzling result here is that expenditures for food away from home and women's apparel increased more for the "control" (one-earner) households than for the "new earner" (two-earner) households.

The labor force is now growing at slightly more than 1 percent a year, compared to double that rate during the 1970's and early 1980's. Labor shortages in some industries are already beginning to appear. The Census Bureau's 1982 Current Population Survey found that 26 percent of nonworking mothers with preschoolers would look for work if "reasonably priced child care were available."[26] This represents a potential addition to the labor force of 1.7 million women. Thirteen percent of employed women with preschoolers (about 700,000 workers) said they would work longer hours if additional or better child care were available. Given these attitudes toward work and tighter labor supplies, it is likely that more employers will begin to offer child care benefits to induce women to enter the labor force. Hence, the number of two-earner families may be expected to continue to grow. The ongoing Consumer Expenditure Survey will allow for future examination of the spending patterns of these families. □

——*FOOTNOTES*——

[1]The data used in this study were drawn from the Interview portion of the 1984, 1985, and 1986 Consumer Expenditure Survey. The Interview survey is the most comprehensive survey of demographic characteristics of American consumer units. The Interview sample, selected on a rotat-

ing panel basis, is targeted at 5,000 consumer units per quarter. Each quarter, one-fifth of the sample is new to the survey. Consumer units who participate in the survey are interviewed five times, once per quarter; the first interview is used only for bounding purposes. Data for interviews 2 through 5 are used for publication and analysis. Over the 1984–86 time frame, data for a consumer unit may be available from one to four times. Each quarter is considered as a separate sample when estimates are calculated.

[2]The terms "household," "family," and "consumer unit" are used interchangeably throughout the text.

[3]Vicki Schram Fitzsimmons, "Family Money Management: How One-Earner and Two-Earner Families Handle Money," poster presentation at the annual meeting of the American Council on Consumer Interests, Chicago, IL, April 1988.

[4]Victor Fuchs, "Sex Differences in Economic Well-Being," *Science*, Apr. 25, 1986, pp. 459–64.

[5]G.S. Becker, "A Theory of the Allocation of Time," *The Economic Journal*, September 1965, pp. 493–517.

[6]Robert T. Michael and Gary S. Becker "On the New Theory of Consumer Behavior," *Swedish Journal of Economics*, September 1973, pp. 378–95.

[7]Don Bellante and Ann C. Foster, "Working Wives and Expenditure on Services," *Journal of Consumer Research*, September 1983, pp. 700–07.

[8]Elizabeth Waldman and Eva E. Jacobs, "Working Wives and Family Expenditures," *Proceedings of the Social Statistics Section of the American Statistical Association*, 1978.

[9]For the initial interview, information is collected on demographic and family characteristics and on the inventory of major durable goods of each consumer unit. Expenditure information is also collected in this interview, using a 1-month recall, but is used, along with the inventory information, solely for bounding purposes; that is, to classify the unit for analysis and to prevent duplicate reporting of expenditures in subsequent interviews. Data from the first interview are not used in the estimates.

[10]Complete income reporters. The distinction between complete and incomplete income reporters is based in general on whether the respondent provided values for major sources of income, such as wages and salaries, self-employment income, and Social Security income. Even complete income reporters may not have provided a full accounting of all income from all sources. In the current survey, across-the-board zero income reporting was designated as invalid, and the consumer unit was categorized as an incomplete reporter.

Data for the descriptive statistics (tables 2 and 3) are for complete income reporters only. Data used in the regression analysis are for all husband-wife families.

[11]Susan E. Shank, "Women and the labor market: the link grows stronger," *Monthly Labor Review*, March 1988, pp. 3–8.

[12]Myra H. Strober, "Wives' Labor Force Behavior and Family Consumption Patterns," *American Economic Review*, February 1977, pp. 410–17.

[13]Barbara R. Bergmann, *The Economic Emergence of Women* (New York, Basic Books, Inc., 1986).

[14]For a description of the methodology, see G.S. Maddala, *Limited-Dependent and Qualitative Variables in Econometrics* (New York, Cambridge University Press, 1983).

[15]Expenditures are defined as the transaction cost, including excise and sales taxes, of goods and services acquired during the interview period. Expenditure estimates include expenditures for gifts, but exclude purchases or the portion of purchases directly assignable to business purposes. Also excluded are periodic credit or installment payments on goods or services previously acquired. The full cost of each purchase is recorded when the purchase is made, even though full payment may not have been made on the date of purchase.

[16]Families in which the wife works as a volunteer are not included in this study. These families were dropped because they could introduce conflicting results. That is, they probably make use of the same timesaving techniques that employed women use but there is no additional income.

[17]In addition, if a wife begins to work during the periods covered by the third and fourth interviews, that information is collected. This was discussed in the longitudinal part of this study. However, if the wife stops working, that information is not recorded until the fifth interview. Hence, a family may be misclassified for up to two quarters.

[18]S. J. Prais and H. S. Houthakker, *The Analysis of Family Budgets* (Cambridge, MA, The University Press, 1971).

[19]Age is that of the reference person in the consumer unit. The reference person is the first member mentioned by the survey respondent when asked to "Start with the name of the person or one of the persons who owns or rents the home." It is with respect to this person that the relationship of other consumer unit members is determined. Thus, age may refer to the husband or the wife.

[20]Robert A. Pollack and Terence J. Wales, "Demographic Variables, in Demand Analysis," *Econometrica*, November 1981, pp. 1533–51.

[21]See Robert T. Michael, *The Effect of Education on Efficiency in Consumption*, National Bureau of Economic Research Occasional Paper No. 116 (New York, Columbia University, 1972).

[22]The test statistic is $\chi^2 = -2(\log \text{Likelihood } R - \log \text{Likelihood } U)$. The statistic is asymptotically chi-square, distributed with the degrees of freedom equal to the number of coefficients set equal to zero. The log likelihood function for the restricted model, represented by R, is obtained when the function is maximized with respect to the intercept only. The log likelihood of the unrestricted model, U, is obtained when the function is maximized with respect to all the coefficient estimates corresponding to the intercept and all explanatory variables.

[23]The part-time earner status coefficient for women's apparel is negative. However, when the interaction term "age* part-time employment status of the wife" is included in the equation, the net effect is that, for families with a reference person over age 24, households with wives working part time spend more on apparel than those in which the wife does not work.

[24]Waldman and Jacobs, "Working Wives."

[25]Strober, "Wives' Labor Force Behavior."

[26]Martin O'Connell and David E. Bloom, "Juggling Jobs and Babies: America's Child Care Challenges," *Population Trends and Public Policy*, Issue no. 12 (Washington, Population Reference Bureau, February 1987).