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The Impact of Domestic Work
on Men's and Women's Wages

Past research has consistently found that the negative relationship between housework and wages is stronger for women than for men. This article tests a potential explanation for this difference by focusing on the fact that men and women typically perform different types of household chores. Traditionally "feminine" and "masculine" task types are likely to interfere with work differently, because they vary as to when and how often they must be performed. Based on longitudinal data from the National Survey of Families and Households, fixed-effects regression results show that only time spent in female housework chores has a negative effect on wages. Furthermore, gender differences in the effect of housework disappear upon disaggregating housework into task types. This research suggests that a more equitable distribution of not only the amount, but also the type, of housework performed by men and women in the home may lead to a narrowing of the gender gap in wages.

Over the past few decades, there has been a dramatic increase in the percentage of married women participating in the labor force. Among married women with children younger than 6 years old, 64% worked outside the home in 1998, compared to only 19% in 1960 (U.S. Bureau of the Census,

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1999). Despite these extensive changes in women's employment rates, housework has remained "women's work." Married women's movement into paid employment has not been accompanied by a significant increase in the amount of housework done by husbands, and thus responsibility for the "second shift" of housework has fallen primarily on working wives (Berk, 1985; Coverman & Sheley, 1986; Hochschild, 1989; Kamo, 1988; Shelton, 1990).

Previous research has argued that household responsibilities may have a negative effect on wages, and thus that women's disproportionate responsibility for household work may be one factor contributing to the earnings gap between men and women. The hypothesized negative effect of housework on wages has generally been supported by past empirical research (Baxter, 1992; Coverman, 1983; Hersch, 1985, 1991a, 1991b; Hersch & Stratton, 1997; McAllister, 1990; Shelton & Firestone, 1988a). However, results consistently suggest that women incur a statistically significant greater penalty for housework time than do men. This raises an important question: Why does time spent on housework affect women's earnings more than men's?

Although some have speculated that the differential effects of housework time on earnings may be due to men and women performing different types of chores (Hersch, 1991a, 1991b), this hypothesis has not yet been tested empirically. Instead, past research has focused exclusively on the effect of the total number of hours of housework performed by husbands and wives, not the impor-

tance of task-type distinctions. Distinguishing be-
tween task types is necessary and important be-
cause "female-type" tasks, unlike "male-type"
tasks, generally need to be performed frequently
and at specific times; performance of female tasks
might thus have a more negative effect on wages
than performance of male tasks. Attention to task
type could also conceivably explain why past re-
search has found gender differences in the effect
of total housework time on wages. It may be that
men and women are still performing different
types of household tasks, and it is female tasks
particularly that affect wages.

This article makes two contributions to re-
search on the impact of housework on wages.
First, I refine the arguments linking men's and
women's involvement in domestic work to their
wages by categorizing housework into different
types of chores, asking whether this dimension of
household work affects wages. Second, longitu-
dinal panel data are used to formulate fixed-effects
models, providing a clearer specification of the
relationship between housework time and wages.
By relying on cross-sectional data, previous stud-
ies (with the exception of Hersch & Stratton,
1997) have been unable to control for unobserved
heterogeneity, leading to potentially biased re-
sults.

<center>BACKGROUND</center>

Scholars have argued that domestic work may af-
fect wages through the amount one is able to
work, the type of job one chooses or is placed in,
energy available for market work, and discrimi-
nation by employers. First, housework may affect
wages by restricting the amount one is able to
work. This argument rests on the notion that a
trade-off between housework and paid labor is
likely to exist, because time is a finite resource.
In other words, housework responsibilities may
cause one to reduce the number of work hours or
leave the labor market altogether (Mincer & Po-
lachek, 1974). Individuals not working or working
part-time will accumulate less work experience,
compared to those employed continuously full-
time. According to human capital theory, experi-
ence is positively associated with earnings. Fur-
thermore, part-time workers are less available than
full-time workers for work-related activities, fur-
ther education, retraining programs, or other ex-
periences that may contribute to promotion and
wage growth (Coverman, 1983). Part-time work-
ers are also typically relegated to low-skilled jobs

with low pay (Waldfogel, 1997). Second, individ-
uals may seek jobs that have flexible hours, a lo-
cation near home, and limited out-of-town travel
in order to integrate housework responsibilities
with paid work more effectively (Becker, 1991;
Coverman, 1983; Hersch, 1991b). The theory of
compensating differentials predicts that jobs with
these qualities will pay less (Filer, 1985). Third,
independent of human capital characteristics,
household responsibilities may have a negative ef-
fect on wages by limiting the energy and effort
available for labor market work and may thereby
reduce one's productivity and earnings (Becker,
1985; Hersch, 1985). The assumption here is that
individual effort is finite and must be parceled out
across all activities. Thus, the amount of effort
available for market work is directly diminished
by effort expended on housework. Because work
effort and wages are likely to be positively cor-
related, more burdened workers will have less en-
ergy and effort available for market work and thus
will earn less than those without substantial
housework responsibilities. Fourth, employers
may also be less likely to hire or promote indi-
viduals whom they believe to have substantial
housework responsibilities because they expect
such individuals to be less reliable workers or
more likely to quit (Coverman, 1983; Phelps,
1972). The third and fourth causal pathways are
typically identified as "direct," because most re-
search lacks measures of effort and discrimina-
tion.

Controlling for measures of human capital, re-
cent studies have empirically tested the direct ef-
fect of housework on wages for married men and
women. These results suggest that women incur a
greater wage penalty than men for time spent on
housework (Baxter, 1992; Coverman, 1983;
Hersch, 1985, 1991a, 1991b; Hersch & Stratton,
1997; McAllister, 1990; Shelton & Firestone,
1988a). This raises a significant question: Why
does time spent on housework affect women's
earnings more than men's?

The answer may lie in the type of housework
that men and women typically do. Housework has
two conceptually and analytically distinct dimen-
sions: number of hours and type of tasks (Blair &
Lichter, 1991; Schooler, Miller, Miller, & Rich-
tand, 1984; Twiggs, McQuillan, & Ferree, 1999).
Other studies of housework, both those predicting
time spent in housework (Blair & Lichter, 1991;
Gupta, 1999; Shelton, 1990; South & Spitze,
1994; Twiggs et al., 1999) and those examining
the impact of housework on perceived fairness

and satisfaction with division of labor (Benin & Agostinelli, 1988; Blair & Johnson, 1992) have incorporated this distinction. However, the distinction between types of tasks has been untapped in research examining the effect of housework on wages. Though some have speculated that the differential effects of housework time on wages could be due to the type of tasks performed (Hersch, 1991a, 1991b), no past research has explicitly tested this possibility.

Indeed, numerous studies show that men and women perform very different types of housework (Berk, 1985; Blair & Lichter, 1991; Coltrane, 1996; Hochschild, 1989). Women traditionally perform chores that take place inside the home and that are closely associated with child care. These types of tasks are generally termed "*female*" in the literature—because women have more often performed them—and I follow this convention here. Women are usually more involved than men in getting children ready for school in the morning, preparing the evening meal, cleaning the home, and doing laundry (Berk, 1985; Thompson & Walker, 1989). Importantly, these tasks need to be performed regularly and offer little discretion as to when they are performed, often in close conjunction with the typical workday (Meissner, 1977; Shaw, 1988).

Because of the inflexible and daily nature of female tasks, there are several ways that performing these tasks could negatively affect wages. To begin, female tasks could affect the number of hours available to work in the labor market because these tasks must be performed daily, not just on weekends. Also, because female tasks need to be performed at very specific times, individuals who perform these tasks may be less able to arrive at work early or stay late for special training meetings or other work-related activities (Baxter, 1992). Thus, being responsible for these tasks may act as a barrier to the accumulation of experience and seniority at work. Because these tasks need to be performed daily and at specific times, responsibility for female tasks might also restrict one to flexible jobs, located near home and requiring little out-of-town travel. Furthermore, if there is indeed any reduction in energy and effort available for market work associated with home responsibilities, it is likely to be strongest when performing female tasks, because these tasks usually take place very close in time to market work (Hersch, 1991b).

Men, on the other hand, traditionally perform chores that take place outside the home and do not revolve around daily child care. Traditional "male" tasks, such as household repairs and automobile maintenance, tend to have a well-defined beginning and end, allow discretion as to when the task should be performed, and even include a leisure component (Meissner, 1977). Moreover, male tasks are usually performed on the weekends, distant from market work (Shaw, 1988). The discretionary and infrequent nature of male tasks permits more flexible scheduling around paid work (Shelton & Firestone, 1988b).

The flexible and infrequent nature of male tasks means that such tasks are not likely to negatively affect wages. For instance, because male tasks are often accomplished on the weekends, performing them is not likely to reduce the number of hours one can work at a 9-to-5 job or to hamper participation in overtime or training programs at work. Also, because male tasks are performed irregularly and distant from market work, responsibility for them is unlikely to restrict one to jobs that have flexible work hours and are close to home (Baxter, 1992). Finally, any reduction in effort caused by housework is unlikely to have a pronounced effect on productivity if housework is not timed closely with market work, as is the case with male tasks (Hersch, 1991b).

Overall, because female tasks need to be performed more frequently and are more inflexible than male tasks, time spent in female tasks is expected to have a stronger negative effect on wages than time spent in male tasks. Moreover, if female tasks have a stronger negative effect on wages than male tasks, segregation of tasks in the home may help explain previous findings that total time spent in housework negatively affects women's wages more than men's wages. That is, it might simply be that men and women are still performing different types of household tasks, and it is female tasks especially that affect wages. In short, disaggregating housework into task types may "explain away" the gender difference in the effect of housework.

METHOD

Data

The data come from Wave 1 (1987–1988) and Wave 2 (1992–1994) of the National Survey of Families and Households (NSFH). The NSFH is a national probability sample of 13,007 adults. From the original sample, 10,008 respondents were successfully reinterviewed during Wave 2.

The NSFH data are appropriate for this investigation because they include detailed questions on housework as well as data on respondents' income and employment history. Unlike other data sets, the NSFH separates the total amount of time spent on housework into nine different types of chores, allowing me to construct task types. Additionally, these data allow me to use more complete measures of work history than those used in prior studies of the effect of housework on wages. I am able to distinguish between full-time and part-time experience, as well as to identify the number of times a worker exits the labor market. Finally, because the NSFH is a longitudinal panel data set, fixed-effects regression models (to be discussed later) that control for unobserved heterogeneity can be estimated.

I used several criteria to define my sample. First, the sample includes respondents who were interviewed at both waves. This restriction is necessary because fixed-effects models require at least two observations on each person. Second, the sample is limited to working individuals so as to examine the impact of housework on wages. Third, I focus only on continuously married respondents to situate the link between work in and outside the home within the context of marriage. Married respondents are also the focus of most other studies (Baxter, 1992; Coverman, 1983; Hersch, 1985; Hersch & Stratton, 1997; McAllister, 1990). The data are arranged in a pooled time-series cross-section with person-years as the unit of analysis. Because there are two waves of data, each respondent contributes two person-year records. The final analytic sample contains 3,384 person-years for 1,692 individuals, consisting of 1,590 person-years for 795 women and 1,794 person-years for 897 men.

Measures

The dependent variable is the natural log of current hourly wage in the respondent's main job. Using the natural log of hourly wage helps adjust for its skewed distribution. Log-wage also better reflects the nonlinear relationship between the independent variables and wages. For those individuals not paid by the hour (i.e., weekly, biweekly, monthly, or yearly), I calculated the hourly wage by dividing the payment amount by the number of hours the respondent usually works per week and, for those who are paid yearly, by the appropriate number of weeks worked in the last calendar year. Cases that are missing hourly wage and

outliers with hourly wages below $1.00 and above $250.00 are dropped from the analyses.

The primary independent variable of interest is the time spent on different types of housework. The housework data come from answers to a self-administered questionnaire that asks the respondent to approximate the number of hours spent on nine household tasks during the week preceding the survey. These nine tasks are preparing meals, washing dishes, cleaning house, doing outdoor chores, shopping, washing clothes and ironing, paying bills, maintaining the automobile, and driving. From these nine questionnaire items, I created three separate categories of household tasks and a variable equaling the total amount of time spent in each one. These categories are suggested by theory and are empirically supported through factor analysis; they are also consistent with many other housework analyses, including those by Presser (1994) and Shelton (1992). Tasks that have been traditionally done by women are denoted here as "female" tasks: preparing meals, washing dishes, cleaning house, and washing clothes. Likewise, tasks that have traditionally been done by men are denoted as "male" tasks: outdoor and other household maintenance and automobile maintenance. Finally, tasks that have been traditionally shared equally between men and women are denoted as "neutral" tasks: shopping, paying bills, and driving other household members. In order to provide a reference point to previous work, a variable equal to the total hours spent on housework is also created.

Following a technique used by South and Spitze (1994), two adjustments are made to the measures of time spent on specific tasks. First, because a few respondents reported spending an inordinate number of hours on specific tasks, values above the 99th percentile are recoded to the value at 99%. The 99th percentile figures range from 10 hours per week on "shopping" to 30 hours per week on "cleaning house". This adjustment reduces skewness in the individual measures and therefore in the summed measures as well. Second, I exclude respondents who did not answer more than two of the nine household task questions. For those who answer at least seven of the nine items, I impute a value of 0 for those who did not answer the question or said the task was inapplicable. For those who spent some unspecified amount of time on the task or stated that they didn't know, I impute the mean value for the task separately for men and women. For each individual for each task, I create two sets of dummy var-

iables: The first is equal to 1 if that task was imputed with a 0, and the second is equal to 1 if that task was imputed with the mean. These two sets of dummy variables are included in all the regression analyses; this procedure allows for an adjustment on selectivity as to who neglects to report housework time. Alternatively, I excluded those respondents who did not answer one or more of the nine questions, treated all nonnumeric answers as 0, and substituted all nonnumeric responses with the mean. The regression results from these alternative approaches did not differ significantly from the results of the chosen approach.

Because I am interested in estimating the direct effect of housework on wages, I control for additional wage predictors that are associated with variation in housework time. I include measures of years of education and years of work experience; both are expected to be associated with higher wages. I distinguish between part-time and full-time years of work experience, because the return to part-time experience is expected to be smaller than that to full-time experience (Corcoran, Duncan, & Ponza, 1984). Also, I include a measure that captures discontinuities in labor force participation: number of breaks in employment, where a *break* is defined as a period of 2 months or longer when a respondent is not employed. Employment breaks are expected to have a negative effect on hourly wages (Mincer & Polachek, 1974). Furthermore, I control for a number of characteristics of the respondent's main job. I include a dummy variable equal to 1 if a respondent is employed in an upper-white-collar occupation (defined as managerial-professional), 0 otherwise. Being in an upper-white-collar occupation is expected to be positively related to wages. A dummy variable equal to 1 for respondents currently working part-time—defined as less than 35 hours per week—is also included. Part-time status is expected to have a negative effect on wages. Two measures that characterize the demands of one's job are included: number of minutes spent commuting to job and an indicator of whether the job requires travel or overnight absence from home. Economic theory predicts that employers will have to pay higher wages to get employees to commute long distances and travel overnight. The total number of children ever born to or adopted by the respondent is included in the model. Number of children is expected to have a positive effect on men's hourly wages and a negative effect on women's hourly wages because of the difference in the level of responsibility assumed

for children (Hochschild, 1989). The positive effect of children on men's wages is usually attributed to the greater pressure placed on them to fulfill the breadwinner role.

The data are limited in some respects. Ideally, I would like to control for tenure at current job; however, in the NSFH, the histories of employment do not capture the sequence of jobs that an individual has held, nor do they differentiate among employing organizations. I am also unable to control for labor union membership because the NSFH does not ask respondents such information. Finally, the measure of housework time used here includes only time spent on tasks (e.g., going shopping); it does not include the behind-the-scenes responsibility for household management (e.g., making a shopping list) (Mederer, 1993).

Analysis

Fixed-effects regression models are estimated to assess the direct effects of time spent on various task types on hourly wages. The data are arranged in a pooled time-series cross-section with person-years as the unit of analysis. Effects are fixed for years (period) and persons. The model is as follows:

$$\ln Y_{it} = b_0 + \sum b_k X_{kit} + e_{it}$$

where

$$e_{it} = u_i + v_t + w_{it}$$

Regression coefficients are denoted by b,; k indexes independent variables; i indexes respondents; and t indexes survey years. The dependent variable, Y, is the hourly wage. Because period effects on wages are controlled, it is not necessary to change wages to constant dollars. X is a vector of measurable characteristics expected to affect wages, including housework. Random error terms are represented by e; u is a time-invariant or fixed individual component of error; v is a time-wise component of error; and w is a classical random normally distributed error component. The coefficients can be obtained by estimating a standard regression model using ordinary least squares (OLS), where a separate dummy variable has been included for each individual and each year (with appropriate omitted categories). I estimate this model using the PROC TSCSREG procedure in SAS (SAS Institute Inc., 1999). Also, because the use of a multistage sampling design could bias the standard errors of estimates, the analyses rely on

TABLE 1. DESCRIPTIVE STATISTICS FOR MARRIED MEN AND WOMEN

Variable	Women		Men	
	M	SD	M	SD
Hourly wage (in dollars)	11.55	8.66	17.56*	18.49
Total hours of housework per week	33.15	19.06	18.62*	14.28
Total hours of female tasks per week	25.05	14.71	7.32*	8.12
Total hours of male tasks per week	1.97	3.14	7.10*	6.69
Total hours of neutral tasks per week	6.13	4.70	4.20*	4.47
Years of education	13.63	2.45	13.98*	3.21
Years of full-time work experience	13.56	9.29	20.76*	11.37
Years of part-time work experience	3.18	5.62	0.50*	3.09
Number of employment breaks	1.06	1.05	0.39*	0.87
Occupation (1 = upper-white-collar)	0.39	0.48	0.39	0.54
Part-time work status (1 = yes)	0.29	0.45	0.04*	0.23
Commuting time (in minutes)	16.92	13.47	21.68*	17.65
Travel requirements (1 = yes)	0.17	0.37	0.36*	0.54
Number of children	2.11	1.26	2.24*	1.66
Age (in years)	41.29	9.59	41.69	10.91
Race (1 = White)	0.89	0.31	0.88	0.36
n (person-year)	1,590		1,794	

Note: These data are weighted.
*Differences in means for women and men are statistically significant at $p < .05$ (two-tailed t tests).

regressions with standard errors adjusted for complex surveys (SAS Institute Inc., 2000).

The fixed-effects specification controls for all unobserved individual characteristics that do not vary over time, because the effects of constant individual characteristics (e.g., race, birth cohort) are absorbed into *u*. In this way, fixed factors related to wages are cancelled out of the earnings equation. Only measures of individual characteristics that change over time are included in these models.

The ability of fixed-effects techniques to control for characteristics that are invariant for an individual across time is particularly important in models of the impact of housework on wages, because a variety of unmeasured individual characteristics, such as motivation, ambition, or ability, are likely to affect both time spent in housework and wages. For example, if individuals with lower motivation to succeed in the labor market are more likely to spend time on housework and less likely to have high earnings, then this unobserved heterogeneity might explain the earlier findings that housework time has negative effects on earnings. The concern here is not with reverse causality (to be discussed later); rather, it is that some unobserved factor is affecting both housework time and wages. My analysis controls for these unmeasured individual characteristics, so long as their effects do not change over time.

Fixed-effects models also have the benefit of removing systematic biases that may exist in measures of housework time. For example, Juster and Stafford (1991) find that retrospective data, like the NSFH, systematically overestimate measures of household labor time compared to time diary data. Assuming that individuals consistently overestimate their housework time over time, fixed-effects estimation will correct for this, and the analyses will not be influenced by this bias.

Separate regression models are estimated for men and women. In order to provide a basis for comparison to previous work, a model that includes a variable measuring the total hours spent on housework on wages is first estimated. Next, I estimate a model that categorizes housework into different task types. Finally, I perform sensitivity analyses to check an alternative categorization of task types and nonlinearity in the housework-wage model.

RESULTS

Descriptive Statistics

Table 1 provides descriptive statistics for the measures included in the analyses for both men and women. As expected, there are substantial and statistically significant sex differences in most of the variables. On average, women earn $11.55 per hour, whereas men earn $17.56 per hour. As these data indicate, comparisons of total hours devoted to housework reveal very large sex differences. Women perform on average more than one and a

half times the amount of housework as men per-
form, 33 hours versus 19 hours, respectively. Not
surprisingly, housework tasks are also highly seg-
regated by sex. Women spend considerably more
time in female tasks than do men, 25 hours versus
7 hours. Men, on the other hand, spend consid-
erably more time in male tasks than do women, 7
hours versus 2 hours. Women spend slightly more
time than men in neutral tasks, 6 hours versus 4
hours. It should be noted that the female-male
task-type theoretical distinctions stem from rela-
tive contributions of husbands and wives to given
tasks, not from comparisons of an individual's
time across tasks. The results from these data (not
shown) reveal that, on average, wives perform
77% of the female tasks and only 23% of male
tasks within the married couple. On the other
hand, husbands perform on average 78% of the
male tasks and only 24% of female tasks.

With respect to the control variables, men have
slightly more education than women, 14.0 years
versus 13.6 years. Women have about 7 years less
full-time work experience than men, but about 2.5
years more part-time work experience. On aver-
age, women have taken more employment breaks
than men and are more likely to be currently
working part-time. About 40% of women and men
are in upper-white-collar professions. Women's
commuting time is also about 5 minutes less than
men's, and women are less likely than men to
have jobs that require extensive travel. Men in the
sample have slightly more children than women.
The values of remaining demographic controls
(age and race) are equal for women and men.

Regression Results

Table 2 shows results for the fixed-effects models.
Race drops out of the analysis because it is fixed
over time. Age is also not included in the models.
This is because age is implicitly controlled, be-
cause both period and cohort (via the person-spe-
cific fixed effect) are controlled: Period and cohort
together uniquely determine age. Because wages
are in logarithmic form, coefficients multiplied by
100 are interpreted as the percentage change in
hourly wages that would result from a unit in-
crease in the independent variable. Model 1 esti-
mates the direct effect of total hours of housework
per week on hourly wage of men and women.

Consistent with other work (Baxter, 1992;
Coverman, 1983; Hersch, 1985, 1991a, 1991b;
Hersch & Stratton, 1997; McAllister, 1990; Shel-
ton & Firestone, 1988a, 1988b), an increase in

time spent in housework is negatively related to
wages, and this is stronger for women. A 1-hour
increase in housework decreases women's hourly
wage by 0.3%. Housework does not have a sig-
nificant effect on wages for men, and the effect
of housework on wages is significantly different
by gender. This finding of significant gender dif-
ferences provides the impetus for breaking house-
work down into task types. Doing so will enable
me to determine whether the gender difference in
effect is due to men and women performing dif-
ferent types of chores.

The other independent variables in the analysis
operate as expected. Hourly wage increases with
being in an upper-white-collar profession for
women. For men, wages increase with full-time
work experience. Whereas employment breaks
and part-time status have a negative effect on
men's wages, commuting time and travel require-
ments are associated with higher hourly wages for
men. Hourly wage also increases with number of
children for men.

Model 2 estimates the effect of time spent in
female, male, and neutral tasks on hourly wage.
For women, the results show that only time spent
in female housework chores has a significant neg-
ative effect on wages. A 1-hour increase in female
housework decreases women's hourly wage by
0.5%. The effect of male and neutral tasks is pos-
itive for women, though not statistically signifi-
cant. For men, female housework is also the only
task type that has a significant negative effect on
wages. A 1-hour increase in female housework
decreases men's hourly wage by 0.4%. The effect
of male and neutral tasks on wages is positive for
men, although not statistically significant. The ef-
fect of female, male, and neutral tasks on wages
does not differ significantly by gender.

Sensitivity Analysis

Instead of categorizing the tasks as female, male,
and neutral, I could have categorized tasks as in-
flexible-frequent (preparing meals, washing dish-
es, cleaning house, washing clothes, shopping,
and driving other household members) and flexi-
ble-infrequent (outdoor and other household
maintenance, automobile maintenance, and paying
bills). The theoretical argument would be similar
to the one presented above. That is, a potential
explanation for the gender difference in the effect
of total housework time on wages is that women
spend more time than men performing inflexible-
frequent tasks, and men spend more time than

TABLE 2. REGRESSION COEFFICIENTS FROM FIXED-EFFECTS MODELS REGRESSING LN HOURLY WAGE ON HOUSEWORK AND OTHER CONTROLS FOR MARRIED MEN AND WOMEN

| | Model 1 | | | | Model 2 | | | |
| | Women | | Men | | Women | | Men | |
Variable	b	SE	b	SE	b	SE	b	SE
Total hours of housework per week	−0.003****[a]	0.001	−0.000*[a]	0.001				
Total hours of female tasks per week					−0.005****	0.001	−0.004**	0.002
Total hours of male tasks per week					0.002	0.003	0.003	0.003
Total hours of neutral tasks per week					0.002	0.003	0.002	0.003
Years of education	0.031	0.025	0.002	0.066	0.031	0.025	−0.002	0.067
Years of full-time work experience	0.025	0.034	0.067**	0.030	0.021	0.033	0.069**	0.030
Years of part-time work experience	0.032	0.034	0.054	0.042	0.028	0.034	0.056	0.042
Number of employment breaks	−0.009	0.036	−0.071*	0.044	−0.012	0.035	−0.069	0.044
Occupation (1 = upper-white-collar)	0.093**	0.042	0.019	0.041	0.089**	0.041	0.018	0.042
Part-time work status (1 = yes)	0.027	0.044	−0.203*[a]	0.115	0.035	0.045	−0.203*[a]	0.114
Commuting time (in minutes)	0.002	0.001	0.002***	0.001	0.002	0.001	0.002***	0.001
Travel requirements (1 = yes)	0.066	0.049	0.068*	0.038	0.066	0.045	0.069*	0.039
Number of children	0.015	0.030	0.085****[a]	0.025	0.015	0.030	0.085****[a]	0.025
R^2	0.855		0.852		0.861		0.853	
n (person-year)	1,590		1,794		1,590		1,794	

Note: These data are unweighted.

[a] Differences in coefficients for women and men are statistically significant at $p < .05$ (two-tailed t tests).

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$ (two-tailed t tests).

women performing flexible-infrequent tasks. The results from this categorization of task types do not differ substantively from those presented here (not shown). The effect of inflexible-frequent tasks on wages is negative and statistically significant for both men and women. The effect of flexible-infrequent tasks on wages is positive and not statistically significant for both men and women. The effect of these task types on wages does not differ significantly by gender.

I also explored whether the relationship between housework and wages is nonlinear. To account for possible nonlinearity associated with housework in the model, a squared term for time spent in each task type was added to Model 2. The housework-squared terms were not significantly related to wages for either men or women.

Endogeneity

The causal model in this article posits housework time as an exogenous variable and wages as the endogenous outcome of variation in housework time. This model assumes that wages do not affect housework time and that all the association between housework and wages is entirely the effect of housework. However, it is plausible that the causal relationship between housework and wages also exists the other way around. That is, causation may be running in both directions (Baxter, 1992; Coverman, 1983; Hersch, 1991a; Hersch & Stratton, 1997; Shelton & Firestone, 1988a). This problem is inherent in many studies of the relationship between work and family.

Wages may affect time spent in housework in two ways. Higher wages may enable an individual to "buy" out of household work by making market substitutes (e.g., maids, restaurants, laundry services, prepackaged and convenience foods) more affordable (Becker, 1991; Hersch, 1991a; Hersch & Stratton, 1997; Oropesa, 1993). Also, higher wages may enable one to demand greater spousal participation in housework in place of one's own housework time (Maret & Finlay, 1984).

If the arguments regarding the endogeneity of housework are correct, then OLS estimates of housework will be downward biased; that is, housework will appear to have a greater negative impact on wages than it actually does. One common statistical technique to help account for the problem of endogeneity is instrumental variables (IV) estimation. The instrumental variables are assumed to be correlated with the potentially en-

dogenous variable (housework time) but to have no direct association with the outcome (hourly wage). Identifying appropriate instrumental variables that are correlated with housework time but not directly correlated with hourly wage is exceedingly difficult given the limited choices in this data set. I explored five potential instrumental variables (home ownership, other family income, gender role attitudes, housework performed by others in the household, and spouse's work status), but none fulfilled this key IV assumption. Because of this, I don't pursue IV estimates. Other research has shown that IV techniques provide notoriously poor estimates when inadequate instruments are used (Bound, Jaeger, & Baker, 1995; Kmenta, 1971).

Uncertainty about the true causal model does not invalidate the results of this analysis, although it should be kept in mind when interpreting the results. Better clarifying the complex relationship between housework and wages requires frequent panel data at several time points so that the temporality between housework and labor market events can be precisely laid out. The NSFH data, so far including two time points separated by roughly 5 years, are the best data available at this time.

DISCUSSION

Feminist research has long argued that the spheres of home and work are integrally related. In this article, I examine one of the linkages between home and work by empirically testing the relationship between time spent in various types of housework and wages of married men and women. The results support the hypothesis that time spent in female tasks, which are the most inflexible and performed the most regularly, has a larger negative impact on *both* men's and women's hourly wage than time spent in male or neutral tasks. In fact, I find that only time spent in female housework chores has a negative effect on hourly wage. This negative effect is "hidden" for men when using a total housework variable, because a smaller proportion of their total housework time is composed of female tasks. Furthermore, categorizing housework into various task types offers a link to the puzzling result that total hours of housework has a stronger effect on women's wages than men's wages. Disaggregating housework into task types, there are no gender differences in the effect of housework on wages.

The fact that these female housework penalties

exist in fixed-effects models is evidence that the effect of female housework is not due to unobserved heterogeneity. Furthermore, these findings are quite conservative, because they capture only the direct effect, not total effect (direct plus indirect), of housework time on wages. Even after controlling for a host of human capital characteristics and controls, the negative effect of female housework on wages persists. One possible mechanism through which female housework may be affecting wages is through reducing energy and effort available for market work. Alternatively, or additionally, employers may be discriminating against those who perform female housework in a way that affects wages. These findings may also be conservative because of the measure of housework used in the analysis. For instance, Mederer (1993) has argued for a comprehensive measure of household labor, one that includes not only time spent accomplishing specific tasks, but also responsibility for household management. If management of female tasks affects wages in a way similar to time spent accomplishing female tasks, it may be that the results presented here are underestimates of the true effect of housework on wages.

These findings should, however, be interpreted with caution because of potential nonrecursivity between housework time and wages in the models. The lack of appropriate instrumental variables precludes an unequivocal assessment of this endogeneity. Panel data at frequent time points would also be useful in sorting out the causal relationships between housework and wages.

Housework consumes a substantial amount of time, and these results suggest that decisions regarding the division of housework time and task types have important implications for life outside the home. Indeed, there are hidden costs to performing female housework tasks. It is likely that the wage penalty from performing female chores is contributing to the overall gender gap in pay, because women spend considerably more time in female housework than men do. There are no comparable wage penalties for performing male tasks. Although many men who perform traditionally male tasks escape the negative effect of housework, the gendered allocation of housework depresses earnings of women, reinforcing economic dependence and traditional gender roles (Hartmann, 1976).

These findings imply that gender equality in the labor market depends partly on a more equitable distribution between the sexes of not only the amount, but also the type, of work performed in the home. Public policy and the media can inform the public that a more equitable distribution of both amount and type of housework is an important factor in reducing the male-female earnings gap. At the structural level, employers can make work more accommodating for individuals with inflexible, routine female household responsibilities. Most wage work in our society facilitates a reward structure that promotes continuous employment and long and inflexible hours. This structure is inconsistent with female housework responsibilities. As the spheres of work and home become more intertwined, employers are increasingly pressured to make the workplace friendlier to the family roles of both men and women. By offering flexible working hours, telecommuting, and job sharing, employers can better attract and hold onto employees with household responsibilities that interfere with work. For example, alternative work schedules allow workers to perform female tasks without sacrificing investments in their work life. Finally, employers can expand services such as in-house dry cleaning, personal shopping, and the preparation of take-home evening meals to help diminish the conflict between family and work.

These findings emphasize the importance of integrating domestic work with market work when attempting to explain the labor force experience of men and women. Future research should continue to explore the impact that the domestic sphere may have on the labor market, with attention to the type of housework performed. The inclusion of task types is essential, both in validly measuring housework and in broadening our understanding of how housework affects labor market outcomes. Also, researchers should continue to work to illuminate the mechanisms by which housework limits success in the labor market. This may be accomplished by exploring the impact of housework on wages for different subgroups, defined by such variables as race, age, marital status, occupation, part-time/full-time employment status, and type of employment schedule (e.g., shift worker vs. traditional 9-to-5 worker). Understanding the impact of housework on labor market outcomes will only become more important with the increase in dual-earner couples juggling both work and family roles.

NOTE

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