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Abstract

In this paper, we investigate the effect of a woman's decision to enter paid employment on their husband's contribution to domestic work. To explore this issue, we analyze cross-sectional data on Spanish couples. Our results suggest that this decision to participate in the labor market increases husbands' housework time. However, these estimates may be subject to an omitted variable bias due to the correlation between unobservable variables, e.g., social norms, determining both decisions. Once we take into account this endogeneity problem, we find a larger impact of the wife's labor status on the husband's contribution to housework.

Keywords: time allocation, gender relations, count data, endogeneity

JEL Codes: J16, J22, C35

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1. INTRODUCTION

During the last three decades the family system in most industrialized countries has moved from the traditional breadwinner-housewife type toward a system characterized by dual-earner households. While in the seventies more than sixty percent of married couples were breadwinner households, at the beginning of the twenty-first century, more than sixty percent of European and American married couples are dual-earner (Eurostat, 2002; US Department of Labor, 2004). One of the questions that arises from this new scenario is whether the disappearance of the traditional breadwinner household system has been accompanied by a more egalitarian distribution of domestic duties between spouses.

Empirical findings based on time use surveys had reported only minor changes in the allocation of housework time when comparing single-earner couples to dual-earner couples. In other words, this empirical literature shows that women in dual-earner couples continue to be responsible for most of the household domestic duties (Juster and Stafford, 1991; South and Spitze, 1994; Hersch and Stratton,1994; Gershuny et al. 1997; Blau et. al 1998; Folbre and Nelson, 2000). Clearly, these findings do not provide evidence in support of theoretical economic models that predict a more egalitarian distribution of domestic duties within the couple due to the increase in women's bargaining power. One possible explanation for the failure of this prediction is that an important part of the division of housework still depends on self-perceptions, structuring identities, social norms and even institutions that support a gendered time allocation, something that is not explicitly considered in most theoretical models. In line with this, some authors claim that social norms or institutions can restrict the bargaining power of a working woman by providing a justification for maintaining an unequal gender situation at home (Sen, 1990; Agarwal, 1997).

These arguments enhance the relevance of controlling for couples' beliefs and social norms when analyzing the time allocation decisions within the household. But, generally, the problem is that these variables are unobserved. This may cause a potential for omitted variables bias when estimating the changing patterns of housework allocation caused by female labor force participation. The sign of the bias is, however, difficult to predict. If we

assume that couples reach an agreement before marriage regarding the division of paid and unpaid work, then in couples with egalitarian (conservative) views toward gender roles, one would expect the woman to be more (less) likely to participate in the labor market and the husband to be more (less) willing to afford more domestic work to compensate. In this case, not controlling for the existence of those unobserved variables may overstate the effect of female labor force participation on the husband's housework contribution.

But the empirical evidence for most developed countries shows that current social values and attitudes toward female labor participation in the labor market are more positive than those related to an egalitarian division of housework between the spouses. In these societies, social norms stating that "untidy houses reflect a slovenly wife" or those classifying certain domestic tasks as "feminine" may limit a husband's adaptation to the new demands imposed by a wife's transition to paid employment. In such a scenario, not controlling for the existence of social constraints may understate the increase in the husband's housework time due to the wife's entry in paid labor.

This aim of this paper is to address this issue in the empirical analysis of the relationship between female labor force participation and male contribution to housework for Spanish couples. Between 1978 and 1998, the proportion of full-time Spanish housewives dropped from 54.1% of the adult female population to 32.1% (Carrasco and Rodríguez, 2000). This was accompanied by a sizable increase in women's access to education and employment; for example, the female employment rate increased from 30% to 44.3% during this period[1]. In spite of these significant changes, the combination of market and family roles has been especially difficult given the persistence of cultural expectations regarding gender. According to the Work Time Situation and Time Use Survey (Encuesta de Situación en el Trabajo y Uso del Tiempo) carried out by the Spanish Institute for Women's Affairs in 1991, women do almost all the housework in nearly 75% of two-earner households[2]. Also, there has been little political concern to alleviate the unbalanced situation of working wives. In fact, Spain

[1]Source: OECD Labour Market Statistics.

[2]Up to now, the 1991 survey is the only data set that provides information on time allocation between paid and unpaid activities within Spanish two earner couples.

is one of the countries in which the implementation of the European Directives for the reconciliation of employment and family life is more modest (Lewis and Smithson, 2001).

The novelty of our empirical analysis is that it takes into account the potential existence of endogeneity problems due to the presence of unobservable variables, e.g., social constraints, that may simultaneously determine the wife's labor status and the husband's contribution to housework. This aspect has not been considered in previous empirical literature dealing with this issue. In the econometric modelling, we use two measures of female working status. The first one is a dummy variable indicating whether the wife has a paid job. The second measure is a latent variable that proxies for the wife's labor market opportunities. Our findings show that not taking into account the endogeneity problems caused by correlation in unobservables underestimates the increase of the husband's housework in response to his wife's entry in paid labor. These results offer some support for the idea that even though the increase in women's income-earning opportunities may enhance their bargaining power in the household, as suggested by the theory, there are many factors -such as social norms, self-perceptions or institutional environments- that may restrict women's empowerment at home. Nonetheless, it is necessary to point out that the estimated increase in the male's share of housework is mainly due to an important reduction in the wife's housework time rather than an increase in the number of hours men work at home.

The remainder of the paper is structured as follows. In the next section we revise some theoretical issues on housework allocation. Section 3 details the data and provides an overview of housework allocation within Spanish couples. In section 4 we discuss the econometric methodology and present the main results. In the last section we conclude.

2. THEORIZING ABOUT HOUSEWORK ALLOCATION

When theorizing about housework allocation, we can find three main approaches that dominate the discussion about how couples allocate their time. Some economists, following Becker (1965, 1985), emphasize the relative efficiency of men and women at performing different tasks. The idea is that specialization is efficient in the family just as it is in a

factory. This implies that the higher one partner's potential wage rate is, the greater the gain to the family of that partner doing market work, and thus the more market work and less household work he will do. However, there are some empirical facts that are difficult to explain from an efficiency approach. For instance, over the last few decades, husbands have marginally increased their housework time allocation in both couples with working wives and in couples without working wives (Blau et al., 1998).

Bargaining theories offer an explanation to this observed pattern. The increasing market opportunities for a woman (regardless of her current employment status) strengthens her fall-back position towards negotiation in a bargaining game with her husband (McElroy and Horney, 1981; Lundberg and Pollak, 1993, 1994). Since partners have their own personal interests within the household, wives may use this increased bargaining power to insist on a fair allocation of housework within the couple by reducing their own contribution and increasing their husband's. Nevertheless, some empirical studies point to the limited explanatory power of economic models that try to discuss the observed housework distribution patterns from a bargaining perspective (Juster and Stafford, 1991; Bittman et al. 2001; Alvarez and Miles, 2002). These papers supply evidence that women in the labor force do more and their husbands do less housework than what should be expected under the bargaining perspective.

Finally, some authors emphasize that an important part of the division of labor still depends on self-perceptions, structuring identities, social norms and even institutions that support traditional attitudes toward gender roles. Whereas women's access to the labor market is becoming more comparable to that of men, there appears to be little erosion in what supports the strength of gender-based role expectations regarding men and women in family roles. In this sense, and despite the recognition of an actual increase in women's bargaining power within the household, social norms, self-perceptions or institutional frameworks could restrict the realization of this empowerment (Agarwal, 1997; Sen, 1990; Bittman et al., 2001; Sevilla, 2003). The problem is that previous empirical literature has not taken into account the existence of this important set of unobservable factors (i.e., gender-based norms, self-perceptions, etc.) which simultaneously determine women's bargaining power

and couples' time allocation processes within the household. In Section 4, we analyze the effect that this omission has when estimating the effect of female labor force participation on couples' housework allocation decisions.

3. DATA

The data used for this analysis come from Work Situation and Time Use Survey (WSTUS), carried out by the Spanish Institute for Women's Affairs (a section of the Ministry of Labor and Social Affairs) in 1991. The original aim of this survey was to compare male and female performances in paid and unpaid activities. For that purpose, male and female wage-earners were interviewed at their workplaces. To reduce unobserved heterogeneity as much as possible, the sample was restricted to sectors and occupations in which men and women had similar participation rates. Information was collected among wage-earners from six regions: Andalusia, Catalonia, Galicia, Madrid, the Basque Country and Valencia. The total sample size of the survey was 2,054 employees (1,049 women and 1,005 men).

The WSTUS offers information on the personal situation and job conditions of the interviewed workers, their distribution of time between market and non-market activities and, for those who were married/cohabiting, we observe the educational level, work status and time use patterns of his/her partner. To our knowledge, it is the only Spanish survey which offers information on the housework time allocation of both members of the couple. In this paper, the analysis is restricted to 416 married/cohabiting male respondents who answered all the questions relevant to our analysis[3].

Housework time is measured as the number of hours per day spent on housework by the interviewee, who responded to the question: "*About how many hours do you spend on housework in an average day? And your partner?*" It was made clear to the interviewee that this question did not refer to time spent on child care. Hence, the analysis is restricted to routine housework activities which, in principle, do not have emotional rewards.

The nature of the sample calls for some caution in generalizing findings. In particular, the

[3]Female respondents were excluded to avoid overrepresenting working women in the sample.

data is one decade old and the relationships may have changed over this period. Nonetheless, the time devoted to housework by Spanish men has not changed to a great extent during this period. Data provided by the Spanish Institute for Women's Affairs show that, between 1993 and 2001, time devoted to housework by men increased by an average of only 16 minutes per day, while women's time decreased by 48 minutes during the same period. As regards female employment rates, between 1990 and 2000, they experienced an increase of about 6 percentage points, from 25.27 % to 31.57%.

About 53% of couples in our sample are two-earner and in 82% of these couples the wife works full time (35 hours or more). In Table 1, we summarize the means and standard deviations of the number of housework hours performed by the interviewed men and their wives, as well as the male share of total housework, controlling for the wife's employment status. Consistent with evidence for other countries, we observe a clearly uneven distribution of housework hours between spouses and for all employment statuses of women.

Insert Table 1

On average, husbands married to women who are not in paid jobs perform about 0.87 hours of housework per day, while their wives average 7.9 hours. Controlling for the wife's employment status mitigates these differences, but does not eliminate them completely. When we move to two-earner couples, men average around 1.7 hours per day, while their wives average 3.6 hours. This situation implies that husbands in male-breadwinner couples perform, on average, 9 % of all housework, whereas this percentage is approximately 32% for husbands in dual-earner couples.

In order to explain the husbands' contribution to housework, we selected a set of variables following what is usual in the theoretical and empirical literature related to this issue. Table 2 lists the sample means and standard deviations of these variables.

Insert Table 2

According to economic models, market wage should affect the intra-household time allocation process by determining the opportunity cost of housework time and/or the spouses'

bargaining power at home (see Bittman et al., 2001 for a review of these perspectives in a context of allocation of household work). Any of these perspectives predicts that each spouse's wage will negatively affect his/her housework time.

Education and age are expected to affect the marginal productivity in both paid and unpaid activities. These variables are also linked to the perception of gender roles. In this sense, young and highly-educated men should be more likely to exhibit egalitarian gender-role orientations at home and, consequently, an even division of housework. However, the descriptive analysis does not offer evidence of this hypothesis for the Spanish couples in this sample. Husbands' average housework times do not significantly change across different educational levels, though we do observe a negative correlation between the interviewee's age and his housework time contribution.

Although the WSTUS question on housework explicitly excluded time spent on child care, it is unlikely that respondents' reported housework times are the result of deducting from their total housework time, the time spent on work created by children, such as extra laundering, cooking and cleaning. To capture this effect, a dummy variable for the presence of children at home is included.

Finally, we construct a dummy variable that indicates whether the husband has a split shift at work, in order to control for the effect of working time restrictions on time devoted to household work.

4. EMPIRICAL ANALYSIS

In the following subsections, we present the empirical results of estimating the effect of the woman's labor force participation on her husband's housework allocation. The male housework contribution is measured through two variables: the share of total housework and the number of housework hours. The empirical strategy begins by considering the wife's participation decision as exogenous, as has been common in the previous empirical literature. Next, we propose a simultaneous equation model that allows for correlation between the unobservables affecting both decisions.

4.1 Exogenous wife's labor status

We begin the analysis by specifying a single-equation model to estimate the effect of female labor force participation on the husband's housework share:

$$S_i = \alpha P_i + X_i^{'}\beta + \varepsilon_i, \tag{1}$$

where S_i denotes the husband's share of the total housework performed by the couple i in an average day; P_i is a binary variable indicating whether the wife is employed; the vector X_i contains individual and family characteristics (see Table 2) including a constant term; and ε_i is a random error that represents the unobservable determinants of S_i.

Note that finding that α is positive does not mean there has been an absolute increase in the husband's contribution to household work as a consequence of his wife's decision to participate in the labor market. This is because we cannot identify whether the increase in the husband's share comes from an increase in his housework time or from a decrease in his wife's. To understand the time reallocation process, we should also measure the effect of the wife's employment status on the number of hours performed by the husband.

Let us denote H_i as the number of hours the husband in couple i spends on housework in an average day. This variable is recorded in our data set as a count data process, taking non-negative integer values, including zero. Following most empirical studies based on count data (see Cameron and Trivedi, 1998), we assume a linear exponential specification for housework hours in which the wife's employment status appears as an explanatory variable, that is

$$H_i = \exp(\delta P_i + X_i^{'}\gamma) + \nu_i \tag{2}$$

where ν_i is a random term such that $E(v_i) = 0$. Consistent estimates of parameters in this model can be obtained by Poisson pseudo-maximum likelihood (PML).

Table 3 presents the estimation results for models (1) and (2).

Insert Table 3

The estimated effect of the wife's employment status on the husband's housework share is positive and significant. The husband's share of housework is about 18 percentage points

higher when the wife has a paid job than when she only does domestic work. Complementing this result with the estimates in column (2), we conclude that the increase in the husband's share is due, to some extent, to an increase in the amount of time devoted to domestic tasks by the husband. In particular, the husband's number of hours devoted to domestic work is about twice as high in dual-earner couples as in breadwinner-housewife couples, once we control for other covariates[4].

In the second place, the estimates obtained for the other variables are consistent with the literature in this field. The age coefficients reveal a significant convex relationship with respect to the husbands' housework share and their number of hours of domestic work. Neither the husband's hours of domestic work nor his share are, however, related to changes in his educational level. This result suggests that the husband's educational level does not affect his wife's housework time.

Moving on to the effect of children, we find that the number of hours devoted by the husband is 1.36 times higher in a couple with children than without them. Interestingly, the presence of children is not significant in the share equation. Together, these estimates indicate that the wife's housework time in couples with children increases at the same rate as her husband's. Bearing in mind that female housework times are, on average, much higher than male times, the evidence here suggests that the presence of children helps to widen the gap between male and female time devoted to domestic work.

Finally, our results show that the higher the husband's wage is, the lower the number of hours he spends on housework. This result is consistent with predictions from both the bargaining and the efficiency perspectives. However, the marginal effect of this variable on the share of housework is not significant. Additionally, we find a negative and significant effect of the dummy variable indicating split shift at work in both the number of hours equation and the share equation.

[4]The linear exponential specification of the housework hours model leads us to interpret coefficients as the proportional change in the conditional mean when the corresponding explanatory variable changes by one unit. If the $k-th$ explanatory variable is an indicator variable, then the conditional mean is $\exp(\gamma_k)$ times larger if the indicator variable is unity rather than zero.

4.2 Endogeneity of wife's labor market status

The conclusions above are in line with other findings in the literature. However, those single-equation models assume the wife's labor force participation is exogenous. If there are unobserved variables that explain the husband's contribution to housework and are correlated to the wife's labor status, then single-equation estimates will be biased. This is of special concern in this context because gender-related attitudes and social norms are unobserved variables that are likely to explain spouses' time allocation decisions in paid and unpaid activities. In this section, we propose to use a simultaneous- equations model to control for this potential endogeneity problem.

More formally, assume that the wife's propensity to participate in the labor market, P_i^* is expressed as

$$P_i^* = Z_i'\theta + \zeta_i \tag{3}$$

where Z_i is a vector of explanatory variables including a woman's personal characteristics (age, education), household composition, non-labor income (typically, the husband's income) and some indicators of labor market situation; ζ_i is a random term denoting unobservable determinants of participation. The binary variable P_i, indicating whether the wife is in paid employment, is related to the latent variable through the following observability rule $P_i = 1(P_i^* > 0)$, where $1(.)$ is the indicator function. The unobserved heterogeneity problem arises if some of the unobserved variables affecting both the husband's share and the number of housework hours also influence the wife's participation decision. This means that $cov(\varepsilon_i, \zeta_i) \neq 0$ and $cov(v_i, \zeta_i) \neq 0$. Under this circumstance, OLS estimates of equation (1) and Poisson pseudo maximum likelihood estimates of equation (2) would be inconsistent.[5]

[5]Note that we could specify a structural simultaneous equation model in which $P_i^* = \varphi S_i + Z_i'\theta + \zeta_i$. However, the estimation of parameters requires imposing coherency conditions to obtain a unique solution for the endogenous variables in terms of the exogenous variables of the system (Windmeijer and Santos Silva, 1997; Lewbel, 2001). The model is coherent if $\alpha = 0$ in the share equation (1) ($\delta = 0$ in the equation for the number of hours (2)) or $\varphi = 0$ in the participation equation. Here, we assume that $\varphi = 0$, i.e. we assume that the husband's contribution to housework has no effect on the wife's decision to participate in the labor

Consistent estimates of parameters in the share equation (1) can be obtained by two-stage least squares (2SLS), by replacing P_i with its estimated conditional mean $F(Z_i'\hat{\theta})$, where $F(.)$ is the logistic cumulative distribution function. As for the equation of housework hours, the exercise is complicated by the fact that maximum likelihood estimation of equation (2) in two stages does not give consistent estimates of parameters (Windmeijer and Santos Silva, 1997). A consistent estimator for (δ, γ) in this model may be obtained by non-linear instrumental variables, and a natural choice of instrument for P_i is $F(Z_i'\hat{\theta})$. To implement these estimation methods, we need at least one variable in Z_i not to be contained in X_i. In this application, we use regional dummies and the wife's education as instruments.[6] Table A in the appendix offers the logit estimates of the participation equation (3).

In columns (2) and (5) of Table 3 we report the coefficient estimates from the housework models in which we model the wife's probability of employment as a function of a set of covariates listed in the Appendix. Overall, the results show that, once we control for the correlation in the unobservables, the effect of the wife's employment status remains positive and significant in both models, but it increases in magnitude with respect to single-equation estimates. In particular, the husband's housework share increases by 38 percentage points (compared to 18 percentage points in the single equation estimate) when the wife is in paid labor. As for the number of housework hours performed by the husband, the estimated increase is more than twice as high as that found when the decision is considered exogenous. The main conclusion from these estimates is that controlling for correlation in the unobservables seems to be important in order to evaluate the effect of the wife's labor status on her husband's housework.

According to bargaining theories, it is not just the wife's employment status which alters her negotiation power at home and, therefore, the allocation of housework, but also her opportunities in the labor market. In order to explore this possibility further, we consider

market.

[6]The likelihood ratio test of the joint significance of the 6 instuments in the logit model for female labor force participation has a value of 37.48 (p-value=0.000). In comparison, the Wald test statistic of this exclusion hypotheses is equal to 2.09 (p-value=0.053) and 15.9 (p-value=0.020) in the Poisson model, with none of the instruments being individually significant.

a second specification strategy in which the wife's labor market opportunities are measured through her propensity to participate in the labor market P_i^*. That is, instead of equation (1), the new equation to be estimated is given by

$$S_i = \alpha P_i^* + X_i^{'}\beta + \varepsilon_i, \tag{4}$$

which looks very similar to the one estimated before, though it is conceptually different. Here we are saying that what affects the husband's housework share is his wife's potential participation or her opportunities in the labor market.

The parameters in this model can be consistently estimated by two-stages methods. In the first stage, we obtain the maximum likelihood estimate of θ in the equation for female labor market participation (3) by assuming the error term ζ_i has a logistic distribution. The variables we use as instruments at this stage of estimation are the same as before. In the second stage, we replace P_i^* in model (4) with its predicted value $Z_i^{'}\hat{\theta}$, and estimate α and β by least squares (Maddala, 1983).

As regards the equation for the number of hours, it can be written as

$$H_i = \exp(\alpha P_i^* + X_i^{'}\beta) + \nu_i. \tag{5}$$

Following Windmeijer and Santos Silva (1997), estimation of this model is carried out in two stages. In the first stage, we obtain logit estimates of parameters in equation (3). In the second stage, we replace P_i^* with its estimated value, $Z_i^{'}\hat{\delta}$, in the housework hours model and estimate δ and γ by Poisson pseudo maximum likelihood. Corrected standard errors are also computed in this case.

The estimation results for the share equation and the number of hours equation are presented in columns (3) and (6) of Table 6, respectively. The coefficient (standard error) of P_i^* in the share equation is equal to 0.053 (0.013). Although it is difficult to interpret the meaning of the marginal changes in P_i^*, the main conclusion arising from these estimates is the existence of an anticipation in the husband's behavior in view of the possibility that his wife accepts some job offer because of an increase in her labor market opportunities. The results for other covariates are quite similar to those in columns (2) and (5), where we do not control for endogeneity.

To offer a better interpretation of how the increase in the wife's opportunities affect her husband's housework, we use the estimated results to make some predictions about these effects. In Figure 1, we represent the predicted number of housework hours performed by the husband and the wife[7], as well as the couple's total hours of housework for different values of the wife's propensity to participate in the labor market. To ease the interpretation of the latent variable, it has been rescaled to take values between 0 and 1. The predicted housework times are computed for a reference couple and for three other couples in which some of these reference characteristics are modified. This approach has the advantage of allowing one to indicate the magnitude and not just the statistical significance of the associations observed. Specifically, we consider a reference couple without children, the husband having a primary education, no split-shift at work and age and wage fixed at their sample mean values. These baseline characteristics are altered by a) the couple's having children, b) the husband's having scheduled working time with a split shift and, c) the husband being 50 years old. The vertical lines in the figures are placed at the values of the wife's opportunities in the labor market for different levels of education.

The overall conclusions arising from Figure 1 are consistent with the existing empirical evidence. In all the simulated scenarios, it is the woman who mostly adapts her housework time to changes in her opportunities in the labor market. The increase in the husband's housework time does not compensate for the reduction in the female contribution, which would explain the drop in the total number of hours of domestic work carried out by the couple.

In couples with children, the husband's reaction to the wife's increasing power of negotiation becomes more important. Thus, though the gap between male and female housework times remains important (4 hours, if the wife has a primary education and 2.5 hours if she has a university degree), the observed decrease in the couple's total time of housework

[7]The wife's number of housework hours in were computed from the expression $\hat{H}_{wife} = \hat{H}_{\text{husband}}(1/\hat{S}_{\text{husband}} - 1)$, where $\hat{H}_{\text{husband}}$ and $\hat{S}_{\text{husband}}$ are, respectively, the husband's number of hours and the husband's share of total housework predicted from the estimates shown in columns (3) and (6) of Table 3.

between the two extremes of the wife's opportunity range is only about 1.5 hours. This is consistent with Agarwal's (1997) view that even women who may be willing to sacrifice their own interest for that of family members out of altruism may strike a hard bargain with their husbands on behalf of their children's well-being.

The economic relevance of the observed husband's adaptation process in other type of couples is not so remarkable. For example, in couples where the husband has scheduled working time with a split shift, or in those where the husband is over 50, the drop in female housework is by far the main cause for the total reduction in the time spent on these tasks by the couple. This suggests that, in these types of couples, the increasing wife's bargaining power of the wife is used to adapt herself but it seldom alters the husband's behavior.

Finally, an interesting feature to note from the predictions presented in Figure 1 is the nonlinearity in the adjustment process. While the woman's adaptation in reducing her hours of housework to labor market opportunities is immediate, her husband only modifies his housework time when the woman's opportunities in the labor market are really high. This finding is in line with Gershuny's et al. (1997) argument that women have already had to confront the implications of transition for gender identity and break with established patterns before deciding to seek work outside the home. However, men only confront the demand for change when the wife's opportunities in the labor market are very high.

5. CONCLUDING REMARKS

In this paper, we intend to add evidence on the relationship between housework allocation within Spanish couples and wives' labor market status. Overall, our results are consistent with most of the evidence from early contributors to this empirical literature. First, we observe that men's and women's daily hours of domestic work tend to converge. Second, this convergence may be characterized as one of women "doing it for themselves" by reducing the time spent on housework towards more male standards of domestic work (Bittman and Matheson, 1996).

Unfortunately, we are precluded from studying the true dynamics behind the housework

reallocation process due to the lack of longitudinal time use surveys in Spain. This would be a very interesting aspect for shedding light on the timing or couples' movement towards an egalitarian distribution of housework and for analyzing whether the change of social norms makes the adaptation process faster for the new generations. Other limitations of our analysis may arise from the reliability of the instruments used to control for endogeneity and from the parametric assumptions we impose on the econometric models.

Despite those potential drawbacks, our findings provide evidence on certain features that empirical literature has not addressed before. In particular, we find that assuming that the female participation decision is exogenous, the estimation of its effect may be biased due to correlation of unobservables. Furthermore, our estimates provide some support for the hypothesis that the housework contribution is determined not only by employment status but by the intentions or future decision of women to participate in the labor market. In terms of bargaining models, this tends to indicate that women's opportunities in the labor market are an important component of women's domestic negotiation power at home.

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TABLE 1 : Time devoted to housework by husbands: mean hours per day and share over total housework, according to wives' employment status (standard deviations in brackets)

	Average hours of housework		Husband's share	Sample
Wife's working status	Husband	Wife		
Not working	0.868	7.903	0.110	197
	(1.486)	(4.022)	(0.182)	
Working	1.712	3.570	0.314	219
	(1.752)	(2.225)	(0.205)	
Working full-time	1.326	3.555	0.320	180
	(1.721)	(2.210)	(0.196)	
Working part-time	1.115	3.641	0.282	39
	(0.952)	(2.322)	(0.242)	

TABLE 2 : Description of variables

Variable	Mean	Std
Husband's age	37.92	10.02
Presence of children at home	0.745	0.43
Husband's educational level		
primary	0.406	0.491
secondary	0.281	0.450
university	0.312	0.464
Working wife	0.526	0.485
Husband's hourly wage (in hundreds of pesetas)	0.699	3.061
Husband's schedule with split shift	0.485	0.500

TABLE 3 : Effect of wife's labor market participation on husband's housework time
(Corrected standard errors in parentheses)

	Husbands' housework					
	Share			Number of hours per day		
	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	2SLS	2SLS	PL Poisson	NLIV	PL Poisson* (two stages)
Const.	0.469	0.492	0.644	2.387	2.509	3.076
	(0.155)	(0.173)	(0.167)	(0.949)	(1.060)	(0.940)
Age	-0.011	-0.021	-0.183	-0.116	-0.167	-0.143
	(0.008)	(0.009)	(0.009)	(0.054)	(0.063)	(0.052)
Age^2	0.009	0.024	0.019	0.120	0.191	0.160
	(0.009)	(0.011)	(0.011)	(0.069)	(0.078)	(0.066)
Children	-0.010	0.021	0.004	0.310	0.405	0.384
	(0.024)	(0.030)	(0.028)	(0.131)	(0.147)	(0.145)
Husband's educational level						
primary	-0.042	-0.001	-0.008	-0.090	0.060	0.006
	(0.026)	(0.031)	(0.026)	(0.166)	(0.192)	(0.176)
university	-0.011	-0.025	-0.025	-0.008	-0.109	-0.121
	(0.025)	(0.028)	(0.028)	(0.141)	(0.153)	(0.156)
Husband's hourly wage	-0.0009	-0.005	-0.007	-0.041	-0.045	-0.059
	(0.010)	(0.003)	(0.016)	(0.018)	(0.019)	(0.026)
Split-shift (husband)	-0.059	-0.068	-0.051	-0.338	-0.374	-0.336
	(0.020)	(0.022)	(0.020)	(0.129)	(0.139)	(0.129)
Wife's labor market participation						
latent variable P_i^*			0.053			0.240
			(0.013)			(0.089)
observed binary variable P_i	0.180	0.381		0.676	1.535	
	(0.023)	(0.070)		(0.169)	(0.742)	

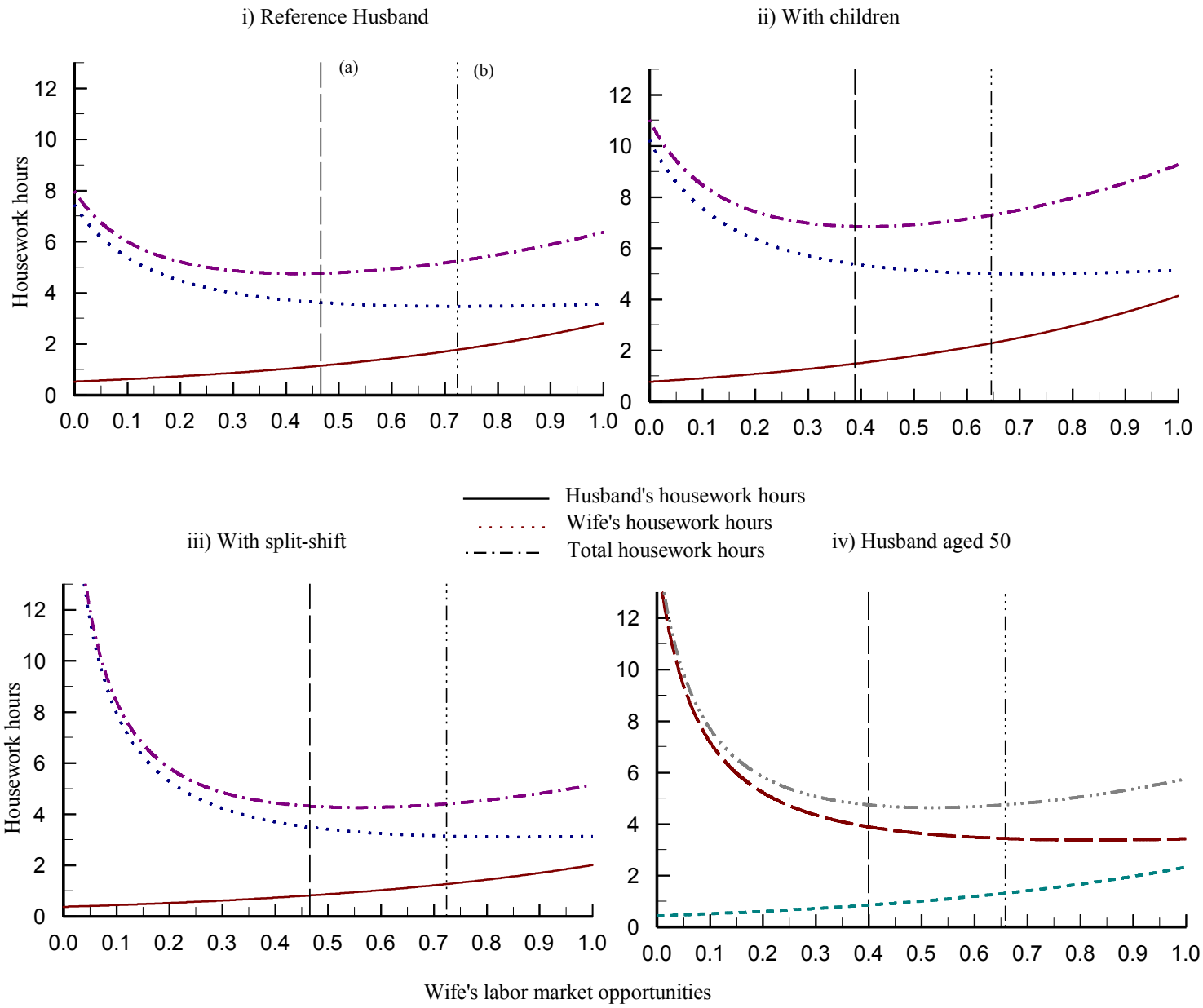
Appendix

TABLE 3 : Logit estimates of female labor participation equation

	Female participation	
	Coeff.	Std. Error
Const.	-3.026	1.909
Age	0.267	0.102
$\text{Age}^2 \times 10^{-2}$	-0.383	0.123
Children at home	-0.541	0.308
Wife's educational level		
primary	-0.819	0.305
university	0.988	0.371
Husband's educational level		
primary	-0.301	0.322
university	-0.434	0.340
Husband's monthly wage	0.0009	0.015
Region of residence		
Andalusia	-0.891	0.397
Basque Country	-0.741	0.373
Galicia	-0.320	0.363
Valencia	-0.358	0.516
Log-likelihood	-236.224	
McFadden R^2	0.227	
% of correct predictions	0.714	

Figure 1

Couples housework hours and wife's labor market opportunities



Reference Husband: without children, primary education and without split-shift; age and wage fixed at the means.

(a) Propensity to participate in the labour market of a wife with primary education and living in Catalonia or Madrid

(b) Propensity to participate in the labour market for a wife with university degree and living in Catalonia or Madrid

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