

## Chapter 6

### Household production and the labour market

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## ***Introduction***

In the UK and other industrialized countries, women share the major share of domestic work (Gershuny, 2000; Kan, 2008; Kan, Gershuny & Sullivan, 2011). Although men have increased their participation in household work over the past four decades, the increases have been concentrated on flexible types of housework. Routine types of housework, such as cooking, cleaning and caring work are still mainly undertaken by women (Kan, Sullivan & Gershuny, 2011). This gendered division of labour might be due to an initial difference in human capital between partners (Becker, 1991[1981]). Nevertheless, changes in family circumstances (e.g., from childless to becoming a parent) tend to reinforce the initial gender divide in the time spending on paid work and unpaid work (Kan & Gershuny, 2009, 2010).

The chapter aims to assess the relationship between household division of labour and gender inequality in the labour market. It does so in two ways.

First, it focuses on the link between the household division of labour and the gender wage gap in the labour market. The gender wage gap in the UK has been falling since the introduction of the Equal Pay Act in 1970. When comparing hourly wage of female full-time workers with that of male full-time workers, the figure was 37% in 1973 but it appears to have bottomed out at around 18% in 1999 (EOC, 2002). In 2009, the figure remained at 19% (OECD, 2012). A common explanation for the persistence of the gender gap in labour market earnings is the differential in women's and men's human capital (e.g., Mincer & Polachek, 1974). Neo-classical economists suggested that women's domestic responsibilities will reduce their acquisition of human capital for labour market earnings so that the comparative advantages of women and men in

domestic work and labour market respectively will be increased over the family life cycle (Becker 1965, 1991[1981]; Dolton & Makepeace, 1990). That is, women and men will become increasingly specialized in domestic work and labour market work respectively, and that the gap in their potential earnings in the labour market will widen over time. Second, the chapter focuses on the changes in time spent on housework and labour market work, and how these might affect the earnings in the labour market, following the birth of a child in the family. In particular, I will examine whether women's and men's earnings might be associated with their own and their partners' housework participation. For example, will husbands' participation in housework help preventing women from quitting labour market work and hence maintaining a higher level of earning capacity after childbirth? Previous research on this topic has largely based on cross-sectional data. In this chapter, I will employ household panel data to investigate whether the gendered division of labour is intensified following the birth of a child.

### ***Data and Methods***

The data used are from the 1992-2006 British Household Panel Survey (BHPS), a major household panel survey in the UK which began in 1991 and carries out annual interviews with all members of eligible households. The BHPS collected information about housework hours since the 1992 wave, and paid work hours and other demographic information in all the waves. The analysis sample includes married and cohabiting heterosexual couples where both partners are aged between 18 and 59. The sample is restricted to this age range because the focus of this chapter is on the association between domestic work and potential wage and that between the domestic division of labour and women's likelihood of keeping full-time work after childbirth. Successive waves of

observations (i.e. 14 pairs) are paired up to examine how the change in parental status (becoming a parent) and the domestic division of labour are associated with women's labour market status and both partners' potential wage in the next year. This pooling of two successive waves of data results in repeated observations of some respondents in the sample. Robust standard errors are used to take account of any serial error correlations within these multiple observations of individuals over time in the analytical models.

In what follows, I will first describe changes in time spent on housework and paid work for men and women in the wake of having a child. Then multinomial regression analysis will be employed on women who were full-time employed to analyse the associations between change in parental status, the domestic division of labour and the employment status in the next year. Finally, OLS and individual-level fixed effect models will be employed for the whole sample. The aim is to test the how each partner's housework time and the change in parental status may affect the potential wage in the labour market. Potential hourly wage is measured by the Essex Score, which is calculated based on respondents' educational qualifications, their most recent occupation, and labour market statuses in the 48 months prior to the interview. It has been shown to be a valid indicator of social position and a significant predictor of earnings in the labour market (Kan and Gershuny, 2006).

### ***Findings – descriptive results***

#### **[TABLES 6.1a AND 6.1b ABOUT HERE]**

Tables 6.1a and 6.1b present the average weekly housework hours and paid work hours of men and women by their parental status in two successive years. The first row of figures refer to couples who did not live with a child aged under 16 in the first year and

then became parents in the next year. The second and third rows are couples who stayed childless in both years and those who were already parents in the first year respectively. As can be seen, women on average share 76% of housework. In the group who newly became parents, both women and men had the shortest housework hours compared with the other two groups (10.46 and 5.18 hours per week respectively). Not surprisingly, those who were parents in both years had the longest housework hours (20.45 hours for women) and those who were childless in both years had the shortest ones (14.79 hours for women). But men's housework hours vary only little (less than 0.5 hour) among the three groups, indicating that parental responsibilities increase mainly women's domestic burdens but not men's. After the birth of a child, women's housework hours increased by 4.94 hours, men's by 0.69 hour, and women's share of housework by 6% in the next year. As for paid work hours, the group who newly became parents had the longest weekly paid work hours in the first year (women worked 28.75 hours and men 36.76 hours per week), probably reflecting their younger age and greater economic needs for the ensuing parenthood than the other groups. Nevertheless, women's paid work hours in this group was reduced significantly by 16.54 hours and men's slightly by 0.67 hours in the next year. Many women changed to part-time employment or non-employment after the birth of their child. In a previous study, Kan and Gershuny (2009) found that women's work hours continued to decline in the five years following the first childbirth. To sum up, the gendered division of labour intensifies after the birth of a child, with men's paid work time being roughly stable but women devoting a higher proportion of their work time to housework.

## ***FINDINGS - Multivariate Analysis Results***

### **[TABLE 6.2 ABOUT HERE]**

In this section, we examine if the housework time of women and men might affect women's likelihood of remaining in the labour market after childbirth. Table 6.2 presents multinomial logistic regression models of the association of women's labour force status with the domestic division of labour and change in parental status. The sample here includes full-time employed women in the first year. The models control for both partners' potential hourly wage in the previous year.

We see that from the first set of models, becoming a new parent enormously increases the likelihood of women changing to part-time employment or non-employment (the coefficients being 2.35 and 3.78 respectively). Women's share of domestic work is also positively and significantly associated with their likelihood of changing to part-time employment. But the share of housework is not a significant predictor of whether women would change from full-time to no employment. This indicates that quitting the labour market is likely due to some economic factors rather than domestic burdens. Turning to the second set of models, both partners' housework hours instead of the woman's share of housework are included as independent variables. As can be seen, women's housework time but not their partners' is positively associated with their likelihood of changing from full-time to part-time employment. In a separate set of models (where results are not shown), an interaction between becoming a new parent and housework hours is added but this term is not significant. This demonstrates that housework hours of one's own and partner's neither reinforce nor reduce significantly the hypothetical effect of new parenthood on the likelihood of women changing to part-time or no employment.

**[TABLE 6.3 ABOUT HERE]**

Table 6.3 presents OLS regression models and individual-level fixed effect models of the association of potential hourly wages with the domestic division of labour and the change in parental status. The models include all women and men of the sample. Women's and men's potential wages are regressed separately.

The models controls for both partners' potential hourly wage in the previous year.

Controlling for other factors, one's potential hourly wage is highly dependent on his/her own potential wage in the previous year (the coefficients are all greater than 0.9), and to a lesser but still significant extent on the partner's previous year potential wage

(coefficients are 0.03 and 0.04 in women's and men's models respectively). As to

changes in parental status, we can see from the first two sets of models, becoming a new parent is *not* associated with a reduction in the potential hourly wage in the next year,

compared with the group who remained childless. The coefficients are negative but

insignificant in the women's models, but are positive and significant in the men's models.

This is because, as we have seen in the descriptive tables, men do not usually reduce their work hours after the birth of their children, and the models have controlled for both

partners' housework hours. Being a parent in both years is associated with an increase in potential hourly wage, when the potential wage of both partners' in the previous years

and other factors are taken into account. When focussing on the results of the individual-

level fixed effect models, where the number of children, rather than change in parental

status is included, we see that the coefficients are of opposite signs in the women's and

men's models. When unobserved fixed characteristics of individuals are controlled for,

each additional child is associated with a reduction of 0.04 pounds in hourly wage for women, but an increase in 0.2 for men. This reflects that the gender gap in comparative advantages of women and men in the labour market is intensified with an increase in the number of children.

As to housework hours and the share of housework, a higher share of housework is significantly associated with a lower potential hourly wage, but the coefficient is marginally insignificant in the men's model. In both the OLS and the fixed effect models, we see that potential hourly wage is associated negatively with individuals own housework hours and positively with partners' housework hours when other factors are controlled for. The coefficients are all small but significant. This shows that one's earning power in the labour market benefits from partner's housework participation and is hampered by his or her own contribution. The current models focus on the changes in only two years, so it is not surprising to find that the hypothetical effect is small. Kan and Gershuny (2009, 2010) examined changes in potential wage and time use for couples after childbirth and found that the gender divides in domestic labour and in potential earning in the labour market are continuously widening in the first five years following the birth of a child.

### ***Discussion and Conclusion***

This chapter has employed longitudinal data to analyse changes in the gender division of labour and the labour market earnings following the birth of a child. The findings show that women's time use on paid work and domestic work changes dramatically following the birth of a child. It is because many women quit labour market work or change to part-time work after becoming a mother. As a consequence, they spend a higher proportion of

their work time on unpaid domestic work, rather than on gainful employment. Men's labour market work time and housework time, on the other hand, change only slightly in the year after the birth of their child. These findings concur with the hypothesis described in the introduction: the gender specialization in domestic work and labour market work has intensified after the birth of a child in the family.

Would a more gender egalitarian domestic division of labour help reduce the disadvantages experienced by women in the labour market? Some supportive evidence has been found in this study. It is found that husband's housework participation is associated with a lower likelihood of women changing to part-time employment after childbirth. Women who have shorter housework hours are also less likely to shift to part-time employment.

Finally, is the gender wage gap due to a certain extent to the unequal division of domestic labour between men and women? We see that from the final sets of models, one's own housework hours hamper the increase in potential earning in the labour market, whereas the partner's housework hours are beneficial. The coefficients are small but significant. The accumulation of human capital is a slow and continuous process. The differences in the daily time use practices between men and women result in differentiation in their rates of accumulation of human capital, and hence the gender gap in labour market earnings between partners widen over the life course.

Nevertheless, the domestic division of labour does not alter the impacts of children on labour market earnings or women's likelihood of staying in full-time employment. This shows that parenthood affects the potential wage of women primarily through reducing the time they spend on labour market work.



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Table 1a. *Housework Hours and Paid Work Hours by Change in Parental Status - Women*

	Weekly paid work hours – year before	Change in paid work hours	Weekly housework hours – year before	Change in housework hours	Share of housework – year before	Change in share of housework
Became parents ( <i>n</i> =863)	28.75 (15.04)	-16.54	10.46 (6.65)	4.94	0.67	0.06
Stayed childless ( <i>n</i> =16,265)	25.06 (16.49)	-0.40	14.79 (9.91)	-0.17	0.74	0.00
Stayed being parents ( <i>n</i> = 19,929)	16.38 (15.50)	0.69	20.45 (12.69)	-0.35	0.78	0.00
<i>Total (n= 37,057)</i>	20.46 (16.54)	-0.17	17.75 (11.83)	-0.15	0.76	0.00

*Note:* Data from the British Household Panel Survey, 1992 - 2006. The sample contains pairs of successive waves of heterosexual couples aged 18-59.

Table 1b. *Housework Hours and Paid Work Hours by Change in Parental Status - Men*

	Weekly paid work hours – year before	Change in paid work hours	Weekly housework hours – year before	Change in housework hours	Share of housework – year before	Change in share of housework
Became parents ( <i>n</i> =863)	36.76 (14.91)	-0.67	5.18 (4.13)	0.69	0.33	-0.06
Stayed childless ( <i>n</i> =16,265)	33.96 (17.94)	-0.46	5.22 (5.38)	-0.01	0.26	0.00
Stayed being parents ( <i>n</i> = 19,929)	35.71 (17.83)	-0.12	5.61 (6.04)	0.01	0.22	0.00
<i>Total</i> ( <i>n</i> = 37,057)	34.97 (17.84)	-0.28	5.43 (5.73)	0.01	0.24	0.00

*Note:* Data from the British Household Panel Survey, 1992 - 2006. The sample contains pairs of successive waves of heterosexual couples aged 18-59.

Table 2. *Multinomial Logistic Regression Models Predicting Change in Employment Status (Part-time Employed/ No Work Contrasting with Full-time Employed)*

	Part-time Work		No Work		Part-time Work		No Work	
	<i>B</i>	<i>Robust SE</i>	<i>B</i>	<i>Robust SE</i>	<i>B</i>	<i>Robust SE</i>	<i>B</i>	<i>Robust SE</i>
Share of housework	0.625***	0.165	-0.255	0.179				
Weekly housework hours					0.026***	0.004	-0.005	0.005
Partner's weekly housework hours					-0.006	0.006	0.003	0.007
Became parents	2.346***	0.130	3.777***	0.110	2.393***	0.131	3.773***	0.111
Stayed being parents (Ref: Stayed childless)	0.690***	0.073	0.590***	0.082	0.622***	0.074	0.598***	0.084
Potential wage previous year	-0.032	0.020	-0.116***	0.020	-0.026	0.020	-0.115***	0.020
Partner's potential wage previous year	0.057***	0.015	0.004	0.018	0.060***	0.015	0.004	0.018
<b>Constant</b>	-3.555***	0.224	-2.133***	0.230	-3.495***	0.205	-2.261***	0.206
<i>Wald <math>\chi^2(df)</math></i>	1391.16*** (38)				1419.67*** (40)			
<i>%N</i>	8.31		6.64		8.31		6.64	

*Note:* Data from the British Household Panel Survey, 1992 - 2006.

The sample contains pairs of successive waves of married and cohabiting women aged 18-59 who were full-time employed in the first wave,  $N = 15,085$ .

The models include dummies for year; standard errors take account of multiple observations of individuals.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

Table 3. *OLS and Fixed Effect Models of the Associations between Housework Participation and Potential Wage - Married and Cohabiting Men and Women*

	Women						Men					
	OLS Model		OLS Model		FE Model		OLS Model		OLS Model		FE Model	
	B	Robust SE	B	Robust SE	B	Robust SE	B	Robust SE	B	Robust SE	B	Robust SE
Share of housework	-0.302***	0.021					-0.030	0.023				
Weekly housework hours			-0.006***	0.000	-0.006***	0.001			-0.007***	0.001	-0.011***	0.001
Partner's weekly housework hours			0.003***	0.001	0.005***	0.001			0.002***	0.000	0.002*	0.001
Became parents	-0.027	0.029	-0.034	0.029			0.161***	0.035	0.151***	0.035		
Stayed being parents	0.025**	0.008	0.041***	0.008			0.084***	0.009	0.099***	0.009		
(Ref: Stayed childless)												
Number of children					-0.043***	0.009					0.207***	0.010
Potential wage previous year	0.913***	0.004	0.911***	0.004	0.217***	0.005	0.916***	0.003	0.914***	0.003	0.273***	0.006
Partner's potential wage previous year	0.033***	0.002	0.032***	0.002			0.043***	0.003	0.042***	0.003		
Constant	0.530***	0.031	0.407***	0.027	3.983***	0.034	0.339***	0.030	0.416***	0.032	4.952***	0.037
<i>R</i> <sup>2</sup> / Between groups <i>R</i> <sup>2</sup>	0.856		0.856		0.251		0.855		0.855		0.207	

*Note:* Data from the British Household Panel Survey, 1992 - 2006. The sample contains pairs of successive waves of heterosexual couples aged 18-59, *N*=37,057. The OLS models include dummies for year; standard errors take account of multiple observations of individuals.