

Time to care (longer): Maternal labor market interruptions and the gender division of domestic work

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Abstract

This study investigates how the duration of mothers' employment interruption and their work hours upon return influence the division of domestic work in German and British couples after a birth. This paper extends the literature which mainly concentrated on changes in couples' work hours, earnings or attitudes as potential drivers of domestic work inequality and has not considered what happens to the division of labor during periods when mothers act as full-time carers. I apply fixed-effects panel models of four years after a first or second birth for 855 British and 1533 German couples. The analysis is based on the British Household Panel Study (1991-2008) and on the German Socio-Economic Panel (1985-2009). I also conduct additional tests using instrumental variables based on parental leave policy reforms in Germany.

The results suggest that mothers perform more housework with increasing duration of their employment interruption after childbirth in both parts of Germany and in the UK. Both mothers and fathers in West-Germany increase their child care time, whereas no effect is found in East-Germany. Mothers' longer work hours after labor market return generally increase fathers' domestic work contributions with the exception of paternal child care in East-Germany. The weaker effects of maternal labor market return decisions on maternal and paternal child care time in East-Germany compared to West-Germany are interpreted in the context of institutional and normative differences in child care provision.

Key words: Parenthood; maternal employment; housework; child care; gender division of labor; Britain; Germany

Introduction

This study investigates how long work interruptions and reduced work hours after a birth contribute to increasing gender inequality in the division of domestic work in couples. Many studies have observed that gender differences in time spent on paid and unpaid work and wage differentials between men and women tend to widen after a birth event (Sanchez and Thomson 1997, Gangl and Ziefle 2009, Sigle-Rushton and Waldfogel 2007). Parenthood also appears to be the main driver of increasing gender inequality in couples' division of housework over the course of relationships (e.g., Grunow et al. forthcoming). The process of how parenthood gives rise to a continuing trend towards greater gender inequality in the division of domestic work, however, is not well understood yet. Despite the large number of economic studies showing that women's longer employment interruptions increase the gender or family pay gap (e.g., Joshi et al. 2007, Gangl and Ziefle 2009, Waldfogel 1998), so far the traditionalizing effect on the division of housework and childcare of periods which women spend outside the labor market has not been investigated. Sociological studies have explored how women's labor market transitions or variations in earnings are associated with changes in housework time of women and men across the population (e.g., Gershuny et al. 2005, Kan 2008, Brines 1994). These however did not consider the length of women's labor market interruption and did not explore changes specifically after childbirth. Studies which focused specifically on birth events either only described changes in the time women and men spend on paid and unpaid work (Gershuny 2004, Gjerdingen and Center 2005) or explored associations with prenatal characteristics, such as earnings and gender ideologies of both partners (Sanchez and Thomson 1997, e.g., Kluwer et al. 2002, Schober 2011b). I contribute to this literature by considering in detail the importance of the timing and extent of women's return to the labor market for changes in maternal and paternal housework and child care after childbirth.

The consequences of mothers' labor market return decisions after childbirth for the division of domestic work in couples are explored in Britain, West-Germany, and East-Germany to test whether the relationships are unique to one country and whether they differ systematically across contexts with different institutions with respect to parental leave and formal child care provision. In recent years a growing body of research has explored the importance of socio-political context for the level of gender inequality in the domestic division of labor. Hook (2006; 2010) has shown that policies which facilitate reconciling work and family for women and men, such as parental leave policies and provision of early years education and care are significantly associated with time spent on housework and child care by men and women. Craig and Mullan (2011) found that cross-national differences between Australia, France, Italy and Denmark in the division of child care between mothers and fathers in couples were largely in line with expected effects of the corresponding policy package of the country. The comparison of both parts of Germany interesting as there have been and still are significant regional differences in mothers' labor market participation, publicly subsidized day-care provision and related attitudes towards working mothers and using institutional care for young children. The United Kingdom serves as an interesting contrast, as it is similar to West-Germany in some aspects of the work-care regime for parents with young children, such as widespread part-time work for mothers, but very different in its parental leave policies. Mothers' employment interruptions tend to be considerably longer in Germany than in the UK. Despite limitations in the comparability of the domestic work measures, it allows us tentative insights into whether the gendered processes within families are similar during interruptions of short or moderate durations of less than one year compared to several years of labor market interruption, which are still common in West-Germany.

The institutional context for new parents in Britain, West-Germany and East-Germany

The male breadwinner/ female part-time carer model has become the predominant arrangement how couples with young children combine earning and caring in the UK and West-Germany, whereas a greater share of mothers still work full-time in East Germany (Crompton and Harris 1999, Misra et al. 2010, Lewis et al. 2008). The male breadwinner/ female part-time carer model constitutes a compromise between a need or preference for women's employment and the expectation that women should be primary caregivers. This model has been supported by national level policies in both countries through the promotion of part-time work. Part-time workers in Germany have been entitled to the same employment protection rights as full-time workers since 1985, whereas in the UK this was only implemented in 2003. Laws regulating the right to request a reduction of working time came into force in Germany in 2001 and in the UK in 2003. In 1991, only 56 per cent of West-German mothers with dependent children participated in the labor market whereas the figure was 94 percent in the regions of the former German Democratic Republic (Goldstein et al. 2010). By 2007, the labor force participation rate of mothers had risen to 73 percent in West-Germany and declined to 86 percent in East-Germany. Between 1991 to 2007, the full-time employment rate of mothers decreased from 23 to 18 percent in West-Germany and from 74 to 50 percent in East-Germany (Goldstein et al. 2010). Over the same time period, the UK consistently had a relatively high share of part-time employed women as percentage of all employed women around 40 percent (OECD 2010)..

Historically, in West-Germany and in the UK this was accompanied by a very low level of publicly subsidized childcare provision (in terms of places as well as opening hours) for children under the age of three. Despite recent improvements in availability, in 2008 still only 14 percent of children under three in Germany and 22 percent in the UK attended formal daycare facilities when measured in full-time equivalent (OECD 2011). Large regional

differences remain between the Eastern and Western parts of Germany. In 2009, 12 and 41 percent of children under three attended formal daycare facilities in West- and East-Germany, respectively. The difference is even larger in terms of full-day care, since most places in East Germany allow children full-day attendance whereas most places provide only half-day care in West-Germany (Goldstein et al. 2010, Buechel and Spiess 2002). Mothers in East Germany have been and still are more accepting of full-time employment and use of formal childcare for young children, as a result of the historical experience of political and economic necessity of labor market participation for mothers (Braun et al. 1994).

Entitlements to maternity or parental leave have been more generous in Germany than in the UK, in particular in terms of duration of leave. Benefit levels were rather low in both countries (this has changed since the 2007 reform in Germany). Several reforms of parental leave policies have taken place in both countries since the mid- 1980s. These are described in some detail for Germany, as they will later be used as exogenous predictors of the length of mothers' labor market interruption. In Germany, the maximum entitlement to paid or unpaid leave (including maternity and parental leave) after a birth for mothers was extended from 6 months in 1985 to 12 months in 1986, to 14 months in 1988, to 17 months in 1990, to 20 months in 1991 and to 36 months in 1992. After the eight-week mother protection period with income-related reimbursement, payment in Germany was a means-tested flat rate of about €300 per month after 1986. This was paid to all mothers for the first six months. For the rest of the period or up to 24 months after 1992, it was means-tested based on household income and reduced at a sliding scale. Two reforms in 1998 and 2001 introduced slightly more choice and flexibility in take-up granting parents the option of receiving €450 per month if they reduced the benefit period to one year and allowing partners to take leave simultaneously and work up to 30 hours per week during the leave (Bundesministerium für Familie 2002, 2006). In 2007, the German government introduced an income-related reimbursement at 67 per cent

of net earnings or a minimum of €300 Euros for 12 months. The option to extend this leave to 24 months at lower pay has been rarely used. Evaluation studies of these policies find that the extensions in the late 1980s and early 1990s delayed mothers' return to the labor market (Schoenberg and Ludsteck 2007, Ondrich et al. 2003), whereas the most recent reform increased mothers' likelihood of returning to the labor market in the second year after the birth (Wrohlich et al. 2012). The reform also included an individual leave entitlement of two months which were reserved for each parent and were otherwise lost to the family. Before 2007, less than 2 per cent of fathers took some child care leave. After 2007, the percentage of fathers taking child care leave slowly rose to 23 percent in 2009 (Reich 2010, Statistisches Bundesamt 2010).

In the UK, maternity leave has been an individual entitlement of the mother which varied by the period of employment with the same employer before the birth. For women with less than one year tenure with the same employer at the time of childbirth, the provision of statutory leave with some pay has been extended from 7 to 14 weeks in 1994, to 26 weeks in 2003, and to 33 weeks in 2007 (Moss and O'Brien 2006, Ringen 1997). Before 2003, women with tenure over one or two years had rights to longer paid leaves of 18 and 29 weeks, respectively. The first six weeks were paid at a maximum of 90 per cent of the previous salary followed by a flat rate which changed slightly with every reform from a maximum of £75 per week before 1994 to £129 per week in 2007. In the UK, entitlements to two weeks of paternity leave for fathers around the birth and to three month unpaid parental leave for each parent was introduced in 2003. Parental leave is not considered in the description above as take-up by British mothers and fathers is low and only 4 weeks can be taken each year (Moss and O'Brien 2006). Transferring some of the paid maternity leave from mothers to fathers was not permitted in the UK until a reform in April 2011. There is tentative evidence that the extensions of maternity leave rights in 1994 increased mothers' retention rates (Waldfoegel et

al. 1999), but evaluations of these policies have been difficult as mothers' leave entitlement differ by their employment history which is unlikely to be independent of their labor market return preferences.

Theoretical framework

Mothers' labor market return timing

Around the birth of a child, the negotiations between men and women in couples may be conceptualized as an implicit agreement which is supposed to allow an eventual return to a (usually less traditional) division of labor similar to the one the couples practiced before having the child. In many couples, this agreement probably entails that the woman interrupts her employment and temporarily accepts to do more domestic work after the birth while the male partner remains in employment. When the child grows older and needs less care, it is assumed that the couple will return to a division of labor dependent on the prenatal distribution of relative resources (Becker 1981, Lundberg and Pollak 1996), women's ability to pay for childcare (Gupta 2007, Schober 2011b), or gender ideologies before the birth (West and Zimmerman 1987). Empirical results provide partial support for all of these influences with some variations depending on the institutional context (Sanchez and Thomson 1997, Schober 2011b, Singley and Hynes 2005).

Periods of mothers' labor market interruption have been treated as a black box, even though similar theoretical mechanisms continue to be at work during this time. With growing duration of women's employment interruption, women's bargaining power and possibility to sanction men's deviant behaviors decrease (Lundberg and Pollak 1996). The specialization of women in household labor may also involve improved household skills for them and depreciation of their partners' skills (Becker 1981). Children may form a stronger attachment

with the mother and transferring the responsibility for certain child care tasks from the mother to the father may become more difficult as children grow older and can voice their resistance to changes in established habits. Furthermore, some women may adapt their expectations of the gender division of labor to the more traditional practice experienced since childbirth (Schober and Scott 2012). In this way, women and men may be ‘doing gender’ (West and Zimmerman 1987) and women may meet their own and societal expectations of ‘intensive mothering’. Greater time investment in child care may be the result of greater awareness of the importance of sensitivity and responsiveness to children’s needs and of spending quality time in activities with children (Hays 1996). In each case, an increase in men’s domestic contributions and a decrease in women’s, which would be needed to return to a less traditional pre-birth division of labor, become less likely. This outcome has also been described as habit formation or inertia, where special impulses would be necessary to change the established division of labor, in particular when it is in line with predominant traditional social norms. As a result of these mechanisms, women will spend more time on housework and child care with increasing length of their labor market interruption (*Hypothesis 1*). It is well established that mothers do more domestic work and their partners do less during times when mothers are not working for pay (e.g., Gershuny et al. 2005). Hypothesis 1 assumes that the relationship can be better understood also taking into account the duration of the current spell out of the labor market.

Fathers’ responses to mothers’ longer periods out of the labor market may take two forms, depending on the extent to which maternal and paternal housework and child care time are substitutes or complements. Fathers may either reduce their housework and child care because they feel less needed or responsible with increasing duration of mothers’ labor market interruption, or they may increase their unpaid work time to spend shared leisure time with their spouse and children. Responsibility for housework chores by mothers and fathers are

likely to be seen as substitutes by many people. Housework is often perceived as something to be avoided or reduced, therefore fathers are likely to reduce their housework contributions when they feel that mothers can and will perform these tasks in their absence (*Hypothesis 2*). By contrast, child care time of partners are likely to be complements as well substitutes. Couples usually want to spend family time together with the child and may get used to more family time the longer mothers have been out of the labor market. It is therefore unclear whether fathers will do more or less child care with increasing length of mothers' time-out or whether the two effects will offset each other.

Mothers' work hours upon return

The second, probably interrelated, decision which mothers face is whether to return to the labor market part-time or full-time. In line with the time availability perspective (Blood and Wolfe 1960), previous research has provided ample evidence of the importance of women's employment status for women's housework and child care time and the relative division of domestic work (e.g., Craig and Mullan 2011, Gershuny et al. 2005). Longer work hours usually result in greater reductions in mothers' child care time, even though mothers seem to reduce passive child care time more than time spent talking and playing with children (Bianchi et al. 2000). Longer work hours also limit women's availability to do time-inflexible housework tasks, which need to be performed every day, such as cooking, and in particular housework tasks connected with childcare, such as cleaning up after children's meals. Previous research also suggests a significant positive association between women's work hours and their partners' housework time (e.g., Cooke 2007, Gershuny et al. 2005). Mothers' longer hours after returning to work are likely to provide a stronger impetus for their partners to increase their housework contributions (*Hypothesis 3*).

Findings relating to associations of mothers' employment with fathers' absolute contributions to child care are more complicated. Most studies find that fathers are more involved in child care in households where mothers work for pay (O'Connell 1993, Sullivan et al. 2009, Craig and Mullan 2011). Fathers in dual full-time worker households in Australia, the US, Italy, France, and Denmark engaged more in routine child care tasks and spent more time alone with the child without the mother present (Craig and Mullan 2011). Cooke (2007), however, found no significant association of mothers' work hours with married fathers' child care time in Germany. Evidence from Norway and the UK suggests that paternal care involvement was greater when mothers worked part-time rather than full-time, whereas the relationship between mothers' work hours and fathers' child care time was positive and linear in Sweden (Sullivan et al. 2009). This suggests that fathers' responsiveness in terms of child care involvement may be context-dependent.

Contextual variations

Prevailing differences day-care coverage, full-time employment rates of mothers, and in attitudes towards maternal employment and use of formal day-care for children under three years between East- and West-Germany may result in differential effects of women's labor market return decisions on the gender division of unpaid work. Policies in the former German Democratic Republic were mainly aimed at facilitating maternal employment but not at altering the gender division of housework within the family. I expect therefore little difference with regard to the effects of longer work interruptions and work hours upon return for mothers on the division of housework. However, the greater availability of public day-care institutions and longer opening hours may allow East German mothers to outsource some of the child care already during periods when they do not participate in the labor market. They may also be more open to outsourcing some of the infant and toddler care to other people, such as

relatives. Therefore I predict that longer employment interruption will increase mothers' child care time more in West-Germany compared to East-Germany (*Hypothesis 4*).

During the phase when couples have children under three years of age, I would expect that fathers constitute an important source of child care for mothers who spend substantial hours in formal employment in West-Germany where access to and opening hours of day-care facilities are limited. By contrast, East German mothers are more likely to be able and willing to use formal day-care for their young children after they have returned to the labor market. Greater availability and longer opening hours probably make substantial involvement of East-German fathers less necessary in order for mothers to be able to work longer hours. I therefore expect a stronger negative association of mothers' work hours with their own child care time and a weaker positive association with fathers' child care contributions in East-Germany than in West-Germany (*Hypothesis 5*). The UK and West-Germany would provide an interesting comparison of the effects in two European contexts with relatively short versus long labor market interruptions after childbirth. However, the measures of housework are not completely comparable and no information on child care time is available for the UK.

Other influences on domestic work time in couples after childbirth

Previous studies found negative associations of men's long market hours or large earnings with their own contributions to unpaid work, whereas they were positively associated with their partners' domestic work time (Cooke 2007, Hook 2010). Couples that become parents at an older age or are unmarried may have a less traditional division of domestic work (Ishi-Kuntz and Coltrane 1992, Schober 2011b). The amount of child care required is likely to decrease with the age of the youngest child in months and increase with the number of children in the household. Previous studies found that both partners' educational levels, gender ideologies, and women's relative and absolute prenatal earnings were significant

predictors of the gender division of domestic work after childbirth (Schober 2011b, Sanchez and Thomson 1997). Housework time in couples is likely to increase with the size of the property, and decrease when external cleaning services or many time-saving household appliances are used. Outsourcing of child care to formal or informal providers outside the household are likely to reduce parents' child care time.

Data and Method

The data to test these hypotheses are drawn from couple responses in the British Household Panel Study (BHPS) from 1991 to 2008 and in the German Socio-Economic Panel (SOEP) from 1985 to 2009. The BHPS is a probability sample of households from Great Britain in the year 1991. The SOEP started with a probability sample of households from West-Germany in 1984 and was then extended to East-Germany in 1989 and includes also some refresher probability samples from 1998, 2000 and 2006 (for a detailed description, see Wagner et al. 2007). The regional extension samples for Wales, Scotland and Northern Ireland and the German subsamples which oversample individuals with foreign nationalities or high income households are not used in this analysis. A great strength of both surveys is that all members of the household are interviewed annually. In addition to retrospective fertility and employment histories, both surveys have asked each respondent annually about time spent on paid work and housework. A measure for child care time is only available for Germany. The categorical measure in the BHPS does not capture sufficient variation to measure change in the years following a birth.

To examine the consequences of differences in mothers' labor market return decisions after a birth for the gender division of domestic work, I follow couples from the birth of their first or second child for four years using panel models. I limit the analysis to couples having their first or second child to reduce the risk of increased selectivity of couples with three or more

children. Separate analyses of first and second births did not show qualitatively different results. From a statistical point of view, the length of mothers' labor market interruptions and work hours upon return and the time allocations to housework and child care of both partners after a birth are endogenous, as they may affect each other and unobserved factors such as work-family orientations of women and men might affect all these processes simultaneously. Ignoring such unobserved characteristics will probably result in overestimating the effects of mothers' labor market return decisions on domestic work inequality in couples. I therefore use fixed-effects panel models which account for time-invariant unobserved heterogeneity between the time-varying dependent and independent variables. As shown in equation (1), they estimate the within-person effects of the length of labor market interruption to-date i_{it} and of mothers' work hours in the year of return p_{it} on d_{it} , which represents the time mothers or fathers spend on housework or child care or mothers' relative share of housework or child care. x_{it} is a vector of control variables. ε_{it} denotes the random variation at each time point, whereas α_i captures a set of random unobserved variables which may be correlated with the independent variables, and therefore can be understood as the combined effect of all time-constant unobserved variables on the outcome.

$$(1) d_{it} = \beta_{1t} + \beta_2 i_{it} + \beta_3 p_{it} + \beta_4 x_{it} + \alpha_i + \varepsilon_{it}$$

To examine the risk of reverse causality, I conducted additional tests using parental leave policy changes over the observation period in Germany as instrumental variables for mothers' return to work timing. I applied fixed-effects instrumental variable regressions using the two-stage least squares procedure. For an effective test of causality, these instruments need to be have enough variation and be sufficiently correlated with the independent variable, the length of mothers' employment interruption. Furthermore, they must be exogenous, which means that they must not be influenced by the same unobserved factors, such as gender ideologies or

work-family preferences, as time allocation to domestic work and they should exert no direct influence on domestic work. Rather they should influence domestic work time in couples only indirectly through the influence on maternal employment decisions. I believe for West-Germany, variations in the length of maximum paid and unpaid parental leave fulfill most of these criteria. They have been shown to affect the work return timing (Schoenberg and Ludsteck 2007, Ondrich et al. 2003) and unobserved attitudes or preferences could not influence their effects as the reforms were passed and newspaper articles about the reforms appeared only a couple of months before they came into effect. Couples therefore could not anticipate the reforms before planning the pregnancy. The only two exceptions were the extensions of the leave period in 1988 and 1990. These were already planned in 1986 and 1989, respectively (Schoenberg and Ludsteck 2007). I also tested the instruments for East-German couples. The results, however, should be interpreted with caution, as there was less variation in the parental leave entitlements with data being available only from 1989. Furthermore, most of the remaining reforms of the length of leave took place just after German reunification when East-German mothers' labor market behavior was also influenced by other fundamental social and economic changes, such as increasing unemployment risk for men and women.

For the UK, parental leave variations are unlikely to provide exogenous instruments for the length of mothers' labor market interruptions. Throughout the observation period leave entitlements depended on different criteria regarding tenure with the same employer before childbirth. Mothers could influence their leave entitlement by planning the pregnancy accordingly. A number of cross-sectional studies of a large number of countries, have found significant associations of parental leave policies with housework and child care time at the individual or couples level (Hook 2006, 2010). After controlling for maternal labor market return timing and work hours, previous studies found direct associations of parental leave

reforms with child care time in Germany but not with housework time (Schober 2011a, 2012). I will therefore apply the instrumental variable estimations only to housework time of mothers and fathers in Germany.

Sample selection

The sample is restricted to couples, irrespective of marital status, where women are between 20 and 45 years old when they have their first or second child. Unmarried cohabiting couples are included, as childbearing increasingly occurs before a marriage in both countries. Teenage mothers are excluded because the dynamics in their division of labor with partners are likely to be driven by other factors such as education and family networks. The selection of couples who became parents is based on women's fertility history. The observed birth is the first or second one for the female partners, but it may not be the same birth order for the male partners. Including a dummy variable for whether the man fathered a child in a previous relationship however does not affect the results. I include couples who have given full interviews before the woman becomes pregnant (calculated as 9 months before the birth date) and at least once after the birth of the child. Based on these restrictions, I observe 1008 British couples with 742 first births and 770 second births. In West-Germany, there are 1588 couples which experience 2158 births, whereas the East-German sample is smaller with 342 couples and 426 births.

Non-response

In order to maximize the number of observed births, an unbalanced panel of up to four years after a first or second birth is used. I have investigated the potential of bias due to wave non-response by examining the correlation with all main explanatory variables and, in line with Uhrig (2008), found a very low rate of wave non-response among couples with young children. I also compared the analysis sample with couples who joined the panels after the

start of the respective pregnancy. For the UK, I can observe that the latter on average have shorter relationship durations. In both countries, women with lower education are more likely to start cohabiting only after the start of pregnancy and therefore the samples slightly under-represent the less well educated. To reduce the risk of bias as a result of attrition between the first and the fourth year after the birth, correlates of non-response such as home ownership, poor health of either partner, and interviewer changes are included in all models in addition to the other explanatory and control variables.

Of the remaining couples, 52, 282 and 153 couples have some non-response in the dependent and independent variables included in the final model in East- and West-Germany and in the UK, respectively. The questions with the largest amount of missing information are housework and child care hours of men. Rerunning the models of women's housework and child care time including those whose partners did not report their housework or child care time, however, gave substantively similar results. The final sample size of couples included in the regression analysis is 885 in the UK, 1306 in West-Germany, and 290 in East-Germany.

Measures and descriptive statistics

The dependent variables in this analysis are mothers' and fathers' housework hours spent on female-typed tasks, child care hours, and women's share of housework and child care relative to the couple's total time. The questions on housework time differ between the BHPS and the SOEP. The BHPS asks male and female respondents in all households to provide estimates of their own weekly hours spent on housework, whereas the SOEP asks how many hours a person spends on housework and child care, respectively, on a typical weekday. Weekend estimates are not asked every year in Germany and are therefore excluded in this longitudinal design. Direct survey questions of housework are generally more prone to overreporting than time diary questions (Kan and Gershuny 2008). The German measure of housework hours on

a weekday may underestimate men's housework time, as some men tend to do less than an hour of housework per day and may therefore indicate zero hours if there is no minute option. I tested this risk of underestimation by comparing a random sample of the SOEP 2009 with the SOEP Pretest 2010, which included a minute option for the housework question. The differences were not statistically significant. The effect of women's work hours on their own/partners' housework time may be over/underestimated in Germany if full-time employed women and their partners' compensate for women's lower housework hours on a weekday by doing more housework on weekends. To test this, I examined differences in weekend housework hours between couples where mothers return to work full-time and those who return part-time for the years where weekend data was available. I found that women who return to work part-time do more and their partners less domestic work on the weekend compared to couples where mothers work full-time suggesting a very limited risk of bias. A dummy variable is included to account for measurement error in Germany as a result of a reduction from two questions on different housework tasks to one combined housework question in 1990.

The duration of women's labor market interruption after a birth is measured as the number of consecutive months after the birth of the child which a woman records her labor force status as either on maternity/parental leave or as looking after the family until she experiences her first spell back in employment or education. The term labor market interruption therefore also includes education interruptions. Length of labor market interruption is not used to refer to actual take-up of maternity or parental leave entitlements, as leave may be combined with some paid work in Germany. The length of employment interruption is calculated from the birth event, as time off during a pregnancy may be linked to medical reasons and may have different effects on the gender division of domestic work. For second-time mothers, who did not return to the labor market or education in between births, the time-out duration since the

most recent birth event is used as some of the underlying mechanisms may be linked to the development of the youngest child. Using the total duration of mothers' labor market interruption since the first birth for these couples, however, gives very similar results, as the focus is on changes within persons over time. A continuous variable of women's total weekly work hours in the year after they re-entered the labor market is constructed for all subsamples. I tested non-linear and categorical specifications for this variable but these were not more significant than a continuous variable. I control for whether mothers returned to education since the last wave.

Descriptive statistics for the main dependent and explanatory variables are shown in Table 1. In the four years following a first or second birth, mothers and fathers in Britain spent on average 17 and 5 hours per week on housework, respectively. Mothers in West-Germany and East-Germany spent just under 4 and 3 hours on housework on a typical weekday, respectively, whereas the equivalent figures for fathers were 40 and 50 minutes, respectively. Women's housework share relative to the couple's total is 75 per cent in Britain, 78 percent in East-Germany and 85 per cent in West-Germany. Mothers in West- and East-Germany spent on average 10 and 9 hours, respectively, on child care on a typical weekday. Fathers in both parts of Germany reported spending about 2 hours on child care on weekdays. These relatively high estimates of weekday child care hours by female and male respondents suggest that most people considered in their responses primary and secondary child care and possibly also time spent on other activities with children present. Women's child care share relative to the couple's total was 81 per cent in West-Germany compared to 78 percent in East-Germany. West-German mothers have spent on average 17 months out of the labor market since birth, whereas the corresponding figures for East-German and British mothers are smaller with only 15 and 10 months, respectively. German mothers worked on average 15 hours per week in the

year of their return, whereas East-German and British mothers worked 25 and 22 hours, respectively.

As instrumental variables for the length of mothers' labor market interruption in Germany, I constructed two continuous variables of the maximum number of months of 1) total leave and of 2) paid leave which were available to mothers at the time of the respective childbirth minus the age of the youngest child in months. The variables therefore calculate how many month of paid and total (including unpaid) leave, respectively, the mother probably could take assuming she started her leave at the time of childbirth. I also tested other specifications, such as dummy variables for each period when parental leave policies changed.

Year dummies are included in all models to control for period trends. I also take into account fathers' work hours and gross monthly earnings lagged by one year, women's age, the marital status of the couple, the age of the youngest child, and for the number of children in the household. Further prenatal predictors of the gender division of domestic work have been tested but are not included in the final model because they show insufficient variation over time. Among these were both partners' educational levels and women's relative and absolute earnings. I also tested controls for the number of rooms in the property, the use of external help with housework, in particular cleaning services, and the presence of time-saving household appliances such as a dishwasher and a microwave did not change the results qualitatively. These variables were not included in the final model as they may be the result of women's employment decisions rather than a cause. I also tested a control variable for whether the youngest child attended publicly subsidized daycare in the respective year in Germany. Unfortunately information on help with childcare from relatives or privately funded care-givers was available only from 1997 onwards in Germany. In Britain, information on use

of different types of formal and informal child care were available only for working mothers and not for each individual child.

[Table 1 about here]

Results

Women's labor market interruption and couples' domestic work time

Table 2 presents estimation results from fixed-effects models of housework hours on weekdays in West-Germany and East-Germany and housework hours per week in Britain.

Table 3 present equivalent results for weekday child care hours in couples in West- and East-Germany. In addition, the last two columns in both tables also show the results for women's relative share of housework and childcare. For all these models, a Hausman test suggested that random-effects models did not provide consistent estimates. I therefore used fixed-effects regression models to reduce the risk of bias due to individual-specific unobserved heterogeneity.

Hypothesis 1 assumed that housework and child care hours of mothers would increase with each additional month of labor market/education interruption. In all three countries, mothers' longer work interruption since childbirth were positively associated with an increase in their own housework hours. A ten-month longer work interruption was associated with women spending 5 and 9 minutes more on housework on a weekday in West- and East-Germany, respectively, and 34 minutes more per week in the UK. Table 3 also shows a positive effect on mothers' child care time in West-Germany but not in East-Germany. West-German mothers perform 18 minutes more child care on a weekday after a 10-month longer labor market interruption. Hypothesis 1 therefore had to be rejected only for mothers' child care in East-Germany. The findings for mothers' child care also provide support for Hypothesis 4,

which assumed that longer employment interruption would increase mothers' child care time more in West-Germany compared to East-Germany.

[Table 2 about here]

[Table 3 about here]

Hypothesis 2 predicted that fathers will reduce their housework contributions with increasing duration of mothers' labor market time-out, whereas the effects on fathers' child care time could be positive or negative. The effects of mothers' longer labor market interruptions on men's housework hours are not statistically significant in any of the three countries.

Hypothesis 2 is therefore rejected. For child care time, I find only a marginally significant positive association in West-Germany but no association in East-Germany. As shown in Figure 1, significant effects on housework or child care hours of mothers usually also translate into a change the division of housework and child care. The consequences of a 10-month longer employment interruption of mothers are relatively similar in West-Germany and in the UK, increasing mothers' housework or child care share by about one percent, whereas mothers' housework share increases by 2 percent in East-Germany.

Women's work hours upon return and couples' domestic work time

In line with Hypothesis 3, mothers' longer work hours upon re-entry strongly reduce their own and increase fathers' housework time across all three countries. Working 15 hours more per week (one standard deviation) after labor market re-entry reduces mothers' own housework time by about half an hours on a weekday and increases their partners' housework contributions by 7 and 5 minutes in West-Germany and East-Germany, respectively. British mothers reduce their weekly housework hours by 90 minutes, whereas British fathers increase theirs' by about 20 minutes.

Mothers in West- and East-Germany reduce their child care time by about 90 and 120 minutes on a weekday, respectively. A 15-hour increase in the work hours upon return is also associated with half an hour more child care time of fathers in West-Germany, whereas the relationship is not significant in East-Germany. I also tested for curvilinear associations of mothers' working hours upon return with domestic work time but found no support for these. The results are in line with Hypothesis 5, which expected stronger negative effects of mothers' work hours on their own child care time and weaker positive effects on fathers' child care contributions in East-Germany than in West-Germany. However, the effects on the division of child care are similar in both parts of Germany, reducing women's child care share by 6 percent in West-Germany and by 5.5 per cent in East.-Germany (see Figure 1). The percent changes in mothers' housework share as a result of mothers' longer work hours by one standard deviation shows slightly more variation across the three countries, ranging from about 3 percent in Britain, to 4 percent in West-Germany, and 5 percent in East-Germany.

[Figure 1 about here]

Women's labor market interruption and housework time: an IV approach

To further examine whether mothers' longer employment interruption on housework time in couples is likely to have a causal effect, I use variations in parental leave entitlements over the observations periods as exogenous variation which is assumed to affect women's employment interruption but to have only an indirect effect on housework time. Table 4 shows the results of two-stage least squares fixed-effects models with two instrumental variables for mothers' employment interruptions. The two instruments measure the time until the end of the total available leave including unpaid leave and the time until the end of the maximum available paid leave entitlement, respectively. As can be seen from the first stage estimates, both are significantly associated with the length of mothers' employment interruption since the last

childbirth in both parts of Germany. In the second stage fixed-effects regression, mothers' longer employment interruption is significantly associated with longer housework time of West-German mothers. The size of the coefficient (.05) is larger than in the fixed-effects regression. This is in part because I excluded mothers' work hours upon return to work, as they may not be exogenous to mothers' employment interruptions and therefore should not be included in the instrumental variable regression. The comparable coefficient in the fixed-effects model would be .02. Based on the IV fixed-effects model, an increase in mothers' employment interruption by 10 months would be associated with an increase in West-German mothers' housework time by half an hour on a weekday. Using only one of these two instruments gives qualitatively similar results. The IV estimate for East-German mothers points in the same direction as the fixed-effects models but does not reach statistical significance. This may be explained in part by less variation in the instrument with fewer observed reforms and by the weaker correlation between parental leave entitlements and maternal labor market return timing in East-Germany.

Discussion

The findings provide evidence that mothers' fast and full-time return to work reduces the trend towards a more traditional division of domestic work in West-Germany, East-Germany and Britain. Longer labor market interruptions seem to increase mothers' housework time, whereas fathers' housework contributions are unaffected. Mothers' child care time is also positively associated with longer interruptions in West-Germany but not in East-Germany. The sizes of these effects are modest compared to associations with mothers' work hours upon labor market return, which appear to be more effective in altering fathers' domestic work contributions. Although longer periods of labor market interruption for mothers were positively associated with paternal child care time in West-Germany which points to some degree of complementarity of maternal and paternal child care time. The stronger positive

effect on maternal care time still resulted in a more and more traditional division of child care with longer durations of mothers' time-out. The results for East-German couples provide an interesting contrast, as I find no significant association of mothers' length of employment interruption after childbirth with child care time of mothers or fathers. These results may be interpreted in the light of institutional differences between the two regions. Possibly the larger coverage of formal day-care for children under three years in East-Germany and parents' greater willingness to use such day-care from an early age of their children prevent an increase in child care time during mothers' labor market interruptions.

The positive associations of women's employment hours upon labor market return with fathers' absolute levels of housework involvement in West-Germany, East-Germany and Britain are consonant with previous studies (Cooke 2007, Gershuny et al. 2005). My analysis, suggests that mothers' work hours after a birth are positively associated with fathers' child care involvement during the early years in West-Germany but not in East-Germany. This contrasts with Cooke (2007), who found no significant relationship between women's work hours and their husbands' contributions to child care in married couples in Germany in the 1990s. One explanation for this difference may be that the influence of mothers' work hours on paternal child care involvement is stronger among unmarried cohabiting couples in West-Germany.

For paternal child care involvement, my results provide support for differential effects depending on the institutional and normative context of child care provision and mothers' labor market participation. Changes in mothers' work hours upon labor market return are more strongly associated with reduction mothers' child care time in East-Germany than in West-Germany. This may be due to more extensive use of formal day-care or to differing norms regarding child care by employed mothers. Regional differences in formal day-care

availability and use may also contribute to explaining why East-German fathers do not increase their child care involvement after their partners re-entered the labor market, whereas West-German fathers take over more responsibility for child care. The findings on contextual differences in the association of women's work hours with paternal child care involvement are in line with a study by Craig and Mullan (2011) on the US, Australia, Denmark, Italy, and France. Sullivan et al. (2009) also found cross-national differences in this association between Britain, Norway, and Sweden. Usually it is difficult to narrow down the institutional factors which may be driving these differences. I contribute to this literature by focusing just on couples during the first few years after a birth and comparing two regions of Germany with significant differences in child care policies and norms in otherwise similar contexts.

I found evidence of significant correlations between fixed unobserved characteristics related to women's labor market return decisions and domestic time in both countries. This provides support for the argument that time allocations to paid and unpaid work are commonly determined and underlines the importance of using suitable statistical methods to account for this interdependence. I conducted additional tests with instrumental variables for the length of mothers' labor market interruption based on parental leave variations in Germany. The results provide some support that reverse causation is unlikely to drive the association between the length of mothers' time-out and their housework time in Germany. Unfortunately, similar tests could not be done for Britain and for child care in Germany, as the parental leave entitlements did not appear to be valid instruments.

Important limitations of this study are the measures of housework and child care time through retrospective survey questions rather than time diaries. Respondents' estimates of domestic work time may be influenced by their gender ideologies, parenting attitudes or housework standards and these may change with increasing length of mothers' employment interruptions.

Previous UK studies exploring changes in gender ideologies after transition to parenthood however found significant change only in a minority of couples and attitude change seemed to be more often a result than a cause of women's return to work decisions (Schober and Scott 2012). To limit potential bias due to panel attrition, the analysis was limited to a period of four years after a birth. The analysis is therefore likely to provide conservative estimates of the associations of domestic work time with women's leave length after return to work, as the associations may have been larger if mothers with longer employment interruptions had been included. The four-year time window after a birth event, however, may lead to overestimation of the effect of women's hours in formal employment on domestic work time in couples if these effects are stronger among the selected group of mothers who return within a few years after a birth.

This research provided the first evidence of the importance of the length of women's labor market interruption for the time they spend on domestic work. In this research I was not able to distinguish between competing explanations for the steady increase in women's responsibilities for domestic work while they are at home full-time to take care of children. A more detailed examination of explanations including task specialization and habit formation, attitude adaptations or reduced bargaining power seems a promising avenue for future quantitative and qualitative research. By showing that women's longer time-outs after childbirth seem to increase at least some aspects their reported domestic work contributions in Britain and both parts of Germany, the analysis suggests that a relationship can be found in more than one context. At the same time differences the patterns between the three contexts also provide evidence of some meaningful variation in line with social norms and institutions in relation to child care for young children. I was not able to examine whether fathers increase their reported domestic work time during periods out of the labor market in a similar fashion as mothers due to the small number of fathers interrupting their paid work after childbirth. It

may be possible to study this in a few years for German fathers, as the number of fathers taking leave has been slowly increasing since the 2007 parental leave reform which also introduced an individual entitlement for fathers. Finally, another interesting question would be whether the duration of spells of inactivity or unemployment of men and women in different phases of the life course is also associated with changes in domestic work involvement. Most studies in this area so far considered only changes in labor market status but not the duration since the last labor market exit.

The findings have implications for parental leave policies, in particular in countries with very long and low paid leave entitlements which usually result in gendered take-up patterns. In 2011, post-natal statutory leave entitlements which give parents the right to return to the same or a similar job after the leave of three years or more was available to parents in Germany, Finland, Sweden, Norway, Croatia, Czech Republic, Hungary, Estonia, Poland, Portugal, Spain, and Greece (International Network of Leave Policies & Research 2011). Whereas longer entitlements up to one year have been found to increase mothers' likelihood of labor market return after the end of the leave period (Waldfogel et al. 1999, Ruhm 1998), leave durations exceeding one year do not seem to be beneficial for retention rates of mothers (Ondrich et al. 2003). Longer leave entitlements, in particular if they are unpaid or low-paid, seem to lead to extended periods out of the labor market for mothers, which reinforce a more traditional division of domestic work in couples. Several countries recently increased fathers' leave entitlements and incentives for take-up after a birth. It remains to be seen whether fathers increase their domestic work contributions to a similar extent as mothers during periods when they look after children full-time.

References

- Becker, G. S. (1981). *A treatise on the family*, Cambridge, MA.: Harvard University Press.
- Bianchi, S. M., Milkie, M. A., Sayer, L. C. & Robinson, J. P. (2000). Is anyone doing the housework? Trends in gender division of labour. *Social Forces*, **79**, 191-228.
- Blood, R. O. & Wolfe, D. M. (1960). *Husbands and wives*, New York: Free Press.
- Braun, M., Scott, J. & Alwin, D. F. (1994). Economic necessity or selfactualization? Attitudes toward women's labour-force participation in East and West Germany. *European Sociological Review*, **10**, 29-47.
- Brines, J. (1994). Economic dependency, gender, and the division of labor at home. *American Journal of Sociology*, **100**, 652-688.
- Buechel, F. & Spiess, C. K. (2002). Kindertageseinrichtungen und Müttererwerbstätigkeit - Neue Ergebnisse zu einem bekannten Zusammenhang. *Vierteljahreshefte zur Wirtschaftsforschung*, **71**, 95-113.
- Bundesministerium für Familie, S., Frauen und Jugend, (2002) Erziehungsgeld, Elternzeit. Berlin: BMFSFJ.
- Bundesministerium für Familie, S., Frauen und Jugend, (2006) Elterngeld und Elternzeit. Berlin: BMFSFJ.
- Cooke, L. P. (2007). Persistent policy effects on the division of domestic tasks in reunified Germany. *Journal of Marriage and Family*, **69**, 930-950.
- Craig, L. & Mullan, K. (2011). How Mothers and Fathers Share Childcare : A Cross-National Time-Use Comparison. *American Sociological Review*, **76**, 834.
- Crompton, R. & Harris, F. (1999) Employment, careers and families: The significance of choice and constraint in women's lives. In R. Crompton (Ed.), *Restructuring Gender Relations and Employment: The Decline of the Male Breadwinner*. (pp. 128-149), Cambridge: Cambridge University Press.

- Gangl, M. & Ziefle, A. (2009). Motherhood, labour force behavior, and women's careers: An empirical assessment of the wage penalty for motherhood in Britain, Germany, and the United States. *Demography*, **46**, 341-369.
- Gershuny, J. (2004) Time, through the lifecourse, in the family. In J. Scott, J. Treas & M. Richards (Eds.), *The Blackwell companion to the sociology of families*. (pp. 158-177), Oxford: Basil Blackwell.
- Gershuny, J., Bittman, M. & Brice, J. (2005). Exit, voice, and suffering: do couples adapt to changing employment patterns? *Journal of Marriage and Family*, **67**, 656-665.
- Gjerdingen, D. K. & Center, B. A. (2005). First-time parents' postpartum changes in employment, childcare, and housework responsibilities. *Social Science Research*, **34**, 103-116.
- Goldstein, J., Kreyenfeld, M., Huinink, J., Konietzka, D. & Trappe, H. (2010) Familie und Partnerschaft in Ost- und Westdeutschland. Rostock: Max Planck Institute for Demographic Research.
- Grunow, D., Schulz, F. & Blossfeld, H.-P. (forthcoming). What Determines Change in the Division of Housework over the Course of Marriage? *International Sociology*.
- Gupta, S. (2007). Autonomy, dependence, or display? The relationship between married women's earnings and housework. *Journal of Marriage and Family*, **69**, 399-417.
- Hays, S. (1996). *The cultural contradictions of motherhood*, New Haven: Yale University Press.
- Hook, J. L. (2006). Care in context: Men's unpaid work in 20 countries, 1965 - 2003. *American Sociological Review*, **71**, 639 - 660.
- Hook, J. L. (2010). Gender inequality in the welfare state: Task segregation in housework, 1965 - 2003. *American Journal of Sociology*, **115**, 1480 - 1523.
- International Network of Leave Policies & Research (2011) Total leave available.

- Ishi-Kuntz, M. & Coltrane, S. (1992). Predicting the sharing of household labor: Are parenting and housework distinct? *Sociological Perspectives*, **35**, 629-649.
- Joshi, H., Makepeace, G. H. & Dolton, P. (2007). More or less unequal? Evidence on the pay of men and women from the British Birth Cohort Studies. *Gender, Work and Organization*, **14**, 37-55.
- Kan, M. Y. (2008). Does gender trump money? Housework hours of husbands and wives in Britain *Work, Employment and Society*, **22** 45-66.
- Kan, M. Y. & Gershuny, J. (2008). Calibrating Stylised Time Estimates Using UK Diary Data *Social Indicators Research*, **93**, 239-243.
- Kluwer, E. S., Heesink, J. A. M. & Vliert, E. v. d. (2002). The Division of labor across the transition to parenthood: A justice perspective. *Journal of Marriage and Family*, **64**, 930 - 943.
- Lewis, J., Campbell, M. & Huerta, C. (2008). Patterns of paid and unpaid work in Western Europe: gender, commodification, preferences and the implications for policy. *Journal of European Social Policy*, **18**, 21-37.
- Lundberg, S. & Pollak, R. A. (1996). Bargaining and distribution in marriage. *The Journal of Economic Perspectives*, **10**, 139-158.
- Misra, J., Budig, M. & Böckmann, I. (2010). Cross-national patterns in individual and household employment and work hours by gender and parenthood. *Luxembourg Income Study Working Paper*, **No. 544**.
- Moss, P. & O'Brien, M. (2006) International review of leave policies and related research 2006. London: DTI Employment Relations Research Series.
- O'Connell, M. (1993) Where's Papa? Fathers' Role in Child Care. *Population Trends and Public Policy, Bulletin No.20*. Washington, DC.: Population Reference Bureau.
- OECD (2010). *OECD employment outlook*, Paris: OECD.
- OECD (2011) OECD family database.

- Ondrich, J., C., Spiess, K., Yang, Q. & Wagner, G. G. (2003). The liberalization of maternity leave policy and the return to work after childbirth in Germany. *Review of Economics of the Household*, **77-110**, 1-2.
- Reich, N. (2010) Who Cares? Determinants of the Fathers' Use of Parental Leave in Germany. *Hamburg Institute of International Economics Working Paper No. 1-31*. Hamburg: University of Hamburg.
- Ringen, S. (1997) Great Britain. In S. B. Kamerman & A. J. Kahn (Eds.), *Family change and family policies in Great Britain, Canada, New Zealand, and the United States*. (pp. pp.29-102), Oxford: Clarendon Press.
- Ruhm, C. J. (1998). The economic consequences of parental leave mandates: Lessons from Europe. *The Quarterly Journal of Economics*, **113**, 285-317.
- Sanchez, L. & Thomson, E. (1997). Becoming mothers and fathers: Parenthood, gender, and the division of labor. *Gender and Society*, **11**, 747-772.
- Schober, P. S. (2011a) Maternal labor market return, parental leave policies, and gender inequality in housework. *SOEP papers 422*. Berlin: DIW Berlin.
- Schober, P. S. (2011b). The parenthood effect on gender inequality: Explaining the change in paid and domestic work when British couples become parents. *European Sociological Review*, **published online May 2011**.
- Schober, P. S. (2012) Parental leave policies and child care time in couples after childbirth. *SOEP Papers 434*. Berlin: DIW Berlin.
- Schober, P. S. & Scott, J. (2012). Maternal employment and gender role attitudes: Dissonance among British men and women in the transition to parenthood. *Work, Employment & Society*.
- Schoenberg, U. & Ludsteck, J. (2007) Maternity Leave Legislation, Female Labor Supply, and the Family Wage Gap. *IZA Discussion Papers 2699*. Institute for the Study of Labor.

- Sigle-Rushton, W. & Waldfogel, J. (2007). Motherhood and women's earnings in Anglo-American, Continental European, and Nordic Countries. *Feminist economics*, **13**, 55-92.
- Singley, S. G. & Hynes, K. (2005). Transitions to parenthood: work-family policies, gender, and the couple context. *Gender and Society*, **19**, 376-397.
- Statistisches Bundesamt (2010) Väterbeteiligung beim Elterngeld steigt auf 23%.
Pressemitteilung Nr.442.
- Sullivan, O., Coltrane, S., Mcannally, L. & Altintas, E. (2009). Father-friendly policies and time-use data in a cross-national context: potential and prospects for future research. *Annals of the American Academy of Political and Social Science*, **624**, 234–254.
- Uhrig, N. (2008). The nature and causes of attrition in the British Household Panel Survey. *ISER Working Paper, No. 2008-05*.
- Wagner, G. G., Frick, J. R. & Schupp, J. (2007). The German Socio-Economic Panel Study (SOEP) - Scope, Evolution and Enhancements. *Schmollers Jahrbuch*, **127**, 139-169.
- Waldfogel, J. (1998). Understanding the 'family gap' in pay for women with children. *Journal of Economic Perspectives*, **12**, 137-156.
- Waldfogel, J., Higuchi, Y. & Abe, M. (1999). Family leave policies and women's retention after childbirth: Evidence from the United States, Britain, and Japan. *Journal of Population Economics*, **12**, 523-546.
- West, C. & Zimmerman, D. H. (1987). Doing gender. *Gender & Society*, **1**, 125-151.
- Wrohlich, K., Berger, E., Geyer, J., Haan, P., Sengül, D., Spieß, C. K. & Thiemann, A. (2012) Elterngeld Monitor. *Politikberatung kompakt*. Berlin: DIW Berlin.

Table 1: Descriptive statistics for pooled 4-year sample of couples with a first or second birth

	West-Germany		East-Germany		Britain	
	Mean/	SD	Mean/	SD	Mean/	SD
Dependent variables						
Women's housework hours (DE:weekday,UK:weekly)	3.78	2.05	2.90	1.83	17.42	10.04
Men's housework hours (DE:weekday,UK:weekly)	0.67	0.91	0.79	0.84	5.29	4.99
Women's share of housework in couple	84.93	18.15	77.59	21.58	75.12	19.05
Women's child care hours	10.17	5.77	8.97	6.12		
Men's child care hours	2.12	2.20	2.22	2.13		
Women's share of child care in couple	81.00	15.71	77.39	18.01		
Explanatory variables						
% women who returned to work 4 years after birth	53.22		75		70.28	
Length of labor market/education interruption since birth	17.46	12.30	15.13	10.23	10.13	9.81
Weekly hours worked in year of labor market return	15.82	16.03	25.01	18.40	22.16	14.29
Gross monthly earnings of partner (lagged) in Euros, inflation adjusted	32740.80	19763.46	22398.51	17251.76	19932.16	15671.64
Work hours of partner (lagged)	40.45	13.84	39.64	17.34	42.70	15.40
Married	80.56		53.92		74.24	
Woman's age	30.94	4.67	29.68	3.84	29.42	4.66
Number of children	1.55	0.52	1.49	0.50	1.58	0.54
Age of youngest child	2.02	1.37	1.69	1.11	1.48	1.33
Survey year	1999.01	6.40	2002.21	4.90	2000.53	4.51
Accommodation owned	38.85		30.42		84.51	
Either partner dissatisfied with health	7.64		8.46		7.99	
Interviewer change	12.90		19.37		36.10	
Instrumental variables						
No. of months until end of statutory leave entitlement	13.24	12.22	15.60	11.92		
No. of months until end of maximum paid leave	6.05	7.58	6.73	7.71		

Source: BHPS (1992-2008) and SOEP (1985-2009).

Table 2: Fixed effects models of weekday housework hours of mothers and fathers in West-Germany and East-Germany and of weekly housework hours in Britain up to four years after a first or second birth

	Mothers' housework hours		Fathers' housework hours		Mothers' housework share	
	b	SE	b	SE	b	SE
West-Germany						
No. months of interruption since birth	0.008*	0.004	-0.003	0.002	0.085*	0.042
Weekly hours worked in year of labor market return	-0.034***	0.004	0.008***	0.002	-0.279***	0.033
N couples (observations)	1,243 (4,942)		1,243 (4,942)		1,243 (4,942)	
East-Germany						
No. months of interruption since birth	0.015*	0.008	-0.002	0.005	0.100	0.109
Weekly hours worked in year of labor market return	-0.032***	0.004	0.006**	0.002	-0.350***	0.049
N couples (observations)	290 (1,058)		290 (1,058)		290 (1,058)	
Britain						
No. months of interruption since birth	0.057*	0.023	-0.009	0.011	0.068*	0.034
Weekly hours worked in year of labor market return	-0.102***	0.016	0.023***	0.008	-0.185***	0.027
N couples (observations)	855 (3,360)		855 (3,360)		855 (3,360)	

Note: All models include the following control variables: Mother returned to education, lags of partners' earnings and work hours, women's age, marital status, number of children, age of the youngest child, and lags of home ownership, whether either partner dissatisfied with health, and interviewer change.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Source: BHPS (1992-2008) and SOEP (1985-2009).

Table 3: Fixed effects models of weekday child care hours of mothers and fathers in West-Germany and East-Germany up to four years after a first or second birth

	Mothers' child care hours		Fathers' child care hours		Mothers' child care share	
	b	SE	b	SE	b	SE
West-Germany						
No. months of interruption since birth	0.030*	0.013	0.008 [†]	0.005	0.086*	0.038
Weekly hours worked in year of labor market return	-0.098***	0.010	0.030***	0.004	-0.403***	0.029
N couples (observations)	1,243 (4,942)		1,243 (4,942)		1,243 (4,942)	
East-Germany						
No. months of interruption since birth	-0.038	0.029	-0.019	0.011	0.031	0.091
Weekly hours worked in year of labor market return	-0.134***	0.013	0.006	0.005	-0.364***	0.041
N couples (observations)	290 (1,058)		290 (1,058)		290 (1,058)	

Note: All models include the following control variables: lags of partners' earnings and work hours, women's age, marital status, number of children, age of the youngest child, and lags of home ownership, whether either partner dissatisfied with health, and interviewer change.

[†] p < 0.1; *p < 0.05; ** p < 0.01; *** p < 0.001.

Source: BHPS (1992-2008) and SOEP (1985-2009).

Table 4: Two-stage least squares fixed effects instrumental variable models of weekday housework hours of mothers and fathers in West-Germany and East-Germany

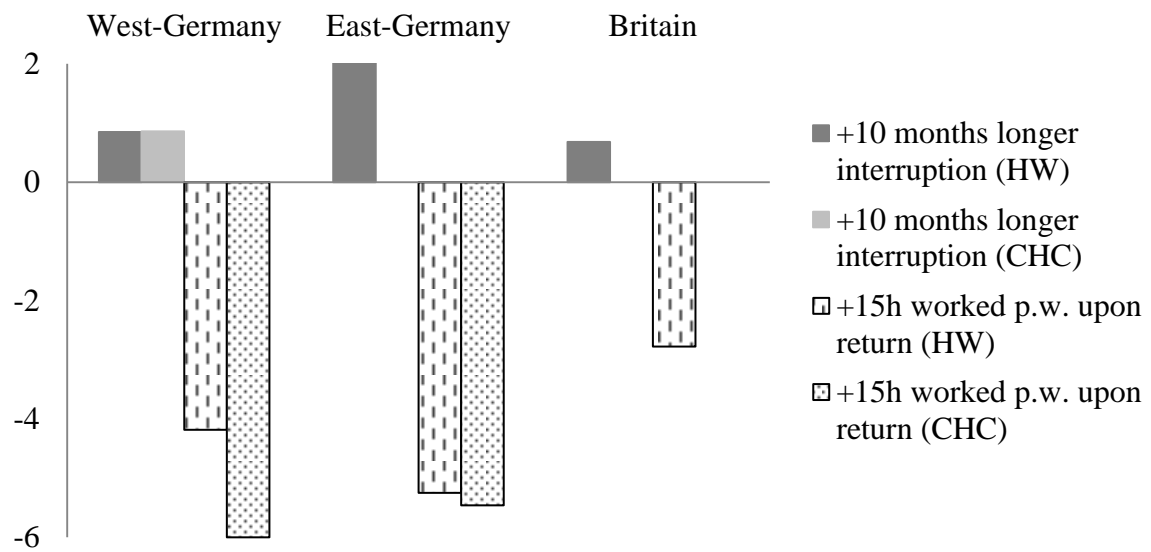
	West-Germany				East-Germany			
	Mothers' housework hours		Fathers' housework hours		Mothers' housework hours		Fathers' housework hours	
2nd stage results	b	SE	b	SE	b	SE	b	SE
No. months of interruption since birth	0.054*	0.023	-0.014	0.011	0.041	0.029	0.01	0.016
N couples (observations)	1,243 (4,942)		1,243 (4,942)		290 (1,058)		290 (1,058)	
1st stage results	b	SE			b	SE		
Months until end of maximum leave	-0.100**	0.034			-0.293*	0.136		
Months until end of maximum paid leave	-0.203***	0.031			-0.302***	0.076		
F test of excluded instruments:	F(2, 3711)= 79.44 p= 0.000				F(2,557) =33.32 p= 0.000			
Anderson canon. corr. LM statistic	Chi-sq(2)=153.75 p=0.000				Chi-sq(2)=62.40 p=0.000			
Sargan statistic	Chi-sq(1)=1.298 p=0.255				Chi-sq(1)=0.198 p=0.657			

Note: All models include the following control variables: Mother returned to education, lags of partners' earnings and work hours, women's age, marital status, number of children, age of the youngest child, and lags of home ownership, whether either partner dissatisfied with health, and interviewer change.

*p< 0.05; ** p< 0.01; *** p< 0.001.

Source: BHPS (1992-2008) and SOEP (1985-2009).

Figure 1: Marginal effects on percent changes in mothers' housework and child care share



Note: Only statistically significant associations shown. No data on child care time was available for Britain.

Source: BHPS (1992-2008) and SOEP (1985-2009).