WO(MEN) AT WORK?

THE IMPACT OF COHABITING AND MARRIED PARTNERS' EARNINGS ON WOMEN'S WORK HOURS

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ABSTRACT

This study investigates the determinants of women's labor supply in the household context. The main focus is on the effect of a change in male partner's wages on women's work hours. This is linked to the broader question of whether married and cohabiting women make different economic decisions and respond differently to changes in their partners' wages. In addition, this study seeks to connect the working behavior of married and cohabiting individuals to the "tax-splitting" benefit for married couples. To provide a complete picture of working behavior within households, I analyze both women and men using data from the German Socio-Economic Panel Study (SOEP) from 1993 to 2010. The methodology for the main analysis relies on fixed effects regression. The main estimation results suggest that married women work less on the labor market and further, an increase in partner's wages results in a negative and significant effect on married women's work hours. The marital status of men, on the other hand, has no significant impact on their work hours.

1. INTRODUCTION

Women's labor supply has changed dramatically over the past decades in almost all industrialized countries. The transition from unpaid housework to paid market work is one of the most striking changes identified in recent labor economic research (Merz, 2008). Simultaneously, marriage rates have decreased in the last few years, while more contemporary living arrangements - specifically cohabitation[1] - have become more prevalent (Adamopoulou, 2010). Both of these changes have generated a large body of research on women's labor supply and family formation. In addition to those cross-border changes, Germany's joint taxation system, including the "tax-splitting" benefit, for married couples only (Steiner and Wrohlich, 2004) delivers further analysis potential. Therefore, the present study seeks to link the three issues by asking whether married and cohabiting women differ in their labor supply decision, if so, to what extent and whether this difference can be linked to the "tax-splitting" benefit for married couples. This is crucial to understand intra-household specialization issues, to comprehend the impact of women's work hours on household income, and finally to draw conclusions about the mode of operation and consequences of the German "tax-splitting" benefit.

To the best of my knowledge, there is little systematic research on whether married women make different economic decisions than cohabiting women. One reason might be that cohabitation was infrequent until the mid-1980s;[2] until then it was typically a short-term preliminary stage to marriage (Morissette et al., 2012). This has changed dramatically. In Germany, cohabitation increased by over one-third over an eight year period from 1996 to 2004 (Nöthen, 2004)[3]. The increase was even larger (around 70%) among cohabiting couples in West Germany with children living in the household. Nonetheless, most of the research so far addressing women's labor supply has focused on married women. This could lead to biased conclusions due to the variety of ways in which cohabiting couples differ from married couples. Cohabiting women have been found to display more pronounced individualism and independence (Morissette et al., 2012). In addition, in many countries including Germany, there is a different legal framework for cohabitation than for marriage. This means that cohabitating couples lack legal recognition for their relationship, face fewer hurdles to

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[1] Cohabitation means living with a partner without being legally married.
[2] Another reason is that cohabitation was mostly not observable in the data until recently because questionnaires only divided into single and married individuals.
[3] Living-apart-together couples are not included in this calculation.

separation, and might require additional financial resources if the relationship comes to an end (Morissette et al., 2012; Kerr et al., 2006).

The aim of my study is to shed light on two questions: first, whether the male and female partners in married and cohabiting relationships are similar or dissimilar from each other, in terms of labor market and non-market characteristics and second, whether married women tend to make different economic decisions concerning their work hours than cohabiting women. This is especially noteworthy against the background of splitting income taxation for married couples. If married and cohabiting women indeed show different working behavior, then I can detect whether this is attributable to that taxation benefit and conclude with its political implication. The main focus therefore is on the effect of a change in the male partner's wages on women's work hours.[4] To examine these questions, I use longitudinal data from the German Socio-Economic Panel Study (SOEP) from 1993 to 2010. I identify the effects of partner characteristics and marital status on women's work hours using fixed effects regression. In doing so, I need to account for selection into the labor force and endogeneity of wages (Laczo, 2011). Therefore, I use a Heckman correction model (Heckman, 1979) and the Mincer wage regression (Mincer, 1974). The main estimation results suggest that married women work less on the labor market. Further, an increase in partner's wages produces a negative and significant effect on married women's work hours. The marital status of men, on the other hand, has no significant impact on their work hours. A second step includes interaction terms to test the combined effect of cohabitation with the main characteristics. The regression analysis confirms that cohabiting women respond significantly more strongly to a change in partner's wages than married women.

My study contributes to the existing literature on women's labor supply by taking not only marriage but also cohabitation into consideration.[5] An additional added value is provided by the longitudinal analysis. Further, my study utilizes a unique feature of the German tax system: the tax benefit for married couples known as "income-splitting"[6]. In this context, the differentiation between married and cohabiting couples provides new insights into household taxation and labor supply incentives.

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[4] For reasons of comparison, I run identical regressions for women and men separately. My aim in doing so is to determine whether a change in a partner's wages affects women's and men's work hours differently.
[5] The distinction between marriage and cohabitation is determined as marital status in this study.
[6] The German law on personal income tax and splitting income taxation is the *Einkommensteuergesetz* (EStG). Steiner and Wrohlich (2004) examine its mechanisms and effects.

The paper proceeds as follows. In section 2, I provide the theoretical background and the main hypotheses of the paper. The data is described in section 3. This is followed in section 4 by a descriptive analysis, including a discussion of extensive versus intensive margin of labor supply. Section 5 proceeds through the regression methodology in detailed steps. Section 6 describes the regression results, and section 7 provides robustness and sensitivity checks. Finally, section 8 concludes the paper.

2. THEORETICAL BACKGROUND

The theoretical framework for this study is derived from the family life course perspective (Elder, 1985, 1997). This theory was developed in the 1960s to connect individuals with their social and historical contexts. One key principle of this approach is the idea of "linked lives," which states that people in close personal relationships with each other, such as parents and children or spouses and cohabitants, are connected by interlocking developmental trajectories that continue over the entire course of their lives (Elder et al., 2003). Within a family, each individual's development is connected with and influenced by the life courses of all of the other family members. Although there is empirical research on "linked lives" and the life course perspective, no formal theory has yet been developed (Mayer, 2009).

Studies on women's labor supply find that partner characteristics influence women's labor force participation (Leibowitz and Klerman, 1995) and work hours (McRattan and Rogerson, 2008). But most of these studies compare only married and unmarried (single) women and do not take into account the increasing number of unmarried partnerships. Accordingly, many authors treat cohabiting couples either as single (McGrattan and Rogerson, 2008) or as married (Merz, 2006). Neither strategy considers possible differences in the working behavior of married and cohabiting couples. This misspecification may lead to biased estimates of women's labor force participation and work hours. Gemici and Laufer (2011) report that cohabiting and married couples in the United States indeed differ in various ways, for example, with respect to both the dissolution of unions and tax rates. In Germany, joint taxation through the system of "income-splitting" is available for married but not for cohabiting couples, and provides the greatest utility if one partner earns significantly more than the other. This may place cohabiting couples, who file jointly, at a disadvantage concerning taxes and may lead cohabiting women to work more in order to offset the tax disadvantage. When it comes to dissolving a union, however, cohabiting couples have an advantage since the law does not provide any strict procedures for separation or duties after

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separation. However, by implication, this also means that no support after separation (e.g., financial assistance) from the partner is guaranteed. Women might therefore choose to work more in such relationships. In addition, marriage can be thought of as a traditional form of partnership based on traditional attitudes, whereas cohabiting couples might have more modern attitudes toward the division of housework and labor market specialization.

Drawing on the concept of "linked lives", I include the partner's wage as a determinant, which allows me to assume that households make allocation decisions jointly rather than taking the income of the partner as given. I argue that a financial modification arising in a household will lead to a change in one partner's work hours if the other partner earns more or less. The joint allocation decision contrasts somewhat with the classical assumption of the division of responsibilities within the household, which is based on the male breadwinner / female homemaker model (Bernhardt, 2000; Abroms and Goldscheider, 2002). In modern societies, earning money is no longer only the sole domain of the male partner. This is especially true for cohabiting couples, as confirmed by literature on the links among living arrangements, partner characteristics, and labor market outcomes. Henkens at al. (1993), for instance, examined the labor force participation decisions of women in different types of partnerships in the Netherlands and found that women who cohabitate rather than marry are economically more independent. Abroms and Goldscheider (2002) analyzed how different partner or other adult relatives living in the same household affects the labor market behavior of mothers in the US. Their results suggest that other adults in the household have different effects on maternal working behavior. Focusing on longitudinal data from the British Household Panel Survey, Laczo (2011) found that cohabiting women work two hours more per week than married women, controlling for age and children.

There is no question that children and the accompanying childcare responsibilities influence mothers' working behavior. Previous studies found that mothers reduce their labor supply if children are present in the household (Kümmerling et al., 2008) Furthermore, the younger the children are, the less their mothers participate in the labor force (Eichhorst et al., 2011). Although the decision to have a child is usually made jointly ("linked lives" principle), it mainly affects the labor supply of the mother. A radical modification of the German parental leave regulation in 2007[7] was carried out to encourage shared responsibility for children

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[7] The German law regulating parental leave is the *Bundeselterngeld- und Elternzeitgesetz* (BEEG). Geisler and Kreyenfeld (2012) give detailed information on the new parental leave benefit scheme.

between both the mother and the father. But still, women are the ones who usually interrupt their careers to raise children (e.g., Böhm et al., 2011), suggesting that the responsibility for childcare lies mainly with women, regardless of marital status and paternal working behavior. Craig and Mullan (2011) confirmed this in an international comparison: in all of the countries analyzed, mothers spent more time on childcare than fathers.

3. DATA

3.1. SAMPLE

This study uses data from the German Socio-Economic Panel (SOEP) Study (Wagner et al., 2007), a representative longitudinal sample of private households in the Federal Republic of Germany that started in 1984. The SOEP provides information not just on households but also on individual household members, which enables me to identify relationships among individuals belonging to the same household. The wide range of topics surveyed includes information about employment, earnings, satisfaction indicators, and household composition. My analysis uses an unbalanced panel from 1993 through 2010 (SOEP, 2011). Starting with 1993 ensures that all relevant variables are also available for households in the former German Democratic Republic. At the time of writing, 2010 is the last wave of the SOEP available. One aim of the paper is to examine the labor market work hours as a function of the individual's and partner's gross earnings and other characteristics. I therefore reshaped the data into an individual-partner structure. My sample includes individuals living in a partnership (either married or cohabitating) between the ages of 25 and 55. This leaves me with a sample of individuals of prime working age. Individuals younger than 25 have often not finished either an education or an apprenticeship, while those older than 55 may have entered early retirement.[8] Furthermore, all individuals currently in education or apprenticeship are excluded from the sample, as well as self-employed people, civil servants, and retirees. The sample is limited to individuals in dependent employment, first, because they can be presumed to have the same labor market requirements and therefore be more comparable, and second, due to the difficulties in measuring earnings of self-employed people. To analyze labor force participation, non-employed individuals are also included. The final sample

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[8] Many large companies in Germany have programs that enable employees to switch to semi-retirement at the age of 55.

consists of 75,506 person-year observations (38,320 women and 37,186 men). Approximately 14 percent of individuals in the sample are cohabitating.[9]

3.2. VARIABLES

My focus is on the female labor supply, especially the paid work hours of women. These are computed by using actual or agreed work hours,[10] overtime, and a variable that determines whether overtime is paid or not. As a result, overtime is included, partly included, or excluded in the variable depending on whether the extra hours are paid, partly paid, or unpaid. Non-working individuals are assigned zero work hours. I restrict the work hours to a maximum of 84 hours per week (12 hours per day). The logarithm of gross hourly wages of the individual and her/his partner is calculated by dividing gross monthly wage, without extra pay, by monthly paid work hours. The wage is measured in 2005 euros adjusted by the consumer price index (Federal Statistical Office of Germany, 2012). Hourly wages of fewer than 3 euros are dropped from the sample. Having children plays a significant role in the evaluation of women's labor supply (Böhm et al., 2011; Cristia, 2008). I consider the number of children in the household under the age of 17 as a basis for estimating current childcare responsibilities. In addition, I distinguish three age groups since younger children demand more childcare. The first age group consists of children up to the age of 3. This group presumably requires the most care time. The second group consists of children aged 4 to 6, and the third group consists of all older children from the age of 7 to 17. Hours spent on housework by the individual and the partner are measured in hours per weekday.

Further, I include a variety of control variables that may affect labor supply behavior. These include education, measured by years of education, as well as age and its squared term to cover the nonlinear effect of age on work hours. Non-labor income is defined as income from pensions, transfers, grants, and benefits. It is also deflated with the consumer price index and measured in thousand euros per year. Work experience and its squared term are measured as the sum of full-time and part-time experience in years. Further I include a dummy to capture the effect of working in managerial positions,[11] a dummy indicating whether the respondent

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[9] The analysis of same-sex couples would be very informative in terms of the absence of traditional gender roles (Allegretto, 2002). Unfortunately, as there are only 241 observations (139 women and 102 men) available, I exclude same-sex couples.

[10] Usually, paid work hours correspond to actual work hours, but agreed work hours are used if data on actual work hours are not available or if overtime is not paid and if actual work hours exceed agreed work hours.

[11] Managerial positions include executive and supervisory positions with comprehensive management responsibilities at all levels of management.

changed jobs since the last interview, and finally a variable that consider the region of residence (East or West Germany). In addition, to account for the influence of the partner on the woman's employment decisions and work hours,[12] I include different characteristics of the male partner. These are: earnings, work hours, housework hours, education, age and its squared term, and non-labor income. All variables are constructed in the same manner as for the observed individual.

4. DESCRIPTIVE ANALYSIS

Means and standard deviations of selected characteristics of women living either in marriage or in a cohabiting relationship are presented in Table 1. The same characteristics are presented for men. Women as well as men in cohabiting relationships differ in various ways from women and men who live with a spouse. Married women and men are, on average, four years older than those in a cohabiting relationship, and married men are generally older than women. Women have fewer housework hours per week if cohabiting, whereas men have more. Considering years of education, women as well as men living in cohabitation have slightly more education. Married couples have twice as many children as couples who are not legally married. This result might also be driven by the fact that cohabiting couples are younger. There is a considerable variation in the region of residence. About one-third of the observed cohabiting individuals live in East Germany (former GDR), while the share of married individuals living in East Germany is about 8 percent lower. Large differences become obvious when considering labor market characteristics. Cohabiting women work about 11 hours more per week than married women. In contrast, married men work slightly more than cohabiting men, and overall, men work more hours than women. They also earn much more per hour than women. Married women have the lowest hourly wages. Cohabiting individuals change jobs more often and work more often in managerial positions, but men more often than women. Overall, when considering labor market characteristics, it is clear that cohabiting women and men are more equal than their married counterparts.

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[12] According to Becker (1985), human capital investments can foster the division of labor among household members. Further, the spouse's or partner's human capital variables may affect the individual's employment decisions (Cha, 2010).

Table 1: Means and standard deviations of dependent and independent variables

	Women			Men		
	Cohabitation	Marriage	Diff.	Cohabitation	Marriage	Diff.
1. Personal characteristics						
Age	35.30	39.80	***	37.22	42.10	***
	(7.530)	(7.363)		(7.530)	(7.490)	
Housework hours	2.013	3.126	***	0.883	0.641	***
	(1.392)	(1.861)		(0.823)	(0.834)	
Yearly non-labor income	1.156	0.543	***	0.617	0.455	***
	(2.863)	(1.668)		(1.976)	(1.968)	
Education in years	12.47	11.73	***	12.46	11.98	***
	(2.501)	(2.391)		(2.604)	(2.622)	
Number of children	0.521	1.128	***	0.528	1.130	***
	(0.821)	(1.068)		(0.823)	(1.075)	
Region						
East	29.86	22.7		30.96	22.65	
West	70.14	77.3		69.04	77.35	
2. Labor market characteristics						
Work hours	29.02	18.54	***	36.12	37.33	***
	(15.63)	(16.41)		(14.21)	(12.32)	
Hourly wage	10.92	8.271	***	14.23	16.23	***
	(8.095)	(8.913)		(9.827)	(11.36)	
Job change	0.139	0.0974	***	0.147	0.0893	***
	(0.346)	(0.296)		(0.354)	(0.285)	
Managerial position	0.137	0.0678	***	0.247	0.224	***
	(0.344)	(0.251)		(0.432)	(0.417)	
Work experience	11.75	13.49	***	14.11	20.00	***
	(7.615)	(8.340)		(8.135)	(8.275)	
N	4681	33639		4688	32498	

Notes: The table shows means with standard deviations in parentheses (for continuous variables). Wage and non-labor income are measured in 2005 euros. *** mean differences are significant at a 1 percent level. The samples consist of women or men between 25 and 55 who are living with a partner (spouse or cohabitant) and either in dependent employment or non-employed.
Source: SOEP 1993-2010, own calculations.

The descriptive statistics provide an initial overview of differences between married and cohabiting individuals, with women displaying greater differences and the greatest difference (compared to men) in the dependent variable, weekly work hours (Δwomen=10.48, Δmen=1.21). All displayed differences are statistically significant at the 1 percent level. This result underlines the necessity of multiple regression analysis.

4.1.   EXTENSIVE AND INTENSIVE MARGIN

Labor supply can be divided in two different dimensions: labor force participation (LFP), which is the extensive margin, and work hours, which is the intensive margin. On the one hand, there is an observable increase in women's LFP in almost all industrialized countries (Fernandez, 2007; Jaumotte, 2003). On the other hand, the weekly work hours, conditional on working, provide a non-uniform picture. While women's work hours in the United States have been rising steadily since 1970 (McRattan and Rogerson, 2004, 2008), the trend in Germany is the opposite. Full-time employment among women has decreased and part-time employment has increased over the same period, resulting in decreasing average work hours (Merz, 2008).

Figure 1: Women's extensive and intensive margin

Notes: The sample includes women between 25 and 55 who are living with a partner (spouse or cohabitant and either in dependent employment or non-employed.
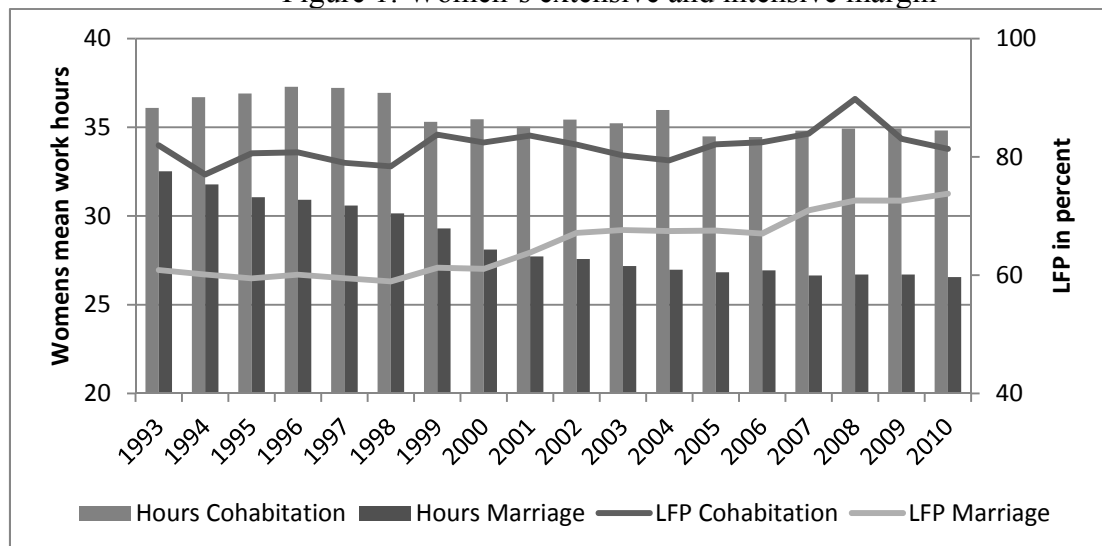Source: SOEP 1993-2010, own calculations.

According to Heckman (1993), the extensive margin is of primary importance for economic analysis. But the intensive margin is also of interest to economic research since it serves as input into the production of goods and services (Merz, 2008) and is important for the evaluation of welfare programs that create disincentives to participate in the labor market and to work higher numbers of hours (Haan, 2005). While this study focuses primarily on the intensive margin, the extensive margin is considered as well in this section.

As noted above, women's labor supply has increased since the 1970s in Germany, as it has in many other developed countries.[13] The LFP, shown in Figure 1, of married women increased more than that of cohabiting women, but still, in 2010, cohabiting women worked at a higher rate than married women.[14] As previously noted cohabiting women have no legal right to financial support after separation and might therefore have a greater probability of participating in the labor market. Although the rate of married women participating in the labor force is increasing, the average number of hours worked per married woman is decreasing over time, while cohabiting women are steadily increasing the number of hours worked on average. Comparing full-time and part-time work shows that there is an enormous shift from full-time to part-time work (full-time>=35 hours) as presented in Table 2.

Table 2: Women's share of full-time and part-time work

| | Cohabitant | | | | Married | | | | Share of |
	Full-time	Part-time	Non-empl.	N	Full-time	Part-time	Non-empl.	N	Married
1993	65.16	16.77	18.06	155	38.02	22.83	39.15	1,857	92.3
1995	67.66	12.94	19.4	201	32.86	26.59	40.55	1,884	90.4
2000	60.34	22.1	17.56	353	26.61	34.43	38.96	2,777	88.7
2005	58.64	23.46	17.9	324	24.73	42.79	32.48	1,921	85.6
2010	56.69	24.65	18.66	284	25.82	47.94	26.24	1,456	83.7

Notes: The sample includes women between 25 and 55 who are living with a partner (spouse or cohabitant and either in dependent employment or non-employed.
Source: SOEP 1993-2010, own calculations.

The shift is highest for married women. Table 2 also shows that the rise in labor market participation is dominated by an increase in part-time work. Cohabiting women are more often found in full-time positions. This could be due to greater independence and individualism among cohabiting couples, or it might reflect the fact that they cannot benefit from the tax advantages provided to married couples if one partner earns (works) significantly less per month than the other.

4.2.   IMPACT OF PARTNER'S WAGES

Considering the partner's wage level again reveals a clear difference between marriage and cohabitation (Figure 2).

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[13] A large body of literature exists on the extensive margin of (married) women. See also Fernandez (2007), Leibowitz and Klerman (1995) or Jaumotte (2003).
[14] This is also true while comparing cohabiting and married women with one child and the same age respectively same number of years after finishing highest educational degree. The results are presented in the robustness section.

Figure 2: Women's work hours by partner's wage terciles
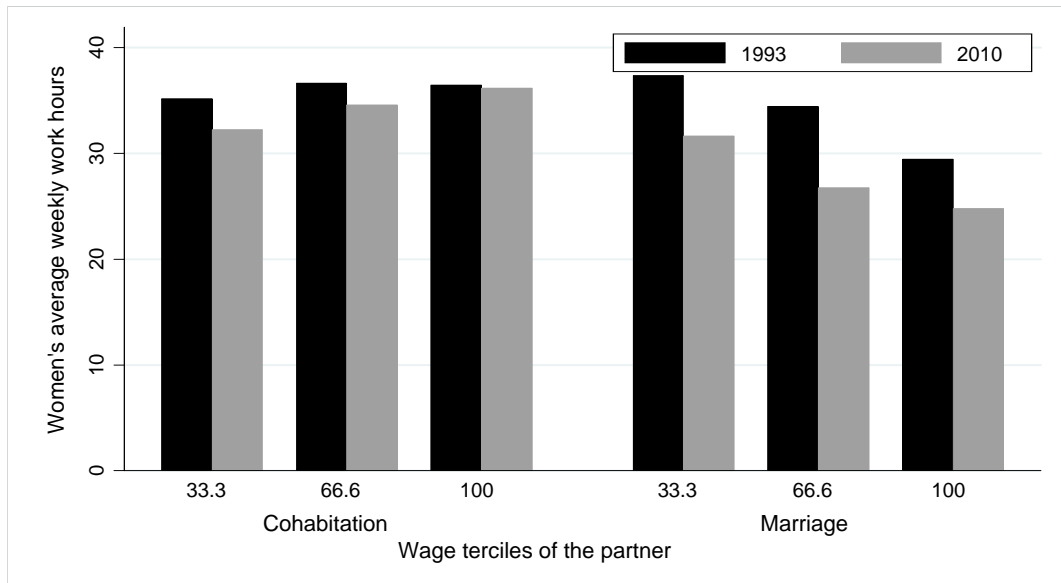
Notes: The sample includes women between 25 and 55 who are living with a partner (spouse or cohabitant) and either in dependent employment or non-employed.
Source: SOEP 1993-2010, own calculations.

Cohabiting women increase their work hours slightly with an increase in the partner's wages. This increase was lower in 2010, but overall, there was not a large change over the observation period. In contrast, for married women, an increase in the husband's wages is generally accompanied by a reduction in work hours, with an even larger decrease in 2010. In 1993, married women worked more hours on average than cohabiting women, if the partner was in the first tercile (33.3 percent). This changed dramatically with an increase in the partner's wages and over time.

As mentioned before the "tax-splitting" benefit for married couples is highest if one partner earns much more than the other and lowest if both partner earns about the same. The descriptive analysis of women's work hours in the highest tercile of partner earnings results in interesting implications for further study. Considering couples with a more equal income distribution than 60 percent / 40 percent yields that: cohabiting women work 38.5 hours per week and married women only little less with 36.9 hours per week. Married couples cannot benefit from the "tax-splitting" benefit with this earnings distribution. On the other hand, if couples with a more unequal earnings distribution than 60 percent / 40 percent are considered then married women work much less (12.7 hours per week) than cohabiting women (26.8

hours per week). Here, the potential tax benefit for married couples may lead to the difference between married and cohabiting women's work hours.

5. REGRESSION METHODOLOGY

This paper benefits from the panel data structure of the SOEP. Panel data allow the observation of dynamics over time and contain more information, which permits more precise estimations. I use fixed effects regression (FE)[15] to estimate the effect of partner's wage change on women's work hours. This estimation method overcomes one of the main challenges of estimating labor supply equations: time-constant unobserved heterogeneity. Using the within-transformation results in the disappearance of person-specific error (e.g., ability, assuming that ability does not change over the observation period). The underlying estimation model can only account for within-person changes over time, not for between-variation (e.g., gender or personality traits). I therefore estimate the regressions separately for women and men. The regression relies on the following labor supply equation:

$$lmh_{it} = \beta_0 + \beta_1 lnw_{it} + \beta_2 lnw_{it}^p + \gamma_1 X_{it} + \gamma_2 X_{it}^p + \delta_t + \varepsilon_{it} \qquad (3)$$

$$i = 1, \dots, n$$
$$t = 1993, \dots, 2010$$

where lmh_{it} equals the number of paid weekly labor market hours[16] by individual i at time t, lnw_{it} is the logarithm of an individual's gross hourly wage rate, lnw_{it}^p is the logarithm of partner's hourly wage rate. X_{it} includes individuals characteristics: education, age, age squared, housework hours, managerial position, job change, number of children, and region. X_{it}^p includes the characteristics of the partner: age, age squared, education, housework- and labor market hours. Finally, δ_t denotes period dummies that are included to estimate only the within variation that is above the time trend. Including both partners' incomes allows for joint time allocation decisions; in other words, the partner's wages are not taken as given (Laczo, 2011). When considering the additive model, in which the analysis is conducted together for cohabiting and married individuals, no conclusion is possible between marital status and partner's wages. Therefore, interaction terms are used in another model to discuss whether cohabitants differ significantly from married individuals in terms of changing partner wages.

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[15] Applying the Hausman test leads to the conclusion that FE model is favorable over the random effects model.
[16] The number of hours for non-working individuals is constrained to zero.

According to Laczo (2011), estimating labor supply equations face not only the problem of unobserved heterogeneity, but also the endogeneity of wages and self-selection into the labor market. The following sections address these challenges.

5.1. ENDOGENEITY OF WAGES

The independent wage rate cannot be seen as exogenous since it is jointly determined with the dependent variable, thus leading to simultaneity bias. To avoid this simultaneity bias in the hours equation, all regressors in the wage equation must be exogenous (Puhani, 1995). One possible solution is to use exogenous instruments (IV) to estimate wages. Common instruments were introduced by Mincer (1974). His approach uses years of experience and years of education to estimate wages. In addition, other explanatory variables like demographic characteristics can be included in the model. I employed the Mincer wage equation as follows:

$$lnw_i = \alpha_0 + \alpha_1 S_i + \alpha_2 Exp_i + \alpha_3 Exp_i{}^2 + \alpha_4 X_i + u_i \tag{4}$$

$$i = 1, \dots, n$$

where lnw_i stands for the logarithm of gross hourly wages, S_i depicts years of education, Exp_i and $Exp_i{}^2$ for years of work experience (combined part-time and full-time experience) and its squared term, while X_i denotes all other characteristics, such as age, region, managerial position, job changes, and number of children. The predicted wage is obtained for all individuals (employed and non-employed), but separately for women and men. Thus (3) can be rewritten as:

$$lmh_{it} = \beta_0 + \beta_1 ln\widehat{w}_{it} + \beta_2 ln\widehat{w}_{it}^p + \gamma_1 X_{it} + \gamma_2 X_{it}^p + \delta_t + \varepsilon_{it} \tag{3a}$$

where $ln\widehat{w}_{it}$ and $ln\widehat{w}_{it}^p$ are derived from equation (4). Using the IV approach is not without drawbacks. Puhani (1995) noted that the prediction of wages could lead to inefficient results if the correlation between the actual and predicted value is very low. He therefore included the predicted values only for those individuals who are not working. I have adopted this method here.

Further, when estimating the wage equation, the problem of self-selection into the labor force arises as well. To correct for this, I used the two-step procedure of the Heckman correction model, discussed in the next section, in the estimation of wages as well.

5.2. SAMPLE SELECTION

Sample selection bias may arise if self-selection by individuals is present (Heckman, 1979). In this context, the individual decision of whether or not to work will determine whether an individual has observable labor market hours and wages. However, if the variables that affect the decision to participate in the labor market do not affect work hours and wages, unobserved hours and wages can be ignored (Lauer and Steiner, 2000). This is unlikely to hold in practice and ignoring it may lead to biased estimates. To correct for this selection bias, I use a modified Heckman correction model (Heckman, 1979). The modification (Berk, 1983) makes it possible to apply the correction model to fixed effects regressions. This modified version is a two-stage procedure. The first stage determines whether the individual works or not and the second stage (estimation of wages and hours) includes a predicted value for the probability of working to control for selectivity bias. In the first stage, I estimate a probit model (Greene, 2003), which predicts the probability of working, for women and men separately during each year of the observation period. The exclusion restriction thereby includes non-labor income and children under the age of three in the household. The younger a couple's children are, the lower is the mother's labor force participation (Eichhorst et al., 2011). Both determinants influence the decision whether or not to work and both are usually used to identify the labor force participation of women. All other variables are the same as in the labor supply regression as long as they are observable for employed and non-employed individuals. Using the selection equation, I computed an inverse Mills ratio of participation in the labor force and used it as an instrumental variable in the Mincer wage equation and in the labor supply equation to control for sample selectivity bias.

Overall, the estimation procedure of labor market hours involves the following three steps:

1. Estimation of selection into the labor market via a modified two step Heckman correction model and calculation of the inverse Mills ratio.
2. Estimation of Mincer wage equation using the inverse Mills ratio from the first step.

$$ lnw_i = \alpha_0 + \alpha_1 S_i + \alpha_2 Exp_i + \alpha_3 Exp_i^2 + \alpha_4 X_i + IMR_i +_{u_i} \qquad (4a) $$

3. Estimation of labor supply equations using a FE model (controlling for unobserved heterogeneity), while including predicted wage and inverse Mills ratio.

$$ lmh_{it} = \beta_0 + \beta_1 ln\widehat{w}_{it} + \beta_2 ln\widehat{w}_{it}^p + \gamma_1 X_{it} + \gamma_2 X_{it}^p + IMR_{it} + \delta_t + \varepsilon_{it} \qquad (3b) $$

6. REGRESSION RESULTS

The main aim is to estimate the relationship between work hours and partner characteristics, distinguishing individuals by marital status. First, the results of the fixed effects regression (Equation 3b) for women and men are presented in Table 5.[17] Model 1 contains the full sample of all couples. Out of them 565 women and 578 men change their marital status during the observation period. Model 2 presents the results for the couples, which do not change their marital status during the observation period, separated into cohabitation and marriage. In Table 6, the results using interaction terms to compare cohabiting and married individuals are presented.[18] Subsequently, Table 7 contains the results of a subsample regression where only couples with a more equal income distribution than 70 percent / 30 percent are included.

For women, most investigated characteristics affect work hours in the expected direction. Model 1 indicates that there is a significant difference between women's work hours and marital status. Women work less when they are married (cohabitation serves as reference category). Women's own wages affects their work hours positively and significantly. A change in partner's wages negatively and significantly affects own work hours for women. A 1 percent increase in the spouse's wages leads to a decrease in married women's work hours of 0.40 hours (about 25 minutes). According to time allocation, one more child reduces women's work hours by significantly more than one hour. The effect of the partner's work hours is surprising. I would expect a negative relationship here, as a result of efforts within couples to adjust time allocation and childcare responsibilities. But, contrary to this expectation, the effect is positive and significant, although small, meaning that if the partner works 10 additional hours, women's work hours increase by about 10 minutes (0.18 hours). The number of hours spent on housework significantly influences work hours (negatively for their own hours and positively for their partner's hours). In addition, a set of controls was included in the regression. Job changes as well as managerial positions yield a significant and positive response in labor market hours. The effect of education is in the opposite of the hypothesized direction. One additional year of education results in a decrease of about 0.3 hours. Region has no significant impact on women's work hours.

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[17]Results for a random effects model and OLS are available upon request.

[18] A modified Wald test for group wise hetreoskedasticity in fixed effects regression models was performed. The null of homoscedasticity was rejected. To control for hetreoskedasticity, robust standard errors were estimated.

Table 5: Fixed effects regression models of women's and men's work hours

	Women			Men		
	(1)	(2)		(1)	(2)	
		Cohabitation	Marriage		Cohabitation	Marriage
1. Marital status						
Marriage	-2.624***			-0.239		
	(0.375)			(0.291)		
2. Financial need						
Log wage	8.899***	11.760***	8.446***	12.048***	13.929***	11.986***
	(0.164)	(0.594)	(0.186)	(0.224)	(0.484)	(0.258)
Log wage Partner	-0.398***	-0.092	-0.331**	-0.240**	-0.923**	-0.223**
	(0.135)	(0.470)	(0.149)	(0.096)	(0.429)	(0.111)
3. Time allocation/ childcare responsibility						
Number of children	-1.299***	-1.584***	-1.036***	-0.099	-0.411	-0.035
	(0.112)	(0.537)	(0.122)	(0.088)	(0.496)	(0.096)
Work hours partner	0.018**	0.032	0.015*	0.025***	0.040	0.023***
	(0.008)	(0.028)	(0.008)	(0.007)	(0.026)	(0.009)
Housework hours	-0.224***	-0.455**	-0.258***	-0.508***	-0.366*	-0.408***
	(0.053)	(0.218)	(0.057)	(0.079)	(0.222)	(0.089)
Housework hours partner	0.168***	0.334*	0.134*	0.037	-0.060	0.054
	(0.064)	(0.190)	(0.071)	(0.034)	(0.148)	(0.037)
4. Controls						
Jobchange	0.992***	1.601***	1.183***	2.730***	2.256***	2.812***
	(0.181)	(0.555)	(0.208)	(0.183)	(0.548)	(0.218)
Leadership position	2.127***	0.705	1.942***	0.201	-0.099	0.251
	(0.322)	(1.011)	(0.376)	(0.228)	(0.731)	(0.260)
Education in years	-0.331***	-0.987	-0.272**	0.038	-0.297	0.033
	(0.119)	(0.811)	(0.116)	(0.114)	(0.613)	(0.123)
Region	-1.696	4.531**	-3.123**	-0.203	1.533	-0.783
	(1.200)	(2.245)	(1.500)	(1.011)	(2.184)	(0.987)
Age + Age² (Individual + Partner)	yes	yes	yes	yes	yes	yes
Year Dummies	yes	yes	yes	yes	yes	yes
Inverse millsratio	-15.113***	-10.257***	-13.328***	-17.292***	-13.263***	-18.061***
	(0.901)	(3.800)	(0.988)	(1.236)	(2.970)	(1.484)
Constant	43.682***	25.293	38.582***	26.942***	25.746**	25.483***
	(3.062)	(15.780)	(3.463)	(2.620)	(12.580)	(3.088)
Adj. R²	.5974086	.6513018	.5570536	.5619464	.6778626	.5574011
N	35971	2672	28716	36089	2788	28711

Notes: * p<0.10, ** p<0.05, *** p<0.01, robust standard errors in parentheses. Standard errors are clustered at the individual level. The sample includes women between 25 and 55 who are living with a partner (spouse or cohabitant) and either in dependent employment or non-employed.

(1) Model 1 contains the full sample.

(2) Model 2 contains couples, who do not change their marital status during the observation period, separated into cohabitation and marriage.

Source: SOEP 1993-2010, own calculations.

The results of this study so far indicate that women work a different amount of hours, depending on marital status. As explained, possible reasons include higher individualism and independence among cohabiting women. But does this directly change with marriage? To approach to an answer, Model 2 is used to analyze the same characteristics but with a subsample, which consists only of those couples that did not change their marital status during the observation period. This model was chosen to distinguish between cohabiting and married couples. The impact of partner's wages for married women is particularly interesting. Women who were married over the entire observation period reduced their labor supply by 0.3 hours if the husband's income increased by 1 percent. The effect is not significant for cohabiting women. One more child reduces women's work hours significantly. The effect is even larger for cohabiting women, even though it is unclear whether the difference is significant. The effect of the partner's work hours is positive and significant. For cohabiting women, the result is not significant. Supervisory positions only significantly increases the work hours of married women. This leads to the conclusion that cohabiting couples behave differently than married couples.

For men, marital status has no significant impact on work hours. The own-wage effect yields a large positive and significant impact on men's work hours. When considering the partner's wages, the results are different than hypothesized. While I expected that men are influenced very little by a change in women's wages, the opposite is true: Men are influenced significantly by a change in women's wages. A 1 percent wage increase in the women's wages results in 0.24 hours less per week for the husband. The number of children does not significantly affect men's work hours. This supports the hypothesis that childcare is generally the responsibility of women, regardless of marital status. Model 2 analyses men in cohabitation and marriage separately. The most interesting impact comes from partner wages. While the coefficient for cohabiting men shows a large negative and significant impact, the coefficient of married men is smaller and they even respond less than married women.[19] The traditional model of labor market specialization within marriage whereby the man plays the role of breadwinner leads the fact that married men decreasing their hours only slightly if their wife's income increases. In cohabiting couples, male and female partners are more similar to each other in terms of labor market traits. As men are not typically the sole breadwinners in these relationships, both partners are more equal in terms of work hours and wages than in

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[19]It is unclear whether the impact for married men is significant or not.

married relationships. As a result, the male partner can afford to reduce hours on a high magnitude with an increase in the female partner's wages.

In these additive models, it is not possible to compare married and cohabiting individuals. Therefore another analysis including interaction terms was conducted. The advantage of including interaction terms is that it tests whether the effect of one independent variable depends on another characteristic. In this analysis, interactions are used to test whether cohabiting women differ significantly from married women in labor supply effects of their own wage, partner's wage, number of children or partner's work hours. The influence of the husband serves as a reference category. The results are provided in Table 7 and Figure 3for women and men separately.

The main effect of cohabitation is a large and significant positive effect on women's work hours. A cohabiting relationship increases women's work hours by about two hours. The coefficient of (cohabiting woman)*(cohabiting partner's wage) is large, positive, and significantly different from that of married women. Cohabiting women increase their work hours about 0.9 times more than married women, meaning that a 1 percent increase in the cohabiting male partner's wage results in an increase in the cohabiting female partner's labor market hours of 0.4 hours (0.9-0.5=0.4). Partner's wages have opposite impacts on married and cohabiting women. While married women respond negatively to a wage increase of the husband, cohabiting women respond positively. This may be because cohabitation - in contrast to marriage, which is often associated with more traditional views about labor market specialization - provides women with more economic independence and may encourage them to seek to match their partner's wage. In fact, cohabiting women are more similar to their partners with respect to labor market traits than married women and their partners. This similarity between partners when choosing a mate might continue during the subsequent relationship. In addition, cohabiting couples cannot benefit from the German income splitting tax benefit. As a result, cohabiting women have no incentive to reduce their work hours. In contrast, married couples benefit from a reduction in the woman's working hours when her spouse's wages increase, since the tax savings increases with the size of the income difference. The difference between married and cohabiting women is even larger for women in long-term relationships. As previously noted, the number of children negatively affects women's work hours. The effect is much higher for cohabiting women. One possible explanation might be that cohabiting women work more hours and therefore reduce their working time at a higher magnitude in order to spend about the same amount of time with

their children as married women. The male partner's work hours affect women's hours positively. I expected a negative impact where a reduction in the male partner's hours allowed the mother to work more. This is a puzzling result.

Analyzing the interaction terms of men shows that cohabiting men are not significantly different from married men in either of the tested interactions.

Table 6: Interaction models with cohabitation for women and men

	Women	Men
Reference category - Spouse		
Log wage Partner	-0.518***	-0.216**
	(0.143)	(0.100)
number of children	-1.208***	-0.070
	(0.115)	(0.091)
Work hours partner	0.020**	0.024***
	(0.008)	(0.008)
Cohabitation	3.254*	-0.435
	(1.763)	(1.476)
Interactions - with Cohabitation		
Cohabitation*	0.887**	-0.305
log wage Partner	(0.373)	(0.303)
Cohabitation*	-1.231***	-0.358
number of children	(0.331)	(0.271)
Cohabitation*	-0.016	0.008
work hours partner	(0.023)	(0.019)
Adj. R²	.5980553	.5619902
N	35971	36089

Notes: p<0.10, ** p<0.05, *** p<0.01, standard errors are in parentheses. The sample includes women and men between 25 and 55 who are living with a partner (spouse or cohabitant) and either in dependent employment or non-employed.
Source: SOEP 1993-2010, own calculations.

Figure 3 graphs conditional effect plots of women and men in cohabitation in comparison to marriage depending on partner wages, number of children, and work hours of the partner, holding all else constant. One main result is that cohabiting women increase their work hours with increasing wages of the partner, while married women decrease their hours with increasing wages of the men.

Figure 3: Conditional effects plots
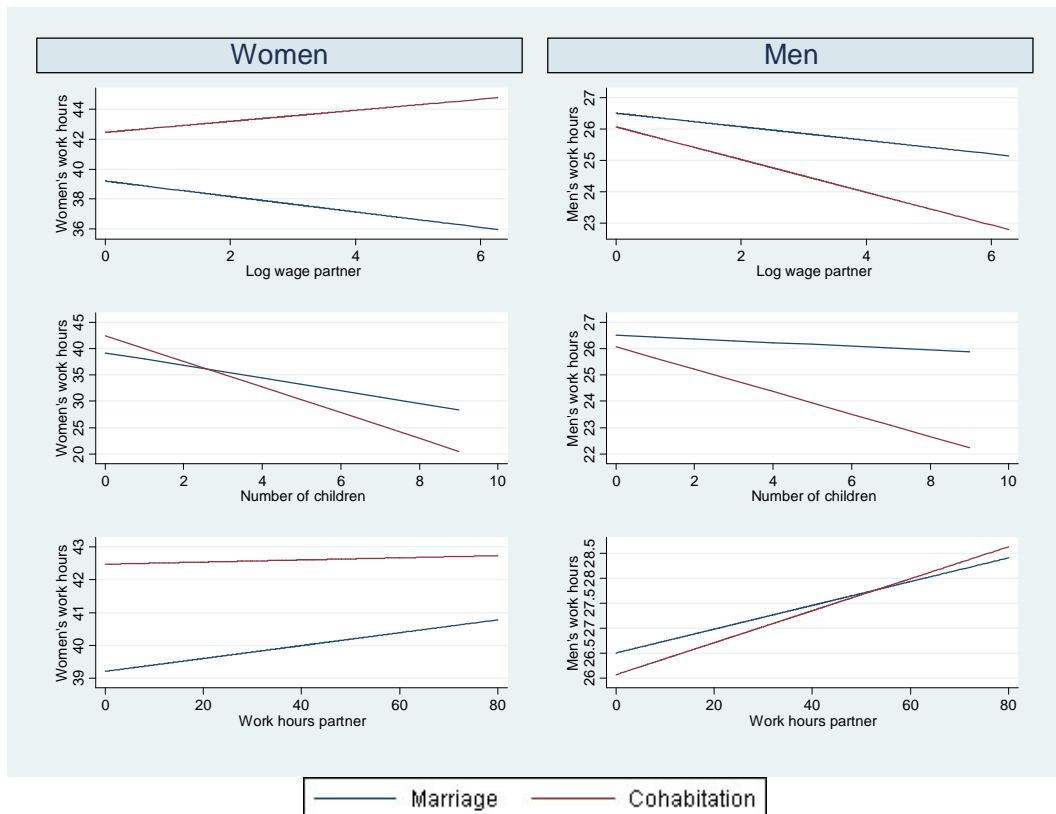
Notes: The sample includes women and men between 25 and 55 who are living with a partner (spouse or cohabitant) and either in dependent employment or non-employed.
Source: SOEP 1993-2010, own calculations.

The main issue aims at the influence of the partner's wage on women's work hours. In both the additive and the interaction model, the difference between cohabiting and married women is obvious. This raises questions about the mechanism driving the result. Is the identification either driven by preferences, such as more pronounced individualism among cohabiting women, or by the tax system with its tax advantages for married couples (joint taxation with "income-splitting")? The method used cannot solve the identification problem completely. To approach an answer, a subsample of couples with more equal incomes was constructed. The sample includes all couples with a more equal income distribution than 60 percent / 40 percent. With such distributions, the splitting advantage is very low compared to more unequal distributions (Steiner and Wrohlich, 2004). The analysis of the subsample clearly states that for women whose income distribution together with the partner is more equal than 60 percent / 40 percent the marital status does not affect work hours. Partner's wage has a huge positive and significant impact. This suggests that the full sample is driven by the tax advantage for married couples.

Table 7: Fixed effects regression models of women's and men's work hours – reduced sample

	Women			Men		
	(3)	(4)		(3)	(4)	
		Cohabitation	Marriage		Cohabitation	Marriage
1. Marital status						
Marriage	0.147			0.148		
	(0.238)			(0.268)		
2. Financial need						
Log wage	-13.553***	-10.098***	-14.086***	-14.509***	-12.683***	-15.359***
	(0.543)	(1.186)	(0.601)	(0.941)	(2.799)	(0.825)
Log wage Partner	5.643***	3.914***	6.041***	5.661***	5.181***	5.566***
	(0.581)	(1.033)	(0.566)	(0.638)	(1.943)	(0.634)
3. Time allocation/ childcare responsibility						
Number of children	-1.094***	-2.136***	-0.971***	-0.118	0.656	-0.090
	(0.168)	(0.624)	(0.169)	(0.152)	(0.832)	(0.148)
Work hours partner	0.182***	0.112**	0.194***	0.230***	0.228***	0.222***
	(0.025)	(0.045)	(0.024)	(0.025)	(0.049)	(0.027)
Housework hours	-0.179**	0.103	-0.273***	-0.258***	-0.230	-0.278***
	(0.077)	(0.123)	(0.088)	(0.087)	(0.215)	(0.092)
Housework hours partner	0.091	0.134	0.093	0.056	0.375**	0.004
	(0.066)	(0.125)	(0.075)	(0.067)	(0.175)	(0.069)
4. Controls	yes	yes	yes	yes	yes	yes
Adj. R²	.4117858	.3118793	.425022	.3370566	.2886975	.363776
N	8803	1939	6864	8862	1953	6909

Notes: p<0.10, ** p<0.05, *** p<0.01, standard errors are in parentheses. The sample includes women and men between 25 and 55 who are living with a partner (spouse or cohabitant) and either in dependent employment or non-employed.
   (3) Model 3 contains the sample of those couples with an earnings distribution of 60 percent / 40 percent.
   (4) Model 4 contains the same subsample as (3), but only couples who do not change their marital status during the observation period, separated into cohabitation and marriage, are included.
Source: SOEP 1993-2010, own calculations.

7. ROBUSTNESS AND SENSITIVITY

In this section, I briefly discuss several robustness and sensitivity checks aimed at addressing important concerns about my specifications. First, I consider different age and wage groups. Second, I comment on the argument that the difference is only observable because cohabiting and married women are two different groups of women in different stages of the life course. Third, I investigate alternative models to analyze work hours. Finally, I present the results obtained while using the bootstrapping method.

7.1.   GROUPED SUBSAMPLES

In the previous section, I presented the estimation results for individuals between the ages of 25 and 55, including all earnings from "one euro jobs" through top management. One possible concern is the age difference between cohabitating couples and married couples, as it is clear that cohabiting couples are much younger than their married counterparts. Consequently one might ask whether younger individuals display different working behavior or whether the reaction to a change in a partner's wages may differ depending on the amount of income. Such questions are addressed in this section. The results of women's coefficients are presented in Table A3 in the Appendix. Looking at different wage quintiles of the partner, we see that women only significantly reduce their work hours if the partner's wage is in the highest quintile. For all other wage distributions are the results insignificant. In contrast, men reduce their work hours significantly if women's earnings lie in the three highest quintiles. With increasing age, women work significantly less compared to the reference category. Men show no significant differences for different age groups.

7.2.   WOMEN DIFFER ACROSSTHE LIFE COURSE

As can be seen in the descriptive statistics, cohabiting women are younger than married women and have fewer children. One might therefore argue that I have analyzed cohabiting and married women in different stages of life and that this is the real explanationwhy cohabiting and married women have shown different reactions to changes in partner's wages. I try to account this by using only women who are similar in key characteristics. Not simply the same age is crucial but the same number of years after completing education, since education leads to postponement of childbearing (Nicoletti and Tanturri, 2005). I therefore compare cohabiting and married women between 10 and 30 years after finishing education with one child in the household. The return to partner wages is comparable to that for the reduced sample of couples who did not change their marital status during the observation period. A partner's wage increase leads married women to reduce their work hours significantly, whereas the impact on cohabiting women is insignificant. The results for this subsample mitigate the concern about comparing two different groups in different stages of life.

7.3.   ALTERNATIVE MODELS

The results presented above were obtained in a step-by-step estimation procedure. One potential concern with this method is that potential misspecifications or measurement errors that occur while estimating the first steps are carried through into later calculations. I estimated different models to control for this. First, I estimated the models without the sample selection step, second without estimating the Mincer wage regression, and third without either of these two steps (Tables A1 in the Appendix). The estimation using different models, however, results in comparable, but slightly different coefficients, with the same significance levels for the main variables.

7.4.   BOOTSTRAPPING

Another concern might be that the assumption that work hours are normally distributed is violated (a skewed distribution). This is an understandable worry, since working hours indeed peak at around 40 hours per week, but other concentrations can be found as well. Women work often part-time at around 20 hours per week and men often work more than 40 hours per week. They have another concentration at 50 hours per week as well as at 60 hours per week. Therefore the assumption of normality may lead to unstable results and an inference in error (Efron and Tibishirani, 1993). The bootstrapping procedure is an appropriate way to control and check the stability of the results since it does not require any assumption of distribution. Instead it is an indirect method to assess the parameters of interest by treating the given sample as population. The main strategy is to derive data sets from the original data (with or without replacement). The new datasets consist of observations from the original data but some of the original observations are included multiple times while others are not included at all. Then the regression will be run on each of these new datasets and finally the parameters will be interpreted in the same way as of the original regression. Mooney and Duval (1993) outlines these steps in detail. As a robustness check, I used a bootstrap procedure with replacement and 1,000 iterations. The parameters presented in Table A2 have comparable magnitudes, go in the same direction, and maintain the same significance level.

8. CONCLUSION

Using longitudinal data, this study finds that cohabiting women are more similar to their partners in terms of labor market traits than married women are to their husbands, and that women's work hours depend significantly on their marital status. To provide a full picture of

intra-household specialization issues, I conducted the same analysis for men. I find that men respond significantly negatively to changes in women's wages, regardless of marital status. The results support the hypothesis that it is indeed important to distinguish between marriage and cohabitation when studying women's labor supply and labor market specialization issues within the household.

The unequal effects of own and partner characteristics in marriage and cohabitation on women's work hours indicate that women maintain different kinds of backup options. In marriage, the man is still the main financial provider and the relationship has a legal foundation, meaning that long-term support is assured. In addition, married couples with a high earnings differential benefit most from the German income tax splitting benefit. Therefore, married women have lower incentives to work and, consequently, respond negatively to an increase in their partner's wages. Cohabiting women seem to have higher incentives to work. They cannot take advantage of the aforementioned tax benefit and have less financial security in case of separation. Within cohabiting households, both partners provide more equal amounts of labor and it appears that women seek to match their partner's wages. This leads to a more equal division of labor in such households and less labor market specialization, which also entails a rejection of the classic relationship model with the man as breadwinner and the woman as homemaker (Becker, 1985). Although there is less inequality within cohabiting households, the more equal division of labor within the household could also be an indicator of higher inequality between households. Analyzing the differences between households is a possible area for further study.

This study is not without drawbacks or weaknesses. While the SOEP data provide a longitudinal sample for Germany, they do not provide information on all important facets of partnerships. A meaningful investigation of same-sex couples is currently not possible, and there is no way to identify other kinds of partnerships such as living-apart-together couples or relationships with multiple partners. Another weakness results from the sample selection estimation strategy. The specification of the exclusion restriction is basically an instrument. The chosen instruments (non-labor income and number of children under the age of three in the household) might be seen as fairly traditional. It would therefore be helpful to find other legitimate predictors which influence employment in general but not working hours in order to further advance our understanding of these issues.

Nonetheless, this study has interesting policy implications. It shows that the rise of cohabitation over recent decades is accompanied by a change in the working behavior of these couples. Cohabiting partners display a more equal division of labor, and together, they work more hours than married couples. This should be considered when discussing the joint taxation benefit with income splitting for married couples in Germany. This taxation scheme may create counterproductive incentives that lead to a reduction of work hours for one or the other partner. In general, this would presumably be the woman, since married women work fewer hours and earn less than their partners. Against the backdrop of the increasing women's labor supply, it would be desirable for married women's work hours to increase to the levels reported for cohabiting women. The German income splitting tax benefit runs counter of this goal. Consequently, the abolition of this tax scheme would yield a positive effect on married women's work incentives.

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APPENDIX

Table A1: Fixed effects regression models of women's and men's work hours

	(1)		(2)	
	Women	Men	Women	Men
1. Marital status				
Marriage	-2.614***	-0.261	-2.596***	-0.232
	(0.375)	(0.291)	(0.374)	(0.292)
2. Financial need				
Log wage	8.896***	12.048***	8.894***	12.050***
	(0.164)	(0.224)	(0.164)	(0.224)
Log wage Partner			-0.401***	-0.242**
			(0.135)	(0.096)
Quantile 1 (reference)				
Quantile 2	0.013	-0.058		
	(0.419)	(0.200)		
Quantile 3	-0.348	-0.402*		
	(0.419)	(0.222)		
Quantile 4	-0.540	-0.671***		
	(0.409)	(0.236)		
Quantile 5	-0.987**	-0.993***		
	(0.417)	(0.269)		
3. Time allocation/ childcare responsibility				
Number of children	-1.294***	-0.118	-1.264***	-0.106
	(0.112)	(0.088)	(0.114)	(0.089)
Work hours partner	0.005	0.019***	0.018**	0.025***
	(0.009)	(0.007)	(0.008)	(0.007)
Housework hours	-0.224***	-0.505***	-0.223***	-0.507***
	(0.053)	(0.079)	(0.053)	(0.079)
Housework hours partner	0.175***	0.039	0.169***	0.036
	(0.064)	(0.034)	(0.064)	(0.034)
Age				
25-30 (reference)				
31-45			-0.621**	-0.106
			(0.255)	(0.272)
46-55			-0.946***	-0.268
			(0.323)	(0.326)
4. Controls	yes	yes	yes	yes
Adj. R²	.5975474	.5621595	.5975887	.5619412
N	35971	36089	35971	36089

Notes: * p<0.10, ** p<0.05, *** p<0.01, robust standard errors in parentheses. Standard errors are clustered at the individual level. The sample includes women between 25 and 5555 who are living together with a partner (spouse or cohabitant) and either in dependent employment or non-employed.
  (1) Model 1 is with dummies for partner's wages.
  (2) Model 2 is with dummies for own age.
Source: SOEP 1993-2010, own calculations.

Table A2: Fixed effects regression models of women's and men's work hours

	(3) Women	(3) Men	(4) Women	(4) Men	(5) Women	(5) Men
1. Marital status						
Marriage	-2.411***	-0.200	-3.379***	-0.163	-3.192***	-0.151
	(0.372)	(0.287)	(0.390)	(0.291)	(0.385)	(0.286)
2. Financial need						
Log wage	8.057***	11.660***	9.597***	12.904***	8.726***	12.467***
	(0.137)	(0.201)	(0.151)	(0.193)	(0.129)	(0.176)
Log wage Partner	-0.355***	-0.236***	-0.385***	-0.234**	-0.360***	-0.241***
	(0.127)	(0.086)	(0.136)	(0.097)	(0.129)	(0.087)
3. Time allocation/ childcare responsibility						
Number of children	-1.088***	-0.068	-1.781***	-0.171*	-1.599***	-0.160*
	(0.112)	(0.087)	(0.114)	(0.090)	(0.113)	(0.088)
Work hours partner	0.016**	0.027***	0.035***	0.032***	0.036***	0.034***
	(0.008)	(0.007)	(0.008)	(0.007)	(0.008)	(0.007)
Housework hours	-0.231***	-0.494***	-0.915***	-1.141***	-1.005***	-1.131***
	(0.052)	(0.078)	(0.047)	(0.080)	(0.044)	(0.078)
Housework hours partner	0.169***	0.040	0.535***	0.086**	0.576***	0.092***
	(0.063)	(0.033)	(0.063)	(0.034)	(0.062)	(0.033)
4. Controls						
Jobchange	0.862***	2.697***	0.473***	2.097***	0.299*	2.049***
	(0.178)	(0.179)	(0.180)	(0.179)	(0.179)	(0.174)
Leadership position	1.955***	0.025	2.028***	0.131	1.886***	-0.084
	(0.320)	(0.223)	(0.327)	(0.230)	(0.328)	(0.231)
Education in years	-0.210*	0.082	-0.295**	0.128	-0.177	0.171
	(0.117)	(0.111)	(0.119)	(0.117)	(0.116)	(0.115)
Region	-0.822	0.022	-1.803	-0.056	-0.863	0.171
	(1.196)	(0.965)	(1.252)	(1.020)	(1.260)	(0.979)
Age + Age² (Individual + Partner)	yes	yes	yes	yes	yes	yes
Year Dummies	yes	yes	yes	yes	yes	yes
Inverse millsratio	-16.767***	-17.377***				
	(0.848)	(1.173)				
Constant	42.142***	27.468***	29.169***	18.105***	25.872***	18.321***
	(3.047)	(2.572)	(3.002)	(2.623)	(2.976)	(2.565)
Adj. R²	.6082179	.5735278	.5865694	.5516883	.5959106	.5637
N	36240	36646	36159	36338	36583	37135

Notes: * p<0.10, ** p<0.05, *** p<0.01, robust standard errors in parentheses. Standard errors are clustered at the individual level. The sample includes women between 25 and 55 who are living together with a partner (spouse or cohabitant) and either in dependent employment or non-employed.

(3) Model 3 is without estimating wages via Mincer wage equation.

(4) Model 4 is without estimating the Heckman selection step.

(5) Model 5 is without estimating wages via Mincer wage equation and without the Heckman selection step.

Source: SOEP 1993-2010, own calculations.

Table A3: Fixed effects regression models of women's and men's work hours with bootstrapped standard errors

	Women	Men
1. Marital status		
Marriage	-2.624***	-0.239
	(0.276)	(0.239)
2. Financial need		
Log wage	8.899***	12.048***
	(0.122)	(0.187)
Log wage Partner	-0.398***	-0.240**
	(0.123)	(0.094)
3. Time allocation/ childcare responsibility		
Number of children	-1.299***	-0.099
	(0.085)	(0.075)
Work hours partner	0.018**	0.025***
	(0.007)	(0.007)
Housework hours	-0.224***	-0.508***
	(0.046)	(0.074)
Housework hours partner	0.168***	0.037
	(0.060)	(0.034)
4. Controls		
Jobchange	0.992***	2.730***
	(0.173)	(0.171)
Leadership position	2.127***	0.201
	(0.259)	(0.215)
Education in years	-0.331***	0.038
	(0.091)	(0.089)
Region	-1.696*	-0.203
	(0.912)	(0.875)
Age + Age² (Individual + Partner)	yes	yes
Year Dummies	yes	yes
Inverse millsratio	-15.113***	-17.292***
	(0.765)	(1.137)
Constant	43.682***	26.942***
	(2.380)	(2.137)
Adj. R²	.5977667	.5623348
N	35971	36089

Notes: * p<0.10, ** p<0.05, *** p<0.01, robust standard errors in parentheses. Standard errors are bootstrapped separately for each column. The sample includes women and men between 25 and 55 who are living together with a partner (spouse or cohabitant) and either in dependent employment or non-employed.
Source: SOEP 1993-2010, own calculations.