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Couple's Labor Supply, Taxes, and the Division of Housework in a Gender-Neutral Lab*

Melanie Schröder† & Norma Burow‡

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Abstract

We use a lab-in-the-field experiment to investigate intra-couple labor supply decisions and the division of housework under individual and joint income taxation systems. In order to eliminate problems of endogenous intra-couple time use decisions, we exogenously varied not only the taxation system but also the intra-couple roles of primary and secondary earners. Using work effort as a proxy for labor supply, 62 established couples, both cohabiting and married (124 participants), performed real effort tasks under a piece rate payment system within a given time. Prior to this paid task, couples had to decide upon the allocation of an unpaid task serving as our proxy for housework. In our gender neutral lab, we find tax-effects only on men's labor supply but not on women's and no gender differences in the allocation of housework. Instead, the allocation of housework follows a purely economic rationale with the majority of secondary earners taking responsibility. This is even confirmed by a shift to a more egalitarian allocation when individual taxation is applied. However, one result replicates real world findings with married male participants providing more labor supply than cohabiting men and married women less than cohabiting women. This result hinges on the stability of specialization in married couples, which seems to overcome the gender neutral lab.

JEL-Codes: H31, D13, C93, J16

Keywords: real effort experiment, labor supply, housework, income taxation, household decision making, gender

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1 Introduction

General wisdom suggests that women and men behave differently on the labor market. Although gender gaps in the labor market have been narrowing over the course of the past century, they are still substantial in employment levels and in pay (OECD, 2012b). When it comes to married women, these gaps are even more pronounced (Blau & Kahn, 2007). Most explanations point to traditional family arrangements, which are characterized by rather unequal divisions of family chores that, consequently, are found to be the main drivers of gender differences in the labor market (Ichino, 2014). Accordingly, women and men face different constraints (Blau & Kahn, 2007), no matter whether this is explained by comparative advantages at home or gender norms supporting the "work division puzzle" (Cochard et al., 2015). Indeed, data show that in all OECD countries women do more unpaid work than men (OECD, 2012b).

At the same time, an institution like joint income taxation is suspected to reinforce these gender differences in the labor market as it affects intra-couple time allocation. A joint income taxation system does not use the individual spouse's labor income as its basic tax unit but rather the split total labor income of the couple. Therefore, compared to an individual taxation system, it levies higher marginal tax rates for secondary earners within a couple, which is why it creates larger disincentives to work. Since it is most commonly women who earn less than their spouse, such a system reinforces traditional family arrangements with women specializing in household work and being absent from workforce (OECD, 2012a).

Since estimating labor supply decisions is challenged by endogeneity of wages and self-selection into the labor-market, correction methods are commonly used in studies using survey data (Laczó, 2011; Triebe, 2013). Contrary to these, we investigate labor supply decisions of couples in a controlled laboratory experiment that rules out these problems by design. Consequently, we ask how couple's labor supply and the allocation of housework is determined (under different taxation systems), when endogeneity of wages and self-selection are truly eliminated.

We conduct a framed field experiment (Harrison & List, 2004), in which 62 established heterosexual couples perform under a piece rate payment on real effort tasks (i. e. solving mazes) within a given time and with work effort (i. e. number of solved mazes) serving as our proxy for labor supply. The concept of labor supply is usually based on the measure of hours of work, but we observe work effort instead, because it "describes many short-run labor supply decisions" (Dickinson, 1999, 640) and is a good proxy for today's real world labor contracts (Meghir & Phillips, 2009). There were two types of mazes differing in complexity level (hard, easy) with corresponding wages (high, low), thus randomly and exogenously determining who is the primary earner (i. e. hard mazes with a higher piece rate wage) and the secondary earner (i. e. easy mazes with a lower piece rate wage) within the couple. In addition, we exogenously assign individual and joint taxation with each couple facing individual taxation in one stage and joint taxation in the other. To investigate the allocation of housework, each couple had to decide upon who of the two takes over an unpaid but compulsory task that noticeably reduces time for the paid task and has to be completed prior to the compensated task. It is exactly this implementation of these exogenous variations that is only possible in an experiment, which makes it a "gender neutral" setting.

Interestingly, in such a "gender-neutral lab," we cannot confirm real world gender gaps in labor supply nor could we confirm the general conviction that housework is women's work. The allocation of unpaid work in our experiment indeed follows an economic rational with opportunity costs determining couple's decisions. This is why our experimentally applied individual taxation system encourages a more egalitarian allocation of the unpaid work that proxies the "unloved" housework outside the lab. However, we indeed find some interesting results when it comes to the institution of marriage. In fact, we herewith confirm findings from survey data demonstrating that married male participants provide more labor supply than cohabiting men, but married women provide less labor than cohabiting women (Barg & Beblo, 2012; Blau & Kahn, 2007). We argue that 'sorting into specialization' (Barg & Beblo, 2012) with a strong emphasis on traditional gender norms is the main driver of this result.

This paper is organized as follows: The literature review in Section 2 is followed by a presentation of a theoretical background and some hypotheses in Section 3, and the description of the experiment in Section 4. In Section 5, we present our results, followed by a discussion and conclusion in Section 6.

2 Review of the Literature

This is the first experimental economics paper focusing on the impact of the different income taxation systems on couple's labor supply and the division of housework.[1] However, there is a rewarding stand of empirical literature using survey data that refers to labor supply and labor supply elasticity of individuals living as a (married) couple. The main descriptive findings for many western countries are: (1) there is a gap in labor force participation in that men have higher rates compared to women (OECD, 2012b); (2) married men participate more in the labor market than cohabiting men (Barg & Beblo, 2012); (3) married women participate less in the labor market than cohabiting women (Barg & Beblo, 2012); (4) labor supply elasticity is larger for women compared to men; and (5) this latter gap increases when it comes to married couples (Bargain et al., 2014). As Ichino (2014) points out, these gender differences are largely determined by the unequal division of household chores. Or, according to Blau & Kahn (2007), women face constraints that men do not. What they mean is that, typically, men tend only to substitute market work with leisure while women face an additional market work substitute: housework.

Consequently, the gendered division of housework is a well established empirical fact: women do the bulk of household work (OECD, 2012b) and there are several explanations of why. In a world with gender-based pay gaps, the first economic explanation at hand is that the difference in opportunity costs leads to a gendered allocation of housework. Interestingly, Brines (1994) and Haberkern (2007) show that housework remains women's work, regardless of the intra-couple income differences, even if women earn more than their husbands. Referring to the concept of

[1] To our knowledge, there is only one experimental paper, by Cochard et al. (2015), that studies real couples' work division in an artificial field setting. Moreover, they also exogenously assigned intra-couple roles by creating an "advantaged" and "disadvantaged" partner by varying the earnings from their private accounts such that investing in the household public good is not efficient for the advantaged player.

"doing gender," West & Zimmerman (1987) state that women display their femininity by doing housework. Gender identity considerations, as conceived by Akerlof & Kranton (2000), translate into societal expectations like (1) husbands should earn more than their wife; and (2) wives are unwilling to earn more than their husband, both relating to the norm of a male breadwinner. Indeed, Bertrand et al. (2015), confirm that these expectations have severe effects on the intra-couple division of housework. They show that unlike what could be expected, primary earner women take over most of the domestic work – more than their husbands are expected to do with respect to their comparative disadvantage. Contrary to these findings, Auspurg et al. (2014) and Cochard et al. (2015) do not show any systematic gender differences in the division of housework within couples. However, the couple's reference is important, as demonstrated in the lab by Görges (2015). She finds that women are significantly more likely to perform an unpaid task when they play with their beloved compared to playing with a stranger and explains it with social gender norms. Using the UK Time Use Survey, Stratton (2012) discovers that it is not only opportunity costs but also preferences for 'evil' housework tasks that help explain the division of housework tasks within households.

As regards the influence of income taxation systems on couple's labor supply, the focus of the literature is on the disincentives to work in general. In particular, a joint income taxation system is usually implemented in order to realize horizontal tax equity no matter the intra-couple income distribution. It incorporates individual income capabilities by relieving taxes for the spouse who is in the workforce while the other is at home, working less and/or earning less. However, it supports a breadwinner model since in such a system taxes are applied on the split total earnings of married couples, which under a progressive tax function results in lower marginal tax rates for the primary earner and higher for the secondary earner.[2] LaLumia (2008), Crossley & Jeon (2007), and Selin (2014) use natural experiments in the United States (change from individual to joint taxation), Canada, and Sweden (joint to individual taxation), respectively, showing that the system of joint taxation is associated with a lower labor force participation of married women since it is mostly women who are in the role of secondary earners and, therefore, face disincentives to (increase) labor market work. For Germany, which still adheres to a system of joint taxation, microsimulation studies predict an increase in married women's labor supply if individual taxation is introduced (Bach et al., 2011; Beninger et al., 2007; Steiner & Wrohlich, 2004). On the contrary, husbands would reduce their hours worked, as well as their participation rate, but their labor supply effects in total would be much smaller than the effects for married women. Moreover, Decoster & Haan (2014) demonstrate, with the help of a structural model, that an individual taxation system would additionally increase household's disposable income. Kabátek et al. (2014) additionally integrate the housework domain in their simulation study using the French Time Use Survey and show that a shift from joint to individual taxation could contribute to equalizing the within-couple housework allocation.

We contribute to the existing literature in that we investigate couples' labor supply and the allocation of housework under different taxation systems under what we call a "gender-neutral"

[2]Joint income taxation systems are also referred to as "family-based" taxation (OECD, 2015), "income splitting" systems (Steiner & Wrohlich, 2004), or "joint filing" as opposed to "separate filing" (Pollak, 2011). An overview of countries adhering to such systems is provided in OECD (2015).

setting. First, we exogenously assign intra-couple roles and balance them over gender, thus ruling out problems of self-selection and endogeneity. Second, survey data often deal with the problem of a small sample size of men working part time or male secondary earners when investigating labor supply choices. In our setting, half of the sample consists of male secondary and female primary earners. Third, each couple, whether married or not, experiences individual taxation and joint taxation. This makes it a big advantage, since joint taxation normally is the privilege of married couples and self-selection into specialization by marriage is shown in the literature (Barg & Beblo, 2012). Fourth, using work effort we observe changes from a short term perspective since work effort instead of hours worked "describes many short-run labor supply decisions" (Dickinson, 1999, 640). This makes it a good proxy for today's real-world labor contracts, offering employers the opportunity to substitute on-the-job-leisure for work effort (Meghir & Phillips, 2009). Even though Dickinson (1999) calls for caution when generalizing work effort to more traditional measures of labor supply, Doerrenberg & Duncan (2014) conclude that work effort is indeed a good proxy for labor supply. Additionally, Meghir & Phillips (2009) even stress that "hours of work is just one dimension of work effort" for many individuals, especially for workers with a high level of autonomy in their work. Moreover, these changes in short are clearly supply driven without potential influence from the employer side.

3 Theoretical Background and Hypotheses

In order to meet the challenge of endogeneity of wages and selection into the labor market, we exogenously assign intra-couple roles with the help of tasks and corresponding income capabilities. Each couple consists of one primary earner (PE), whose job is to solve harder tasks with a higher gross wage rate, and a secondary earner (SE), whose job is to solve easier tasks for a lower gross wage rate. That assignment remains unchanged throughout the duration of their participation in the experiment. To observe the reaction to a change in tax-system, every couple, whether married or not, faces both tax systems during the experiment.

To investigate labor supply, we use work effort as a proxy and refer to the Intensity Model of Dickinson (1999). The model assumes utility to be a function of consumption (c), productive hours of work (h_w), and hours of on-the-job-leisure (h_l) with $U_c > 0, U_{h_l} > 0, U_{h_w} < 0$. Hours of work ($h$) can then be denoted with $h = h_l + h_w$. Since hours of work are fixed in our experiment, the subject's choice variable instead is h_w, work effort: It's the intensity that participants choose in working on the paid task within a given time to maximize utility recognizing that they also could engage in their market work substitute, which is on-the-job-leisure. Since both men and women have the same market work substitute and no other duties as in a real-world setting, such as domestic and caring tasks, they face the same constraints. Therefore, we do not expect behavioral differences between men and women to occur.

Table 1 presents the taxation systems designed for our experiment: individual and joint income taxation. We hold the gross wage rates, denoted as w_g^{SE} (i.e. gross wage rate for secondary earner) and w_g^{PE} (i.e. gross wage rate for primary earner), as well as the progressive tax function τ constant across both taxation systems. In order to create marginal tax rates that differ between

the systems, we simply allocate basic allowances, which determine initial tax-free income ranges, differently. Under individual taxation each partner gains from a basic allowance E, while under joint taxation both partners' basic allowances are assigned to only the primary earner while the secondary earner is taxed beginning with the first Euro. Basically, our tax scheme in both cases consists of individual taxation, but due to assigning basic allowances differently we simulate the typical differences in the marginal tax rates between both systems.[3] This even mirrors the well-known real-world constellation under a joint income taxation with a progressive tax function, where both spousal incomes are summed up and divided (equally)[4] as the basic unit for assessing income taxes.

Table 1: Net Individual Incomes Conditionally on Taxation System

	Individual Taxation	Joint Taxation
Secondary Earner (SE)	$I^{SE} = nw_g^{SE} - \tau(nw_g^{SE} - E)$	$I_J^{SE} = nw_g^{SE} - \tau(nw_g^{SE})$
Primary Earner (PE)	$I_I^{PE} = nw_g^{PE} - \tau(nw_g^{PE} - E)$	$I_J^{PE} = nw_g^{PE} - \tau(nw_g^{PE} - 2E)$

Note: E - basic allowance, τ- progressive tax function, w - wage rate, J - joint taxation, I - individual taxation, PE - primary earner, SE - secondary earner.

With regard to labor supply choices in our experiment, we expect a positive substitution effect. This means an increase in work effort when the own net wage increases due to a lower marginal tax rate, i.e. from individual taxation to joint taxation for primary earners and from joint taxation to individual for secondary earners, and vice versa. However, labor supply choices also emerge endogenously from intra-couple bargaining, i.e. choices are also made jointly in a couple. Therefore, we could also expect an income effect to occur with a change in the couple's total income, which differs between the taxation systems.[5] On account of the fact that both partners' incomes change simultaneously (but independently) by design, i.e. an increase or decrease in own net wage and a decrease or increase in partner's wage occur at the same time, we are not able to distinguish between the two effects. Since both effects point in the same direction because of the fact that an increase of own net wage goes along with a potential decrease of partners net wage, this issue is negligible. In sum, we expect an increase in work effort with decreasing marginal tax rates, as shown by researchers using both survey (see Meghir & Phillips (2009) for an overview) as well as experimental data (see Alm (2010) for an overview). We assume that

[3]Implementing a joint taxation system experimentally via assigning the tax allowance to one partner within a couple is based on the income tax class combination in Germany, *III and V*. Here, one spouse is grouped in tax class III receiving basic and lump-sum allowances, while the other spouse, receiving no allowances, is grouped in tax class V (Stöwhase, 2011). Following Stöwhase (2011), this tax class combination can be seen as an early realization of a "splitting advantage."

[4]or by a certain factor conditionally on the number of children, like e.g. in France (Steiner & Wrohlich, 2008).

[5]From a couple's perspective, individual taxation yields to slightly lower total income compared to joint taxation with a gap of 3 % in the average couple income. Due to the small magnitude of the gap, a change in tax systems can be considered as almost income neutral with respect to the total income. Consequently, we can ignore a potential income effect.

these effects do not differ over gender since both genders face the same market work substitute in our experiment and could only consume on-the-job-leisure.

Besides the choice of work effort, participating couples also faced the decision of substituting market work with a non-market alternative – an unpaid but compulsory task, our proxy for housework. As in a real-world setting, housework – although unpaid and undesired – must be done, thus reducing precious time for earning money or consuming leisure. Where productivity differences might exist in reality, we ensure that productivity differences could not occur and announce that the so far unknown task is "not difficult at all with no special previous knowledge required." However, since the unpaid task in the experiment was indivisible, couples had to jointly agree upon the allocation of housework to only one of the two. Following cooperative models of intra-family decision-making (see Donni & Chiappiori (2011) and Grossbard (2011) for excellent overviews), which all point to similar predictions regarding a rational allocation of housework, we predict the majority of couples will choose the secondary earner to take it over, irrespective of gender. In the absence of productivity advantages, only a comparative disadvantage in market production or a bargaining disadvantage in negotiations may hold responsible for that decision.

As the unpaid task in our experiment is designed to be gender neutral in the sense that it is unknown to participants and required no previous knowledge, couples should not expect productivity differences in advance. To this end, the intra-couple allocation should be totally unrelated to gender. However, it might be also reasonable to expect a gendered allocation of the unpaid task when we follow the "doing gender" concept (West & Zimmerman, 1987) or the 'Identity Economics' approach of Akerlof & Kranton (2000), if couples bring their social gender norms from outside into the lab (Kimbrough & Vostroknutov, 2016).

Last, but not least, as income taxes determine labor supply choices, also the division of housework must be affected. Comparing the two taxation systems, we predict that individual taxation encourages a more egalitarian division of housework as already shown by Kabátek et al. (2014). Primary earners are expected to take over this task more frequently compared to the situation of joint taxation, since higher marginal tax rates reduce primary earners' net piece rate wage and, hence, decrease opportunity costs of market work.

4 Description of the Experiment

We conduct a "framed field experiment" with non-standard subjects participating in a lab experiment with field context in that we framed the information set concerning the taxation of income as stemming from participants' natural environment (Harrison & List, 2004). We invited both cohabiting and married, heterosexual couples who had been living together for at least one year in the area of Frankfurt (Oder), Germany, to participate in our experiment.[6] Contrary to Güth et al. (2004) who invited standard subjects (students), but in line with others conducting real couple experiments (Bateman & Munro, 2005, 2009; Palma et al., 2011),[7] we used couples.

[6] We recruited subjects by distributing postcards, publishing a call for participation in the local press (newspaper and radio), and visiting parent's evenings at local kindergartens and schools.

[7] For an overview of couple experiments in economics see Beblo (2015).

By doing so, we realized a high level of control in the lab with a "subject pool from the market of interest" (Beblo & Beninger, 2015, 6). Moreover, as Fochmann & Weimann (2013) show, it is required that participants have personal experience with income taxes; we would have had probably to few cases among a students sample. All experimental sessions were carried out at the European University Viadrina in Frankfurt (Oder), Germany, in the evenings and on weekends throughout the summer and autumn of 2012.[8]

4.1 Experimental procedure

After arriving in the classroom, participants were seated in pairs with partition screens that separated couples from each other in order to prevent interaction and provide privacy. Subjects were informed that they were taking part in a scientific study that consisted of two stages in which they could accumulate income by solving tasks (with an additional show-up fee of 2.50 €) but only one of the two stages (random selection) would be relevant for payoff. Immediately before each stage, subjects were informed about the type of the task they had to perform. All instructions were handed out and read aloud.[9]

In both stages, each partner's compensated task was to solve mazes[10] by using paper and pencil within a period of 15 minutes. One person within each couple was assigned to be the secondary earner with easy level mazes and a lower piece rate wage (0.50 €), while the other was assigned to be the primary earner with hard level mazes and a higher piece rate wage (1.50 €). Choosing mazes that differ in complexity level is advantageous in many ways. With regard to a productivity-oriented wage-setting, it is plausible from a participant's point of view that for a task of a higher complexity-level a complexity-premium is applied that leads to a higher overall remuneration. Additionally, there are no effects coming from one's preference for a specific task when the same type of task for both partners is assigned.

Income taxes were collected during both stages. The couple's income was taxed individually in one stage and jointly in the other. In both situations the same progressive tax function τ applied. Under individual taxation both partners gain from a basic allowance of 4.50 €, while under joint taxation the basic allowance (E) for both partners of 9 € was assigned to only the primary earner. The tax description sheets, which were handed out at the beginning of each stage, included an effort-income-table and a short explanation of the tax system. Following Fochmann & Weimann (2013), who emphasize that complex tax environments may cause biases, we kept our experiment's tax schemes and the instructions as simple as possible: First, we made use of a tax function that is piecewise linear and progressive with increasing marginal tax rates (20%, 40%, 60%, 80%, 90%, 95%).[11] Second, we represented net wages instead of a tax rate

[8] For participants with children, we provided professional childcare during the experiment in cooperation with local kindergarten teachers.

[9] The translated instructions are provided in the Appendix.

[10] We used a collection of mazes from the web: http://www.onebillionmazes.com. Unfortunately, this website provides different content today. Samples are available upon authors request. "Easy" refers to mazes of a low difficulty level, "hard" to mazes of a slightly higher difficulty level.

[11] Piecewise linear tax systems are very common in reality, although in Germany there is additionally non-linearity implemented. Apps et al. (2014) present an analysis of main characteristics of a piecewise linear tax system. See also Apps & Rees (2009) for a general overview on household taxation systems.

(Sillamaa, 1999). Third, we illustrated the tax burden per unit graphically with the help of a pie chart (Fochmann & Weimann, 2013). There was also a clearly written description of the tax system, summarized as, "Both partner's income is taxed to the same degree," for individual taxation and "Both partner's income is taxed to a different degree. The tax burden of the one with the lower wage rate is higher and the tax burden of the one with the higher wage is lower," for joint taxation. To make sure that subjects were acquainted with both tax sheets and both income opportunities, they had to answer control questions concerning their own and their partner's potential income.

Additionally, one partner had to fulfill an unpaid but compulsory task, which was easy but reduced time for the paid task from 15 to 12 minutes. To avoid effects from one's preference for a specific task, the kind of task was unknown to the participants. In one stage, subjects connected dots (paper and pencil) that should yield a picture. In the other stage, subjects were asked to decode numerical series into words by substituting the numbers with letters, using an encryption table that assigned a number to each letter of the alphabet, similar to Erkal et al. (2011). The couple had to decide who of the two undertakes this task prior to the following paid work part. To allow for on-the-job leisure (Dickinson, 1999), we arranged a selection of magazines, a daily newspaper, sweets, and drinks on each of the couple's desk.

After having performed in two stages, each single participant was asked to fill out a post-experimental questionnaire that contained questions about their individual socio-demographic and couple related characteristics. To avoid communication and interaction while filling out the questionnaire, we seated the partners apart from each other at this stage. Directly after the experiment, each couple received their payments plus the show-up fee in another room. Since outcomes of only one stage were relevant for payoff and to secure random selection, one partner of each couple had to draw a ball from an urn with red and yellow balls that represented the potential income of each stage to finally determining the household total income.

4.2 Experimental Design

In our within-between-subjects design, we assigned two types of mazes with corresponding piece rate wages to create two different roles within each couple for the duration of the experiment. The higher piece rate wage defines the primary earner (PE) and the lower the secondary earner (SE). As depicted in Figure 1, in experiment groups 1.1 and 2.1 couples consisted of a male primary and a female secondary earner. In the other groups (1.2 and 2.2) we reversed these intra-couple income-roles, creating couples with a female primary and a male secondary earner.

To control for learning or boredom effects that could occur when solving the same task in both stages but would confound tax effects, we inverted the order of the tax conditions in the second treatment as compared to the first treatment.

Figure 1: Experimental Design

	Treatment 1		Treatment 2	
	Group 1.1 male PE & female SE	Group 1.2 female PE & male SE	Group 2.1 male PE & female SE	Group 2.2 female PE & male SE
Stage 1	individual taxation		joint taxation	
Stage 2	joint taxation		individual taxation	
	post-experimental questionnaire, urn decision			

Note: PE = primary earner, SE = secondary earner.

5 Results

We conduct 24 sessions with 124 participants (62 couples). Each session took about one hour and the average payment was 27.24 € per couple. A sample description can be found in the Appendix. We dropped observations of a couple that cheated by exchanging their assigned mazes. Furthermore, we restrict the sample to participants with tax-experience.

Before performing the compensated task, each couple had to decide upon who of the two will undertake the unpaid but compulsory task. This task has to be done prior to the compensated task and reduces time for the paid task to 12 instead of 15 minutes for the one who undertakes it. As couple's time use decisions include both paid and unpaid work, we divide the results section into two parts: (5.1) presents intra-couple unpaid task allocation; while (5.2) considers work effort choices of each individual after controlling for housework responsibilities, i.e. take-over of the unpaid task.

5.1 Allocation of the unpaid task

Figure 2 presents raw data results on the allocation of the uncompensated task. In line with our hypothesis, 75 % of the couples choose the secondary earner to take over this task. Comparing the shares of primary earners who take over this task under individual and joint taxation reveals a significant difference (Binomial Test, two-sided; $p<.001$). Whilst only 14 % of the primary earners take over this task in case of joint taxation, this share more than doubles with individual taxation. As a result, the intra-couple allocation of the unpaid task is more equal compared to joint taxation. Although the men's share is surprisingly slightly larger than that of women, but not significantly larger than 50 % (Binomial Test, two-sided; $p=.441$) with therefore no gender gap to exist.[12]

These results are confirmed using multivariate estimation analysis. Table 2 presents estimation results for the allocation of the unpaid task using a pooled linear probability model with cluster robust standard errors at the individual level since subjects made decisions in two subsequent stages.[13] Figure 3 shows corresponding marginal effects using the full model (column 3). We

[12]These effects do not change, when we restrict the sample to married couples.

[13]Running logit regressions leads to similar results and tables are available upon authors request.

Figure 2: Allocation of the Unpaid Task

Note: Displayed are the proportions of those who undertake the unpaid task and corresponding Binomial Tests. PE = primary earner, SE = secondary earner.

observe allocation decisions conditional on the assigned role (dummy for primary earner: *pe*, reference secondary earner) and participant's gender (dummy for men: *male*, reference women). In order to investigate tax-effects we use a dummy for the tax system (*joint*, reference individual), which takes the value of 1 if joint taxation is applied and 0 if individual taxation applied. Stage controls (interaction of *stage* and *pe*) are considered in all estimations, individual controls are added in column 2 (including participant's highest educational attainment, labor market status, personal gross income, age, whether they were born in East Germany and their satisfaction with the assigned role). Couple controls (interaction of marital status and gender) are then added in column 3.

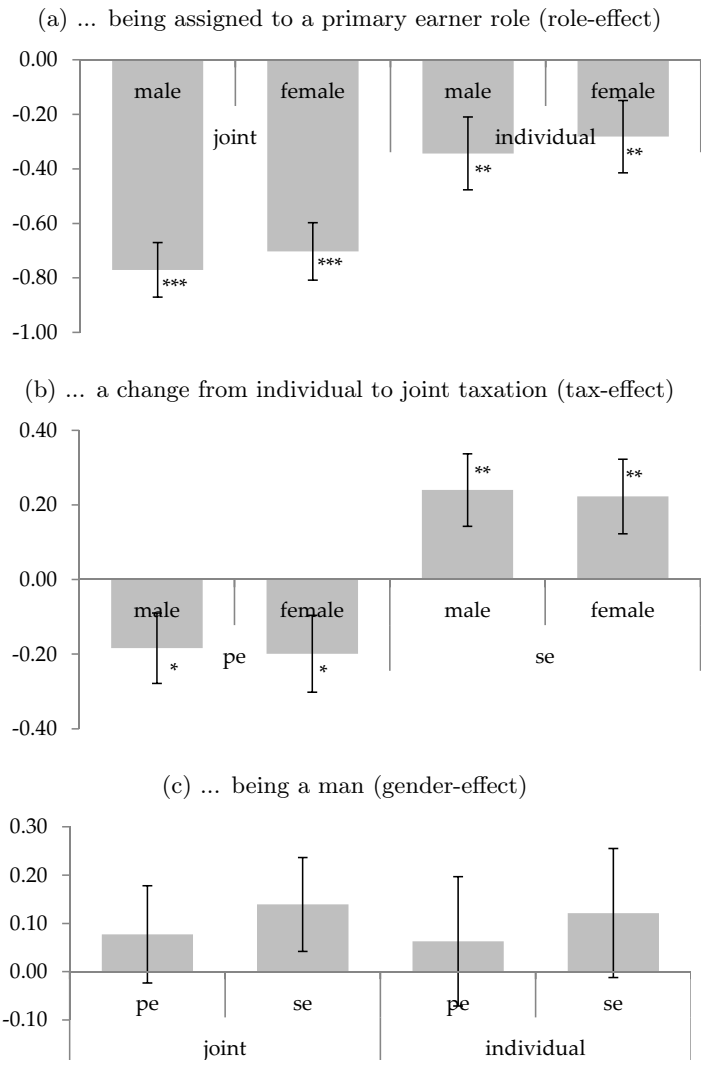
Results clearly indicate that couples follow the economic rational. First, being assigned to the primary earner role significantly decreases the probability of taking over the unpaid task for men and women in both tax conditions (Fig. 3 a). Interestingly, the effects seem to differ over both tax conditions with the primary earner being significantly less likely to take over this task under joint taxation. Second, as Figure 3 b) depicts, joint taxation indeed causes a reallocation of the unpaid task between the intra-couple roles. The probability of taking over the task is 20 % lower for the group of primary earners when joint taxation applies. And finally, in accordance with our hypothesis and raw data findings from above, gender appears not to play a role in the assignment of the unpaid work in our experiment since gender differences are not statistically different from zero (Fig. 3 c).

Table 2: Regression Results for Taking Over the Unpaid Task

DV= unpaid task	(1)	(2)	(3)
joint	0.223**	0.223**	0.223**
	(0.098)	(0.099)	(0.100)
male	0.108	0.103	-0.052
	(0.129)	(0.132)	(0.185)
joint x male	0.010	0.018	0.018
	(0.134)	(0.138)	(0.139)
pe	-0.272*	-0.310**	-0.302**
	(0.139)	(0.140)	(0.139)
joint x pe	-0.465***	-0.421***	-0.421***
	(0.137)	(0.143)	(0.143)
male x pe	-0.084	-0.035	-0.063
	(0.184)	(0.185)	(0.187)
joint x male x pe	0.049	-0.003	-0.003
	(0.190)	(0.196)	(0.197)
constant	0.599***	0.760***	0.877***
	(0.102)	(0.203)	(0.218)
stage controls	yes	yes	yes
individual controls	no	yes	yes
couple controls	no	no	yes
observations	226	216	216
R-squared	0.321	0.329	0.340
adj R-squared	0.293	0.279	0.284

Note: Displayed are the coefficients of pooled linear probability models with cluster robust standard errors on the individual decision to take over the unpaid task ((0-1) choice counted on the individual level, jointly agreed upon within the couple). * p<.100, ** p<.050, *** p<.010. Full table in Appendix, Table 4.

Figure 3: Marginal Effects of ...

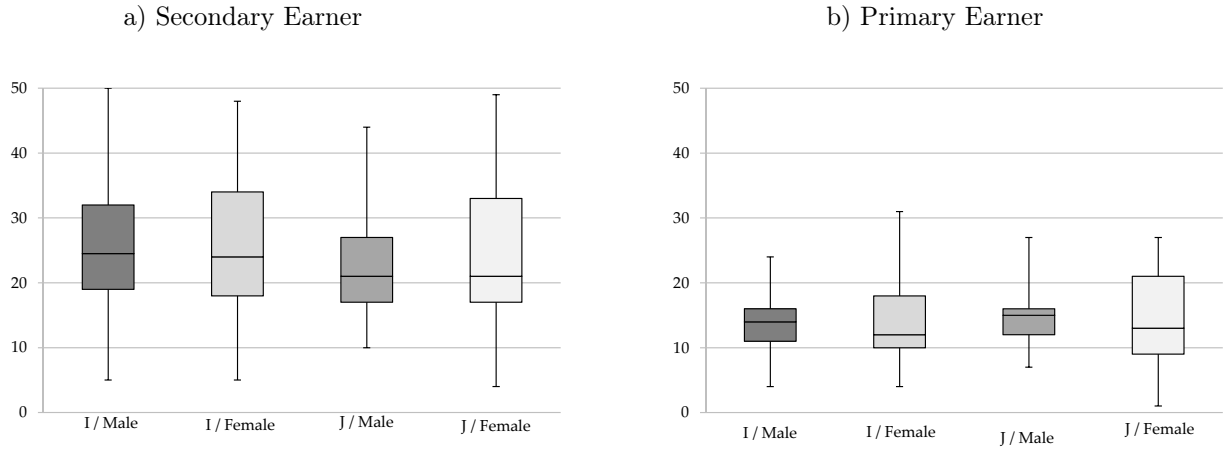


Note: Displayed are average marginal effects on the decision to take over the unpaid task ((0-1) choice made by the individual, jointly agreed upon within the couple) and error bars that represent the 95 % confidence interval. Basis is the full model of column 3 in Table 2. * p<.10, ** p<.05, *** p<.01.

5.2 Work Effort

To analyze labor supply decisions in our experiment, we consider paid work, i.e. individual work effort as measured as the number of solved mazes. Figure 4 gives an overview of participants' work effort by intra-couple role, taxation system, and gender. At first glance, it seems odd that secondary earners are more productive than primary earners. Nevertheless, this finding simply reflects the difference in the complexity levels between the tasks assigned to primary earners and to secondary earners. This is exactly the reason why we do not compare secondary and primary earners' work effort.[14] To begin with, Mann-Whitney tests do not detect any significant gender differences and tax-effects in work effort decisions. Nor do men and women differ in their work effort, nor does a change in the taxation system disclose any behavioral effect.

Figure 4: Work Effort by Role, Tax, and Gender



Note: Displayed are the box plots of work effort by intra-couple role, taxation system, and gender.

Table 3 then provides multivariate estimation results using pooled linear regression models with cluster robust standard errors. The dependent variable is work effort, i.e. the number of solved mazes. We estimate labor supply decisions conditionally on the assigned role (dummy for primary earner: *pe*, reference secondary earner) and participant's gender (dummy for men: *male*, reference women). In order to investigate tax-effects we again use a dummy for the tax system and a dummy that captures stage effects. Furthermore, we control the allocation of housework (interaction of *taking over the unpaid* task, *male* and *pe*) in all estimations. Column 2 then adds personal characteristics such as participant's highest educational attainment, labor market status, personal gross income, age, whether they were born in East Germany and their satisfaction with the assigned role. In column 3, we additionally consider marital status in a dummy (*married*, reference cohabiting).[15]

[14] One might claim that the difference in complexity levels challenges the implementation of the intra-couple role assignment. However, we overcompensated the complexity level in the following way: a hard level maze equals 1.72 easy level mazes, whereas a hard level maze is remunerated 3 times higher than the easy level maze. We thereby ensured that secondary earner's income is always lower than primary earner's income. Table 6 in the Appendix demonstrates that the intra-couple role implementation holds true for the majority of the sample. T-tests indicate that the incomes of primary earners are significantly higher than those of secondary earners ($p<.001$).

[15] A full table can be found in the Appendix.

Table 3: Regression Results on Work Effort

DV= work effort	(1)	(2)	(3)
joint	1.643	1.856	1.849
	(1.541)	(1.485)	(1.488)
pe	-14.74***	-12.13***	-11.64***
	(3.729)	(2.875)	(2.908)
joint x pe	-0.515	-1.599	-1.913
	(1.828)	(1.714)	(1.717)
male	-0.025	-0.430	-6.056*
	(4.662)	(2.997)	(3.189)
joint x male	-2.710	-4.141**	-3.926**
	(2.102)	(1.995)	(1.968)
pe x male	1.708	0.716	-0.377
	(4.971)	(3.374)	(3.512)
joint x pe x male	2.295	4.725**	4.830**
	(2.417)	(2.294)	(2.258)
married			-4.516*
			(2.318)
married x male			8.180***
			(2.277)
Constant	29.04***	44.44***	48.32***
	(3.393)	(4.300)	(4.260)
stage controls	yes	yes	yes
housework controls	yes	yes	yes
individual controls	no	yes	yes
Observations	226	212	212
R-squared	0.347	0.671	0.700
adj R-squared	0.307	0.635	0.663

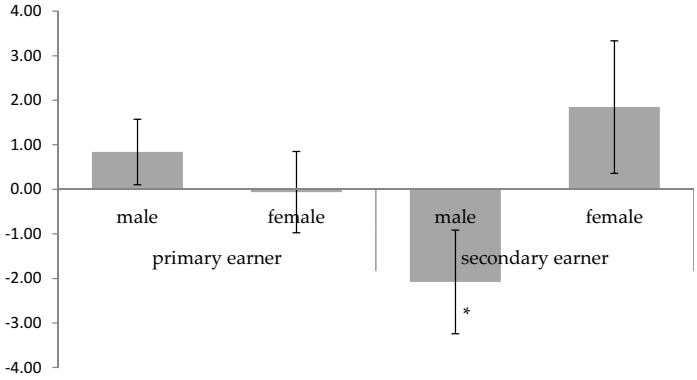
Note: Displayed are coefficients of pooled linear regression models with cluster robust standard errors at the individual level on work effort. Full table in Appendix Table 5. * p<.100, ** p<.050, *** p<.010.

As Table 3 displays, the negative sign of *pe* mirrors just the higher complexity level of the task, which is why primary earner's work effort is significantly lower than that of secondary earners (see the first paragraph of this subsection for a discussion of this point). Besides this, none of the other coefficients seems to play a role until individual characteristics are included in column 2, which let to the interaction of joint taxation and male becoming significant, thus suggesting tax-effects and/or gender differences. Adding marital status to the model in column 3 reduces the male coefficient to a large extent, with the coefficient becoming significant indicating that marriage seems to drive results, thus playing a role in our experiment.

Following our hypotheses, joint taxation is expected to decrease secondary earner's work effort but to increase primary earner's work effort. Columns 2 and 3 reveal an effect that confirms our hypothesis, at least for men. To illustrate this, Figure 5 plots the marginal tax-effects on work effort conditionally on the intra-couple role and subject's gender using the estimation results in column 3, which account for individual characteristics and the couple's marital status. This figure nicely highlights the average tax-effect when joint taxation replaces individual taxation accounting for individual heterogeneity. Men in the role of a secondary earner decrease work effort significantly when taxed jointly. In joint taxation they solve two mazes fewer on average than under an individual taxation regime. In contrast, tax-effects for women are not statistically significant from zero. F-tests confirm that men and women respond differently to a change in

tax rates for the secondary earner group but not for the primary earner group.

Figure 5: Marginal Effects of Joint Taxation on Work Effort



Note: Displayed are the average marginal effects and error bars of the 95 % confidence intervals of the joint taxation effect on participants' work effort by intra-couple role and gender. Basis is the full model of column 3 in Table 3. p-values are from F-tests.

Including an interaction of male and marriage into our analysis increases the strength of the male coefficient, which illustrates gender differences. Indeed, studies using observational data already show that married and cohabiting women as well as men differ in their labor supply in general. According to Barg & Beblo (2012) married women's working hours are smaller than cohabiting women's working hours and married men's working hours are larger than cohabiting men's working hours, at least in Germany. [16]

And indeed, the overall labor supply patterns of married and unmarried couples in our experiment are identical to survey data findings. The coefficients of the marriage interaction in column 3 of Table 3 depict the male marriage surplus in labor supply. Married men solve an average of 4 mazes more than the cohabiting men while married women solve on average 8 mazes fewer than cohabiting women. Thus, married men provide substantially and significantly more work effort than cohabiting men while married women provide less work effort than cohabiting women, even though factors that might affect underlying ability (e.g. age, education, labor market experience) are controlled for.

6 Discussion and Conclusions

In a laboratory where constraints are absent, we cannot find many of the gender differences that are present outside the lab in the real-world labor market. Without real-world constraints, women and men do not behave all that differently.

First, our findings on the allocation of the housework task are in line with Auspurg et al. (2014) and Cochard et al. (2015) but contrary to real-world findings since we do not confirm that

[16] Inspired by these studies and Bargain et al. (2014), one could assume that the reaction to a change in tax rates is stronger for married couples and thus the gender gap in elasticities becomes more visible. This is exactly what we try to capture when extending the tax interaction by a dummy for being married in another estimation (upon author's request) and comparing the tax-effects between married and cohabiting subjects. At a first glance, F-tests indicate that the tax-effect of male secondary earners seems to be driven by married men but the difference between married and unmarried men is not statistically significant.

housework has a female label. We acknowledge it to the gender-neutral framing of the task as being "not difficult at all [with] no special previous knowledge [being] required." However, one might claim that exposure to the unknown nature of the task counteracts the expected gender differences in the intra-couple allocation of the unpaid task. In fact, if women's risk and uncertainty aversion would have influenced our results, gender ratios in the allocation of this task would differ over the stages. Nevertheless, knowledge is de facto less imperfect in the second stage as couples have experienced the truly easy nature of the unpaid task in the first stage and should have updated their beliefs accordingly. Since we, in the end, do not find allocation differences over the stages, a potential uncertainty aversion has indeed not contradicted our results. Another reason could be that our participants simply prefer a relatively equal allocation of the unpaid task in the situation of that artificial setting and therefore play a turn-taking in their household decision-making (Munro et al., 2008) from the real world to inside the lab. This is supported by answers from our post-experimental questionnaire revealing that our male participants report taking on less than their fair share of housework in their daily life, while women report doing more than their fair share (Wilcoxon-Signed Rank test; $p>.001$).[17] Thus, we assume that subjects are indeed encouraged to perform a fair share of 'housework' in our experiment because its realization is less costly compared to their daily life.

Second, although we do not find gender differences in labor supply generally, men and women differ in their reaction to a change in tax rates. Secondary earner men react to a change while secondary earner women are not affected. Interestingly, this gender difference in labor supply elasticity does not match the well established fact of a larger labor supply elasticity of women compared to men outside the lab (Bargain et al., 2014). Revealing quite the opposite leads us to follow Keane's (2011) argumentation of men's labor supply being "more elastic than conventional wisdom suggests"(Keane, 2011, p. 1071).

Finally, we find strong gender differences when it comes to the institution of marriage that matches real-world findings. As already shown by survey data, married men provide more work effort than cohabiting men, while married women provide less work effort than cohabiting women. Sorting into specialization and the impact of specialization-enhancing institutions for married couples in Germany are found to explain this observation. First, as Barg & Beblo (2012) argue, sorting into specialization happens if couples get married who have already planned to divide housework and labor market work in traditional ways. In short, the ones who anticipate specialization marry. Consequently, we interpret our finding as exactly a display of the differences in specialization preferences between married and cohabiting men and women. Second, since for each couple the same rules of the game apply in our experiment, i.e. both married and unmarried couple's income is charged to both joint as well as individual taxation, the experimental institutions cannot be the driver of the observed behavioral differences between them. However, there could be an indirect influence from the taxation system given outside the lab: joint taxation is, in the real-world, applied only to married couples, whereas individual taxation is applied to cohabiting couples. Following Lewis (2002), who argues that institutions

[17] We adopted this PAIRFAM (Panel Analysis of Intimate Relationships and Family Dynamics) question in our post-experimental questionnaire: "Looking at both housework and paid work, how fair is the division of labor between you and your partner?"

could not only offer incentives but also shape attitudes and nourish the social norm of a male breadwinner, as well as Akerlof & Kranton (2000), who advocate that social norms translate into norm-conforming behavior, we could conclude that the different behavior of married couples in the lab is a result of experiencing such specialization-enhancing institutions outside the lab. Kimbrough & Vostroknutov (2016) already show that participants might import their social norms from outside into the lab, which is more pronounced, the higher an individual's "strength" of the adherence to social norms is, i.e. the norm sensitivity outside the lab. This is exactly what we see: A stronger specialization for married couples despite the fact that the rules are the same for married and cohabiting couples.

Furthermore, we add a qualitative observation from during our experiment that supports the assumption of the existence of the social norm of the male breadwinner in our sample: During the experiment, we had the impression that subjects are puzzled when we assigned potentially atypical roles (female primary and male secondary earner). The couples frequently asked whether anything went wrong or whether the assignment was truly random when they recognized their wages (and thus their roles) from reading the instructions. Some women asked if they could trade the task and some men asked if they could help their female partner. In fact, one couple cheated by exchanging the mazes when the experimenter was out of sight (we dropped this observation). Remarkably, this kind of behavior did not appear in experimental group with presumably typical roles, i.e. couples consisting of male primary earners and female secondary earners.

While the effect of joint taxation on subjects' work effort is not very strong in our experiment, the effect on the allocation of housework actually is. Individual taxation significantly increases the probability of the primary earners taking on this task. Thus, in view of the world of gender gaps that result in the majority of couples consisting of male primary and female secondary earners, the abolition of joint taxation in favor of individual taxation could be a fruitful way to relax women's constraints. It could contribute to reducing the unequal division of family chores that otherwise "is likely to be the primary determinant of most if not all the gender differences in the labor market" (Ichino, 2014, 41).

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A Appendix

A.1 Results

Table 4: Regression Results for Taking Over the Unpaid Task (Full Table)

DV= unpaid task	(1)	(2)	(3)
joint	0.223**	0.223**	0.223**
	(0.098)	(0.099)	(0.100)
male	0.108	0.103	-0.052
	(0.129)	(0.132)	(0.185)
joint x male	0.010	0.018	0.018
	(0.134)	(0.138)	(0.139)
pe	-0.272*	-0.310**	-0.302**
	(0.139)	(0.140)	(0.139)
joint x pe	-0.465***	-0.421***	-0.421***
	(0.137)	(0.143)	(0.143)
male x pe	-0.084	-0.035	-0.063
	(0.184)	(0.185)	(0.187)
joint x male x pe	0.049	-0.003	-0.003
	(0.190)	(0.196)	(0.197)
stage	-0.013	-0.009	-0.009
	(0.067)	(0.069)	(0.070)
stage x pe	0.050	0.040	0.040
	(0.095)	(0.098)	(0.098)
age		-0.003	-0.004
		(0.003)	(0.003)
education		0.029	0.025
		(0.081)	(0.082)
employed		-0.155	-0.160
		(0.117)	(0.119)
children		0.018	-0.036
		(0.102)	(0.116)
income		0.021	0.026
		(0.041)	(0.041)
east		-0.077	-0.098
		(0.123)	(0.124)
married			-0.039
			(0.160)
married x male			0.231
			(0.169)
constant	0.599***	0.760***	0.877***
	(0.102)	(0.203)	(0.218)
observations	226	216	216
R-squared	0.321	0.329	0.340
adj R-squared	0.293	0.279	0.284

Note: Displayed are coefficients of pooled linear probability models with cluster robust standard errors on the individual decision to take over the unpaid task ((0-1) choice counted on the individual level, jointly agreed upon within the couple). * p<.100, ** p<.050, *** p<.010.

Table 5: Regression Results for Work Effort (Full Table)

DV= work effort	(1)	(2)	(3)
joint	1.643	1.856	1.849
	(1.541)	(1.485)	(1.488)
pe	-14.74***	-12.13***	-11.64***
	(3.729)	(2.875)	(2.908)
joint x pe	-0.515	-1.599	-1.913
	(1.828)	(1.714)	(1.717)
male	-0.0250	-0.430	-6.056*
	(4.662)	(2.997)	(3.189)
joint x male	-2.710	-4.141**	-3.926**
	(2.102)	(1.995)	(1.968)
pe x male	1.708	0.716	-0.377
	(4.971)	(3.374)	(3.512)
joint x pe x male	2.295	4.725**	4.830**
	(2.417)	(2.294)	(2.258)
stage	0.793	0.297	0.332
	(0.875)	(0.917)	(0.922)
stage x pe	-2.959***	-2.600**	-2.672**
	(1.039)	(1.067)	(1.070)
unpaid	-7.525*	-8.402**	-8.376**
	(4.054)	(3.295)	(3.252)
unpaid x pe	8.888*	5.945	4.326
	(5.140)	(3.599)	(3.642)
unpaid x male	1.470	4.284	3.480
	(5.547)	(3.910)	(3.885)
unpaid x male x pe	-6.753	-5.029	-2.622
	(6.526)	(4.394)	(4.435)
age		-0.326***	-0.323***
		(0.045)	(0.047)
education		1.368	1.439
		(1.084)	(1.033)
employed		-1.430	-0.821
		(1.515)	(1.380)
children		-1.050	-1.018
		(1.572)	(1.637)
income		0.376	0.411
		(0.530)	(0.485)
east		-4.453***	-5.772***
		(1.387)	(1.469)
change		4.953**	4.895**
		(2.423)	(2.448)
change x pe		-7.724***	-7.939***
		(2.799)	(2.790)
married			-4.516*
			(2.318)
married x male			8.180***
			(2.277)
Constant	29.04***	44.44***	48.32***
	(3.393)	(4.300)	(4.260)
Observations	226	212	212
R-squared	0.347	0.671	0.700
adj R-squared	0.307	0.635	0.663

Note: Displayed are coefficients of pooled linear regression models with cluster robust standard errors at the individual level. * p<.100, ** p<.050, *** p<.010.

A.2 Instructions

General Instructions (page 1, for all participants)

Welcome and thank you for your participation! You are an important part of our study, which we are conducting with 250 people from the area of Frankfurt (Oder). You are participating as a couple because we are interested in how you jointly, together, make decisions. The study consists of two rounds and a questionnaire. In both rounds you will make decisions and solve tasks. Your decisions and the performance on these tasks determine your income. At the end you will receive the income of one round, which will be chosen randomly. The questionnaire is important for our analysis. Therefore, we please you to complete it carefully. After filling our the questionnaire, you receive a voucher from the supervisor that entitles you to collect your payoff in the next room.
It is essential that you read the instructions carefully. In case of any doubts or concerns please address your questions to the supervisor. Please indicate your concern by hand rising. We will come to your seat in order to not to disturb the other participants. Your anonymity is assured during all times. As participant you will receive a code number that is written in the upper right corner of each page.

Stage Instructions (page 2, identical in both stages, SE)

Task:
Your task is to solve mazes printed on paper within 15 minutes. The aim of the paper-and-pencil game is to draw a route through the maze from the start to finish without being hindered by dead ends. The maze is solved after having drawn a continuous line from the starting point (S) to the finishing point (F). The inner and outer frames of the maze should not be touched or crossed by the pencil line. There are easier and harder mazes. You will have to solve the **easy** mazes. Your partner's task will be to solve the harder ones. Every maze that is solved correctly yields to earnings as follows: Your salary for each **easy** maze is **0.50 €**.
Taxation:
As in real life your income is taxed. Your net income (salary minus taxes) on each solved maze depends on the total number of solved mazes and the tax rate. The more mazes you solve, the higher your income, and also the higher the tax burden. In other words, the tax burden is progressive. A table will show you how the tax affects
- your net wage per solved maze,
- the tax burden per solved maze, and
- also your accumulated income.

This way, you always know what wage to expect when you decide to solve another maze. Shortly, we will show you how to catch the table's information. In case of any doubts or concerns please address your questions to the supervisor. Please enjoy the drinks, cookies, and the magazines as pastime!

Stage Instructions (page 2, identical in both stages, PE)

Task:

Your task is to solve mazes printed on paper within 15 minutes. The aim of the paper-and-pencil game is to draw a route through the maze from the start to finish without being hindered by dead ends. The maze is solved after having drawn a continuous line from the starting point (S) to the finishing point (F). The inner and outer frames of the maze should not be touched or crossed by the pencil line. There are easier and harder mazes. You will have to solve the **harder** mazes. Your partner's task will be to solve the easy ones. Every maze that is solved correctly yields to earnings as follows: Your salary for each **hard** maze is **1.50 €**.

Taxation:

As in real life your income is taxed. Your net income (salary minus taxes) on each solved maze depends on the total number of solved mazes and the tax rate. The more mazes you solve, the higher your income, and also the higher the tax burden. In other words, the tax burden is progressive. A table will show you how the tax affects

- your net wage per solved maze,
- the tax burden per solved maze, and
- also your accumulated income.

This way, you always know what wage to expect when you decide to solve another maze. Shortly, we will show you how to catch the table's information. In case of any doubts or concerns please address your questions to the supervisor. Please enjoy the drinks, cookies, and the magazines as pastime!

Tax Description and Effort-Income Table (page 3, SE, individual taxation)

Note:

The more mazes you solve and thus the more income you generate, the higher is your tax burden. That is why your net piece rate declines the more mazes you solve.

The income of both partners is taxed equally.

Example:

The person who solves the easier mazes and thus receives a lower wage earns a net piece rate of 0.50 € when solving the 5th maze. For the 15th maze the person receives 0.40 €. According to 15 solved mazes the person receives 6.90 € in total.

The person who solves the more difficult mazes and therefore receives a higher wage, earns a net piece rate of 1.20 € for the 5th maze. For the 15th maze the person receives 0.30 €. According to 15 solved mazes, the person receives 13.50€ in total.

Number of mazes	1- 3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39
Net wage	0.50 €	0.50 €	0.50 €	0.40 €	0.40 €	0.40 €	0.30 €	0.30 €	0.30 €	0.20 €	0.20 €	0.20 €	0.10 €
Tax burden	0.00%	0.00%	0.00%	20.00%	20.00%	20.00%	40.00%	40.00%	40.00%	60.00%	60.00%	60.00%	80.00%
													
Net income	1.50 €	3.00 €	4.50 €	5.70 €	6.90 €	8.10 €	9.00 €	9.90 €	10.80 €	11.40 €	12.00 €	12.60 €	12.90 €

Tax Description and Effort-Income Table (page 3, PE, individual taxation)

Note:

The more mazes you solve and thus the more income you generate, the higher is your tax burden. That is why your net piece rate declines the more mazes you solve.

The income of both partners is taxed equally.

Example:

The person who solves the easier mazes and thus receives a lower wage earns a net piece rate of 0.50€ when solving the 5th maze. For the 15th maze the person receives 0.40€. According to 15 solved mazes the person receives 6.90€ in total.

The person who solves the more difficult mazes and therefore receives a higher wage, earns a net piece rate of 1.20€ for the 5th maze. For the 15th maze the person receives 0.30€. According to 15 solved mazes, the person receives 13.50€ in total.

Number of mazes	1- 3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39
Net wage	1.50 €	1.20 €	0.90 €	0.60 €	0.30 €	0.15 €	0.08 €	0.08 €	0.08 €	0.08 €	0.08 €	0.08 €	0.08 €
Tax burden	0.00%	20.00%	40.00%	60.00%	80.00%	90.00%	95.00%	95.00%	95.00%	95.00%	95.00%	95.00%	95.00%
													
Net Income	4.50 €	8.10 €	10.80 €	12.60 €	13.50 €	13.95 €	14.18 €	14.40 €	14.63 €	14.85 €	15.08 €	15.30 €	15.53 €

Tax Description and Effort-Income Table (page 3, SE, joint taxation)

Note:

The more mazes you solve and, thus, the more income you generate, the higher is your tax burden. That is why your net piece rate declines the more mazes you solve.

The income of both partners is taxed differently.

Example:

The income of the person with the easier task is taxed higher. The income of the person with the difficult task is taxed at a lower level The person who solves the easier mazes and thus receives a lower wage earns a net piece rate of 0.40 € when solving the 5th maze. For the 15th maze the person receives 0.30 €. According to 15 solved mazes the person receives 5.40 € in total.

The person who solves the more difficult mazes and therefore receives a higher wage, earns a net piece rate of 1.50 € for the 5th maze. For the 15th maze the person receives 0.60 €. According to 15 solved mazes, the person receives 17.10 € in total.

Number of mazes	1- 3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39
Net wage	0.40 €	0.40 €	0.40 €	0.30 €	0.30 €	0.30 €	0.20 €	0.20 €	0.20 €	0.10 €	0.10 €	0.10 €	0.05 €
Tax burden	20.00%	20.00%	20.00%	40.00%	40.00%	40.00%	60.00%	60.00%	60.00%	80.00%	80.00%	80.00%	90.00%
													
Net income	1.20 €	2.40 €	3.60 €	4.50 €	5.40 €	6.30 €	6.90 €	7.50 €	8.10 €	8.40 €	8.70 €	9.00 €	9.15 €

Tax Description and Effort-Income Table (page 3, PE, joint taxation)

Note:

The more mazes you solve and, thus, the more income you generate, the higher is your tax burden. That is why your net piece rate declines the more mazes you solve.

The income of both partners is taxed differently.

Example:

The income of the person with the easier task is taxed higher. The income of the person with the difficult task is taxed at a lower level. The person who solves the easier mazes and thus receives a lower wage earns a net piece rate of 0.40€ when solving the 5th maze. For the 15th maze the person receives 0.30€. According to 15 solved mazes the person receives 5.40€ in total.

The person who solves the more difficult mazes and therefore receives a higher wage, earns a net piece rate of 1.50€ for the 5th maze. For the 15th maze the person receives 0.60€. According to 15 solved mazes, the person receives 17.10€ in total.

Number of mazes	1- 3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39
Net wage	1.50 €	1.50 €	1.20 €	0.90 €	0.60 €	0.30 €	0.15 €	0.08 €	0.08 €	0.08 €	0.08 €	0.08 €	0.08 €
Tax burden	0.00%	0.00%	20.00%	40.00%	60.00%	80.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%
													
Net income	4.50 €	9.00 €	12.60 €	15.30 €	17.10 €	18.00 €	18.45 €	18.68 €	18.90 €	19.13 €	19.35 €	19.58 €	19.80 €

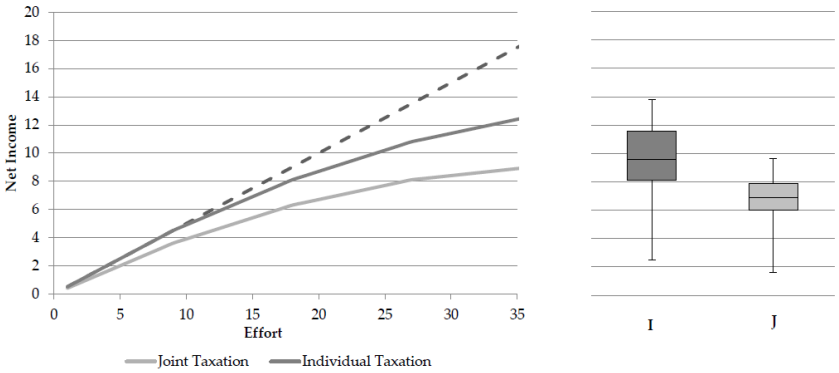
Decision on the uncompensated task (page 4, identical in both stages, for all participants)

Before you can start, you are asked to decide jointly, if you by yourself or your partner by him/herself will solve an unpaid task. This task is not difficult at all and no special previous knowledge is required. Whoever you decide on will have to solve the task by him/herself alone. The solving takes 3 minutes. It thereby shortens the available total time on solving the mazes by 3 minutes. After finishing this task, this person can also start to solve the paid task and, thus, generate income. Please check the box if you are the person solving this mandatory task.

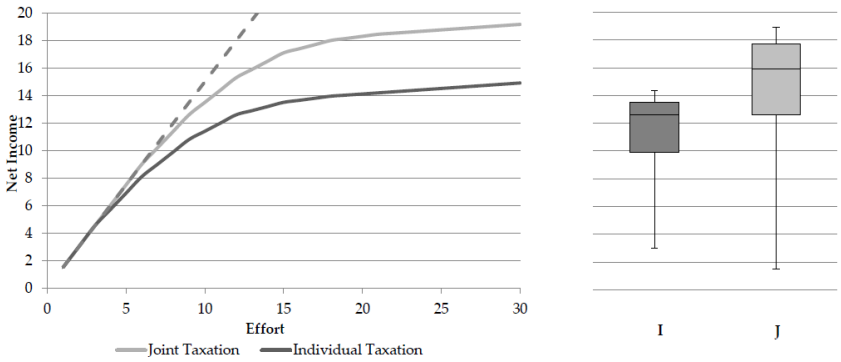
A.3 Tax Schemes

Figure 6: Tax Schedule and Actual Net Income Distribution

(a) Secondary Earner



(b) Primary Earner



Note: Displayed are the underlying income functions conditionally on work effort and taxation system by intra-couple role at the left. Box plots at the right depict the distribution of actual net incomes conditionally on work effort, the taxation system and the intra-couple role. $p<.001$.

A.4 Sample Descriptives

Table 6: Sample Descriptives

	Women	Men	p-value (gender differences)
Age	41.97	44.83	.310
	(15.52)	(15.84)	
Share of married	0.73	0.73	1
Living together since	17.51	17.95	.880
	(15.46)	(15.60)	
Share of Couples with at least one child	0.73	0.73	1
Highest educational attainment	2.14	2.28	.380
	(0.91)	(0.89)	
Full time employment	0.40	0.50	.031
Part time employment	0.18	0.05	.023
Personal gross income	3.08	3.46	.087
	(1.25)	(1.21)	
Tax experience	0.94	0.95	.700
N	62	62	

Note: Displayed are means and standard deviations. 'Highest educational attainments' denotes mean of the highest educational attainment (0=none, 1=Vocational Education without A-level, 2=Vocational Education with A-level, and University degree=3). 'Full time employment' and 'part time employment' denote the share of participants with this employment status. Others are either in pension, unemployed, in maternity leave, in education programs or work in marginal employment. Personal gross income is classified in categories (1=0€-500€, 2=501€-1000€, 3=1001€-2000€, 4=2001€-3000€, 5≥3001€). "Tax experience" denotes the share of people having experience with income taxes, being defined as experienced if they had ever made a tax declaration or know which tax class they have.