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What makes Russian women (un)happy?
A closer look at the family

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Abstract

Two decades of economic transition revealed that Russian women are on average less happy than men. This paper addresses individual subjective well-being from the intra-family perspective and investigates whether the gender satisfaction gap could be caused, among all, by a mismatch between the socially imposed patriarchal family gender roles and the actually performed ones. I test for the presence of the following phenomena: (1) a "fair" share of income brought by each of the spouses into their household is judged according to the patriarchal model attributing the role of the breadwinner to men; (2) division of housework, with women, even if working, holding the main responsibility for housekeeping activities, is perceived as "fair". Prime-age working adults living in partnership constitute the dataset which is a part of the Russian Longitudinal Monitoring Survey for 1994-2004. Life satisfaction is modelled with the help of the seemingly unrelated bivariate ordered probit model aiming at the adjustment for unobserved factors influencing happiness evaluation of both partners. For the period 1994-1998, the results show that women's relative unhappiness is likely to be causes by their increasing earning powers with relative to men, and overload with hours spent on housekeeping in households with children. In the second period of economic growth, 2000 - 2004, I observe a change in women's preferences over time-use and total income shares, suggesting a tendency towards their emancipation.

1 Introduction

Studies of the first decade of the Russian transition reveal that Russian women are on average less happy than men, which could indicate vulnerability of women's position in the country. Understanding the forces driving the phenomenon may help in both achieving gender equality goals and improving the psychological climate in the transforming Russian society. The purpose of this paper is to address the individual well-being from the intra-family perspective and to investigate whether the gender satisfaction gap could be caused by a mismatch between the socially imposed family gender roles and the actually performed ones. Additionally, I aim at figuring out whether these roles have changed over the years of the Russian socio-economic transition. In order to do so, I assume that one can speculate about the social norms spread in a society by observing an impact of the gender roles related categories (e.g. time spent on housework) on subjective well-being. I test for the presence of the following phenomena: (1) a "fair" share of income brought by each of the spouses into their household is judged according to the patriarchal model attributing the role of the breadwinner to men; (2) division of housework when women, even if working, hold the main responsibility for housekeeping activities, is perceived as "fair".

Life satisfaction of prime-age working individuals living in couples, married officially or de facto, is assessed on the basis of the Russian Longitudinal Monitoring Survey dataset for 1994 – 2004. To accommodate for the presence of unobservable factors influencing the level of satisfaction reported by both spouses, seemingly unrelated bivariate ordered probit strategy is used.

The results confirm that the traditional views were strongly supported in the first sub-period, 1994-1998, studied. During the second sub-period, 2000-2004, a slight change in the views on gender family roles, with women seemingly changing their views towards the pro-equity ones, is observed. Further change in the satisfaction gap is likely to depend on the social approval of the emancipation process.

The rest of the paper is organised as follows. Section 2 contains a short overview of findings on perceived fairness and gender family roles, and a description of the situation in Russia. Gender roles in family life and their impact on individual satisfaction are discussed. The model is formalised in Section 3. Dataset and estimation strategy are introduced in Section 4. Section 5 presents the estimation results. Conclusions are in the final section.

2 Previous literature

During the last decades, life satisfaction measures[1] are proved to be a meaningful concept, to have biological foundations and to be able to contribute to economics research[2]. In this growing strand of research, only a sign and significance of the respective male or female dummy is usually mentioned when gender differences in life satisfaction are discussed. Starting with a paper of Clark (1997), a widespread opinion of a "normally" relatively higher happiness among women in comparison to men appeared for both job and general life satisfaction. The former seems to be the only domain where the reasons for a gender happiness gap to emerge have been studied. Recent evidence show that the phenomenon seems to be only "an Anglo-Saxon paradox" (Sousa-Poza and Sousa-Poza, 2000a), although a positive gender life satisfaction gap is still observed in some applied studies for other countries (e.g. in post-communist Romania in Mitrut and Wolff, 2008). The opposite result for Russia is still referred "an unusual finding" (Senik, 2004; Graham et al., 2004). As no significant gender difference in job-satisfaction was found in Russian studies (e.g. Sousa-Poza and Sousa-Poza, 2000b), I turn to another life domain - family life - looking for the reasons of the noted "unusual" gender gap to appear.

Studies show that living in partnership means, on average, a higher level of individual life satisfaction with respect to singles – with married men being happier than married women – due to obtaining higher standards of living, emotional support from the partner and division of the total workload between spouses (e.g. Stutzer and Frey, 2006). Given a traditional specialisation of women on housework and proved existence of a gender wage gap, women are supposed to bear the main responsibility for housework according to both "new home economics" by Gary Becker and the "economic dependence theory". The former bases its prediction on different productivity of partners in performing labour market- and house-work. The latter, in its turn, attributes a lower bargaining power, when taking decisions about the time distribution, to the partner earning less. However, housework is often combined with a labour market job, which leads to an overload with total amount of work. Moreover, women traditionally perform the most tedious and routine low-control indoor component of housework. All these what lead to higher levels of psychological distress, feeling of dissatisfaction or even health problems, decrease the quality of marriage and increase the likelihood of divorce (Hochschild and Machung, 1990; Baxter, 2000; Frisco and Williams, 2003). Then the "unusual" relative unhappiness of Russian women is explained just by the fact that they perform more housework and have less bargaining power within their households, is it not? The answer seems to be much more tricky.

Recall, that it is particularly important for women worldwide to be socially accepted and to "fit the norm", and to behave in accordance with "fairness" considerations. It is important that "equality" (objective) and "fairness" (subjective) of, for example, housework division do not necessarily coincide (Greenstein, 1996). The impact of intra-family

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[1]Further in this paper the terms '(individual) subjective well-being', 'happiness', and 'life satisfaction' are used interchangeably.
[2]e.g., see reviews in Frey and Stutzer, 2002; Clark et al., 2008

decisions and roles on individual well-being depends on characteristics of a comparison group and individual expectations of the own role in a couple (Thompson, 1991). For women, a "perceived fairness" of tasks and time distribution is even more important for the well-being evaluation than hours actually worked at home (e.g. Baxter, 2000; Frisco and Williams, 2003). Women compare a housework sharing in the own family with a reference group of other women, and then, can perceive the personal situation as "unfair" (Kluwer et al., 1996; Freudenthaler and Mikula, 1998) while men tend to compare themselves to an imaginary man who performed even less housework, and hence to perceive the situation as more than "fair" (Himsel and Goldberg, 2003). "Fairness" considerations strongly depend on the ratio of traditionalism-liberalism views in a society (e.g. a study of Lalive and Stutzer (2004) for Switzerland).

In a patriarchal society, greater career opportunities and higher wages for men are considered to be a "fair" practice as men's role as the breadwinner is fundamental as well as the fact that women are exposed to less social pressure than men when being out of the labour force (or unemployed). In order to fulfil the "gender specific familial expectations", working women in both developing and developed countries, traditionally bear the main responsibility for housework, often at the expense of their leisure time (e.g. Hadfield, 1999). Most the applied studies show that even if contributing to the family budget more tan men, women often do not exercise their economic power and spend more time on housework to affirm their gender-atypical relative incomes (Beblo and Robledo, 2007). Even a minimal participation of husband in housework is perceived as a supportive behaviour with a positive effect on wife's life satisfaction (Pina and Bengtson, 1993).

Historical background. Russia. Regardless of the officially declared principle of equal labour market opportunities for men and women in the Soviet Union, gender discrimination existed, manifested in the gender wage gap on the level of about 0.7 (as in other planning economies, according to Newell and Reilly, 1996; Brainerd, 1998), as well as practices hampering women's careers. The socially approved "dual roles" and inability to substitute housework for working duties were often forcing women to choose jobs basing on more convenient work schedules, or even just those closer to home (Deloach and Hoffman, 2002). The rather explicit form of "familism" created a vicious circle, solidifying the women's unfavourable position in the labour force (Cerami, 2010).

After the beginning of transition, women took their role of the employees with a lower status for granted (Ashwin and Yakubovich, 2005; Ogloblin and Brock, 2005). Subsequently, a gender wage gap was increasing in 1991-1994 (Kazakova, 2007), and the possibilities for women's career development were scarce (Roshchin and Solntcev, 2006). Often women had no possibility of deciding whether to work or to stay at home, as husbands' incomes were generally not enough to keep the households on a subsistence level (Vannoy, 1999; Cerami, 2010). Despite the huge social and economic changes, only slight modifications of the traditional role of women in the Russian society (and family) were observed (Cubbins and Vannoy, 2005). So, working women still spent a significant part of their leisure time in unpaid family work (Deloach and Hoffman, 2002; Malysheva and

Verashchagina, 2008).

While there are a number of papers studying different life dimensions of life satisfaction in transitional Russia, only some rare examples are concerned with the family domain and individual well-being (e.g. mental risk-sharing in marriage: Powdthavee (2005), chapter 6). Up to my knowledge, the impact of "fairness" of intra-family decisions on individual well-being has not yet been investigated.

3 Formalisation of the model

I start with a set-up describing wife and husband decision making process, in case of two (labour market and "non-labour market") and three (labour market, housework, leisure) possible time-use categories (see the Appendix 7.1 for more details). Further, for the sake of simplicity, I do not address explicitly such categories as savings, non-labour income, wage arrears and so on. In the model set-up, it is implicitly assumed that all the income received is consumed. Moreover, I assume that each of the spouses takes the other's behaviour as given and decides non-cooperatively on the number of hours to supply to the labour market. The terms 'partners' and 'spouses' are used interchangeably, and thus the terms 'wife' and 'husband' indicate female and male-partner independently of the legal status of the partnership.

It is assumed that matching the socially approved gender roles should influence the spouses' satisfaction level positively. Below, I formulate two hypotheses involving the intra-family comparisons through a prism of social norms:

Hypothesis 1: Man is seen as the breadwinner

Hypothesis 2: Woman is seen as responsible for housework

3.1 Hypothesis 1: Man is seen as the breadwinner

Negative gender satisfaction gap is caused by the fact that women's earning power in relation to men is increased, while society attributes the role of the breadwinner to men.

Even if Russian women participate quite actively in the labour market, their earnings are often considered to be of the "supportive character", while society traditionally prescribes the role of the family breadwinner to men. A husband who earns less than his wife is considered successful, neither by other men, nor by his own wife.

Let me assume that individual utility functions of two partners in household include individual hours of "non-working activities" Z_s and pooled labour income of two spouses Y. A term $I(\frac{w_s L_s}{Y} > 0.5)$ is added in order to evaluate the impact of unequal contributions of the spouses to the household income on their individual life satisfactions. The individual problems can be formalised as:

$$\max_{L_s} U_s = \beta_{1s} \ln(Z_s) + \beta_{2i} \ln(Y) + \beta_{3s} I(\frac{w_s L_s}{Y} > 0.5) \tag{1}$$

$$\text{s.t. } Y = w_f L_f + w_m L_m$$
$$Z_s = 24 - L_s$$
$$s = f(\text{emale}), m(\text{ale})$$

Here L_s stands for the hours supplied to the labour market by a spouse s for an exogenously given per hour wage rate w_s. The coefficients β reflect preferences of individuals over leisure time and income(consumption) and can differ between two spouses. For example, $\beta_{2f} \neq \beta_{2m}$ would mean that an increment of the joint income could be evaluated

differently by wife and husband. At the same time, spouses do not distinguish between the sources (herself/himself or partner) of this augment. Substituting the constraints into the utility function, one receives, for example, for male-partner:

$$\max U_m = \beta_{1m} \ln(24 - L_m) + \beta_{2m} \ln(w_f \bar{L}_f + w_m L_m) + \beta_{3m} I(\frac{w_m L_m}{Y} > 0.5) \quad (2)$$

I use this indirect function 2 as the main functional form, and expect that in traditional (patriarchal) society $\beta_{1s} > 0$, $\beta_{2s} > 0$ for $s = f(emale), m(ale)$, while $\beta_{3f} < 0$ and $\beta_{3m} > 0$. A "traditional man" receives a positive marginal utility from the augmentation of both, his own and total household income, when his earnings increase. When husband contributes an income greater than his wife, he should be more satisfied with life due to the confirmation of his role of the breadwinner. A "traditional wife" then should receive a positive additional utility from a decreasing hours of work ($\beta_{1f} > 0$) and dislike earning more than her husband ($\beta_{3f} < 0$).

3.2 Hypothesis 2: Wife is seen as responsible for housework

Women, even if working, hold the main responsibility for the housekeeping activities. Women are overloaded with total work, and consider such an unequal division of housework between spouses "unfair", which induces their lower satisfaction with respect to their husbands.

In the problem (1), I was operating with "non-market activity" term, without distinguishing between the time spent on housework[3] ($H_s > 0$) and pure leisure (Z_s^*). L_s still stands for the hours of remunerated work. Now let us assume that a household produces some "household (public) good" G, with the Cobb-Douglas production technology requiring both spouses' housework time H_f and H_m among the inputs. Moreover, I include a term $I(\frac{H_s}{H_m + H_f} > 0.5)$, an indicator that the share of time spent on housework by a spouse is greater than a half, into the utility functions. Both spouses could care about their shares of housework performed, although, women are likely to be more concerned about the issue. In the latter case, the respective "fairness term" is present (significant) only in her utility function. Then each of the spouses solves his/her own individual problem taking the other's decision as given (conjecture of the other's L_s, H_s).

$$\max U_s = \gamma_{1s} \ln(Y) + \gamma_{2s} \ln(G) + \gamma_{3s} \ln(Z_s^*) + \gamma_{4s} I(\frac{H_s}{H_m + H_f} > 0.5) \quad (3)$$

$$\text{s.t. } Y = w_f L_f + w_m L_m$$
$$24 = L_f + H_f + Z_f^*$$
$$G = H_f^{\eta_1} H_m^{\eta_2}$$
$$s = f(\text{emale}), m(\text{ale})$$

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[3]By the housework I understand all the non-remunerated housekeeping activities.

all the coefficients $\gamma_{js} > 0$ for $s = f(email), m(ale), j = 1, 2, 3$. η_1 and η_2 are some positive elasticities of the household production function. Similar to the previous case, an indirect function, for example, for female-partner is the following:

$$\max U_f = \gamma_{1f} \ln(w_f L_f + w_m \bar{L}_m) + (\gamma_{2f}\eta_1) \ln(H_f) + (\gamma_{2f}\eta_2) \ln(\bar{H}_m) \qquad (4)$$

$$+\gamma_{3f} \ln(24 - L_f - H_f) + \gamma_{4f} I(\frac{H_s}{H_m + H_f} > 0.5)$$

I expect that a "traditional wife", even if possibly not enjoying the amount of hours of housework performed (coefficient $\gamma_{2f}\eta_1 = (?) < 0$), at the same time feels more satisfied with life when reaffirming her traditional gender role as the main housekeeper ($\gamma_{4f} > 0$). An "emancipated wife" should feel displeased when performing more household work than the husband. In the opposite case, when the husband does the most part of the housework, the "emancipated wife" gets a positive marginal utility while the "traditional wife" dislikes the situation. I also expect that the help of husband at home is appreciated ($\gamma_{2f}\eta_2 > 0$).

4 Data and estimation strategy

4.1 Data source, sample and variables

The dataset in consideration is a part of the second wave of the nationally representative Russian Longitudinal Monitoring Survey (RLMS)[4]. I consider nine rounds related to the period 1994 – 2004 (in 1997 and 1999 the survey was not conducted) and concentrate on prime age adults (25 – 54) living in partnership (officially, or de facto). Only respondents with the "currently working" labour market status, who reported the number of hours worked and wages received are kept in the sample[5].

Estimation is performed on the data pooled over 1994-1998 and 2000-2004, and counting for about 2916 and 3528 couples respectively. Two sub-periods are distinguished due to the different macroeconomic settings and unavailability of detailed time-use questions for the latter rounds. In time use questionnaires, information on 6661 individuals is available. The number of observations exploited in estimation is lower due to the missing values in explanatory variables and data cleaning performed to ensure consistency of gender and year of birth of individuals across rounds.

Now let me list the variables used in further analysis (see Appendix 7.2 for details).

Satisfaction measure. Satisfaction with life in general (LS) coded from 0, "completely unsatisfied", to 4, "completely satisfied" (5-points Likert's scale).

In order to check the robustness of results, the following two dichotomisations of the dependent variable will be also exploited: $Sat01$ (0, if $LS = 0, 1$; 1, if $LS = 2, 3, 4$) and $Sat02$ (0, if $LS = 0, 1, 2$; 1, if $LS = 3, 4$).

Time use categories. A rich set of time use variables is available only for *1994 – 1998*. An absolute number of hours spent on housework/leisure time/working in the labour market can be recovered from the questionnaire to describe time-use within a *week* (total endowment of 168 hours).

- "$Work$" + "$Housework$" (without child care) + "$Leisure$" (includes child care) = 168 hours

- "$Work$" + "$Housework_{ch}$" (with child care) + "$Leisure_{ch}$" (does not include childe care) = 168 hours

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[4]Detailed information about the survey can be found on the following website. "Russia Longitudinal Monitoring Survey - UNC Carolina Population Center" http://www.cpc.unc.edu/rlms/.

[5]Such restriction of the sample is done for several reasons. First of all, the presence of time-use and income categories is essential in order to answer to the questions posed by this paper. Further, the labour market in the first years of transition underwent the significant changes, and some new phenomena as unpaid leaves, wage arrears and payments in kind appeared. That is why only the actually working individuals with actual incomes are considered. In addition, concentrating on the working individuals I pay no attention to the modelling of selection for the labour market participation.

Then "$Work$" is related to the primary job working hours. The "$Housework$" includes the following (non remunerated) activities repeated nearly on a daily basis: cooking, washing dishes, house cleaning, laundry, and purchasing the food items. The "$Leisure$" category then includes all the other activities not cited above, in particular, time for sleeping and rest.

For *2000 – 2004* the "pure" leisure time enjoyed by each of the spouses cannot be evaluated due to absence of the time-use questionnaire. Full time available to an individual is divided into "working hours" (understood as "worked in the labour market for remuneration") and "non-working hours" (as in the G. Becker approach).

- "$Work$" + "$NonWork$" = 168 hours

Income related variables (in 1992 year Rubles):

- total expenditures of household (as a proxy of the household income) ,

- monthly wage from the primary job, actually received last month,

- monthly total income personally received last month

Intra-family comparisons indicators

- $I(share\ income > 0.5)$ - an own share of income in all income received from all the sources by both spouses

- $I(share\ housework > 0.5)$ - an own share of time spent on housekeeping activities

Socio-demographic and other controls. The following list of controls is included: gender, age, indicator of health problems, indicator of higher education diploma, household composition (children of the age 0-6 and 7-18, number of other adults), dummy for higher education; regional and time dummies.

4.2 Estimation strategy

Given the ordered nature of the dependent discrete satisfaction variable, non-linear modelling strategy is to be used, taking into consideration the fact that the error terms of the husband's and wife's equations are likely to be correlated.

Then the seemingly unrelated bivariate ordered probit is a reasonable model to estimate[6].

Analogous to the univariate case, let us assume the existence of two latent continuous variables U_m^* and U_f^* representing the unobserved utilities of male- and female-partner of a household, respectively.

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[6]In case of the uncorrelated error terms, estimation of models would be an appropriate strategy. When correlation between two non-linear equations is significant, treating two equations separately as two univariate ordered probits will lead not only to a less efficient, but inconsistent coefficients estimates.

$$U_{f,i}^* = \beta_f X_{f,i} + \epsilon_{f,i}$$
$$U_{m,i}^* = \beta_m X_{m,i} + \epsilon_{m,i}$$

(5)

where the subscript f stands for $female$ and m for $male$, and $i = 1, ..., N$ represents a number of the couple an individual belongs to. The error terms $\epsilon_{f,i}$ and $\epsilon_{m,i}$ are supposed to be orthogonal to the vectors of exogenous explanatory variables. $E(\epsilon_{f,i}|X_{f,i}, X_{m,i}) = E(\epsilon_{m,i}|X_{f,i}, X_{m,i}) = 0$, $var(\epsilon_{f,i}|X_{f,i}, X_{m,i}) = var(\epsilon_{f,i}|X_{f,i}, X_{m,i}) = 1$, $corr(\epsilon_{f,i}, \epsilon_{m,i}|X_{f,i}, X_{m,i}) = \rho$, $-1 < \rho < 1$. Residuals follow the bivariate standard normal distribution $F(\epsilon_{f,i}, \epsilon_{m,it}) = N_2((0,0), (1,1), \rho)$

The observable subjective life satisfaction (LS) measure is assumed to be ordinally comparable across individuals and has 5 discrete levels ($j = 0, 1, ..., 4$) for both women and men. The combinations of the satisfaction levels are determined by the threshold values dividing the bivariate normal density into the areas associated with the possible outcomes[7]. The thresholds are increasing $\gamma_{g,j} < \gamma_{g,j+1}$ for $g = f, m$, with $\gamma_{f,0} = \gamma_{m,0} = -\infty$, $\gamma_{f,5} = \gamma_{m,5} = \infty$.

Given the underlying latent utilities and thresholds, the following satisfaction levels are observed for each of the spouses ($s = f$(emale),m(ale)):

$$LS_{s,i} = \begin{cases} 0, & \text{if } U_{s,i}^* \leq \gamma_{s,1} \\ 1, & \text{if } \gamma_{s,1} < U_{s,i}^* \leq \gamma_{s,2} \\ 2, & \text{if } \gamma_{s,2} < U_{s,i}^* \leq \gamma_{s,3} \\ 3, & \text{if } \gamma_{s,3} < U_{s,i}^* \leq \gamma_{s,4} \\ 4, & \text{if } \gamma_{s,4} < U_{s,i}^* \end{cases}$$

The probability to observe a combination of the satisfaction levels $\{j, k\}$ ($j, k = 0, 1...4$) for a particular couple i, and in terms of the standard normal bivariate cumulative density function $\Phi_2(.)$, is given by

$$\begin{aligned} Pr(LS_m = j, LS_f = k) = \\ = Pr(\gamma_{m,j} \leq U_m^* \leq \gamma_{m,j+1}, \gamma_{f,k} \leq U_f^* \leq \gamma_{f,k+1}) = \\ = \Phi_2(\gamma_{m,j+1} - X_{1i}'\beta_m, \gamma_{f,k+1} - X_{1i}'\beta_f, \rho) \\ -\Phi_2(\gamma_{m,j} - X_{1i}'\beta_m, \gamma_{f,k+1} - X_{1i}'\beta_f, \rho) \\ -\Phi_2(\gamma_{m,j+1} - X_{1i}'\beta_m, \gamma_{f,k} - X_{1i}'\beta_f, \rho) \\ +\Phi_2(\gamma_{m,j} - X_{1i}'\beta_m, \gamma_{f,k} - X_{1i}'\beta_f, \rho) \end{aligned}$$

(6)

Given the independent observations in the sample, the log likelihood function has the following form:

$$\ln L = \sum_{i=N}^{N} \sum_{j=0}^{4} \sum_{k=0}^{4} I(LS_m = j, LS_f = k) \ln Pr(LS_m = j, LS_f = k)$$

(7)

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[7]Calhoun (1989) notes that this discrete distribution might accommodate any shape, even skewed or multi-modal, due to the fact that the thresholds are not fixed ex ante. This fact is important as in the data modelled a happiness levels distribution is skewed to the right.

where $I(.,.)$ is an indicator function and N is the sample size. Then 8 threshold values, βs and the correlation coefficient ρ are to be estimated.

A user-written Stata program `-bioprobit-` by Zurab SajaiaSajaia (a) allows the estimation of a two-equation ordered probit model by means of the general Full-Information Maximum Likelihood Estimates (FIML) algorithm. Observations are also clustered within individuals in order to correct for repeating observations. Robust option is chosen for the standard errors.

5 Estimation results

5.1 Some preliminary data analysis

Satisfaction level. In both periods considered (recession and growth), an average level of life satisfaction reported by women stays inferior (at about 90%) to that of men (for the age range 25-54: Fig. 1, and Table 1). The gender gap is observed among those living in partnership, but not for the singles. If the sample is narrowed to include only the couples with two working partners, the average life satisfaction scores for women and men always differs significantly at 0.001-level. Satisfaction levels of two spouses are inter-related with the correlation coefficient being in the range of 0.36-0.49.

Socio-demographic variables. The sample in consideration mainly consists of households including 3-4 members (see Table 2 for descriptive statistics). Less than a third of families include children under the school age of 7. Men are only slightly older than females (difference of about one year in both periods, being 37 against 36 y.o. in 1994-1998, and 43 y.o. against 43 in 2000-2004), but seem to be in better health. 26% of men and 36% of women reported the presence of health problems during the month preceding the interview in 1994-1998. It is important, that people with worse health are more likely to drop out of survey or to not respond, although in the Russian case women are less likely to drop out.

Time use. While men work slightly longer hours in the labour market (about 45 hours per week against 40 hours per week for women in 1994-1998), women perform 85% of all the housekeeping activities in terms of the time spent. Total workload for women is about 20 hours per week greater than for men[8]. Table 3 presents housework time by several categories, and in line with the worlwide evidence, women's time prevail in all the categories of housekeeping "indoor" activities. For example, women spend about twice more time than men taking care of children under 14 y.o., and nearly 10 times more hours on cooking and washing dishes.

Social opinion on gender roles. A range of RLMS Survey questions, changing from round to round, allows to assess the changes in the level of traditionalism over the period 1996-2004 (all respondents available included).

Equality of skills of the two genders allowing to be successful at work is recognised by a high proportion of population, with the percentage of those disagreeing decreasing to 18.49% among men and to 8.99% among women by 1998. Some occupations still remain gender labeled. For example, in 2003, 62.66% of men and 43.18% of women agreed that "it is more suitable for a man than for a woman to be a leader or manager". In accordance with the patriarchal views, men are perceived as having greater possibility to find good,

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[8]This finding resembles that of Hochschild and Machung (1990), who noted that in comparison with their husbands, wives work an extra month (of 24-hour days) over a year because of 15 hours more housework performed weekly.

highly paid work (in 2000 it was reported by 50.52% of men and 60.60% of women). Men are more certain to find a job not worse than the present one if fired (40.49% men and 32.56% women in 2004).

Even if the possibilities for women in the labour market are perceived as inferior with respect to men, 44.24% of men and 57.45% of women agreed in 2000 that "working wife is more respected than housewife". The idea of the husband's main role in providing the household with means for living is still strongly supported even in 2003 (by 66.68% of men and by 55.74% of women). Although, only a 28.58% of men (and only 14.32% of women) think strongly traditionally that the husbands is "the head of the family, and the wife should be obedient to her husband". The idea of equality of the rights and responsibilities for the spouses was shared by 70.00% of men and 83.68% of women.

5.2 Satisfaction level modelling

5.2.1 General comments

Significance of the equations and correlation coefficient ρ. For each of the models estimated, significance of the explanatory variables is tested with help of the Wald-test. The null hypothesis of the coefficients of explanatory variables being simultaneously zero is always rejected as the test values exceed the critical values from 8 to 12 times.

A test of two equations' independence - Wald Chi2 test, as the cluster option is used - always rejects the null-hypothesis of the spouses' equations independence (H0: $\rho = 0$ (two independent ordered probit regressions should be estimated), H1:$\rho \neq 0$). The estimated correlation coefficient of the respective error terms ρ is highly significant and reaches the magnitude of 0.45-0.49. The origins of the correlation of latent utility levels between spouses might be a combined effect of the "distinct factors, such as genes, nature, and shared general economic conditions of the family" (Winkelmann, 2005). When two partners decide on the economic resources and tasks distribution among them, preferences of each of the spouses cannot be fully taken into account due to the budget and time constraints, and hence a final decision balances personal and common goals. The magnitude of the correlation coefficient reflects then the satisfaction trade-off among two spouses due to the changes of distribution of economic and time resources between them. As in our case the correlation coefficient is big and positive, spouses seem to demonstrate a tendency of altruistic and caring behaviour (not searching for being happier at the expense of each other). Moreover, satisfaction levels of two spouses are likely to change in the same direction in response to an external shock affecting only one of the partners directly.

One more reason for the happiness levels' correlations is the relative nature of the subjective satisfaction levels reported. The husband might report his level of happiness comparing to his wife's perceived level, or based on the relative perceived efficiency of household in "household public good" production. This issue is unlikely to be true in our case due to the way the satisfaction question is asked.

Note on the coefficients' interpretation. One should interpret the coefficients with caution as the model is non-linear. They reflect the effect of the changes in the magnitude of the explanatory variables on the respective latent utility function U^*, but not directly on the observed levels LS. Moreover, as Hoetker (2007) notes for univariate ordered probit and logit models, unlike for the OLS, the interpretation for the interaction coefficients or squared variables may not indicate the direction of the interaction effect, as it often depends on the given values of the explanatory variables.

Apart from the discussion of the statistical significance and signs of the coefficients in two periods in the consideration, one could be interested in testing the difference in the coefficient's magnitude among periods. The most straightforward way can be seen in re-estimating the model on the pooled dataset, interacting the variables of interest (non-market time, income share indicator, and logarithm of the total household expenditures) with a dummy coding the "second period" (2000-2004). Unfortunately, as Hoetker (2007) notes for probit and logit models, such comparisons are meaningful only when unobserved variation between two groups in comparison is equal (here, between two periods). Otherwise, one might find no difference in slope coefficients even if they exist.

Socio-demographic controls. The list of socio-demographic controls included in the analysis is rather standard for the happiness research, and the signs of the respective coefficients confirm the previous literature findings. Age is significant mainly in men's equations. Higher education (dummy) has a positive impact on the probability to report higher levels of individual satisfaction. Negative impact on satisfaction of health problems during the month before the interview is observed. Positive is the impact of the increasing expenditures of the household, and from the ownership of a dwelling a household lives in. The latter is nearly always significant for women, and only sometimes for men.

Total household expenditures (proxy for total income) has always a positive and highly significant coefficient, indicating a beneficial role of the increasing total income, and hence of consumption, on the probability to report the higher levels of life satisfaction. Members of the household other than the couple itself have a negative impact on individual satisfaction of the spouses, possibly due to division of income between a greater number of people.

5.2.2 Man is seen as the breadwinner

Table 5 contains the results for the specification including time division among "work" (time worked in the labour marked, remunerated) and "non working time", in addition to the shares of the incomes (as in the model 1). Two specifications are tested, including and excluding the partner's time spent in the two time categories.

In *1994 - 1998* the effect of the variables of interest on individual life satisfaction of each of the partners is coherent with the traditional/patriarchal views on the gender family

roles. As it was predicted in the section 3.1, women enjoy a greater amount of time spent not at work (in the labour market).

Let us recall that in the beginning of transition, a drop in labour market participation of Russian women was not as big as it could be expected, as one breadwinner often could not provide a family with the means to be at the subsistence level. Given a generally low commitment of women to their jobs at the end of the Soviet time, decrease in the working hours as the source of additional life satisfaction for women looks reasonable for the period. Further, according to the model estimates, men evaluate the own non-market time negatively. The latter is likely to be due to the perception of non-working time (by men) as lost for gaining an income. In the period of transition it could be even more important for a man to work in order to maintain at least a subsistence level for the own family. Interestingly, non-market time of partner appears irrelevant to the own life satisfaction of both genders.

Apart from the hours of "work" and "non-work", the model includes a measure of intra-family income comparisons. The traditional role of male-partner as the main breadwinner can be demonstrated with the help of several different indicators. So, a coefficient for the own share of income is positive and significant (10%) for men (but only when the hours of non-market time of partner are not controlled for). The result is much stronger for the indicator of the own income share in total income of two spoused being greater than a half ($I(share\ income > 0.5)$). The coefficient is significant for both partners, being negative for women and positive for men. Thus, women's life satisfaction was likely to be pushed up by the fact that she earns a lower income than her husband, while a man's satisfaction level was likely to increase when he performed the role of the main breadwinner in his family.

However, the situation seems to change in the second period, in particular, in the roles perception by women. In *2000 - 2004*, a greater amount of time in "non-market" activities is still significantly negative for the individual life satisfaction for men. Female-partner's non-market time is significantly positive any more neither for the life satisfaction of women themselves, nor for their male-partners. This fits together with one of the results of the social opinion polls, cited above, which showed that a working wife was more respected than housewife (about 57% of women and 44% of men in 2000). As the growing economy is considered, it might be a sign of changing attitudes toward the gender equality in professional and family life.

The share of income in the total income of two partners appears to be significant (1%) and positive only for men (Table 4). Men's share in total income, especially if exceeding 50% is likely to increase the probability to report higher levels of life satisfaction. Similarly, when the logarithm of the share of own income is included into the equation, it is still significantly positive only for men (Table 6). Even if in this case the interpretation is slightly more tricky than for the shares themselves. Given the fact that the shares belong to the open interval (0, 1) (as both partners work and hence gain some income), logarithm of share variable is negative. Hence, the bigger is a share of men's part in the total

income of two spouses, the lesser is its negative influence on the individual satisfaction. The minimal negative effect (equal to zero) would take place in the case when man is the only breadwinner in the household, which is not the case considered in this paper. The respective measures are found to be significant for men only; one can speculate that men seem to be still seen as the breadwinner, but more likely by men themselves and not by women any more. Partially, it is supported by a higher percentage of men, comparing to women, sharing this traditional view in 2003 (see section 5.1).

Robustness checks. Two verifications are done to check the robustness of the results: with regard to the personal income category used, and to the codification of the dependent variable.

I have re-estimated the model using the "wage (primary job) received last month before the interview" instead of the "individual income" variable. The difference between these two categories appears if a person had more than one job during the period addressed, or if a person had other sources of income, as social assistance and so on. Here one should note that, especially in the beginning of transition, employee wage was the only source of income for most of the population. From another point of view, due to the wage arrears, people were forced to look for some sources of income other than the main job, possibly, unofficial. In fact, primary job wage comparisons do not lead to the same results, although still suggesting the strength of the patriarchal views for men in 1994-1998 (positive co-efficient before the dummy coding that the own wage is greater than that of the partner) and signs for the emancipation of women (10% significant positive coefficient before the respective dummy). An additional check was done about the per hour wages. This in a rather artificial construction/category for Russia. In fact, an indicator that own per hour wage is greater than partner's is not significant.

In order to check stability of the results with respect to the categorisation of the dependent variable, the 5-step life satisfaction dependent variable was collapsed into a binary one in two ways described in the Section 4.1, and the models were re-estimated as bivariate probits. Checks (bivariate probit results) for the specification in Tables 6 and 5 can be found in Table 10 and 9, respectively.

When the dichotomisation $Sat01$ is used, the interpretations of the coefficients give mainly the same results as the bivariate ordered probit. The differences appear only twice in women's equation: insignificant male's non-working hours in women equation for 200-2004, or women's non-working time in 1994-1998.

For the dichotomisation $Sat02$, the difference in the results is more visible, although still not contradicting to the bivariate ordered probit results interpretations. The differences include insignificant own non-working hours in women's equation in 1994-1998, significant logarithm of the share of income brought by husband in male's equation (1994-1998). For 2000-2004 the non-working males' time is not significantly negative any more in women's equation, while women's non-working time looses its significance in men's equation.

Summarizing, I should note that even if some slight changes appear, the conclusions are mainly confirmed, especially if the dichotomisation $Sat01$, which assumes the unity when the own happiness level is greater than the average in the sample (1.23, 1.76 in respective periods), is used.

5.2.3 Woman is seen as responsible for housework

Division into the "work" and "non-work" activities is not detailed enough for answering the question of whether the women feel (and maybe even enjoy) housework as their main responsibility. In fact, non-market activity includes not only housework[9] but pure leisure also. As noted above, women in the sample have a much higher total workload because of the performed household activities.

1. Housework does not include childcare. Leisure time category (which also includes childcare) has a robustly positive significant coefficient for women, while for men is it insignificant, possibly, due to the particularity of the economic conditions during the period (Table 7).

Increasing hours of housework are likely to negatively influence life satisfaction of women, but the respective coefficient becomes significant only in the specification which includes the male-partner's housework time and the own share of housework or its logarithm.

However, for the issues of "gender demonstration" and "fairness", a division of work between spouses is more relevant to female satisfaction. In case of traditional gender roles, own hours of housekeeping could appear to have a negative or a neutral influence on the wife's satisfaction, while a partner's help is appreciated. However, a share of housework performed, if coinciding with her gender role and hence being higher than that of the male-partner, would have a positive effect on the satisfaction. And it is, in fact, shown by the data. The coefficient (in women's equation) for the hours of male partner spent for housework is positive in all the specifications where it is included. An indicator of the fact that the own share of housework is greater than a half is significant and positive only for women. In other specification, which include the logarithm of the share of housework performed, a positive significant coefficient would mean that the deviation of women from performing most housekeeping activities is possibly leading to the loss of her satisfaction.

2. Housework includes childcare. Women bear the main responsibility for raising their children, which leaves them not much leisure time, especially if the children are young. Men in Russia, when helping with childcare, often assist mainly to some recreational activities. Interestingly, with the definition of leisure time, which does not include childcare,

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[9]Housework mainly includes such activities that an individual would like to delegate to somebody else or to buy their substitutes in the market. Such activities are usually "unpleasant" and performed on a daily basis (Gupta, 2007)

(log-)leisure time category has insignificant coefficients for both men and women. Unlike in the previous subsection, an amount of housework time has now significantly negative coefficient for women in all the specifications, and as in the previous case, is irrelevant for life satisfaction of men (Table 8).

For two specifications, including logarithm of the own housework time share and an indicator of the own share being more than a half, I conclude again that women were evaluating positively - in 1994-1998 - the "patriarchal gender stereotypes"[10]. I conclude that even if time spent by male-partner on housework had enhanced life satisfaction of female-partner, she would have not considered the equality of the housework shares as "fair". She seemed to be more satisfied when confirming her traditional role at home, while he was not concerned about this issue, as in the world-wide studies (e.g. Coltrane, 2000).

Availability of a number of domestic appliances is likely to have an effect on the amount and difficulty of the housework to be performed. I re-estimated the model including the dummies coding whether a household owns a washing machine and a fridge into each of the spouses' equation. The only change with respect to the results discussed above are in 10% level significant positive coefficient for the washing machine dummy for men.

Robustness checks. As in the previous case, two dichotomisations of the dependent variable are considered, and the model is re-estimated as a bivariate probit (see Tables 11 and 12 for the models in Tables 7 and 8, respectively).

$Sat01$: The same signs and significance of the coefficients as in the bivariate ordered probit are confirmed for the specification with the indicator of the own housework share being greater than a half for both definitions of the housework, and for the specification with the logarithm of the household time share (housework with childcare included). In case of the housework category not including the childcare), both spouses (and not only wife as in binomial ordered probit case) are found to be likely less satisfied with life when their own hours of housework increase, and to be more satisfied when the hours of the proper partner increase. Moreover, the hours of leisure of men have negative impact on the level of his life satisfaction (as it was noted in some other specifications above), while the respective coefficient for wife became insignificant. Surprisingly, the log-share of housework became positively significant for men too.

For $Sat02$ I find the same signs and significance of the coefficients - as for bivariate ordered probit - for housework time categories (own and partner's) Although, as in the other dichotomisation of the dependent variable above, I find that leisure has an insignificant coefficient for women and significantly negative for men. Moreover, the indicator coding the own housework time being greater than a half, is not significant in the women equation any more.

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[10]The share of time spent on housework had an insignificant even if positive coefficient.

5.3 Note on the marginal effects

All the interpretations of the estimation results above were based on the sign and significance of the coefficient vectors β_m and β_f. Each of the components of these vectors, as Calhoun (1989) notes, represents the change in the expected value of the respective latent function (U^*), expressed in standard deviations, in response to a one-unit increment in respective variable x. Apart from the coefficients, partial effects would be a good source of information. Unfortunately, there is still no conventional agreement on what exactly should be analysed. Greene (2008) indicates the joint probability (e.g. $Pr(LS_f = 1, LS_m = 1)$) and the conditional mean function (e.g. $E(LS_f|LS_m = 1, X_{f,i}, X_{m,i})$) as the candidates to retrieve the partial effects. Christofides et al. (1997) and Christofides, Hardin, and Stengos (2000) suggest to evaluate the effects on different levels (based on joint, marginal and conditional event probabilities). Given a note of Hoetker (2007), who suggest the (choice models) coefficients interpretation based not on the graphic presentation, I use the approach discussed in Sajaia (b) for retrieving an approximation of the partial effects of the explanatory variables on the joint probabilities.

The influence of the following variables on the probabilities (joint and marginal) is investigated below: increase in wife's hours of housework.

1. Increase of wife's monthly income by 500RUR, 2000-2004.

Table 13 contains the joint probabilities estimated after the model presented in Table 4), column (2). The situation studied is an increase of women's salary by 500RUR, which is about 20% of the mean monthly income. Even if one could rather expect neutrality of women's satisfaction to this argument from the significance of the income share coefficient, and increase in the probabilities of men to report lower life satisfaction levels, the situation observed is indeed so even if changes in probabilities are not very great (at maximun of 4%). Thus, despite the insignificance of the respective share coefficient, women do seem to be much less concerned about their partners as the main breadwinners.

2. Increase in the total expenditures by 100 - 1000 RUR, 2000-2004 As an additional exercise based on the same model, I simulated an increase in total household expenditures in the range from 100 to 1000 Rubles. The results are presented graphically on the Figure 2. Surprisingly, even if the coefficients by the respective variable are the same in both equations, the effect of such increase on two genders is different, being stronger pronounced for men.

3. Increase in wife's hours spent on housework, 1994-1998.

Table 14 presents the changes in predicted joint probabilities after one-hour increase of wife's housework time. Figure 3 presents how the joint probabilities (of wife and husband) to report the respective combination of the life satisfaction levels are changing when wife's housework hours increase (after the model presented in Table 7, column (3)). In this picture, husband's satisfaction level reported is chosen as "neutral" (level "2" on the scale 0-4). Figure 4 changes in the probabilities of different life satisfaction levels

reported by wife, Figure 5, changes in probabilities of life satisfaction levels reported by husband.

Let us recall, that for this specification with the logarithm of the shares of housework hours, one could rearrange the coefficients, and to get for the woman's equation the following: *-0.16 ln(hours housework, own) + 0.50 ln (hours housework, own) - 0.50 ln(total housework hours) = 0.34 ln (hours housework, own) - 0.50 ln(total housework hours).* Then, if woman perform (nearly) all the housework needed, it contributes negatively to her life satisfaction (*-0.16 ln(total housework hours)*), even if the coefficient before the logarithm of her own housework time share suggests that she enjoys to have greater hours of housework than her husband. In fact, similar picture can be observed on the two figures cited above. When wife's hours of housework increase, only the probability of the least satisfied category grows for her, while for men all at least neutral ones are growing.

6 Conclusions

The fact that women in Russia systematically feel less happy than men may be an evidence of the fact that transition was particularly harmful to the female population. While the intuition behind would be that women may be less prone to face uncertainty and risk that are associated with market economy and moreover, that they are discriminated in the labour market, the source of such unhappiness could also lay in difficulty to meet the social norms, e.g. related to the gender family roles, in the new socio-economic conditions.

In the present paper I assume that observing an impact of the gender roles related categories, one can speculate about the social norms spread in a society. I investigate whether the change in society preferences over the time-use decisions and shares of the income contributions of spouses could be among the factors responsible for the "unusual" unhappiness of the Russian women. I assume that all the decisions are taken by the spouses in non-cooperative settings (leaving other theoretical possibilities for the further research) and use a seemingly unrelated bivariate ordered probit model as a modelling strategy. In fact, in all the specifications tested, the hypothesis of the spouses equations independence was rejected.

For the period of 1994 – 1998, interpretation of the models' coefficients is in accordance with the traditional gender roles. Women were more likely to be happier if spending less time in the labour market and enjoying more leisure time available. Men were less likely to be happy when having more leisure time available, possibly due to the fact that in the declining economy conditions leisure cannot be enjoyed being the time not spent on market work, and hence, for providing the own family with the necessities. Moreover, "leisure time enjoyment" is often associated with some activity requiring money spending. Wives are found to be neutral (in sense of the influence on the individual life satisfaction) about their leisure time, if all the activities including childcare are considered as housework. Help from the spouse is appreciated (supportive behaviour). The latter might be both a post-socialist doctrine heritage, or the first sign of women's emancipation "at home". When some part of housekeeping activities is already delegated to the husband, raising children still remains mainly the women's duty. The number of hours spent by women on taking care of their children reduces significantly the women's free time available. This can be named among the reasons of less life satisfaction of women with respect to men.

Both, analysis of the time categories impact on life satisfaction ("work" vs. "non-work") and of the impact of income-share based measures, leads me to the conclusion, that man was considered as the main breadwinner by both genders. So, while women did appreciate an increase in "non-working" hours, men did not. The same was valid for the opinion on the partners' time categories. When the income shares are analysed, one can discover that the fact of bringing a higher share of income than a spouse, had a significantly positive impact on husband's satisfaction, but negative on the women's one.

Unfortunately, the detailed time-use questionnaires are not available for the period of

the economic stabilisation of 2000-2004. Nevertheless, some changes in individual perception of norms can be noted. Women, even if still positively evaluating an increasing workload of their husbands, become neutral about their own non-working time available. Analogously, men are less approving to have their partners as housewives. In a similar manner, women themselves seem to be less prone to consider men as the main breadwinners (while men still do). The aggregate time-use categories analysis supports, together with the social opinion on gender roles, the tendency toward gradual emancipation of women, which could be one of the driving forces of the change in individual preferences and satisfaction gap magnitude.

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7 Appendix

7.1 Model details

7.1.1 General notations and notes

If each of the spouses takes the other's behaviour as given and decides non-cooperatively on the number of hours to supply to the labour market, then two optimization problems are solved *simultaneously*.

L_i - hours supplied to the labour market by a spouse i,

w_i - exogenous wage rate (per hour)

Z_i -"non-market activities",

Y - pooled labour income of two spouses,

G - a household "public good" produced with inputs of time (housework) by two partners, with η_1 and η_2 being elasticities (time inputs of wife and husband). Marginal productivities: $G_{H_m} > 0$, $G_{H_f} > 0$, $G_{H_m H_m} < 0$, $G_{H_f H_f} < 0$, moreover, time contributions of two spouses to production of the household good are substitutes $G_{H_m H_f} < 0$.

H_i - household non remunerated work time

Z_i^* - pure leisure ("private good") (leisure consumption function has a positive and decreasing first derivative (the same function for each spouse))

β - coefficients (estimated constants)

7.1.2 "$Work$" + "$NonWork$"

$$\max U_i = \beta_{1i} \ln(Z_i) + \beta_{2i} \ln(Y) \tag{8}$$

$$\text{s.t. } Y = w_f L_f + w_m L_m$$
$$Z_i = 24 - L_i$$
$$i = f\text{(emale)},m\text{(ale)}$$

An augment of the joint income could be evaluated differently by wife and husband (and so $\beta_{2f} \neq \beta_{2m}$).

$\beta_{1i} > 0$, $\beta_{2i} > 0$: preferences of individuals over leisure time and income(consumption) and can differ between spouses

Indirect utility function:

$$\max_{L_f} U_f = \beta_{1f} \ln(24 - L_f) + \beta_{2f} \ln(w_f L_f + w_m \bar{L}_m)$$

Changes in wife's utility level due to changes in husband's labour market hours:

$$\frac{\partial U_f}{\partial L_m} = \frac{w_m \beta_{2f}}{w_m L_m + w_f L_f} > 0$$

She receives a positive marginal utility when her husband augments his labor supply (given fixed wage rate it is equivalent to an increase in their pooled income).

At the same time, wife will tend to decrease her own hours worked

$$\frac{\partial L_f}{\partial L_m} = \frac{-\beta_{1f}w_m}{(\beta_{1f} + \beta_{2f})w_f} < 0$$

.

F.O.C.

$$\frac{\partial U_f}{\partial L_f} = -\frac{\beta_{1f}}{24 - L_f} + \frac{\beta_{2f}w_f}{w_f L_f + w_m L_m} = 0$$

From where the "best response" of wife, in a sense of hours worked in the labour market, to a number of hours worked by husband is received as:

$$L_f = \frac{24\beta_{2f}w_f - \beta_{1f}w_m L_m}{(\beta_{1f} + \beta 2f)w_f}$$

Maximal utility received by wife when she made a "best response" is':

$$[\beta_{1f}\ln\frac{\beta_{1f}}{\beta_{1f} + \beta_{2f}} + \beta_{2f}\ln\frac{\beta_{2f}}{\beta_{1f} + \beta_{2f}}] + (\beta_{1f} + \beta_{2f})\ln(24w_f + w_m L_m) - \beta_{1f}\ln w_f$$

The F.O.C. remain the same in case when $I(.)$, index function, equal to 1 if the condition in parenthesis is true and 0 otherwise, is included into the maximised utility function.

Now let us introduce into the individual utility functions a share of income brought to the household by each of the spouses.

$$\max U_i = \beta_{1i}\ln(Z_i) + \beta_{2i}\ln(Y) + \beta_{3i}\ln(\frac{w_f L_f}{Y}) \tag{9}$$

$$\text{s.t. } Y = w_f L_f + w_m L_m$$
$$Z_i = 24 - L_i$$
$$i = f\text{(emale)},m\text{(ale)}$$

Notes on the coefficients signs:
$\beta_{1i} \leq 0$, $\beta_{2i} > 0$ for $i = f(emale), m(ale)$,
$\beta_{3f} < 0$ - "traditional" wife,
$\beta_{3f} \leq 0$ - "emancipated" wife
$\beta_{3m} > 0$ - "traditional" husband

$$\frac{\partial U_f}{\partial w_m} = \frac{\beta_{2f}L_m}{w_f L_f + w_m L_m} - \frac{\beta_{3f}L_m}{w_f L_f + w_m L_m} = \frac{L_m(\beta_{2f} - \beta_{3f})}{w_f L_f + w_m L_m} > 0$$

Wife is happier when husband's earnings grow if $\beta_{3f} < 0$. An "emancipated wife" ($\beta_{3f} > 0$) then is happier only if $\beta_{2f} > \beta_{3f}$, her main focus is on the increase of the household income not on the source (spouse) the money came from.

Wife's solution (choice of hours to work):
F.O.C.

$$\frac{\partial U_f}{\partial L_f} = -\frac{\beta_{1f}}{24 - L_f} + \frac{\beta_{2f}w_f}{w_f L_f + w_m L_m} + \beta_{3f}\frac{w_m L_m}{w_f L_f + w_m L_m} = 0$$

Best response as a solution of this equation:

$$(\beta_{1f} + \beta_{2f})w_f L_f^2 + (\beta_{1f}w_m L_m - 24\beta_{2f}w_f + \beta_{3f}w_m L_m)L_f - 24\beta_{3f}w_m L_m = 0$$

7.1.3 "$Work$" **+** "$Housework$" **+** "$Leisure$"

(these two categories were aggregated in one called "non-market activity"). Now let us assume that a household produces some "household (public) good" G, with the Cobb-Douglas production technology requiring both spouses' housework time among the inputs (in line with the time allocation approach). Then if L_i stays for the hours of remunerated work, and η_1 and η_2 are elasticities of the household production function[11] with the time input of wife and husband respectively, we rewrite the individual optimization problems as following.

$$\max U_i = \gamma_{1i} \ln(Y) + \gamma_{2i} \ln(G) + \gamma_{3i} \ln(Z_i^*) \tag{10}$$

$$\text{s.t. } Y = w_f L_f + w_m L_m$$
$$24 = L_i + H_i + Z_i^*$$
$$G = H_f^{\eta_1} H_m^{\eta_2}$$
$$i = f(\text{emale}), m(\text{ale})$$

Wages w_m and w_f are exogenously given. Three time use categories produce the additive contributions to individual utility function. Each of the time uses is "normal", so the increase of the time endowment would entail an increase in time spent on these activities. Every unit of the total labour income of the household (Y) is equally valuable regardless of its source. Both spouses contribute to the household good production and derive the same marginal utility from it. Leisure time (Z_i^*) is "consumed" individually by each of the partners.

In case when the weights (coefficients γ) of each of the three components of the individual utility function are the same for both partners in the household, husbands and wives with similar wage rates should enjoy the same amounts of leisure time, while a better-paid spouse should have less leisure time (result reported by Beblo and Robledo, 2007). Also, an increase in the hours worked by men L_m (or man's labour income $Y_m = w_m L_m$) reduces the optimal number of hours supplied to the labour market by his wife, but augments the amount of time spent by her on household keeping activities.

Simultaneous independent optimization (Nash-Cournot). Partner's behaviour is taken as given. For example, the woman optimizes with respect to L_f and H_f the following indirect utility function:

$$U_f = \gamma_{1f} \ln(w_f L_f + w_m L_m) + (\gamma_{2f}\eta_1) \ln(H_f) + (\gamma_{2f}\eta_2) \ln(H_m) + \gamma_{3f} \ln(24 - L_f - H_f)$$

F.O.C. (No corner solutions assumed)

$$\frac{\partial U_f}{\partial L_f} = \frac{\gamma_{1f} w_f}{w_f L_f + w_m L_m} - \frac{\gamma_{3f}}{24 - L_f - H_f}$$

_____

[11] If constant return to scale is assumed for the 'household good' production function then $\eta_1 + \eta_2 = 1$.

$$\frac{\partial U_f}{\partial H_f} = \frac{\gamma_{2f}\eta_1}{H_f} - \frac{\gamma_{3f}}{24 - L_f - H_f}$$

Given men's decision on this time distribution between the activities, solution for woman is the following

$$L_f = \frac{\gamma_{1f}w_f 24(\gamma_{1f} + \gamma_{3f}) - w_m L_m(\gamma_{3f})(\gamma_{1f} + \gamma_{2f}\eta_1 + \gamma_{3f}) + \gamma_{1f}\gamma_{2f}\eta_1}{w_f(\gamma_{1f} + \gamma_{2f}\eta_1 + \gamma_{3f})}$$

$$H_f = \frac{\eta_2\gamma_{2f}(24w_f + w_m L_m)}{w_f(\gamma_{1f} + \gamma_{2f}\eta_1 + \gamma_{3f})}$$

so, increase of the hours worked by husband L_m (or man's labour income $Y_m = w_m L_m$ reduces the optimal number of hours supplied to the labour market by his wife, but augment the amount of time spent by her on household keeping activities.

$$\frac{\partial L_f}{\partial L_m} = -\frac{w_m(\gamma_{3f})(\gamma_{1f} + \gamma_{2f}\eta_1 + \gamma_{3f}) + \gamma_{1f}\gamma_{2f}\eta_1}{w_f(\gamma_{1f} + \gamma_{2f}\eta_1 + \gamma_{3f})} < 0$$

The effect of "his hours worked" on "her hours of housework" is the opposite: when husband contributes more to the common income, wife contributes more to the creation of the "household public good"

$$\frac{\partial H_f}{\partial L_m} = \frac{\eta_1\gamma_{2f}w_m}{w_f(\gamma_{1f} + \gamma_2(\eta_1 + 1))}$$

7.2 Variables description

Time use variables. The following aggregated categories are constructed using the detailed time-use questionnaires for 1994-1998:

- $Work$. Hours of work reported, last week (all values greater than 95 percentile, each round, are recoded to the 95th percentile value).

- *Homework*. Hours per week, household keeping activities including (purchasing of food items, cooking and washing dishes, cleaning, laundry and ironing) (all values greater than 95 percentile, each round, are recoded to the 95th percentile value). In order to prevent dropping from the sample those couples where one of the partners did not report a number of hours worked for housekeeping, I use an approach similar to Del Boca and Flinn (2005) and substitute with a value of 1 hour zero and unreported hours of housework.

- *Leisure*. Hours per week of "pure" leisure. $= 168 - Work - Homework$

- $Homework_{ch}$. Hours per week, household keeping activities including those is "homework" plus *taking care of children*

- $Leisure_{ch}$ Hours per week of "pure" leisure $= 168 - Work - Homework_{ch}$

The following less detailed time-use categories are available for both, 1994-1998 and 2000-2004:

- $Work_{week}$. Average hours worked a week during a month before interview at the primary job. (Hours of work reported (last month) divided by 4).

- $NonWork_{week}$. Non-market activities, hours per week $(168 - Work_{week})$

When constructing the aggregated time-use categories, the following procedure was exploited (similarly to Gupta, 2007):

1. all the values higher than 95% of each of the variables are recoded to that percentile (estimated on all the variables available for each round, by genders) to exclude the possible outliers

2. to keep as more observations as possible for the analysis, missing values in the variables describing the housekeeping activities were substituted with zeros

3. activities are summed up to create an aggregated category

4. to insure that hours of housework are not zero, in the aggregated variables the hours of housework are substituted with 1 hour per week

5. included into estimated equations in log-form

Income related variables

- *Monthly wage from the primary job* from the RLMS question: "How much money in the last 30 days did you receive from your primary job after taxes? If you received all or part of the money in foreign currency, please concert that into Rubles and repeat the total"; the question is asked only if "yes" is answered to a question "At your primary job in the last 30 days did you receive some amount of money in form of wages, bonuses, grants, benefits, revenues, or profits?"

- *Monthly total personal income* form the RLMS question: "'Try to remember, please: What is the total amount of money that you personally received in the last 30 days. Please, include everything: wages, retirement pensions, premiums, profits, material aid, incidental earnings, and other receipts, including foreign currency, but convert the currency into Rubles."'

- *Wage*. Per hour wage at primary job including in-kind payments (last month) in 1992 rubles. $= Wage_{last.month}/Work_{last.month}$[12]

- $Ln(totalexpend)$. Logarithm of total household expenditures in rubles of 1992. Used as a proxy for household income due to the World Bank recommendations.

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[12]Both variables previously recoded to the 95th percentile value if the value reported is higher

Socio-demographical and family related controls

- *Gender.* Sex of the respondent (1 = men, 2 = women). Some observations (< 10) are dropped after having merged all the rounds due to inconsistency of the variable.

- *Age*, *age squared.* Constructed using "the most probable year of birth" resulted after having merged the data.

- *Health problems.* Dummy. Reply to the survey question "Have you in the last 30 days had any health problems?" (1 = had health problems, 0 = otherwise)

- *Child0-6*, *Child7-18.* Number of children younger than 6 y.o. (younger than school age), and of children from 7 to 18 y.o. in the household.

- *Other males*, *Other females*, *Older w.a..* Number of other adults of working age in household, males and females, respectively, and number of household members older than working age.

- *Own house.* House perceived as own (privatized or not) (1 = own house or apartment, 0 = otherwise)

Regions. The following eight Geographical Regions are suggested by the RLMS documentation: Metropolitan areas (Moscow and St. Petersburg), Northern and North Western, Central and Central Black-Earth, Volga-Vyatski and Volga Basin, North Caucasian, Ural, Western Siberian, Eastern Siberian and Far East.

7.3 Social opinion on gender roles

Different opportunities of professional growth for two genders were perceived by both employers and employees already in the Soviet Union (Clark and Sacks, 2004). The fact that Soviet women had fewer opportunities than men to hold responsible positions in the economic bureaucracy, was reported by nearly 60% of men and 50% of women participated in the "Soviet Interview Project" survey which covered about 3000 of migrants arrived in the United States in 1979-1982 (Linz, 1996).

There is a range of the Survey questions, which allows assessing the level of traditionalism in the modern Russian society. These questions differs from Round to Round of the Survey. Further in this sections the descriptive statistics (percentages of particular answers) are listed, including all the observations available for each round.

- **1996**: *"men & women – equal in work?"*

	Men, %	Women, %
Completely agree	26.05	36.27
Agree	52.18	52.31
Disagree	18.64	9.76
Completely disagree	3.13	1.66
Total, obs	3,390	4,456

- **1998**: *"Do you agree that for the organization of any work, men and women need to have equal abilities?"*

	Men, %	Women, %
Completely agree	33.08	46.04
Agree	48.42	44.96
Disagree	15.47	8.10
Completely disagree	3.02	0.89
Total, obs	3,606	4,715

- **2000**: *"Do you agree or disagree with the notion that it is usually bad for a family if the wife works?"*

	Men, %	Women, %
Completely agree	12.66	10.13
Agree	29.56	25.12
Disagree	46.33	49.89
Completely disagree	11.44	14.86
Total, obs	3,609	4,905

- *"Do you agree or disagree with the notion that if the wife works then she held a higher respect in the family than if she were simply a housewife?"*

	Men, %	Women, %
Completely agree	11.54	19.21
Agree	32.70	38.24
Disagree	45.72	35.36
Completely disagree	10.05	7.19
Total, obs	3,563	4,814

- *"What do you think?"*

	Men, %	Women, %
(1) Men and women have the same possibility of finding good, high paying work	43.65	36.39
(2) Men have a greater possibility	50.53	60.60
(3) Women have a greater possibility	5.82	3.00
Total, obs	3,679	4,861

- **2003**: *"To what extent do you agree or disagree with each of the following statements? It's husband's responsibility to earn money and a wife's responsibility to take case of the house and children"*

	Men, %	Women, %
Completely agree	28.49	22.98
Agree	37.78	32.76
Both yes and no	20.87	21.69
Disagree	11.23	18.86
Completely disagree	1.63	3.71
Total, obs	4,471	5,961

- *"Men and women should play equally important parts in politics"*

	Men, %	Women, %
Completely agree	10.30	15.55
Agree	45.58	52.68
Both yes and no	21.94	18.93
Disagree	19.12	11.75
Completely disagree	3.07	1.08
Total, obs	4,399	5,736

- *"It is more suitable for a men than for a women to be a leader or manager"*

	Men, %	Women, %
Completely agree	20.85	12.34
Agree	41.81	30.84
Both yes and no	20.09	20.51
Disagree	15.36	31.21
Completely disagree	1.89	5.09
Total, obs	4,441	5,869

- *"In our time various opinions are given on who should be the head of the family. Which statement is closest to your opinion on this subject? (1) The husband should be responsible for the family, the head of the family, and the wife should be obedient to her husband, (2) The husband and the wife should have equal rights and be equally responsible for the family, (3) The wife should be responsible for the family, the head of the family"*

	Men, %	Women, %
(1)	28.58	14.32
(2)	70.00	83.68
(3)	1.42	2.00
Total, obs	4,503	6,005

- *"Imagine this unpleasant scenario: the enterprise or organization where you work for some reason will close tomorrow and all workers will be laid off. How certain are you that you will be able to find work no worse than your present job?"*

Men

	Absolutely certain	Fairly certain	Both yes and no	Fairly uncertain	Absolutely uncertain	Total,obs
1994	18.95	16.01	13.37	26.74	24.92	2,311
1995	18.17	16.15	15.07	23.16	27.45	2,124
1996	14.01	15.23	16.30	26.13	28.32	1,963
1998	11.44	12.63	15.22	26.23	34.48	1,853
2000	15.33	20.75	18.33	24.52	21.06	1,937
2001	22.46	21.96	15.49	22.41	17.68	2,195
2002	19.15	24.17	15.15	23.43	18.10	2,271
2003	17.83	24.65	15.84	25.22	16.46	2,260
2004	16.23	24.26	19.45	23.01	17.05	2,329

Women

	Absolutely certain	Fairly certain	Both yes and no	Fairly uncertain	Absolutely uncertain	Total,obs
1994	10.07	9.36	9.69	27.15	43.73	2,383
1995	9.47	10.10	13.12	26.92	40.40	2,218
1996	8.83	9.73	10.39	28.06	42.99	2,117
1998	7.13	7.28	10.72	25.27	49.61	2,034
2000	10.55	14.80	13.73	27.36	33.57	2,142
2001	15.41	16.27	13.28	26.43	28.61	2,440
2002	14.88	18.11	14.88	24.47	27.66	2,607
2003	14.13	19.53	14.85	25.54	25.95	2,647
2004	12.67	19.89	15.70	26.21	25.53	2,675

7.4 Tables and figures

Table 1: Singles vs. living in partnership. Mean life satisfaction by year and gender.

year	couple	mean(m)	obs(m)	mean(w)	obs(w)	t-stat.	Pr(mean(m) $<$ $mean(w))^{(a)}$
1994	single	1.14	276	1.07	425	1.00	0.16
	partnership	1.36	1287	1.23	1335	3.08	0.00
1995	single	1.07	246	1.06	416	0.03	0.49
	partnership	1.34	1205	1.22	1246	2.71	0.00
1996	single	1.04	254	0.96	424	1.02	0.15
	partnership	1.25	1193	1.07	1196	4.36	0.00
1998	single	0.90	238	0.91	429	-0.13	0.55
	partnership	1.15	1211	0.99	1216	3.95	0.00
2000	single	1.23	229	1.13	477	1.27	0.10
	partnership	1.40	1205	1.28	1202	2.74	0.00
2001	single	1.49	285	1.35	584	1.81	0.04
	partnership	1.61	1272	1.52	1298	2.12	0.02
2002	single	1.49	323	1.52	632	-0.36	0.64
	partnership	1.92	1288	1.77	1283	3.36	0.00
2003	single	1.55	308	1.44	644	1.43	0.08
	partnership	1.83	1270	1.69	1268	3.24	0.00
2004	single	1.60	317	1.60	698	0.07	0.47
	partnership	1.97	1232	1.82	1221	3.67	0.00

Sample: prime-age individuals (25-54 y.o.), both working and not.

Notes: Life-satisfaction (LS) is coded from 4="very satisfied" to 0="very unsatisfied"

mean(m) and *mean(w)* stand for mean satisfaction scores among men and women respectively

(a): Hypothesis tested H0: mean(LS men) = mean(LS women); Ha: mean(LS men) $<$ mean(LS women)

Source: own elaboration on RLMS.

Figure 1: Singles vs. living in partnership. Mean life satisfaction by year and gender.
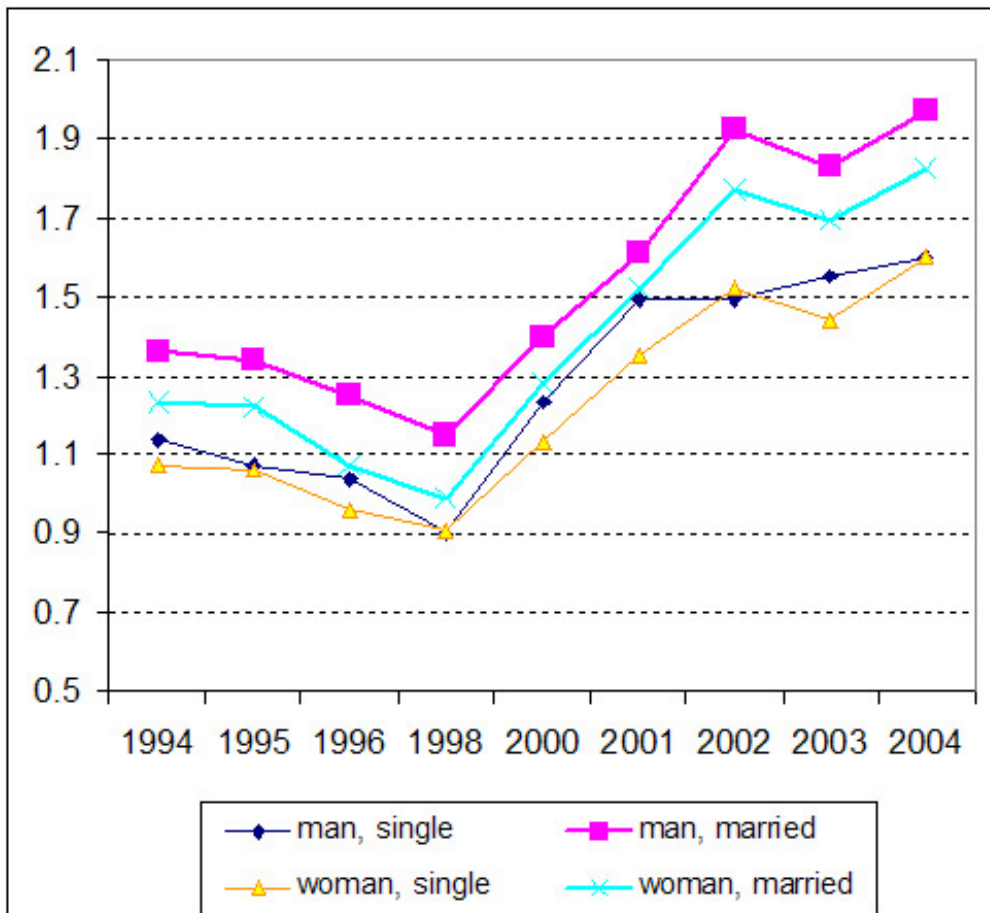
Sample: prime-age individuals (25-54 y.o.).

Notes: Life-satisfaction is coded from 4="very satisfied" to 0="very unsatisfied".

Source: own elaboration on RLMS.

Table 2: Descriptive statistics

	1994-1998		2000-2004	
	mean	st. dev.	mean	st. dev.
LS (0 - 4)	1.23	1.04	1.71	1.09
Children under 6 y.o.	0.35	0.60	0.13	0.37
Children 6 - 14 y.o.	1.16	0.87	0.92	0.82
Household size	3.89	1.06	3.65	1.07
Owning house/flat, %	87		92	
Men				
LS (0 - 4)	1.33	1.05	1.81	1.09
Per hour wage (1992 year RUR)	27.90	42.50	27.85	29.72
Market work, hrs. week	44.83	14.09	46.26	13.13
Housework, hrs. week	4.54	5.92	n.a.	n.a.
Share housework hrs., own	.14	.15	n.a.	n.a.
Total workload, hrs. week	49.41	14.94	n.a.	n.a.
Age	37.10	5.20	43.05	5.05
Health problems, %	26		28	
Wage, last month (1994, 2000)	338337	251962	2469	1972
Women				
LS (0 - 4)	1.13	1.01	1.61	1.08
Per hour wage (1992 year RUR)	20.22	30.13	19.94	26.72
Market work, hrs. week	37.63	12.17	39.56	11.04
Housework, hrs. week	27.95	13.64	n.a.	n.a.
Share housework hrs, own	0.84	0.17	n.a.	n.a.
Total workload, hrs. week	65.68	17.94	n.a.	n.a.
Age	36.23	5.24	41.99	5.17
Health problems, %	36		38	
Wage, last month (1994, 2000)	191213	147792	1440	1213

Sample: prime-age individuals (25-54 y.o.) living in partnership.

Notes: Wages received during the last month are evaluated for the starting years for each period, 1994 and 2000 respectively. When comparing these values, one should recall the denomination of Ruble which took place on the 01.01.1998 (one "new" ruble was set to be equal to 1000"old" Rubles).

Source: own elaboration on RLMS.

Table 3: Time use categories, 1994 and 1998. Descriptive statistics.

time-use category	men				women			
	mean	s.d.	p50	obs.	mean	s.d.	p50	obs.
1994								
work	37.62	20.76	40.00	1159	29.13	19.27	36.00	1040
comm	4.56	4.13	3.00	1159	3.28	3.38	2.00	1040
gard	0.20	0.47	0.00	1159	0.13	0.38	0.00	1040
purch	1.66	2.96	0.00	1159	4.72	4.32	4.00	1040
cook	1.95	3.41	0.00	1159	16.07	8.61	14.00	1040
clean	2.63	4.46	0.67	1159	6.71	5.02	6.00	1040
laundr	0.33	1.14	0.00	1159	5.15	3.96	4.00	1040
14child	8.54	11.08	5.00	1159	19.17	22.42	14.00	1040
ochild	0.31	2.20	0.00	1159	0.79	4.25	0.00	1040
50care	0.58	2.76	0.00	1159	0.80	3.12	0.00	1040
sleep	50.54	8.70	49.00	1159	50.27	8.61	49.00	1040
1998								
work	34.10	22.05	40.00	887	31.31	18.42	37.00	829
comm	3.72	3.63	2.50	887	3.39	3.29	2.50	829
gard	0.19	0.46	0.00	887	0.14	0.39	0.00	829
purch	0.99	1.99	0.00	887	3.18	3.03	2.50	829
cook	1.52	2.89	0.00	887	13.81	7.77	14.00	829
clean	0.62	1.35	0.00	887	4.83	4.07	4.00	829
laundr	0.20	0.69	0.00	887	3.51	2.58	3.00	829
14child	6.47	10.52	0.08	887	12.47	18.76	3.00	829
ochild	0.30	2.28	0.00	887	0.97	5.14	0.00	829
50care	0.32	1.63	0.00	887	0.60	2.62	0.00	829
sleep	49.98	12.05	50.00	887	50.55	9.55	50.00	829

Notes: the following abbreviations are used: "work" - hours in market activities, "comm" - hours commuting, "gard" - hours gardening, "purch" - hours purchasing food items, "cook" - hours cooking/washing dishes, "clean" - hours cleaning house, "laundr" - hours doing laundry/ironing, "14child" - hours taking care of children under 14 y.o., "ochild" - hours taking care of other children, "50care" - hours taking care of relatives older 50 y.o., "sleep" - hours sleeping.
Source: own elaboration on RLMS

Table 4: Bivariate ordered probit: two time-use categories and share of income

	1994-1998		2000-2004		1994-1998		2000-2004	
	woman	man	woman	man	woman	man	woman	man
	(1)		(2)		(3)		(4)	
Ln(hours in non market activities), own	0.54**	-0.44**	-0.28	-0.32*	0.78***	-0.55***	-0.21	-0.45**
	[0.26]	[0.18]	[0.26]	[0.17]	[0.29]	[0.20]	[0.29]	[0.19]
Ln(hours in non market activities), partner's					-0.21	0.54*	-0.32*	0.12
					[0.20]	[0.29]	[0.18]	[0.29]
Income share, own	-0.03	0.15*	-0.11	0.45***	-0.01	0.13	-0.06	0.43***
	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]
Ln(total expend.)	0.38***	0.30***	0.38***	0.38***	0.38***	0.30***	0.37***	0.38***
	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]
Socio-dem. controls, regional and time dummies	yes	yes	yes	yes	yes	yes	yes	yes
cut1	2.03	-2.78***	-2.87**	-2.67***	2.16	-0.63	-4.04**	-2.7
	[1.30]	[0.92]	[1.29]	[0.88]	[1.65]	[1.66]	[1.66]	[1.68]
cut2	3.11**	-1.67*	-1.64	-1.49*	3.25**	0.48	-2.82*	-1.53
	[1.30]	[0.91]	[1.28]	[0.88]	[1.65]	[1.66]	[1.66]	[1.68]
cut3	3.88***	-0.92	-0.93	-0.77	4.02**	1.23	-2.11	-0.8
	[1.30]	[0.91]	[1.28]	[0.88]	[1.65]	[1.66]	[1.66]	[1.68]
cut4	4.78***	-0.15	0.32	0.51	4.92***	2	-0.86	0.47
	[1.29]	[0.91]	[1.28]	[0.88]	[1.64]	[1.66]	[1.65]	[1.68]
atrho	0.48***		0.48***		0.48***		0.48***	
	[0.03]		[0.03]		[0.03]		[0.03]	
Observations	2010	2010	2726	2726	2010	2010	2726	2726
N clusters	1074		1092		1074		1092	
Log-likelihood	-5178		-7161		-5176		-7159	
Log-likelihood(0)	-5341		-7392		-5339		-7390	
Wald Chi2(22)	174.2		339		176.6		338.4	
Wald Chi2(1) (independent equat.)	239.4		277.7		239.4		277.3	

Notes: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Socio-economic controls: age, presence of health problems (dummy), ownership of apartments/house, higher education, number of children aged 0-6 and 7-18, number of other males and females in the household.

Sample: working prime-age adults living in partnership

Source: own elaboration on RLMS

Table 5: Bivariate ordered probit: two time-use categories and indicator of earning more than spouse

	1994-1998		2000-2004		1994-1998		2000-2004	
	woman	man	woman	man	woman	man	woman	man
	(1)		(2)		(3)		(4)	
Ln(hours in non market activities), own	0.53**	- 0.30*	-0.22	- 0.45***	0.70***	- 0.36**	-0.14	- 0.55***
	[0.24]	[0.16]	[0.24]	[0.16]	[0.26]	[0.18]	[0.28]	[0.18]
Ln(hours in non market activities), partner's					-0.10	0.39	-0.25	0.16
					[0.18]	[0.26]	[0.17]	[0.28]
$I(share\ income > 0.5)$, own	- 0.11**	0.21***	-0.05	0.20***	- 0.10**	0.21***	-0.03	0.19***
	[0.05]	[0.05]	[0.05]	[0.05]	[0.05]	[0.05]	[0.05]	[0.05]
Ln(total expend.)	0.39***	0.30***	0.39***	0.38***	0.39***	0.30***	0.38***	0.38***
	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]
Socio-dem. controls, regional and time dummies	yes	yes	yes	yes	yes	yes	yes	yes
cut1	1.87	- 1.96**	-1.95	- 2.86***	2.22	-0.31	- 2.76*	-2.57
	[1.21]	[0.81]	[1.20]	[0.82]	[1.51]	[1.50]	[1.56]	[1.60]
cut2	2.96**	-0.87	-0.74	- 1.72**	3.31**	0.77	-1.55	-1.43
	[1.21]	[0.81]	[1.20]	[0.82]	[1.51]	[1.50]	[1.56]	[1.60]
cut3	3.72***	-0.13	-0.03	-0.99	4.07***	1.52	-0.84	-0.70
	[1.21]	[0.81]	[1.20]	[0.82]	[1.51]	[1.50]	[1.56]	[1.61]
cut4	4.62***	0.65	1.21	0.25	4.97***	2.30	0.40	0.54
	[1.20]	[0.81]	[1.20]	[0.83]	[1.50]	[1.50]	[1.56]	[1.61]
atrho	0.50***		0.48***		0.50***		0.48***	
	[0.03]		[0.03]		[0.03]		[0.03]	
Observations	2295		2945		2295		2945	
N clusters	1163		1152		1163		1152	
Log-likelihood	-5847		-7786		-5846		-7784	
Log-likelihood(0)	-6047		-8035		-6045		-8033	
Wald Chi2(22)	232.1		379.9		234.9		377.8	
Wald Chi2(1) (independent equat.)	291.0		299.2		291.0		299.0	

See notes under Table 4

$I(share\ income > 0.5)$ stays for the share contributed by the spouse to the "total income" - a sum of wife's and husband's incomes received during a month before interview.

Table 6: Bivariate ordered probit: two time-use categories and share of own incomes

	1994-1998		2000-2004		1994-1998		2000-2004	
	women	men	women	men	women	men	women	men
	(1)		(2)		(3)		(4)	
Ln(hours in non market activities), own	0.55*	-0.35	-0.10	-0.12	1.00***	-0.44*	0.05	-0.28
	[0.31]	[0.21]	[0.30]	[0.20]	[0.35]	[0.24]	[0.34]	[0.22]
Ln(hours in non market activities), partner's					-0.06	1.03***	-0.35*	0.27
					[0.25]	[0.36]	[0.20]	[0.32]
Ln(share of income), own	-0.01	0.05	0.04	0.22***	-0.01	0.05	0.05	0.21***
	[0.05]	[0.04]	[0.05]	[0.06]	[0.05]	[0.04]	[0.05]	[0.06]
Ln(total exp)	0.38***	0.30***	0.36***	0.35***	0.38***	0.31***	0.35***	0.35***
	[0.05]	[0.05]	[0.04]	[0.05]	[0.05]	[0.05]	[0.05]	[0.05]
Socio-dem. controls, regional and time dummies	yes	yes	yes	yes	yes	yes	yes	yes
cut1	1.78	-2.44**	-2.03	-1.84*	3.67*	2.21	-3.00	-1.23
	[1.56]	[1.07]	[1.48]	[1.00]	[2.03]	[2.05]	[1.89]	[1.86]
cut2	2.87*	-1.30	-0.80	-0.64	4.76**	3.35	-1.76	-0.03
	[1.56]	[1.07]	[1.48]	[0.99]	[2.03]	[2.05]	[1.89]	[1.85]
cut3	3.66**	-0.56	-0.10	0.09	5.55***	4.10**	-1.06	0.70
	[1.56]	[1.07]	[1.48]	[0.99]	[2.03]	[2.05]	[1.89]	[1.85]
cut4	4.57***	0.28	1.18	1.40	6.47***	4.94**	0.22	02.02
	[1.56]	[1.07]	[1.48]	[1.00]	[2.03]	[2.05]	[1.89]	[1.86]
atrho	0.52***		0.51***		0.52***		0.51***	
	[0.04]		[0.03]		[0.04]		[0.03]	
Observations	1408		2284		1408		2284	
N clusters	861		987		861		987	
Log-likelihood	-3670		-5981		-3665		-5979	
Log-likelihood(0)	-3806		-6196		-3802		-6193	
Wald chi2 (21)	116.5		250.2		121.4		251.4	
Wald chi2 (1) (indep. equat)	211.2		284.0		211.4		282.2	

See notes under Table 4.

Table 7: Bivariate ordered probit: three time uses. Housework does not include child care.

	woman	man	woman	man	woman	man	woman	man
	(1)		(2)		(3)		(4)	
Ln(hrs housework), own	-0.04	-0.00	-0.03	0.01	-0.16**	-0.26	-0.09	0.02
	[0.05]	[0.02]	[0.06]	[0.03]	[0.08]	[0.17]	[0.06]	[0.03]
Ln(hrs housework), partner's			0.04*	0.01	0.12***	0.26	0.06**	0.00
			[0.03]	[0.05]	[0.04]	[0.16]	[0.03]	[0.05]
Ln(hrs leisure), own	0.34**	-0.15	0.35**	-0.15	0.28*	-0.17	0.29*	-0.14
	[0.17]	[0.19]	[0.17]	[0.19]	[0.17]	[0.19]	[0.17]	[0.19]
Ln(own housework share)					0.50**	0.33		
					[0.23]	[0.20]		
I(own housework share >0.5)							0.32*	-0.05
							[0.16]	[0.15]
Ln(total expend.)	0.43***	0.33***	0.42***	0.33***	0.42***	0.32***	0.42***	0.33***
	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]
Socio-dem. controls, regional and time dummies	yes	yes	yes	yes	yes	yes	yes	yes
cut1	0.68	-1.38	0.81	-1.33	0.10	-1.67*	0.71	-1.29
	[0.91]	[0.93]	[0.93]	[0.94]	[0.96]	[0.98]	[0.93]	[0.97]
cut2	1.76*	-0.29	1.90**	-0.23	1.19	-0.57	1.79*	-0.20
	[0.91]	[0.93]	[0.93]	[0.94]	[0.96]	[0.98]	[0.93]	[0.97]
cut3	2.53***	0.50	2.67***	0.56	1.96**	0.22	2.56***	0.59
	[0.91]	[0.93]	[0.92]	[0.94]	[0.96]	[0.98]	[0.92]	[0.97]
cut4	3.46***	1.29	3.60***	1.34	2.89***	1.00	3.49***	1.38
	[0.91]	[0.93]	[0.92]	[0.95]	[0.95]	[0.98]	[0.92]	[0.97]
atrho	0.51***		0.51***		0.51***		0.51***	
Observations	2015		2015		2015		2015	
N clusters	1075		1075		1075		1075	
Log-likelihood	-5146		-5144		-5141		-5142	
Log-likelihood(0)	-5330		-5329		-5324		-5326	
Wald chi2(22)	227.5		231.0		238.2		235.8	
Wald chi2(1) (independent equat.)	269.4		269.7		267.5		269.5	

Notes: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Socio-economic controls: age, presence of health problems (dummy), ownership of apartments, higher education (dummy), number of children aged 0-6 and 7-18, number of other males and females in the household

Two definitions of housework hours are the following: *"Hrs housework"* includes a number of hours spent on cooking, washing the dishes, house cleaning, laundry, and purchasing the food items. *"hrs work"* + *"hrs housework"* + *"hrs leisure"* = 168 hours. *"hrs housework, ch"* = "hrs housework" + "hrs of childcare"

Sample: working prime-age adults living in partnership

Source: own elaboration on RLMS.

Table 8: Bivariate ordered probit: three time uses. Housework includes child care.

	woman	man	woman	man	woman	man	woman	man
	(1)		(2)		(3)		(4)	
Ln(hrs housework, ch), own	-0.11**	-0.00	-0.12**	0.02	-0.25***	-0.12	-0.16***	0.01
	[0.05]	[0.02]	[0.06]	[0.02]	[0.08]	[0.19]	[0.06]	[0.03]
Ln(hrs housework, ch), partner's			0.05**	-0.03	0.13***	0.10	0.06***	-0.01
			[0.02]	[0.05]	[0.04]	[0.18]	[0.02]	[0.06]
Ln(hrs leisure, ch), own	0.09	-0.13	0.11	-0.14	0.07	-0.13	0.10	-0.11
	[0.10]	[0.16]	[0.10]	[0.16]	[0.10]	[0.16]	[0.10]	[0.16]
Ln(own housework share, ch)					0.53**	0.16		
					[0.24]	[0.22]		
I(own housework share, ch >0.5)							0.28*	0.10
							[0.16]	[0.14]
Ln(total expend.)	0.42***	0.33***	0.42***	0.33***	0.42***	0.33***	0.42***	0.33***
	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]
Socio-dem. controls, regional and time dummies	yes	yes	yes	yes	yes	yes	yes	yes
cut1	-0.78	-1.29	-0.64	-1.35	-1.23*	-1.45*	-0.52	-1.16
	[0.59]	[0.80]	[0.62]	[0.83]	[0.65]	[0.88]	[0.63]	[0.85]
cut2	0.31	-0.20	0.45	-0.26	-0.14	-0.36	0.57	-0.07
	[0.59]	[0.80]	[0.62]	[0.83]	[0.64]	[0.88]	[0.63]	[0.85]
cut3	1.07*	0.59	1.22**	0.53	0.63	0.43	1.34**	0.72
	[0.59]	[0.80]	[0.62]	[0.83]	[0.64]	[0.88]	[0.63]	[0.85]
cut4	2.00***	1.38*	2.15***	1.32	1.56**	1.22	2.26***	1.51*
	[0.59]	[0.80]	[0.62]	[0.83]	[0.64]	[0.88]	[0.63]	[0.85]
atrho	0.51***		0.51***		0.51***		0.52***	
	[0.03]		[0.03]		[0.03]		[0.03]	
Observations	2013		2013		2013		2013	2013
N clusters	1074		1074		1074		1074	
Log-likelihood	-5136		-5134		-5130		-5131	
Log-likelihood(0)	-5322		-5319		-5316		-5318	
Wald chi2(22)	231.9		236.4		247.1		246.5	
Wald chi2(1)	273.7		274.2		274.1		277.9	

See Notes under Table 7. Dichotomisations of the dependent variable: $Sat01$ (0, if $LS = 0, 1$; 1, if $LS = 2, 3, 4$) and $Sat02$ (0, if $LS = 0, 1, 2$; 1, if $LS = 3, 4$).

Table 9: Bivariate probit: two time uses and total income share being greater than a half

	Dichotomisation $Sat1$				$Sat2$			
	1994-1998		2000-2004		1994-1998		2000-2004	
	woman	man	woman	man	woman	man	woman	man
	(1)		(2)		(3)		(4)	
Ln(hours in non market activities), own	0.54	-	-0.49	-	0.27	-	-0.06	-
		0.42**		0.46**		0.42*		0.50**
	[0.33]	[0.21]	[0.32]	[0.20]	[0.40]	[0.25]	[0.38]	[0.22]
Ln(hours in non market activities), partner's	-0.16	0.38	-0.23	0.18	-0.21	0.68*	-0.07	-0.01
	[0.22]	[0.32]	[0.19]	[0.33]	[0.27]	[0.38]	[0.21]	[0.36]
$I(shareincome > 0.5)$, own	-	0.14**	-0.06	0.16***	-0.06	0.17**	-0.05	0.19***
	0.12*							
	[0.07]	[0.06]	[0.06]	[0.06]	[0.08]	[0.08]	[0.06]	[0.06]
Ln(total expend.)	0.38***	0.30***	0.34***	0.35***	0.43***	0.23***	0.47***	0.42***
	[0.05]	[0.04]	[0.04]	[0.05]	[0.06]	[0.06]	[0.05]	[0.05]
Socio-dem. controls, regional and time dummies	yes	yes	yes	yes	yes	yes	yes	yes
cut1	2	0.55	-	-1.34	1.95	2.61	0.99	-0.63
			3.64**					
	[1.90]	[1.80]	[1.80]	[1.88]	[2.38]	[2.20]	[2.07]	[2.05]
atrho	0.53***		0.50***		0.66***		0.66***	
	[0.04]		[0.04]		[0.06]		[0.04]	
Observations	2295	2295	2945	2945	2295	2295	2945	2945
N clusters	1163		1152		1163		1152	
Log-likelihood	-2644		-3595		-1545		-2916	
Log-likelihood (0)	-2745		-3720		-1624		-3081	
Wald Chi2(22)	158.9		266.6		105		281.4	
Wald Chi2 (1)	163.3		207		134.7		247.9	

See notes under Table 5.

Dichotomisations of the dependent variable: $Sat01$ (0, if $LS = 0, 1$; 1, if $LS = 2, 3, 4$) and $Sat02$ (0, if $LS = 0, 1, 2$; 1, if $LS = 3, 4$).

Table 10: Bivariate probit: two time uses and total income share

	Dichotomisation $Sat1$				$Sat2$			
	1994-1998		2000-2004		1994-1998		2000-2004	
	woman	man	woman	man	woman	man	woman	man
	(1)		(2)		(3)		(4)	
Ln(hours in non market activities), own	0.72*	-0.69**	-0.21	-0.28	0.57	-0.58*	0.2	-0.3
	[0.43]	[0.28]	[0.38]	[0.24]	[0.52]	[0.33]	[0.43]	[0.26]
Ln(hours in non market activities), partner's	-0.02	0.96**	-0.34	0.47	-0.37	1.44***	-0.15	0.16
	[0.30]	[0.42]	[0.23]	[0.39]	[0.35]	[0.49]	[0.24]	[0.40]
Ln(share of income), own	-0.05	0.01	0.06	0.16**	-0.1	0.24**	0.03	0.20***
	[0.07]	[0.05]	[0.06]	[0.07]	[0.06]	[0.10]	[0.06]	[0.08]
Ln(total expend.)	0.39***	0.30***	0.32***	0.33***	0.43***	0.26***	0.43***	0.41***
	[0.06]	[0.06]	[0.05]	[0.05]	[0.07]	[0.07]	[0.06]	[0.06]
Socio-dem. controls, regional and time dummies	yes	yes	yes	yes	yes	yes	yes	yes
atrho	0.54***		0.51***		0.69***		0.67***	
	[0.05]		[0.04]		[0.07]		[0.05]	
cut1	3.47	1.99	-3.35	0.51	2.57	5.32*	1.21	0.91
	[2.46]	[2.34]	[2.10]	[2.18]	[3.04]	[2.84]	[2.37]	[2.26]
Observations	1408	1408	2284	2284	1408	1408	2284	2284
N cluster	861		987		861		987	
Log-Likelihood	-1696		-2802		-1037		-2338	
Log-Likelihood(0)	-1761		-2899		-1094		-2473	
Chi2 (22)	91.71		177.8		79.54		194.7	
Chi2(1)	112.2		163.4		93.73		207.9	

See notes under Table 6.

Dichotomisations of the dependent variable: $Sat01$ (0, if $LS = 0, 1$; 1, if $LS = 2, 3, 4$) and $Sat02$ (0, if $LS = 0, 1, 2$; 1, if $LS = 3, 4$).

Table 11: Bivariate probit: three time uses. Housework does not include child care.

	Dichotomisation $Sat1$				$Sat2$			
	woman	man	woman	man	woman	man	woman	man
	(1)		(2)		(3)		(4)	
Ln(hrs. housework), own	-0.25***	-0.50***	-0.16**	0.02	-0.20*	-0.36	-0.06	0
	[0.09]	[0.19]	[0.08]	[0.03]	[0.11]	[0.26]	[0.09]	[0.04]
Ln(hrs. housework), partner's	0.13**	0.43**	0.05	-0.06	0.14**	0.31	0.05	-0.03
	[0.05]	[0.18]	[0.03]	[0.06]	[0.06]	[0.25]	[0.04]	[0.06]
Ln(hrs. leisure), own	0.1	-0.41*	0.12	-0.37	0.28	-0.54**	0.35	-0.52*
	[0.22]	[0.24]	[0.22]	[0.24]	[0.29]	[0.27]	[0.29]	[0.28]
Ln(share housework)	0.63**	0.59***			0.61*	0.41		
	[0.29]	[0.23]			[0.31]	[0.30]		
I(share housework $>$ 0.5)			0.36*	-0.24			0.06	-0.11
			[0.20]	[0.20]			[0.23]	[0.25]
Ln(total expend.)	0.40***	0.30***	0.40***	0.31***	0.49***	0.26***	0.49***	0.26***
	[0.05]	[0.05]	[0.05]	[0.05]	[0.07]	[0.06]	[0.07]	[0.06]
Socio-dem. controls, regional and time dummies	yes	yes	yes	yes	yes	yes	yes	yes
cut1	-0.05	-1.83	0.73	-1.3	2.37	-1.55	3.23**	-1.18
	[1.22]	[1.21]	[1.18]	[1.21]	[1.58]	[1.42]	[1.55]	[1.40]
atrho	0.52***		0.53***		0.68***		0.68***	
	[0.04]		[0.04]		[0.06]		[0.06]	
Observations	2015	2015	2015	2015	2015	2015	2015	2015
N cluster	1075		1075		1075		1075	
Chi2(23)	144.2		141.9		108.5		105.5	
Log-likelihood	-2354		-2357		-1364		-1366	
Log-likelihood(0)	-2441		-2445		-1437		-1440	
chi2(1)	142.1		144.5		125.9		127.1	

See notes under Table 7.

Dichotomisations of the dependent variable: $Sat01$ (0, if $LS = 0, 1$; 1, if $LS = 2, 3, 4$) and $Sat02$ (0, if $LS = 0, 1, 2$; 1, if $LS = 3, 4$).

Table 12: Bivariate probit: three time uses. Housework includes child care.

	Dichotomisation $Sat1$				$Sat2$			
	woman	man	woman	man	woman	man	woman	man
	(1)		(2)		(3)		(4)	
Ln(hrs housework, ch), own	-0.34***	-0.28	-0.22***	0	-0.24**	-0.12	-0.1	0
	[0.09]	[0.19]	[0.07]	[0.03]	[0.11]	[0.24]	[0.08]	[0.04]
Ln(hrs housework, ch), partnerŠs	0.14***	0.16	0.06*	-0.09	0.16**	0.08	0.06*	-0.02
	[0.05]	[0.17]	[0.03]	[0.06]	[0.06]	[0.22]	[0.04]	[0.07]
Ln(hrs leisure, ch), own	-0.12	-0.33	-0.09	-0.3	0.05	-0.40*	0.08	-0.40*
	[0.12]	[0.20]	[0.12]	[0.20]	[0.15]	[0.24]	[0.15]	[0.24]
Ln(own housework share, ch)	0.65**	0.32			0.67**	0.14		
	[0.29]	[0.22]			[0.33]	[0.28]		
I(own housework share, ch >0.5)			0.37*	-0.06			0.15	0.02
			[0.19]	[0.17]			[0.23]	[0.22]
Ln(total expend.)	0.39***	0.31***	0.40***	0.31***	0.49***	0.26***	0.49***	0.26***
	[0.05]	[0.05]	[0.05]	[0.05]	[0.07]	[0.06]	[0.07]	[0.06]
Socio-dem. controls, regional and time dummies	yes	yes	yes	yes	yes	yes	yes	yes
cut1	-1.40*	-1.41	-0.49	-1.07	1.11	-0.74	1.90**	-0.61
	[0.81]	[1.09]	[0.78]	[1.06]	[0.98]	[1.26]	[0.94]	[1.24]
atrho	0.53***		0.53***		0.68***		0.68***	
	[0.04]		[0.04]		[0.06]		[0.06]	
Observations	2013	2013	2013	2013	2013	2013	2013	2013
N cluster	1074		1074		1074		1074	
Log-Likelihood	-2350		-2352		-1361		-1363	
Log-Likelihood(0)	-2438		-2441		-1435		-1437	
Wald Chi2(23)	148.3		145.4		108.5		106.8	
Wald Chi2(1) (indep. equat.)	143.9		145.3		126.1		126.2	

See notes under Table 7

Dichotomisations of the dependent variable: $Sat01$ (0, if $LS = 0, 1$; 1, if $LS = 2, 3, 4$) and $Sat02$ (0, if $LS = 0, 1, 2$; 1, if $LS = 3, 4$).

Table 13: Approximations of the partial effects on joint predicted probability, Model in Table 4 (2), 2000-2004. Increase in woman's income by 500RUR.

(A) Predicted probabilities. Original model

woman's satisfaction	man's satisfaction					
	0	1	2	3	4	Total
0	0,047597	0,062193	0,021189	0,00808	0,000271	0,13933
1	0,053288	0,15879	0,09903	0,064546	0,00468	0,380334
2	0,013494	0,074064	0,072218	0,071526	0,008976	0,240279
3	0,004369	0,039689	0,057358	0,087725	0,020044	0,209184
4	0,000115	0,002195	0,005426	0,015388	0,00775	0,030874
Total	0,118862	0,336932	0,25522	0,247265	0,041721	1

Total

(B) Predicted probabilities after a 500RUR increase in woman's income

woman's satisfaction	man's satisfaction					
	0	1	2	3	4	Total
0	0,049377	0,062482	0,020779	0,007767	0,000253	0,140658
1	0,055359	0,160571	0,098065	0,062698	0,00443	0,381123
2	0,014036	0,075206	0,071967	0,069935	0,00856	0,239704
3	0,004548	0,040421	0,057449	0,086271	0,019259	0,207949
4	0,00012	0,002244	0,005467	0,015232	0,007505	0,030566
Total	0,12344	0,340924	0,253725	0,241904	0,040006	1

(C) Percentage change in the predicted probability

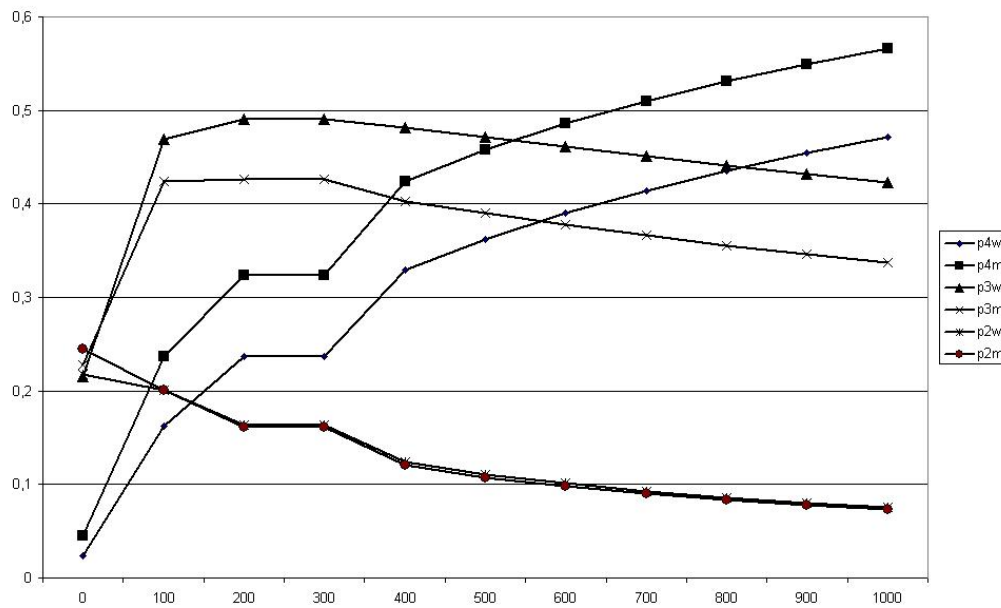| woman's satisfaction	man's satisfaction					
	0	1	2	3	4	Total
	4%	0%	-2%	-4%	-7%	1%
	4%	1%	-1%	-3%	-5%	0%
	4%	2%	0%	-2%	-5%	0%
	4%	2%	0%	-2%	-4%	-1%
	4%	2%	1%	-1%	-3%	-1%
Total	4%	1%	-1%	-2%	-4%	0%

Figure 2: Predicted joint probabilities: increase in total expenditures by 100 - 1000 RUR

Notes: Pjm should be understood as $Pr(LF_m = j)$ for $j = 0, ..., 4$, Pkw should be understood as $Pr(LF_f = k)$ for $k = 0, ..., 4$, m stays for $male$ and f for $female$. The joint probabilities are estimated after the Model presented in Table 4, column (2).

Table 14: Approximations of the partial effects on joint predicted probability, Model 7,(3), 1994-1998. One-hour increase in woman's housework hours.

(A) Predicted probabilities. Original model

woman's satisfaction	man's satisfaction					
	0	1	2	3	4	Total
0	0,132247	0,120042	0,036245	0,008029	0,000944	0,297507
1	0,080218	0,170304	0,094234	0,03393	0,006644	0,38533
2	0,01906	0,072824	0,063917	0,033864	0,010066	0,199731
3	0,004019	0,024966	0,032606	0,024594	0,011045	0,097229
4	0,000248	0,002729	0,00566	0,006525	0,005041	0,020203
Total	0,235793	0,390864	0,232661	0,106942	0,03374	1

Total

(B) Predicted probabilities after the one-hour increase in woman's non-market time

womane's satisfaction	man's satisfaction					
	0	1	2	3	4	Total
0	0,115625	0,130167	0,046844	0,0121	0,001691	0,306426
1	0,063053	0,162461	0,105794	0,044007	0,010169	0,385484
2	0,013945	0,06362	0,064882	0,0394	0,013782	0,195629
3	0,002782	0,020359	0,030492	0,026105	0,013741	0,093478
4	0,000162	0,002067	0,004844	0,006262	0,005648	0,018983
Total	0,195567	0,378673	0,252856	0,127875	0,04503	1

Total

(C) Percentage change in the predicted probability

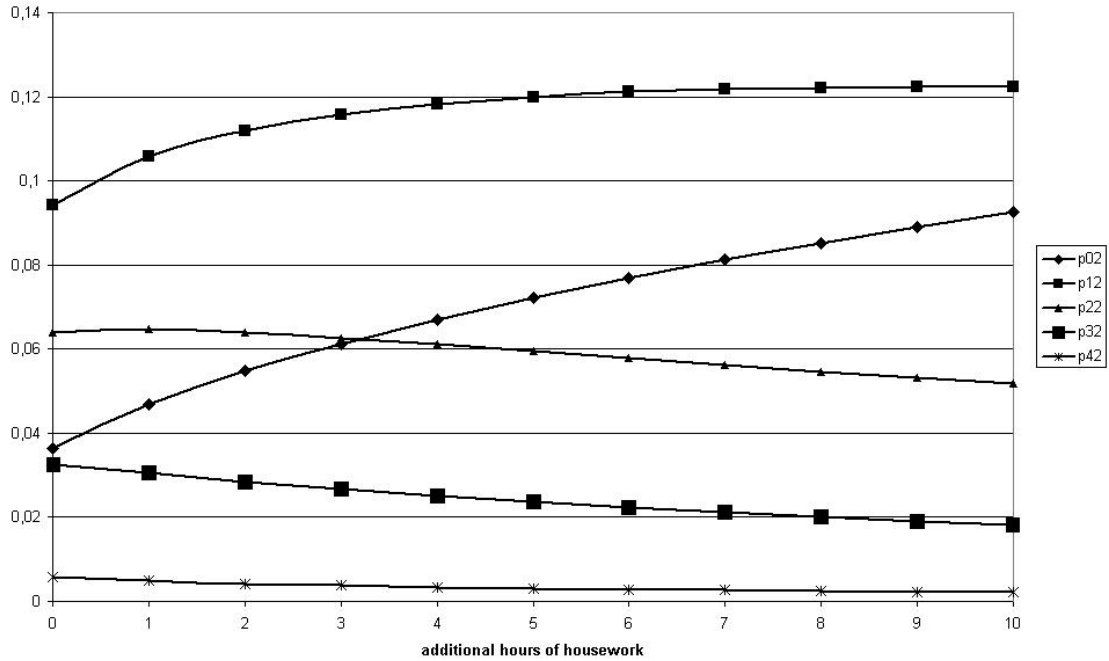| woman's satisfaction	man's satisfaction					
	0	1	2	3	4	Total
0	-13%	8%	29%	51%	79%	3%
1	-21%	-5%	12%	30%	53%	0%
2	-27%	-13%	2%	16%	37%	-2%
3	-31%	-18%	-6%	6%	24%	-4%
4	-35%	-24%	-14%	-4%	12%	-6%
Total	-17%	-3%	9%	20%	33%	

Figure 3: Predicted joint probabilities: increasing hours of housework by woman

Notes: "simulations" done after the model estimated Table 7 Column (3). Axes: X - hours of non-working time added (woman) (0 is a predicted joint probability estimated from the model); Y - joint probability to observe a combination of wife's and husband;s life satisfaction levels. Pij should be understood as $Pr(LF_f = k, LS_m = j)$ for $k, j = 0, ..., 4$, m stays for $male$ and f for $female$.

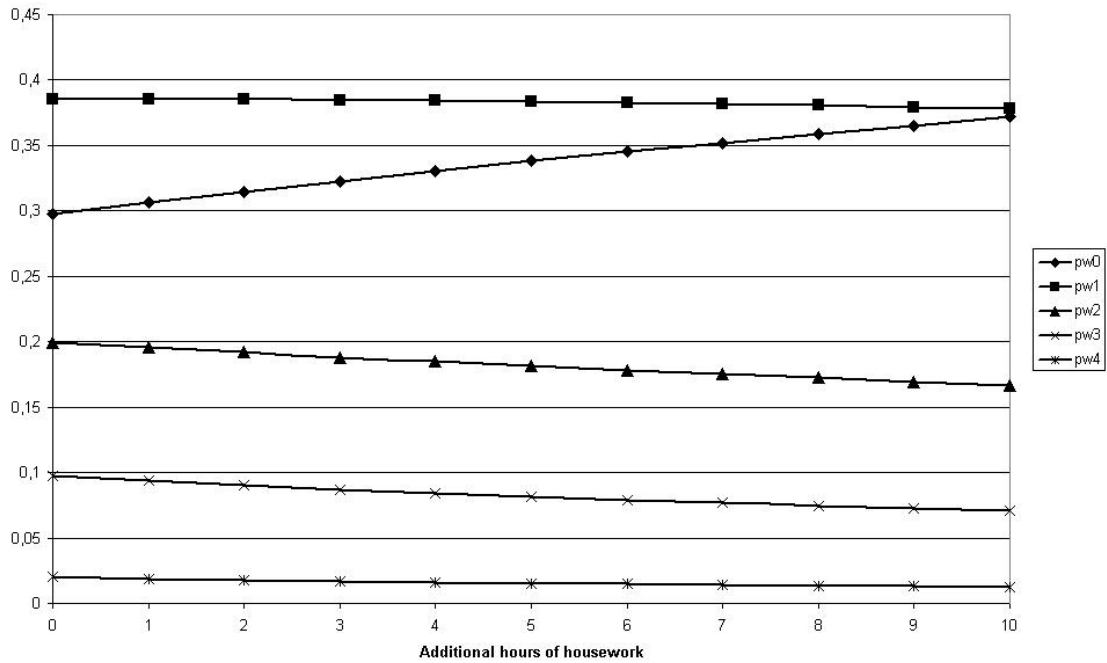The joint probabilities are estimated after the model presented in Table 7, column (3).

Figure 4: Predicted marginal probabilities for woman: increasing hours of housework by woman

Notes: Pk should be understood as $Pr(LF_f = k)$ for $k = 0, ..., 4$, m stays for $male$ and f for $female$.

The probabilities are estimated after the model presented in Table 7, column (3).
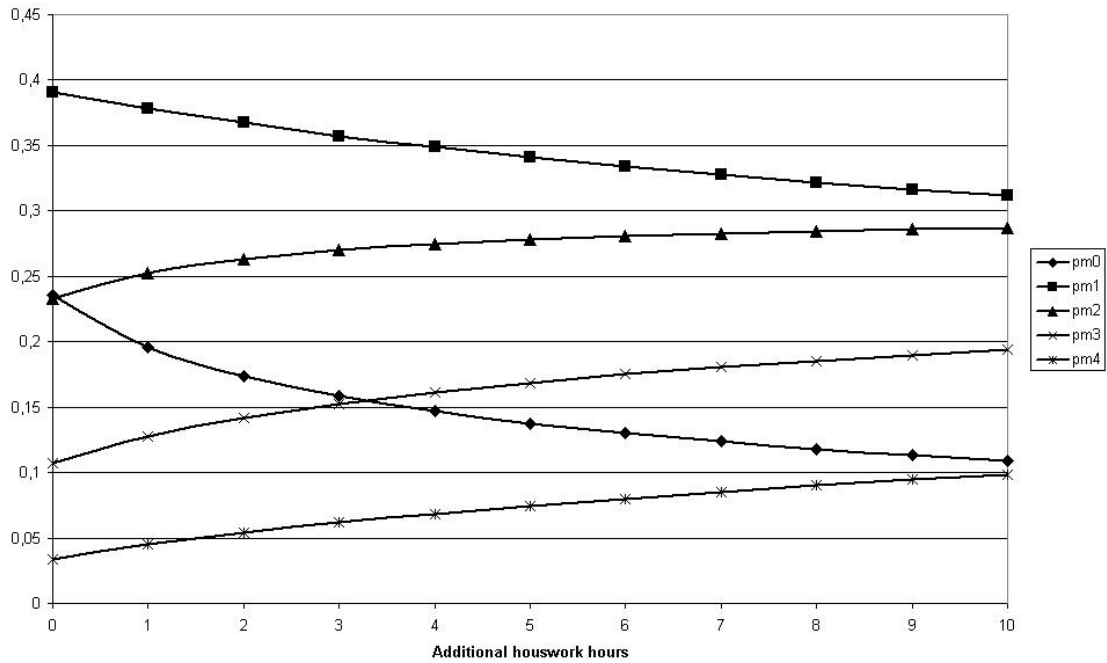
Figure 5: Predicted marginal probabilities for man: increasing hours of housework by woman

Notes: Pj should be understood as $Pr(LF_m = j)$ for $j = 0, ..., 4$, m stays for $male$ and f for $female$.

The probabilities are estimated after the model presented in Table 7, column (3).