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## Income Inequalities within Couples in the Czech Republic and European Countries

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# Income Inequalities within Couples in the Czech Republic and European Countries

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**Abstract:**

This study analyses the income distribution within couples in the Czech Republic and ten European countries using the EU-SILC 2005 database. Data from the Luxembourg Income Study (LIS) database supplement the analysis with previous period (1986–2000). Women, on average, contribute less to a couple's income than men. Among the included countries, within-couple income inequality tends to be lower in the new EU member states than in the old ones, with the Czech Republic being the exception. Within-couple income inequality has two crucial factors: employment of female partners and, subsequently, their wages. In the context of the first, the inter-generational transmission of the traditional model of the family proved to have a significant negative impact on the female employment decision mainly in the old EU member states. Finally, gender wage gaps between men and women who live in a couple were examined and compared with the gender wage gaps for single individuals. The gender wage gap proved to be higher for cohabiting individuals than for singles even after adjusting for gender differences in individual and job characteristics.

**Keywords:** gender wage gap, traditional family model, within-couple inequalities.

**JEL classification:** D19, J31, J79.

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# 1. Introduction

Most studies dealing with income inequality consider the individual and/or household as the basic unit of research. However, the analysis of income inequalities from an individual/household point of view does not fully describe the individual's position in income distribution. The fact is that society is highly structured in terms of internal household organization, too. It follows that both approaches mentioned above ignore income re/distribution within the household, and this can distort the picture of the relationship between people's financial and social well-being.

The within-household income distribution can be of great importance, especially in transition countries. The transition from communist-style compulsory employment (i.e. almost full employment of both men and women) to a diversified labour market with increasing gender income inequality may considerably change within-household bargaining. Since this field has not been examined sufficiently in the Czech Republic, we know little about within-household gender issues in the process of transition. Therefore, I will try to fill this empirical gap by producing a detailed description of wage differentials in couples (both with and without children) and comparing the results with selected transition and West European countries.

The results obtained should deliver new insights into problems that are highly relevant, not only to post-communist societies, but also to highly developed countries. For instance, partnership (family) relations are changing, especially in developed countries. More specifically, there is a mismatch between the changing within-family earnings distribution in favour of women and the traditional division of roles within the family.[1] This may be eroding the traditional family model, which has consequences for demographic development. In this regard, the economics of households can deliver some answers that are of potential social and economic relevance.

In terms of the policy relevance of the present research, economic and social policies need adequate instruments to catch the dynamics of the ongoing changes in income distribution and their impacts on social stability. The present research intends to contribute to this. Great importance will be attached especially to a comparison between the transition, the new EU member countries, and the old EU member states. Current within-couple income inequalities might differ between these two groups of countries and the first group's recent experience of communism could be of great importance.

The rest of this paper is organized as follows. The next section provides a literature overview and discusses the empirical proofs of rejection of the assumption of household income pooling. It also outlines in more detail the aims of this study. Section 3 describes the data sources to which the present analyses are to be applied. Section 4 focuses on within-couple income inequality in several steps. First, it discusses the female share of couple income and the biggest contributing factors determining that share across the covered countries. In the second step, it focuses on the employment decision of women living in a couple as the most apparent source of within-couple income inequality. In this context, the main emphasis is put on the inter-generational transmission of the traditional family model. The last part of Section 4 describes gender income inequality within two-earner couples.

Section 5 analyses the wage differentials between women and men living in a couple in general and compares the gender wage gaps for cohabiting and single individuals separately.

[1] This topic was discussed, for example, by Rost (2002).

The main findings, including comparisons between the old and the new EU member states, are summarized in Section 6.

## 2. Literature overview and new objectives

Many studies have been carried out that examine the distributional changes at the household level, most of them in order to analyse the impact of social and tax policy changes (see, e.g., Giles and Johnson, 1994, Redmond and Sutherland, 1995). Another type of studies has examined whether increasing income inequality across families can be ascribed to a stronger connection between spouses' earnings (e.g. Schwartz, 2010).

The household can be an appropriate unit if we assume that the individuals who live in the same dwelling share their income and decisions about expenditures. This would conform to the assumptions of the unitary model of household behaviour and income pooling in households.

Bonke and Uldal-Poulsen (2005) stated that about two-thirds of Danish households pool their income. Among all the factors suggested by theory that influence the likelihood of income pooling in the household, they found the duration of marriage and the existence of children to be the only ones with a clear impact.

However, many recent studies have appeared that reject the assumption of income pooling since income distribution within the household influences, for instance, decision-making, expenditures on consumption, and/or the satisfaction of individual household members (see, e.g., Ermish and Pronzato, 2006; Thomas, 1990; Heimdal and Houseknecht, 2003; Browning et al., 1994; Lundberg et al., 1996; Phipps and Burton, 1998; Tiefenthaler, 1999).

Using the Danish expenditure survey, Bonke and Browning (2006) argue that the wife's share of consumption expenditures is higher the higher her share of gross income is. The same authors (2003) proved that women and men living in a couple often report a different level of satisfaction with their financial situation; the wife's share of household income increases her satisfaction while it decreases his. Bonke (2006) shows that the share of women's income out of the total personal income in the household is 20% in most Southern European countries, with Portugal being the most extreme. The opposite extreme is in Denmark, where women's income accounts for around 40% of total household income.

Unfortunately, this study does not provide any evidence for the rejection of the unitary household model. Data surveys in the Czech Republic, which is the subject of this analysis, contain no information on consumption expenditures on the individual level and no subjective variables such as satisfaction with one's financial situation, both of which are commonly used in studies of the income pooling hypothesis.

Therefore, based on the existing empirical evidence, we only can assume that the within-household income distribution to a certain extent influences the position of women in terms of bargaining power, consumption decisions, and welfare. Unequal access to financial resources within couples could have a significant impact on the living standard and well-being of both partners. Instead of trying to accept/reject the income pooling hypothesis, this study will analyse income inequality within couples in several steps and compare the findings among European countries.

Figari et al. (2007) explored the effects of tax and benefit systems on differences in income and in incentives to earn income among men and women within couples in 11 old EU

member states. They found that women contributed least to pre-tax and benefit income in Greece and most in Finland. The tax-benefit systems equivalised couple incomes the most in Austria and Finland.

Unlike the majority of the above-mentioned studies, the analysis in this paper includes both old and new EU member states and stresses the differences between them. This will provide a valuable basic insight into the potentially unequal financial and social well-being of partners and the impact that the new EU member states' previous experience of a communist regime might have on this.

It is obvious that the main factor contributing to within-couple income inequality is the economic activity of both partners. Given that, generally, women contribute less to the household income than men do and female labour market participation is typically lower, I consider the economic activity of female partners to be crucial. I aim to quantify the factors that influence the employment decision of cohabiting women since this is the factor that explains the greatest part of within-couple income inequalities. Using logistic regression I will examine the individual and household characteristics that contribute to the employment of female partners. In addition to the usual variables that influence the a woman's decision to work, such as education, age, the number and age of children in the household, and unearned income, I intend to apply variables that could depict the relationship between the characteristics of a couple and decision-making.

In this context, of main interest is the traditional division of female and male roles and the extent to which this still influences decision-making within couples in society today. Couples in which the male and/or female partner grew up in a 'traditional family model', that is, in a family where the father was the breadwinner and the mother was a housewife, could be influenced by this tradition. The inter-generational transmission of the traditional division of roles could have an effect on whether women in such couples work or not. In the next step, the analysis focuses on two-earner couples and outlines the characteristics that contribute most to within-couple income inequality.

Finally, to stress the income disparities between individuals living in a couple and singles in general, I compare the gender wage gap and its structure separately for individuals living in a couple and singles.

## 3. Survey data

The main part of this analysis is based on data from the EU–Statistics on Income and Living Conditions (EU-SILC) household survey. This survey is uniform and compulsory for all EU Member States, so it provides data suitable for cross-country comparisons. Information is collected on households (mainly information on living conditions, joint income, and joint social allowances) and individuals (individual and job characteristics, wages, income, and social allowances).

This study draws on the first wave of the survey (EU-SILC 2005), because that wave included an ad hoc module on the inter-generational transmission of poverty in the given year. These additional data provide us with information on the family circumstances in which the individuals grew up. Respondents answered questions about their parents, such as the parents' economic activity, occupation, and education when the respondents were teenagers.

Only countries that provided information on both gross and net income data and contained the full battery of the module variables were included in this analysis. Besides the Czech Republic, ten other European countries were involved: Austria, Belgium, Germany, Estonia, France, Hungary, Lithuania, Luxembourg, Poland, and Slovakia.[2] For the sake of brevity, I call the six new EU member states (Czech Republic, Estonia Hungary, Lithuania, Poland, and Slovakia) 'NMS', while the other five included countries, the old EU member states (Austria, Belgium, Germany, France, and Luxembourg), are called 'OMS'.

The sample used in the analysis of within-couple income inequality consists of couples living in the same household irrespective of the legal status of their partnership. I excluded couples in which at least one member is collecting a retirement pension and couples who share their household with other adults. Other adults are considered individuals aged 25 and over or individuals aged 16 to 24 who earn their own income or live without their parents. I define dependent children as those under the age of 16 and those between the ages of 16 and 24 who do not have their own earned income, live with parents, and are not in a couple themselves. In other words, the sample includes households of two adults living in a partnership in which the only other members, if there are any, are their dependent children. This is so the male and female shares of income represent the total household income.

Because the analysis requires working age couples and the ad hoc module on the inter-generational transmission of poverty was applied only to individuals aged 25 and over, I set an age limit on the couples so that all the adults are aged 25 to 65. I decided to exclude couples in which the male or the female gross or net income was negative and in which the couple's total gross or net income was non-positive since in these cases I cannot determine the share of women's income ranging from 0 to 1.

The characteristics of the countries in the sample are presented in Table A.1. Couples in Lithuania, Poland, and Slovakia are more likely to be legally married, to have children and to be younger than in the other countries studied. Couples in which women are the sole earners are more common in Lithuania and Poland than elsewhere.

Two-earner couples are the most common in Slovakia, Estonia, and France. France and Estonia have the lowest marriage rates. Estonia also has the largest share of couples in which the woman has a higher level of education than the man (35%), while the share of such couples is extremely small in the Czech and Slovak Republics (10%). In the Czech Republic and in Slovakia, educational homogamy appears to be much higher than in the other countries studied—75% and 77% of couples, respectively, have the same level of education.

Childless couples are more common in Germany, Belgium, and Austria. Austria, Germany and Luxembourg have the largest shares of couples in which the man has a higher level of education than the woman (30%, 29%, and 25%, respectively). In these countries and in Hungary, the man is relatively often the only earner (29%, 29%, 33%, and 29%, respectively).

As far as the legacy of the traditional family model is concerned, the share of couples in which at least one of the partners grew up in a traditional family is smaller in the post-communist, new EU member states, where employment was compulsory under the previous regime. The share of such couples ranges from 66% to 83% in the old EU member states, while from only 10% to 26% in the NMS, with the exception of Poland and Hungary, where the figure is approximately one-third of all couples.

[2] Hungary and Slovakia lack variables for net (after-tax) incomes. However, this analysis focuses mainly on a comparison of Central European countries, so Hungary and Slovakia are included.

The findings in sub-subsection 4.2, which focuses on two-earner couples, are enriched by data from previous years drawn from the database of the Luxembourg Income Study (LIS).[3] The LIS database ex-post harmonizes datasets available for various countries as much as possible so that the datasets represent a highly suitable source for international comparisons. However, not all the information required for this analysis is provided. Most countries lack information on income from self-employment at the individual level and usually provide gross or net wages only. Therefore, the findings can be limited to two-employee couples only, applying the same restrictions on household structure as mentioned above.

The data sample used in Section 5 comparing the gender wage gap for cohabitating and single individuals employs two sub-samples. In the sub-sample of cohabitating persons (both married and not) the restrictions that were applied to the couple sample are relaxed.[4] The sample thus consists of a sub-sample of all cohabitating adult persons and a sub-sample of adult singles, aged 16 to 65 irrespective of the presence of other household members. The methodology applied to examine the gender wage gap required further sample variations which are discussed in the methodological part in Section 5.

## 4. Inequality within couples

The indicator used to measure within-couple income inequality is the female share of total couple income. Table 1 shows the female share of total gross income (earnings from employment and self-employment) according to household characteristics and the effects of the tax and benefit system.[5] The extent to which taxation (plus social contributions) and social benefits bring the female contribution to couple income closer to 50% indicates the rate of the equalizing function of the tax and benefit systems.

**Table 1**

The female share of couple gross income is the smallest and thus gross income inequality within couples the highest in Luxembourg (25.6%), followed by the other old EU member states and by the Czech Republic (32.6%). Within-couple gross income inequality is lower in all the new EU member states studied—it is the lowest in Slovakia (41.3%), followed by Lithuania (40.9%).

[3] For details, see www.lisproject.org. The data-files of most countries were taken from waves III and IV (only wave III for Slovakia since personal data file is not available in wave IV). The analysis was supplemented with wave II in Poland and wave V in France. Specific years are stated in Table 3. LIS database does not contain Lithuania. Estonia is included only in wave V, however, relevant personal income data are missing.

[4] Couples living with other adults in the household, couples where at least one member collects a retirement pension, couples with total non-positive income, and individuals under the age of 25 are no longer excluded.

[5] Annual income is applied. For the Czech Republic, the missing net income from self-employment was imputed. I computed the net values according to the tax-system framework valid in 2004, including joint taxation for married couples with dependent children. However, the net values of income from self-employment can be undervalued since I am not able to apply all tax deductible items due to a lack of data. Disposable income is defined as net earnings plus (net) social benefits. These benefits consist of benefits received by individuals and benefits received by a household as a whole. Benefits taken into account at the individual level include unemployment benefits, sickness benefits, disability benefits, and education-related allowances. The joint household benefits consist of family- and child-related allowances, housing allowances and benefits related to social exclusion not elsewhere classified—these benefits were split in half between the couple.

The tax system equalizes within-couple income inequality the most in Austria (0.8 pp) and Belgium (0.5 pp).[6] In Estonia, the tax system increases the female share of couple income in more than one-half of the couples.

The social system increases the female share of income the most in the Czech Republic (3.2 pp), Luxembourg (2.6 pp), and Austria (2.5 pp). The benefit system raises the female share of couple income in more than 60% of the couples in Luxembourg and Austria. These are also the countries with the smallest fraction of couples in which the female share of couple income is greater than 50%: women have more disposable income than their partner in only 13.2% of couples in Austria and only 11.6% in Luxembourg. In the Czech Republic, this figure is also relatively small (17.5%).

The total equalizing function of the tax and social systems is apparent in Figure 1. The greater the distance from the 45° line, the higher the equalizing effect of the tax and benefit systems. The Czech Republic and the OMS are located lower along the 45° line than the NMS.

**Figure 1**

Regardless of whether we are considering gross, net, or disposable income, the female share of couple income is considerably higher in the NMS than in the OMS (see Table 1). The only exception is the Czech Republic, which exhibits values similar to the group of OMS. First of all, the female share of couple income is influenced by the economic activity of both partners. If we focus on two-earner couples only, the female share of couple income considerably increases in all countries, as is apparent in Table 1. So in the next section the analysis looks at the employment of women living in a couple, while Section 4.2 is devoted to two-earner couples.

## 4.1 Female employment and the inter-generational transmission of the traditional family model

The economic activity of the female partner determines within-couple income inequality to a substantial extent. Men are often the sole earners in the couples; this is least often the case in Slovakia (13% of couples) and most often in Luxembourg, where men are the only breadwinners in almost one-third of couples (see Table A.1). This traditional family behaviour was also very common in Luxembourg one generation earlier: 67% of male partners and 63% of female partners grew up in the traditional family, i.e., in a family where the father was the breadwinner and the mother was a housewife. My aim is to examine whether traditional family behaviour is transmitted between generations.

I assume that in couples where the male and/or female partner grew up in a traditional family there is a greater probability that the female partner does not work, hence within-couple income inequality is much higher. In the majority of the countries analysed, the female shares of income are considerably lower when at least one partner grew up in a traditional family than if neither of the partners grew up in such a family, with the most apparent difference in Germany (see Table 1). The opposite is most apparent in Lithuania.

### *4.1.1 Methodology*

[6] Hungary and Slovakia are not considered since there are no data on net incomes.

I applied a logistic regression to demonstrate the impact that growing up in a traditional family has on the current employment of women living in a couple. The dependent variable in the logistic regression takes the value 1 if the female partner worked the prevailing part of the year in 2004 and 0 otherwise. The logistic model is as follows:

$$ln\ [p/(1-p)] = \beta_0 + \beta_i X_i\ , \qquad (1)$$

where $p$ is the probability that the female partner worked and vector $X_i$ includes all the explanatory variables. The explanatory variables included in equation (1) are dummy variables that equal 1 if the male and the female partner grew up in a traditional family (*M_TRADITION* and *F_TRADITION* respectively) and 0 otherwise. The list of other control variables includes: female education, the educational gap between partners, the woman's age, the age gap between partners, unearned income, the presence of children, marriage, and economically inactive male partner.

The education of the female partner is represented by dummies for medium and high education.[7] Given that education levels exhibit a positive influence on potential wages, education levels are expected to have an impact on the decision to work. Supposing that partners divide their 'labour supply', the partner with a higher education level should be the one who is supplying her/his labour since her/his potential wage is higher. Therefore, the relative education level of the male partner could also have an impact on the female partner's work decision. Relative education is represented by dummies for a male education level higher and lower than his partner, measured in the number of years.

The age of the female partner is represented by dummies for three age groups. Since age often serves as a proxy for work experience the reason for including the age gap between partners in the form of four dummies for age differences is similar to the justification for including the education gap. Moreover, Bonke (2006) suggests that the older the male partner is relative to his partner, the more he finds himself in a position as a breadwinner and if, on the contrary, the female partner is older than her partner, a dual-earner family/household is more likely.

Unearned income includes various social benefits and allowances and other non-work income, e.g., rental income and inter-household transfers. This variable is represented by a dummy that takes the value 1 if a couple's unearned income was greater than half of the at-risk-of-poverty threshold in 2004 and 0 otherwise.[8] The presence of children is represented by three dummies for children aged 0 to 2, 3 to 5, and 6 to 15. Married couples are represented by a dummy variable. The last variable is determined by a dummy for an inactive male partner, which denotes male partners who did not work for at least six months in the reference year.

### *4.1.2 Results*

The results are stated in Table 2. Growing up in a traditional family proved to be insignificant for both male and female partners in almost half of the included countries. Among the new EU member states (NMS), growing up in the traditional family was significant only for the male partner in Hungary and the female partner in Slovakia. In Hungary, the odds ratio stands at 0.737, which means that female partners' employment is approximately three-quarters as

[7] High education (tertiary) – ISCED levels 5 and 6; medium education (upper secondary) – ISCED levels 3 and 4; low education ('basic') – ISCED levels 0, 1 and 2.

[8] The "at-risk-of-poverty threshold" is defined as 60% of the national median of total disposable household income. I derived the at-risk-of-poverty threshold by taking into account all the households included in the EU-SILC 2005 dataset. The absolute level of the at-risk-of-poverty threshold differs among countries.

likely to occur among women whose partner grew up in the traditional family than among those whose partner did not. For women who grew up in a traditional family the odds ratio indicates a positive but insignificant impact on female partners' employment (1.281).

Slovak data confirmed a significant negative influence of women growing up in a traditional family (0.465), while the odds ratio for men growing up in a traditional family proved insignificant but still indicating a negative impact on current female employment. In the remaining NMS studied, the odds ratios of both males and females growing up in a traditional family exhibit an insignificant and negative impact on female employment, except among Lithuania and Estonian men.

Among the OMS, growing up in a traditional family proved to be significant for both men and women in Germany and either for men or for women in Austria, France, and Luxembourg, while it was insignificant for both in Belgium. German women who grew up in a traditional family or whose partner did are less likely to work (significant odds ratios 0.824 and 0.813, respectively). In Luxembourg, the probability that a woman in a couple worked was significantly increased by her having grown up in a traditional family, and this was the only case among the countries studied of the women's or men's traditional background having a significant positive impact (see Table 2).[9]

**Table 2**

The results indicate that there tends to be a difference between the old and new EU member states—the inter-generational transmission of the traditional model of family is more apparent among the OMS than among the NMS. This confirms my supposition, since the couples in the post-communist new EU member states were raised in an environment of almost full employment. Therefore, the traditional model would not have been transmitted to a similar extent as in the OMS. However, there are some exceptions: Hungary and Poland are countries where in about one-third of couples at least one partner grew up in a traditional family, followed by Slovakia where this share was 26% (see Table A.1). Indeed, Hungary and Slovakia are the only NMS where the male's or the female's traditional family background proved to have a significant effect. Conversely, no significant effect on current female employment was observed in Poland.

### 4.2 Income inequality in dual-income couples

The gender difference in labour market participation is not the only reason for income inequality within couples. Theoretical and empirical evidence of the gender wage gap indicates that even two-earner couples experience substantial income inequality. Therefore, in this subsection, income inequality in dual-earner couples is described.

Table 3 shows the development of the female share of couple earnings in the countries under observation. Since most of the datasets did not provide information on income from self-employment, only couples made up of two employees are considered. The female share of couple income exhibited relatively high values in Poland (43.3%) and Slovakia (40.8%) in the early 1990s and reached 42.4% in 1994 in Hungary. The 2004 values are even higher and, together with Lithuania, these NMS form a group of countries with relatively low within-couple income inequality. Compared to that the Czech Republic experienced higher within-

[9] The impacts of the control variables did not show surprising results and are apparent in Table 2.

couple income inequality and the female share of couple income decreased slightly over the 1990s.

**Table 3**

The lowest value of the female share of couple income was recorded in Luxembourg in the early 1990s (31.8%) and this country together with Germany and Austria were the OMS with the highest within-couple income inequality also in 2004. Although there is no straightforward dividing line between the OMS and the NMS, there tends to be a slight difference between the two: the female share of couple income seems to be somewhat lower in the OMS, with a decreasing or fluctuating trend over time, while in the NMS the female share of couple income is relatively high and mostly increasing. The Czech Republic deviates from this latter trend, as the female share of couple income has been moderately decreasing over time and its 2004 value (like in Estonia) was lower than in the other NMS.

Table 4 shows the female share of total gross income (earnings from both employment and self-employment) according to household characteristics as well as the effects of the tax and benefit systems in two-earner couples. Higher female education seems to be the substantial contributor to income equality. There is a significant difference between the average female shares of total gross income according to which partner achieved a higher level of education. In most NMS, near income equality in couples prevails if women have higher education, i.e. the female share of total gross income is approximately 50%.

**Table 4**

Figure 2 depicts the female share of couple gross and disposable income in two-earner couples. The Czech Republic together with the OMS are still situated lower along the 45° line than the other NMS. Moreover, the female share of gross income is still the lowest in Luxembourg, the equalizing effect of taxes is highest in Austria and Belgium, and the equalizing effect of the social system is highest in Luxembourg, the Czech Republic, and Austria.

**Figure 2**

Based on the results connected with the characteristics of all the couples in the sample (Table 1) and two-earner couples (Table 4), I can outline some general conclusions: (i) the Czech Republic appears to show features similar to the OMS rather than the NMS; (ii) the female share of couple gross income is lower in the Czech Republic and the OMS than in the NMS; (iii) the redistributive effect of the tax system is highest in Austria and Belgium; (iv) the redistributive effect of the social system is highest in the Czech Republic, Luxembourg, and Austria; and (v) the factors that contribute the most to within-couple income inequality are growing up in a traditional family, the male having a higher level of education, younger age, the presence of children, and marital status.

## 5. The gender wage gap for cohabiting versus single individuals

The analysis so far indicates the existence of substantial gender income inequality even within two-earner couples. Nevertheless, the preceding analysis only concerned annual earnings, thus ignoring the gender differences in work intensity. So this section focuses on hourly wages. Moreover, the previous results showed that even marriage seems to penalize women in terms of higher within-couple income inequality. There may even be greater gender income

inequality among couples than among singles. The aim of this section is to find out whether and to what extent women living in a couple are disadvantaged compared to single females. Figure 3 shows the difference between the mean log hourly male and female wages separately for cohabitating (both married and not) and single individuals.

The biggest gender wage gaps for both cohabiting and single sub-samples occurred in Estonia, followed by the Czech Republic. The gender wage gap is substantially higher for cohabiting individuals in all countries with the biggest difference in Germany and the smallest in Lithuania. Moreover, the average single women's wages are even higher than single men's wages in some countries. There are several possible sources of the differences in gender wage gaps for cohabiting and single individuals. First, male and female wages differ because men and women have different observable individual and job characteristics. Therefore, one reason for higher gender wage gaps for cohabiting individuals might be that cohabiting women have 'worse' characteristics than single women. This might be related to the process of matching of couples itself or it might be due to the greater responsibilities cohabiting women have for family and/or children, which can cause the deterioration or lesser improvement of some characteristics of cohabitating women relative to single women.

**Figure 3**

Second, single women might be treated more equally to men, while cohabiting women might be penalized with lower wages owing to their greater family responsibilities. However, this kind of possible discrimination is hard to measure since there are still other unobserved characteristics that can depict the differences not only between men and women but also between cohabiting and single individuals.

### 5.1 Gender wage gap decomposition methodology

Wage regression model estimates are used to provide a deeper insight into the structure of gender wage gaps. As a first step, this study applies the Heckman regression selection model in order to avoid the sample selection bias.[10] The estimated wage function under the selection-corrected Heckman model is:

$$\ln W_i = X_i\beta + \rho\sigma_\varepsilon\lambda_i + \varepsilon_i^*, \text{ where } \lambda_i = \frac{\varphi(V_i\gamma)}{\Phi(V_i\gamma)} \qquad (2)$$

where vector $X_i$ includes all explanatory variables of the wage equation, $\varphi$ and $\Phi$ signify standard normal density and distribution functions, respectively, $V_i$ represents the vector of explanatory variables of the participation equation that should differ from that included in the wage equation, and $\rho$ is the correlation coefficient of the wage and participation equations.[11]

The regression model estimating the influence of individual and job characteristics was run both separately for cohabiting and single individuals and for men and women. The Wald test of independent equations was used to prove if $\rho$ is significantly different from zero and whether consequently there is a selection bias. In cases where the Wald test did not indicate

[10] Sample selection bias occurs when working individuals do not create a random sub-sample of the population but differ systematically from non-participating individuals (Beblo et al., 2003).

[11] The Heckman model is a kind of two-stage regression where the propensity to participation in the labour market is estimated in the first step (including both employed and non-employed individuals) and then incorporated into the wage regression. For more details, see Heckman (1979) or some of the studies reproducing Heckman's model (e.g. Beblo et al., 2003).

the selection bias, standard OLS regression was applied (the second term on the right-hand side of equation (2) becomes zero).

The dependent variable in the Heckman model is the logarithm of the hourly gross wage, which is not obtained directly, but is computed on the basis of the Eurostat definition of the gender wage gap.[12] The explanatory variables included in the male and female wage equations are years of education, years of experience and its square[13], two dummies for the size of a local unit where an individual works, a dummy for an unlimited job contract, a dummy for a managerial position, a dummy for living in densely populated cities,[14] and nine dummy variables for occupational groups.

The explanatory variables included in the participation equations are total annual non-earned household income, a dummy for an inactive partner (only for the cohabiting sub-sample), three dummies for children of a particular age,[15] years of education, three dummy variables for age groups, and a dummy indicating a bad health condition.[16]

In the second step, Oaxaca-Blinder decomposition method (Oaxaca, 1973; Blinder, 1973) is applied:

$$\overline{\ln W^M} - \overline{\ln W^F} = \underbrace{\hat{\beta}^M (\overline{X}^M - \overline{X}^F)}_{endowment\ effect} + \underbrace{\overline{X}^F (\hat{\beta}^M - \hat{\beta}^F)}_{remuneration\ effect} + \underbrace{(\hat{\theta}^M \overline{\hat{\lambda}}^M - \hat{\theta}^F \overline{\hat{\lambda}}^F)}_{selection\ effect} \quad (3)$$

where expressions with a bar signify the mean values, *M* and *F* means male and female, respectively, $\hat{\theta}$ is the estimate of $\rho\sigma_\varepsilon$ and $\overline{\hat{\lambda}}$ is the average estimated $\lambda_i$ from Heckman's equation (2). The endowment effect is a component of the raw gender wage gap that is due to differences in individuals and job characteristics between the genders. Remuneration effect is a part that is due to the differences in the rewards that the two genders receive for their individual and job characteristics. If the Heckman model is applied, a selection effect arises. The selection effect reveals how the raw gender wage gap would change if non-participating individuals started working. If the Heckman correction procedure is not applied for men (women), the correction term for men (women) in equation (3), i.e., $\hat{\theta}^M$ ($\hat{\theta}^F$), is set to zero.

### 5.2 Gender wage gap decomposition results

The gender wage gap decomposition is presented in Table 5 and Figure 4. Table 5 shows the effects expressed in percentages of the difference between male and female log hourly wages (as shown in Figure 3). In the couples sub-sample, the endowment effect is mostly positive, which means that a certain part of the gender wage gap can be explain by men's 'better' characteristics. Mostly positive endowment effects were found also by Nicodemo (2009), who analysed the gender wage gap using the 2006 data for married couples in five OMS countries.[17] The endowment effect in France was substantially lower in her study (less than

[12] The hourly gross wage is the usual monthly gross income from a person's main job divided by the quadruple of the number of hours usually worked per week in the person's main job, including common overtime.
[13] The Hungarian dataset lacks this variable, so a proxy "age minus six minus years in education" was applied.
[14] A densely populated area is defined as a local unit with a density of more than 500 inhabitants per square kilometre and where the total population in the unit is at least 50,000 inhabitants.
[15] These household characteristics serve as the exclusion restriction that do not enter the wage equations, i.e. variables that affect participation in the labour market without affecting wages conditional on participating.
[16] To save space, the results of the regression models (four sets of results for each of the eleven countries) are not presented here, but they are available from the author upon request.
[17] France, Italy, Portugal, Spain, and Greece.

20%, while it is 45% in the present study). However, this inconsistency might be caused by analysing all the cohabiting couples in the present study, while Nicodemo (2009) included married couples only.

This effect is even negative in most of the NMS (CZ and HU being the exception), which suggests that cohabiting working females have, on average, 'better' characteristics than their male counterparts.

**Table 5**

In the sub-sample of singles, the endowment effect is negative in all countries. Although Table 5 shows a positive percentage share of the gender wage gap in Germany, France, Hungary, and Poland, note that single women's wages are, on average, higher than single men's in these four countries (see Figure 3). Figure 4 demonstrates the gender wage structure in log points, which depicts the negativity of the endowment effect more straightforwardly.

**Figure 4**

Figure 5 shows the adjusted gender wage gap after subtracting the endowment effect, i.e. the part of the gap that is caused by different characteristics between genders. The gender wage gaps remain relatively high and positive (with the exception of Poland for the singles sub-sample). The gender wage gap for singles is no more negative after this adjustment in Germany, France, and Hungary. The disparity between the adjusted gender wage gaps for the cohabiting and single sub-samples has narrowed compared to the raw (unadjusted) gender wages gaps in Figure 3. The reason is that the endowment effect for the singles sub-sample was negative in all countries while it was positive for the cohabiting sub-sample in the majority of the countries. If single women have on average 'better' characteristics than single men and the raw gender wage gap is still positive, then, as a consequence, the difference in rewards to these characteristics has to be higher than the observed raw gender wage gap.

**Figure 5**

Nevertheless, the gender wage gap adjusted for different gender individual and job characteristics is still higher for the cohabiting than for the singles sub-sample. The gender differences in returns to characteristics might be a form of discrimination, apparently stronger against women living in a couple, or it could reflect some unobserved heterogeneity that the model does not capture. If there is discrimination it may be that employers disadvantage women living in a couple relatively more than single women because of their greater responsibilities for family and children or expectations that they will have greater family commitments in the near future. On the other hand, women living in a couple may differ from single women based on their choices in terms of their career, working effort, or other unobservable characteristics. However, this analysis does not provide any potential explanations and the remaining adjusted gender wage gap must be considered as unexplained.

## 6. Summary

Recent empirical evidence stresses that households do not pool their income and do not have a unitary utility function. Quite the contrary, individual income brought into the household budget can influence the consumption, decision power, and/or social well-being of particular household members. This study analysed the within-couple income inequality in eleven European countries: Austria, Belgium, Czech Republic, Germany, Estonia, France, Hungary, Lithuania, Luxembourg, Poland, and Slovakia.

The female share of couple gross earned income ranges from 25.6% in Luxembourg and 28.5% in Austria to 41.3% in Slovakia and 40.9% in Lithuania. From this point view, the Czech Republic, with a relatively low female share of total gross couple income (32.6%), differs from the other new EU member states observed here and instead belongs to the group of old EU member states.

The redistributive effect of the tax system is highest in Austria and Belgium, while the redistributive effect of social system is highest in the Czech Republic, Luxembourg, and Austria. Besides the economic activity of partners, factors that negatively influence within-couple income inequality are higher male relative education, younger age, children, and marriage.

The female share of total couple income is highly influenced by the employment of the female partner. In particular, this study examined whether the traditional model of the family is transmitted from the previous generation to the current one. The hypothesis that growing up in a traditional family, i.e. in a family in which the father was the breadwinner and the mother a housewife, can negatively influence the employment of current female partners was significantly confirmed in Germany, Austria (in the case of the male partner only), France, and Luxembourg (in the case of the female partner only), and among the new EU members in Hungary and Slovakia (in the case of the male partner only). In Belgium and the remaining four new EU member states, neither the male nor the female partner's growing up in a traditional family proved to have a significant effect on current female employment.

Within-couple income inequality among two-earner couples is the most significantly affected by the educational gap between partners. In some countries, there is near income equality among couples in which the woman's level of education is higher.

The final part of this study focused on the gender wage gap separately for individuals living in a couple and singles. The gender wage gap proved to be bigger for cohabiting individuals than for singles even after adjusting for gender differences in individual and job characteristics. This suggests that women living in a couple are either more disadvantaged in terms of their wages (and) or their unobserved characteristics substantially differ from those of single women.

To my knowledge, this study provides the first insight into within-couple income inequality in some post-communist countries. It found that among the countries considered the Czech Republic more resembles the old EU member states than it does the other new member states in some of the examined income inequality aspects. Further research will hopefully focus on detecting the reasons for the differences between the Czech Republic and other post-communist countries. This could be highly relevant for formulating economic and social policies aimed at mitigating income inequality within Czech couples and bringing the potentially lower social well-being of women closer to men's.

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**Table 1** Female share of couple income (%)

| | AT | BE | CZ | DE | EE | FR | HU | LT | LU | PL | SK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Gross earnings** | **28.5** | **34.6** | **32.6** | **30.0** | **36.8** | **34.6** | **37.1** | **40.9** | **25.6** | **36.6** | **41.3** |
| (total sample) | (25.6) | (24.4) | (25.0) | (29.3) | (26.3) | (24.7) | (29.5) | (30.6) | (25.4) | (32.9) | (27.5) |
| Couples in which women have greater gross earnings (% of whole couple sample) | | | | | | | | | | | |
| | 15.2 | 21.9 | 18.4 | 21.5 | 24.8 | 23.7 | 30.1 | 34.0 | 14.1 | 31.3 | 26.9 |
| Bottom quintile | 24.6 | 28.4 | 27.8 | 32.3 | 40.3 | 25.8 | 30.2 | 40.0 | 23.1 | 32.4 | 48.8 |
| | (36.1) | (36.6) | (38.6) | (39.8) | (40.8) | (34.3) | (40.1) | (44.7) | (32.8) | (43.5) | (43.9) |
| Top quintile | 32.6 | 36.4 | 35.4 | 37.2 | 35.3 | 36.1 | 38.1 | 40.4 | 30.9 | 41.4 | 38.7 |
| | (18.7) | (17.1) | (17.1) | (19.2) | (20.2) | (21.2) | (22.8) | (22.5) | (20.5) | (22.8) | (17.8) |
| Both worked | 36.2 | 39.8 | 38.1 | 36.6 | 40.7 | 40.3 | 44.9 | 41.9 | 35.1 | 42.9 | 44.4 |
| | (17.5) | (14.2) | (17.3) | (21.5) | (19.1) | (18.2) | (18.1) | (22.5) | (17.5) | (24.2) | (20.9) |
| At least one | 27.9 | 34.4 | 32.7 | 27.6* | 35.0 | 33.8* | 39.1 | 46.1* | 25.4 | 37.1 | 41.3 |
| grew up in t. f. | (26.1) | (25.0) | (26.1) | (28.6) | (24.6) | (24.9) | (31.2) | (32.2) | (25.7) | (34.3) | (29.7) |
| Neither grew up | 30.4 | 35.5 | 32.5 | 34.5 | 37.0 | 36.6 | 36.1 | 39.7 | 26.9 | 36.3 | 41.3 |
| in a t. f. | (23.8) | (21.2) | (24.8) | (30.2) | (26.5) | (24.0) | (28.6) | (30.1) | (23.8) | (32.3) | (26.7) |
| Man has higher | 25.3 | 25.8* | 29.9 | 24.1* | 32.2 | 26.6* | 28.6* | 33.3* | 18.9 | 26.9* | 36.1* |
| education | (26.0) | (26.4) | (24.1) | (27.7) | (25.6) | (25.1) | (27.3) | (32.4) | (22.4) | (32.2) | (26.8) |
| Same level of | 27.3 | 34.2 | 32.8 | 30.4 | 35.4 | 34.4 | 38.2 | 39.0 | 26.2 | 35.0 | 41.3 |
| education | (24.4) | (21.9) | (24.8) | (28.9) | (25.3) | (23.9) | (29.2) | (29.7) | (25.6) | (32.6) | (27.4) |
| Woman has | 37.2* | 42.1* | 35.0 | 37.2* | 40.9* | 40.3* | 43.4* | 48.0* | 32.6* | 46.4* | 47.6* |
| higher educ. | (26.5) | (25.6) | (27.3) | (30.6) | (27.6) | (24.4) | (31.0) | (30.0) | (26.4) | (32.2) | (27.9) |
| Older partner | 24.8* | 36.5* | 28.9* | 27.2* | 33.3* | 34.5 | 31.9* | 39.2* | 26.4 | 35.4* | 38.4* |
| aged under 45 | (22.5) | (20.3) | (23.7) | (27.2) | (24.7) | (23.8) | (26.9) | (29.2) | (23.0) | (31.6) | (26.1) |
| Older partner | 35.2 | 31.1 | 38.9 | 34.6 | 42.8 | 34.6 | 46.4 | 44.0 | 24.3 | 39.2 | 47.2 |
| aged 45+ | (29.3) | (30.3) | (26.0) | (31.9) | (27.8) | (26.2) | (31.6) | (32.9) | (28.9) | (35.5) | (29.3) |
| With dependent | 23.7* | 34.6 | 29.2* | 23.5* | 35.1* | 33.4* | 34.4* | 39.4* | 21.9* | 35.4* | 40.1* |
| children | (23.5) | (22.2) | (24.6) | (26.8) | (25.6) | (24.1) | (28.8) | (29.5) | (23.6) | (32.5) | (26.9) |
| Without dep. | 38.8 | 34.7 | 40.7 | 41.4 | 41.9 | 37.9 | 45.2 | 45.9 | 35.5 | 41.5 | 48.1 |
| children | (27.0) | (28.4) | (24.0) | (29.9) | (27.8) | (25.9) | (30.1) | (33.6) | (27.1) | (34.5) | (30.1) |
| Married couple | 27.9* | 33.5* | 31.7* | 27.8* | 37.2 | 32.7* | 37.2 | 41.2 | 23.4* | 36.3 | 41.2 |
| | (25.8) | (25.0) | (24.9) | (29.0) | (25.9) | (24.7) | (29.7) | (30.4) | (24.5) | (32.9) | (27.5) |
| Not married | 33.4 | 41.9 | 40.3 | 44.0 | 35.9 | 39.9 | 36.8 | 35.8 | 40.4 | 40.9 | 41.9 |
| | (24.0) | (18.6) | (24.6) | (27.3) | (27.6) | (23.9) | (28.3) | (35.0) | (26.1) | (33.4) | (28.1) |
| **Net earnings** | **29.2** | **35.2** | **32.7** | **29.8** | **37.2** | **34.8** | **-** | **40.8** | **25.6** | **36.7** | **-** |
| (total sample) | (25.4) | (24.3) | (24.8) | (29.4) | (26.2) | (24.8) | | (30.1) | (25.3) | (33.1) | |
| Couples in which women have greater net earnings (% of whole couple sample) | | | | | | | | | | | |
| | 14.6 | 20.6 | 18.3 | 21.3 | 23.5 | 24.2 | - | 33.8 | 12.9 | 31.5 | - |
| **Disposable inc.** | **31.8** | **36.5** | **36.0** | **30.8** | **38.8** | **36.8** | **-** | **41.8** | **28.3** | **37.2** | **-** |
| (total sample) | (18.6) | (18.2) | (17.9) | (22.4) | (21.3) | (19.2) | | (25.9) | (20.2) | (28.2) | |
| Couples in which women have greater disposable income (% of whole couple sample) | | | | | | | | | | | |
| | 13.2 | 19.3 | 17.5 | 19.0 | 23.1 | 23.3 | - | 34.0 | 11.6 | 30.6 | - |
| Couples in which tax system increased female share of couple earnings (% of whole couple sample) | | | | | | | | | | | |
| | 47.6 | 45.3 | 46.2 | 34.7 | 54.0 | 49.8 | - | 38.0 | 32.5 | 33.5 | - |
| Increase (pp.)** | 2.4 | 3.2 | 0.8 | 3.6 | 1.3 | 0.9 | - | 2.4 | 2.1 | 1.7 | - |
| Couples in which benefit system increased female share of couple income (% of whole couple sample) | | | | | | | | | | | |
| | 63.2 | 57.8 | 54.0 | 56.7 | 57.1 | 50.5 | - | 29.2 | 65.2 | 31.0 | - |
| Increase (pp.)** | 7.1 | 5.5 | 8.9 | 6.9 | 5.2 | 7.5 | - | 8.8 | 6.1 | 9.4 | - |
| Couples in which tax-benefit system increased female share of couple income (% of whole couple sample) | | | | | | | | | | | |
| | 74.3 | 62.5 | 71.9 | 58.9 | 69.3 | 67.9 | - | 52.8 | 69.1 | 52.7 | - |
| Increase (pp.)** | 7.5 | 7.0 | 7.1 | 7.9 | 5.1 | 6.1 | - | 6.4 | 6.4 | 6.4 | - |

Notes: Means, standard deviations in parenthesis. Couple gross income quintiles are calculated across couples with positive gross income using the modified OECD equivalence scale. *Difference of means significant at 5% (t-test). For the level of education (measured in years) the mean is compared to the mean when having the same level of education. **Average percentage points increase of female share of couple income in couples where tax and/or benefit system induced a change.

Source: EU-SILC UDB 2005 – version 5 of August 2009 (author's computation).

**Table 2** Logistic regression: female work – odds ratio

| | AT | BE | CZ | DE | EE | FR | HU | LT | LU | PL | SK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *M_TRADITION* | 0.653*** | 1.145 | 0.699 | 0.824** | 1.447 | 1.021 | 0.737* | 1.314 | 0.866 | 0.928 | 0.705 |
| *F_TRADITION* | 0.794 | 0.888 | 0.749 | 0.813** | 0.622 | 0.768** | 1.281 | 1.022 | 1.394** | 0.879 | 0.465*** |
| *F_MEDIUM_EDUC* | 1.899*** | 2.362*** | 1.664 | 1.754*** | 2.884*** | 2.271*** | 3.018*** | 2.041** | 1.310* | 1.966*** | 1.687 |
| *F_HIGH_EDUC* | 2.193*** | 5.562*** | 2.922** | 3.173*** | 7.488*** | 3.339*** | 5.526*** | 7.252*** | 2.011*** | 8.901*** | 2.270 |
| *M_HIGHER_ED* | 0.913 | 0.915 | 0.980 | 0.855 | 1.186 | 0.880 | 1.073 | 1.144 | 0.805 | 0.957 | 0.988 |
| *M_LOWER_ED* | 1.543** | 1.265 | 1.101 | 0.988 | 0.783 | 1.043 | 0.941 | 1.131 | 1.194 | 1.384*** | 1.592 |
| *F_AGE25_34* | 2.137** | 5.572*** | 1.428 | 2.086*** | 0.684 | 1.724** | 1.600 | 3.271*** | 8.400*** | 0.953 | 0.685 |
| *F_AGE35_44* | 2.815*** | 4.265*** | 2.072* | 2.402*** | 1.083 | 1.893*** | 2.158* | 4.904*** | 5.303*** | 1.577 | 1.068 |
| *F_AGE45_54* | 1.833* | 2.541*** | 1.011 | 2.060*** | 1.343 | 1.724** | 1.762 | 1.526 | 2.746*** | 1.269 | 1.042 |
| *M_OLDER10_* | 0.667 | 0.286*** | 0.639 | 0.833 | 2.552 | 0.919 | 1.858* | 0.587 | 0.699 | 0.827 | 0.439* |
| *M_OLDER5_9* | 0.750 | 0.713 | 0.788 | 0.871 | 1.101 | 0.840 | 1.025 | 1.068 | 0.899 | 0.883 | 0.750 |
| *F_OLDER1_5* | 0.944 | 0.921 | 1.286 | 0.836 | 0.742 | 0.857 | 0.871 | 1.587* | 2.448*** | 0.742** | 0.744 |
| *F_OLDER6_* | 0.610 | 0.460 | 2.328 | 0.756 | 0.944 | 0.987 | 0.542 | 1.025 | 1.573 | 0.305*** | 0.365 |
| *UNEARN_INC* | 0.374*** | 0.309*** | 0.118*** | 0.309*** | 0.249*** | 0.231*** | 0.109*** | 0.514*** | 0.641*** | 0.291*** | 0.112*** |
| *CHILD0_2* | 0.131*** | 0.737 | 0.276*** | 0.228*** | 0.294*** | 0.539*** | 0.065*** | 0.349*** | 0.676** | 0.518*** | 1.530 |
| *CHILD3_5* | 0.437*** | 0.773 | 0.234*** | 0.515*** | 0.689 | 0.540*** | 0.339*** | 0.390*** | 0.447*** | 0.626*** | 0.353*** |
| *CHILD6_15* | 0.754* | 1.340 | 0.487*** | 0.636*** | 0.909 | 1.240* | 1.046 | 0.672** | 0.740** | 0.839* | 0.961 |
| *MARRIAGE* | 0.619* | 0.354*** | 0.714 | 0.565*** | 1.091 | 0.753** | 1.069 | 4.134*** | 0.272*** | 1.126 | 1.128 |
| *M_NOTWORK* | 8.603*** | 7.549*** | 15.249*** | 2.328*** | 1.124 | 3.799*** | 3.678*** | 1.451 | 3.684*** | 4.341*** | 6.647*** |
| *CONSTANT* | 3.794*** | 1.565 | 10.976*** | 2.576*** | 2.382 | 3.224*** | 2.800** | 0.227*** | 1.200 | 1.135 | 10.314** |
| *Correctness of observation classification* | 78.1 | 81.9 | 83.8 | 72.0 | 82.5 | 79.6 | 84.7 | 81.3 | 67.4 | 74.9 | 85.0 |

Notes: * significance at the 10% level, ** significance at the 5% level, *** significance at the 1% level.

The economic activity was derived according to number of months when the main activity of respondent was full-time or part-time work. Even if number of worked months was zero, the earnings can be positive (irregular work or the individual worked lesser part of month). High education (tertiary) – ISCED levels 5 and 6; medium education (upper secondary) – ISCED levels 3 and 4; low education ('basic') – ISCED levels 0, 1 and 2.

Source: EU-SILC UDB 2005 – version 5 of August 2009 (author's computation).

**Table 3** Female share of couple income – two-earner couples (%)

| Data source | AT | BE | CZ* | DE* | EE | FR | HU | LT | LU | PL | SK* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LIS | | 1988 | | 1989 | | 1989 | | | | 1986 | |
| 1986–1989 | | **39.8** | | **32.0** | | **40.4** | | | | **40.8** | |
| | | (12.4) | | (17.8) | | (12.4) | | | | (10.7) | |
| LIS | | 1992 | 1992 | | | | 1991 | | 1991 | 1992 | 1992 |
| 1991-1992 | | **39.8** | **39.6** | | | | **39.2** | | **31.8** | **43.3** | **40.8** |
| | | (11.9) | (11.8) | | | | (16.8) | | (16.1) | (11.2) | (12.5) |
| LIS | 1994 | 1995 | 1996 | 1994 | | 1994 | 1994 | | 1994 | 1995 | |
| 1994–1996 | **37.2** | **38.5** | **39.3** | **35.8** | | **39.8** | **42.4** | | **36.3** | **42.5** | |
| | (16.2) | (14.0) | (13.5) | (19.9) | | (17.8) | (16.9) | | (15.2) | (12.1) | |
| LIS | 1997 | 1997 | | | | 2000 | 1999 | | 1997 | | |
| 1997–2000 | **37.5** | **41.2** | | | | **39.0** | **42.4** | | **32.2** | | |
| | (15.6) | (13.4) | | | | (16.6) | (18.0) | | (18.4) | | |
| EU-SILC | 2004 | 2004 | 2004 | 2004 | 2004 | 2004 | 2004 | 2004 | 2004 | 2004 | 2004 |
| 2005 | **36.8** | **41.4** | **39.1** | **34.2** | **39.9** | **41.2** | **43.5*** | **43.1** | **35.4** | **44.6** | **41.2** |
| | (15.3) | (12.4) | (14.5) | (20.1) | (17.0) | (16.6) | (18.3) | (18.5) | (16.1) | (18.1) | (13.9) |

Notes: Means, standard deviations in parenthesis. *Gross wages; all other figures are based on net wages.
Source: 1986 – 2000: LIS database (author's computation), 2004: EU-SILC UDB 2005 – version 5 of August 2009 (author's computation).

**Table 4** Female share of couple gross income (%) – Two-earner couples

| | AT | BE | CZ | DE | EE | FR | HU | LT | LU | PL | SK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Gross earnings** | **36.2** | **39.8** | **38.1** | **36.6** | **40.7** | **40.3** | **44.9** | **41.9** | **35.1** | **42.9** | **44.4** |
| | (17.5) | (14.2) | (17.3) | (21.5) | (19.1) | (18.2) | (18.1) | (22.5) | (17.5) | (24.2) | (20.9) |
| Couples in which women have greater gross earnings (% of two-earner couple sub-sample) | | | | | | | | | | | |
| | 16.8 | 22.7 | 19.5 | 23.9 | 25.4 | 26.5 | 35.2 | 32.9 | 17.0 | 34.9 | 26.9 |
| Man has higher | 31.7* | 35.0* | 34.3* | 32.9* | 36.8 | 34.2* | 38.4* | 32.4* | 32.2 | 36.6* | 39.1* |
| education | (15.7) | (16.0) | (16.3) | (20.5) | (17.8) | (19.5) | (16.2) | (21.7) | (16.7) | (23.8) | (21.3) |
| Same level of | 35.4 | 39.5 | 38.1 | 36.3 | 39.7 | 40.3 | 45.2 | 39.8 | 34.4 | 41.5 | 44.6 |
| education | (16.7) | (13.2) | (16.9) | (21.3) | (18.8) | (17.4) | (17.9) | (21.9) | (17.8) | (24.0) | (20.4) |
| Woman has | 44.1* | 42.9* | 43.4* | 41.6* | 43.6* | 43.8* | 50.8* | 49.7* | 39.6* | 49.0* | 49.5* |
| higher educ. | (19.0) | (14.6) | (19.9) | (22.3) | (19.7) | (17.9) | (18.9) | (21.6) | (16.8) | (23.9) | (22.6) |
| Older partner | 34.8* | 40.9* | 35.8* | 35.6* | 39.1* | 40.6 | 43.9* | 40.3* | 34.8 | 43.4 | 43.3* |
| aged under 45 | (16.4) | (13.9) | (17.4) | (21.3) | (18.5) | (18.0) | (18.0) | (22.5) | (17.3) | (23.7) | (20.6) |
| Older partner | 38.5 | 36.7 | 41.9 | 38.3 | 43.3 | 39.7 | 46.4 | 45.3 | 35.6 | 41.7 | 46.8 |
| aged 45+ | (19.0) | (14.6) | (16.3) | (21.8) | (19.9) | (18.5) | (18.2) | (22.2) | (18.1) | (25.4) | (21.2) |
| With dependent | 34.1* | 39.3 | 36.3* | 32.4* | 39.7* | 39.7* | 44.9 | 40.7* | 33.6* | 42.6 | 44.4 |
| children | (17.1) | (14.6) | (17.9) | (21.7) | (19.0) | (18.2) | (18.2) | (22.8) | (17.9) | (24.3) | (21.1) |
| Without dep. | 39.8 | 41.0 | 41.8 | 42.7 | 43.3 | 42.1 | 44.8 | 46.5 | 38.3 | 44.0 | 44.9 |
| children | (17.5) | (13.0) | (15.4) | (19.8) | (19.2) | (18.0) | (17.9) | (20.8) | (16.3) | (24.1) | (19.4) |
| Married couple | 36.0 | 39.1* | 37.4* | 34.9* | 40.6 | 38.8* | 45.3 | 41.9 | 34.3* | 42.7 | 44.4 |
| | (17.6) | (14.6) | (17.3) | (21.5) | (19.1) | (18.1) | (17.9) | (22.5) | (17.2) | (24.2) | (20.8) |
| Not married | 37.6 | 43.0 | 43.5 | 45.5 | 40.8 | 44.3 | 42.5 | 41.4 | 38.9 | 47.2 | 46.4 |
| | (16.4) | (11.6) | (16.0) | (19.5) | (19.2) | (17.8) | (19.0) | (22.5) | (18.5) | (23.5) | (21.8) |
| **Net earnings** | **37.2** | **40.4** | **38.3** | **36.2** | **41.2** | **40.6** | **-** | **41.8** | **35.1** | **43.2** | **-** |
| | (16.5) | (13.8) | (16.9) | (22.1) | (18.8) | (18.3) | | (21.6) | (17.3) | (24.5) | |
| Couples in which women have greater net earnings (% of two-earner couple sub-sample) | | | | | | | | | | | |
| | 16.0 | 21.0 | 19.2 | 23.8 | 23.8 | 27.2 | - | 32.7 | 15.3 | 35.3 | - |
| **Disposable inc.** | **38.5** | **41.2** | **39.8** | **36.5** | **41.7** | **41.3** | **-** | **42.6** | **36.7** | **43.3** | **-** |
| | (14.3) | (12.3) | (13.8) | (18.4) | (17.0) | (15.3) | | (20.0) | (15.2) | (23.0) | |
| Couples in which women have greater disposable income (% of two-earner couple sub-sample) | | | | | | | | | | | |
| | 16.0 | 20.0 | 18.4 | 22.4 | 23.4 | 26.4 | - | 33.0 | 14.9 | 35.1 | - |
| Couples in which tax system increased female share of couple earnings (% of two-earner couple sub-sample) | | | | | | | | | | | |
| | 67.0 | 59.0 | 60.7 | 46.9 | 67.6 | 61.8 | - | 49.5 | 50.3 | 50.4 | - |
| Increase (pp.)** | 2.4 | 3.2 | 0.8 | 3.7 | 1.3 | 0.9 | - | 2.4 | 2.1 | 1.7 | - |
| Couples in which benefit system increased female share of couple income (% of two-earner couple sub-sample) | | | | | | | | | | | |
| | 56.0 | 57.8 | 45.4 | 48.7 | 54.3 | 45.3 | - | 25.3 | 58.4 | 21.7 | - |
| Increase (pp.)** | 3.3 | 1.9 | 4.9 | 3.8 | 2.1 | 3.9 | - | 4.5 | 3.4 | 4.0 | - |
| Couples in which tax-benefit system increased fem. share of couple income (% of two-earner couple sub-sample) | | | | | | | | | | | |
| | 72.0 | 63.9 | 69.0 | 51.8 | 69.8 | 67.4 | - | 56.0 | 64.5 | 54.6 | - |
| Increase (pp.)** | 4.5 | 4.1 | 3.7 | 5.3 | 2.6 | 3.3 | - | 3.9 | 4.2 | 2.9 | - |

Notes: Means, standard deviations in parenthesis. *Difference of means significant at 5% (t-test). For the level of education (measured in years) the mean is compared to the mean when having the same level of education. **Average percentage points increase of female share of couple income in couples where tax and/or benefit system induced a change.

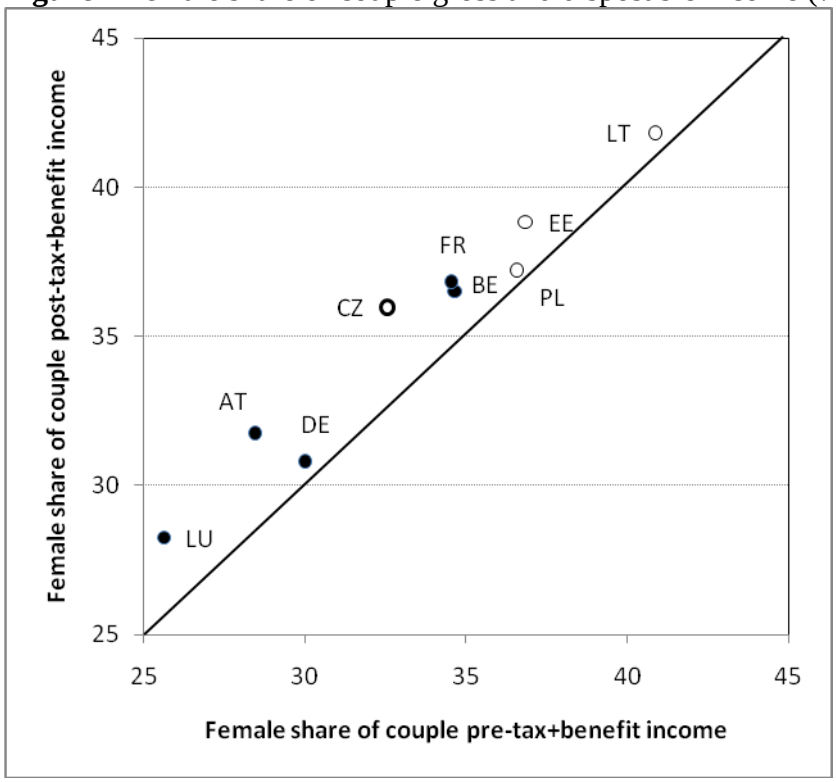
Source: EU-SILC UDB 2005 – version 5 of August 2009 (author's computation).

**Table 5** Gender wage gap decomposition (%)

| | AT | BE | CZ | DE | EE | FR | HU | LT | LU | PL | SK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Couples | | | | | | | | | | | |
| endowment effect | 36.2 | 39.7 | 16.8 | 28.5 | -7.4 | 44.8 | 6.5 | -63.6 | 52.2 | -140.4 | -4.0 |
| remuneration effect | 63.9 | 60.3 | 88.2 | 71.5 | 97.2 | 51.9 | 106.3 | 163.6 | -41.2 | 240.3 | 104.0 |
| selection effect | - | - | -4.9 | - | 10.1 | 3.3 | -12.8 | - | 89.0 | - | - |
| Singles | | | | | | | | | | | |
| endowment effect | -84.9 | -323.0 | -22.1 | 118.3 | -39.4 | 119.0 | 146.2 | -155.3 | -59.9 | 93.7 | -83.0 |
| remuneration effect | 155.5 | 423.3 | 122.1 | -22.2 | 139.4 | -19.0 | 57.5 | 255.3 | 198.0 | 93.0 | 192.1 |
| selection effect | 29.5 | - | - | 4.0 | - | - | -103.7 | - | -38.1 | -86.7 | -9.1 |

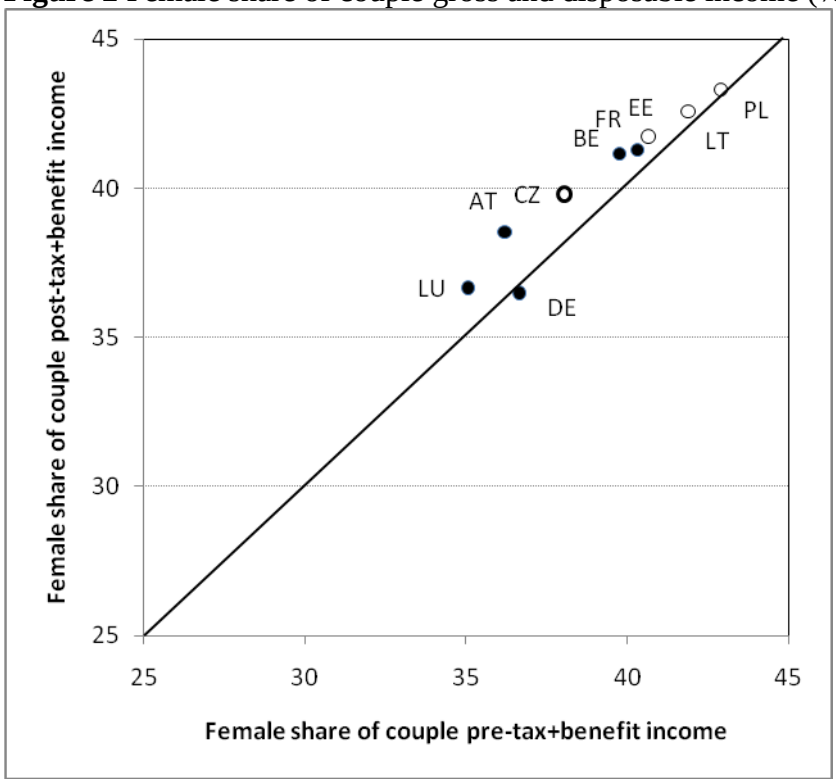
Source: EU-SILC UDB 2005 – version 5 of August 2009 (author's computation).

**Figure 1** Female share of couple gross and disposable income (%): All couples



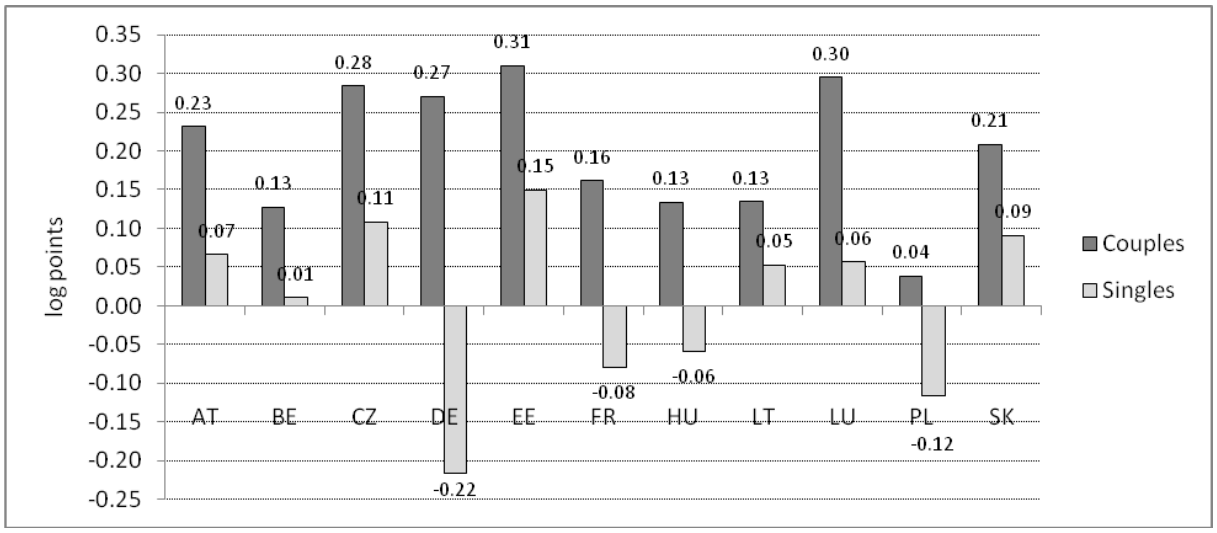

Source: EU-SILC UDB 2005 – version 5 of August 2009 (author's computation).

**Figure 2** Female share of couple gross and disposable income (%): Two-earner couples



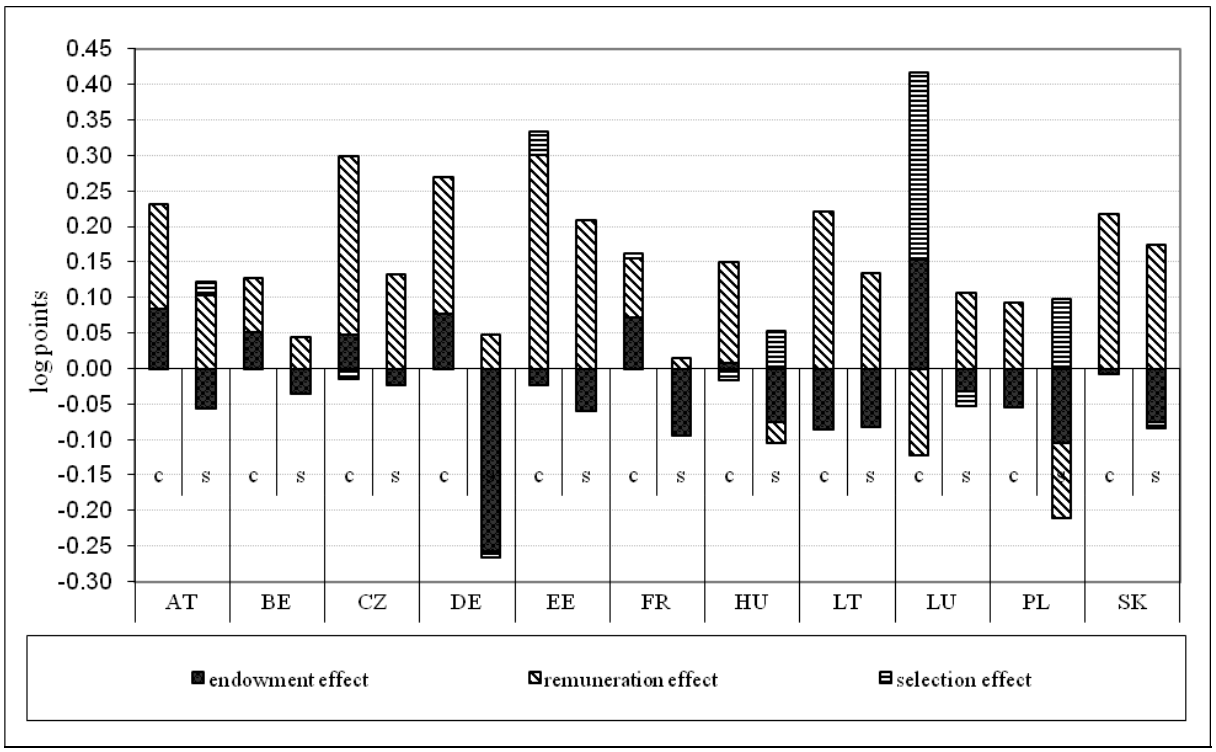

Source: EU-SILC UDB 2005 – version 5 of August 2009 (author's computation).

**Figure 3** Gender log hourly wage gap (log points)



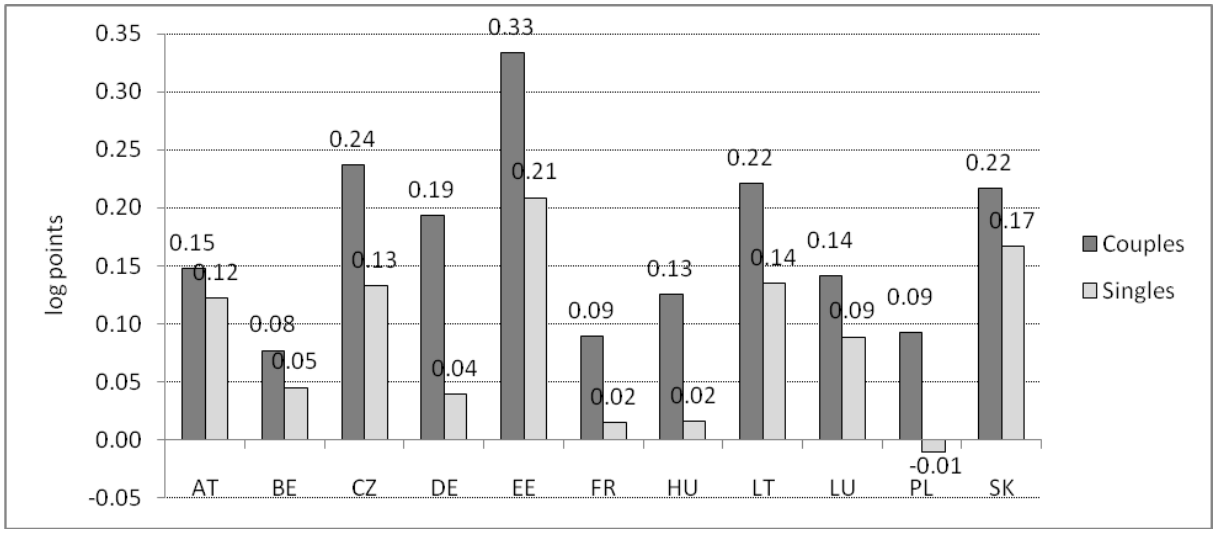

Source: EU-SILC UDB 2005 – version 5 of August 2009 (author's computation).

**Figure 4** Gender wage gap decomposition (log points)




Notes: c – cohabiting individuals, s – singles.
Source: EU-SILC UDB 2005 – version 5 of August 2009 (author's computation).

**Figure 5** Gender log hourly wage gap – after subtracting endowment effect (log points)




Source: EU-SILC UDB 2005 – version 5 of August 2009 (author's computation).

**Table A.1** Sample characteristics: Couples

| | AT | BE | CZ | DE | EE | FR | HU | LT | LU | PL | SK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample size (unweighted) | 1383 | 1288 | 1202 | 3747 | 1107 | 2729 | 1617 | 1268 | 1270 | 3593 | 1342 |
| % of all households | 23.8 | 23.0 | 30.5 | 25.9 | 24.1 | 25.4 | 23.6 | 27.0 | 33.8 | 21.5 | 25.1 |
| % of all couples | 37.5 | 40.3 | 45.7 | 46.9 | 45.7 | 41.1 | 39.3 | 45.8 | 51.1 | 30.5 | 34.9 |
| **Sample characteristics (%)** | | | | | | | | | | | |
| Woman worked 6+ months* | 67.8 | 78.3 | 76.1 | 65.0 | 77.8 | 77.3 | 66.8 | 80.6 | 63.1 | 70.5 | 84.2 |
| Man worked 6+ months* | 95.0 | 94.5 | 96.0 | 90.6 | 92.3 | 95.0 | 90.4 | 88.7 | 96.1 | 88.1 | 93.5 |
| Man only worked* | 28.8 | 19.7 | 20.4 | 29.3 | 15.5 | 18.6 | 29.4 | 14.3 | 32.8 | 25.7 | 13.1 |
| Woman only worked* | 3.9 | 4.8 | 3.4 | 5.9 | 4.8 | 2.9 | 6.9 | 8.4 | 3.2 | 8.5 | 4.8 |
| Both worked* | 67.2 | 75.1 | 76.2 | 63.7 | 78.9 | 78.3 | 62.4 | 76.6 | 64.1 | 65.6 | 82.0 |
| Neither worked (whole year)* | 0.1 | 0.4 | 0.0 | 1.0 | 0.9 | 0.1 | 1.3 | 0.7 | 0.0 | 0.2 | 0.0 |
| Man grew up in traditional model | 57.5 | 60.5 | 9.5 | 48.8 | 5.2 | 55.4 | 22.0 | 10.1 | 67.1 | 20.8 | 16.6 |
| Woman grew up in trad. family | 53.6 | 59.6 | 6.9 | 44.8 | 6.2 | 48.1 | 18.9 | 10.6 | 62.6 | 20.0 | 13.6 |
| At least one partner grew up in t.f. | 76.8 | 81.4 | 14.4 | 65.8 | 10.4 | 74.2 | 33.4 | 19.0 | 82.9 | 32.6 | 26.0 |
| Neither grew up in trad. family | 23.2 | 18.6 | 85.6 | 34.2 | 89.6 | 25.8 | 66.6 | 81.0 | 17.1 | 67.4 | 74.0 |
| Male – high education** | 28.0 | 42.8 | 18.9 | 43.1 | 28.7 | 27.5 | 20.6 | 24.8 | 27.7 | 19.6 | 22.1 |
| Male – medium education** | 63.5 | 39.5 | 77.2 | 52.7 | 63.7 | 48.8 | 66.2 | 68.2 | 43.5 | 73.2 | 75.5 |
| Male – low education** | 8.5 | 17.8 | 3.9 | 4.2 | 7.6 | 23.7 | 13.1 | 7.0 | 28.7 | 7.2 | 2.4 |
| Female – high education** | 21.1 | 48.4 | 16.1 | 34.3 | 41.9 | 34.6 | 22.6 | 33.6 | 29.0 | 26.3 | 20.6 |
| Female – medium education** | 61.2 | 34.2 | 76.9 | 59.4 | 51.7 | 44.1 | 57.9 | 61.0 | 37.3 | 66.2 | 75.9 |
| Female – low education** | 17.7 | 17.4 | 6.9 | 6.3 | 6.4 | 21.2 | 19.5 | 5.4 | 33.7 | 7.5 | 3.5 |
| Man has higher education*** | 30.1 | 18.8 | 14.6 | 28.9 | 16.0 | 18.7 | 19.4 | 15.3 | 24.6 | 10.5 | 12.7 |
| Same level of education*** | 51.8 | 55.6 | 75.4 | 50.3 | 48.7 | 54.1 | 65.6 | 54.2 | 56.6 | 68.5 | 77.4 |
| Woman has higher education*** | 18.1 | 25.6 | 10.0 | 20.8 | 35.3 | 27.2 | 15.1 | 30.6 | 18.8 | 21.0 | 10.0 |
| Older partner aged under 45 | 64.7 | 65.5 | 63.8 | 62.4 | 62.7 | 62.7 | 63.8 | 65.1 | 62.8 | 68.3 | 67.2 |
| Older partner aged 45+ | 35.3 | 34.5 | 36.2 | 37.6 | 37.3 | 37.3 | 36.2 | 34.9 | 37.2 | 31.7 | 32.8 |
| With dependent children | 68.5 | 67.4 | 71.0 | 63.4 | 74.4 | 73.5 | 74.9 | 77.1 | 72.4 | 81.0 | 85.9 |
| Without dependent children | 31.5 | 32.6 | 29.0 | 36.6 | 25.6 | 26.5 | 25.1 | 22.9 | 27.6 | 19.0 | 14.1 |
| Not married | 10.8 | 13.6 | 9.6 | 13.5 | 26.6 | 26.2 | 16.3 | 5.1 | 13.2 | 4.9 | 3.6 |
| Married couple | 89.2 | 86.4 | 90.4 | 86.5 | 73.4 | 73.8 | 83.7 | 94.9 | 86.8 | 95.1 | 96.4 |

Notes: *The economic activity was derived according to number of months when the main activity of respondent was full-time or part-time work. Even if number of worked months was zero, the earnings can be positive (irregular work or the individual worked lesser part of month). **High education (tertiary) – ISCED levels 5 and 6; medium education (upper secondary) – ISCED levels 3 and 4; low education ('basic') – ISCED levels 0, 1 and 2. ***Education was measured in number of years need for highest educational level attained.

Source: EU-SILC UDB 2005 – version 5 of August 2009 (author's computation).