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Country differences in the relationship between incomes and wage rates of working partners

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Abstract

This paper investigates the relevance of the cultural and economic country context for differences in the effect of male partner income on female income and wage rate for 9,373 respondents in 13 European countries. Data taken from the European Community and Household Panel (ECHP), which comprises information on partner income trends between 1994 and 2001, were used to estimate fixed effect models. We find differences between countries in the effect of male partner income on women's income. In countries where average male salaries represent high purchasing power, male partner income has a negative influence on female income and wages. Less evidence was found for the argument that also gender cultures moderate partner income effects.

1. Introduction

It¹ is well known that women continue to earn lower incomes than men on the labor market, indicating persistent gender inequalities (Jarrell and Stanley 2004; Mandel and Semyonov 2005; Rosenfeld and Kalleberg 1991). Previous research attempted to explain this inequality by focusing mainly on individual differences between men and women (e.g. in the human capital they accumulated or their position or occupation) and on discriminatory behavior by employers against women or mothers (Becker 1981; Benard and Correll 2010; Correll, Benard and Paik 2007; England 1992, England 2010; Ridgeway 1997; Roos and Gatta 1999; Tomaskovic-Devey 1993). Research has been less inclined to consider the income situation of the partner as a further restriction on female income, although the working lives of partners are likely to be interlinked (Moen 2003). Together, partners coordinate jobs, hours of work or parenthood, but often in a gendered way (Moen 2003:10). For example, Pixley and Moen (2003) find that men's careers are often prioritized in American dual-earner couples. Moreover, it is still common for the male partner to earn more than the female partner, and this difference influences joint decisions on the division of paid and household labor (Becker 1991; Moen 2003; Winslow-Bowe 2009). We therefore apply a couple perspective investigating the relevance of male partner income for women's income and women's wage rate in working couples. We consider both women's income and wage rate as they are both important indicators for income inequalities. Women's wage rate refers to labor market success but women's income also considers the fact that many women do not work full-time, which can also be influenced by the income of the male partner.

We use New Home Economics (e.g. Becker 1991; Blau and Ferber 1986; Bryant 1990) and social capital theory (e.g. Coleman 1990) to develop contrasting hypotheses on positive and negative partner income effects in line with Verbakel (2008). Moreover, we investigate country differences in the relation of partners' incomes and link possible positive or negative relationships to the cultural and economic country context. The cultural and economic contexts are likely to stimulate certain family models and thus interrelations between careers of partners. For example, the cultural context includes ideas and norms concerning the division of labor between partners and the role of women on the labor market (Blossfeld and Drobnič 2001; Sainsbury 1994; Treas and Widmer 2000). This cultural context

¹ This research results from my dissertation: Abendroth, A-K. 2012. Working Women in Europe. How the Country, Workplace and Family Context Matter. ICS Dissertation Series. Utrecht University. Parts of this section draw on a paper currently under review with more elaborate analysis including also non-working women.

may affect whether partners choose to specialize between household and paid labor or if they try to equally invest in a career. The economic context can affect whether one income is enough for a decent standard of living or whether a second income, provided by a partner working part time or full time, is useful (Blossfeld and Drobnič 2001). The “need of income” effect has been put forward by England (2010, p. 152) for female employment when comparing low educated couples and high educated couples.

In view of these considerations, we pose the following research questions: (1) How does male partner income affect female income and wage rate and does this differ between European countries? (2) To what extent can the cultural and economic context explain differences between countries in the effect of male partner income on female income and wage rate?

We aim to contribute to existing research in three different ways. First, this study adds a couple perspective to research on the gender income gap. Second, this study will focus on partner income influences that are not confounded by assortative mating based on income or education, or by shared and stable resources and restrictions in the couples’ surroundings. This will be done by investigating the relevance of changes in the male partner’s income for female income and wage rate changes with the use of fixed effect models, which control for all unobserved stable characteristics (Allison 2005; Castilla 2007; Musick and Meier 2012 England et al. 1988; Waldfogel 1997). Third, we not only describe country differences in the effect of male partner income on female income and wage rate, but also test whether such differences are related to the cultural and economic context.

To answer the research questions, the present study makes use of panel data from the European Community and Household Panel (ECHP), involving eight waves (between 1994 and 2001) and 13 countries (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, and the UK), and combines these data with information on the economic situation from the ECHP and the cultural situation from human development reports (UNDP 2012).

2. Theory and hypotheses

2.1 The relevance of the partner's income for female income and wage rate

According to New Home Economics (e.g. Becker 1991; Blau and Ferber 1986; Bryant 1990), partners specialize either in paid or household labor in order to maximize joint family utility, i.e. family well-being. Although complete specialization between partners is less common nowadays, specialization is still visible to some degree e.g. one partner is often only seen as an additional earner, but spends less time and effort at work and invests less in a career. Which partner specializes in paid labor depends on the comparative advantage on the labor market. Becker (1991) assumes that women have an advantage in childbearing and men in paid labor, which would result in women specializing in household labor and men in paid labor.

Based on this assumption, the comparative advantage of men on the labor market grows over the life course as they gain more work-related skills by specializing on the labor market, and as women are deprived of their work-related skills by specializing in household and care tasks. This implies that male partner income will increase over time and female income will decrease over time due to these specialization tendencies. The more the partner earns, the more it becomes possible for the female partner to specialize in household labor, because it takes less additional income to maintain a decent standard of living.

Specialization is possible in respect to time and effort on the labor market (Becker 1991; Becker and Moen 1999; Bernasco, de Graaf and Ultee 1998). Spending less time in paid work would reduce women's total income. Expending less effort on paid work would reduce women's wage rate and income because less effort implies fewer opportunities for promotion and pay raises, less bargaining about wages, or having to accept jobs below a certain skill level (Bernasco, de Graaf and Ultee 1998). In conclusion, New Home Economics suggests a negative relationship between the income of the male partner on female income and wage rate because male partners specialize in paid work and female partners in housework (Becker 1991; Bernardi 1999; Bernasco, de Graaf and Ultee 1998; Verbakel 2008). We hypothesize:

H1: Income of the male partner is negatively related to the income and wage rate of the female partner.

Drawing mainly on social capital theory (e.g. Coleman 1990), the resource perspective suggests that people benefit from resources of others within their social network (e.g. Bernardi 1999; Bernasco, de Graaf and Ultee 1998; Verbakel 2008). As part of the female partner's network, the male partner might offer her beneficial contacts, skills or knowledge that are helpful in her own wage rate negotiations or in her search for jobs with higher earning potentials (Bernardi 1999; Bernasco, de Graaf and Ultee 1998; Verbakel 2008). For example, a partner who earns a high income and sees his income rise steadily is likely to have skills and experience in income negotiations with employers and knowledge about the appropriate income for certain job positions. Moreover, these characteristics suggest a beneficial network that provides access to highly paid positions. Granovetter (1974) argues that weak ties in the network are especially beneficial because they link people who would otherwise be unconnected. However, there are also conditions in which strong ties can be profitable. As a strong tie, the partner is more available and more likely to be motivated to assist e.g. by activating his own contacts to search for highly paid jobs (Granovetter 1974). In addition, the literature suggests that women have less valuable networks when it comes to job information and fewer memberships of voluntary associations than men (Beggs and Hurlbert 1997). Thus, the male partner might function as a bridge between the female partner and contacts who have job-related information, for example about jobs that pay a higher wage, which would allow career advancement in terms of earnings. As a consequence, women can increase their wage rate and income. A high income and income gains on the part of the male partner might further imply positive attitudes with respect to career advancement that can stimulate the career ambitions of the female partner (Bernasco, de Graaf and Ultee 1998). This is likely to result in higher career investments, increasing women's wage rate and income. The male partner's higher income can also make it possible to outsource certain household and care tasks. Women can thus spend less time at home and have more time available to work. As a consequence, women can increase their income because they are able to spend more time for working. In conclusion, the resource perspective suggests that a higher income for the male partner increases female income and wage rate. We hypothesize:

H2: Income of the male partner is positively related to the income and wage rate of the female partner.

Previous research has revealed both negative and positive relationships between partners' incomes depending on the country context we look at (Cancian and Schoeni 1998; Henz and Sundström 2001; Juhn and Murphy 1997; Schwartz 2010; Verbakel 2008). For example, Verbakel (2008) demonstrates that the male partner's income has a negative relationship with female's income in the Netherlands. In Cancian and Schoeni (1998), spouses' earnings correlated negatively in Switzerland but positively in Sweden, Norway, France, Canada, Israel and the US. Small positive correlations were found for Germany, the UK, and Australia. This suggests that the relation between partners' incomes and the applicability of the two described theories depend on certain country characteristics. In the following part we suggest that the cultural and economic context might be of importance.

2.2 Country differences

2.2.1 The relevance of the cultural context

Countries differ in the prevalence of traditional or egalitarian gender ideologies (Blossfeld and Drobnič 2001; Crompton and Harris 1999; Panayotova and Brayfield 1997; Treas and Widmer 2000). Traditional ideas imply that the male partner is more responsible for income and the female partner for care and household tasks. More egalitarian ideas indicate that both men and women share these responsibilities and invest equally in work and in caring and household tasks (Blossfeld and Drobnič 2001; Crompton and Harris 1999; Treas and Widmer 2000). The former are more prevalent in countries such as Germany or Belgium and the latter in countries such as Denmark or Sweden (Blossfeld and Drobnič 2001).

Existing values, traditional versus egalitarian, can shape the preferences of men and women with respect to their involvement in the labor market and in caring and household tasks (Verbakel 2008; Verbakel 2010) or, in economic terms, the value they place on time spent in paid labor and at home (Blau and Ferber 1986). For example, traditional ideas stress the value of family and household time for women and of work for men. Thus, Becker's specialization processes coincide with traditional gender ideologies indicating that men specialize in paid labor and women in unpaid labor (see also Verbakel 2010). This is likely to decrease women's income and wage rate especially when male partner's income increases. This also implies that in more traditional cultural contexts, it will be less common or less accepted to use the higher household income (resulting from male partner income increases)

to outsource household and care tasks, or for women to use their partner's contacts and skills for their own career advancement. Similarly, more traditional gender ideologies may encourage the male partner to expect that the female partner specializes in household and care tasks, because it is common for men to be responsible for earning money for the family.

In contrast, egalitarian gender ideologies stress the value of both work and the family; the predominant idea is that both partners should have a career and should be involved at home. As a consequence it is more likely that it is accepted that women use their partner's available resources for their own career advancement. Moreover, it is more common that a higher household income is used to outsource care and household tasks, enabling the female partner to invest more time and energy in the labor market. Male partner's career ambitions are more likely to spill over to the female partner, because there might also be more career opportunities for women on the labor market when employers expect that also women want to pursue a career. This would affect women's hourly wages. We thus assume that egalitarian gender ideologies are more likely to stimulate positive relationships between incomes of partners (resource perspective) and that more traditional gender ideologies stimulate more negative relationships between partners' incomes and wage rates (restrictive perspective). We hypothesize:

H3: In countries with more traditional gender ideologies, the income of the male partner is more negatively related to the female income and wage rate than in countries with more egalitarian gender ideologies.

2.2.2 The relevance of the economic context

The economic affluence hypothesis states that economic circumstances within countries shape the economic necessity of women to invest time and effort on the labor market (Steiber and Haas 2012; Uunk, Kalmijn and Muffels 2005). More specifically, the degree to which a single income in a couple household is enough to maintain a decent standard of living is known to differ between countries (Blossfeld and Drobnič 2001; Steiber and Haas 2012). In countries with relatively high purchasing power, one income is enough to meet the needs of the whole family. The purchasing power of the average male income is low in countries such as Portugal and Greece. In contrast, the purchasing power of the average male income is high in countries such as the Netherlands or Denmark.

Thus, the economic context is relevant for partner income relationships because differences in the purchasing power of the average male income are expected to result in differences in the degree of specialization that is most valuable in terms of increasing family utility. A high level of specialization is most valuable for family well-being in countries where one income is enough for a decent standard of living, because there is less need for an additional income. In contrast, in countries where the purchasing power of average earnings is low, an additional part-time or full-time income is required, alluding to the “need for income” effect (England 2010:152). Women would therefore invest less energy and time at work in the former situation than in the latter, something that is likely to affect their career advancement. The economic need might even stimulate positive partner effects (resource perspective), because the additional income of the female partner would improve the couple’s standard of living from less than adequate to comfortable or luxury. As a consequence, we assume that low purchasing power of the average male income is more likely to stimulate positive relationships between incomes and wage rates of partners (resource perspective) and that high purchasing power of the average male income is more likely to stimulate more negative relationships between incomes and wage rates of partners (restrictive perspective). We hypothesize:

H4: The male partner’s income is more negatively related to the female income and wage rate in countries with high purchasing power than in countries with relatively low purchasing power.

3. Data and Methods

3.1 Data

We test our hypotheses with national samples from the European Community and Household Panel (ECHP) (for more details, see Eurostat 1996; Verma and Clémeanceau 1996). The ECHP is an annual multi-country panel that includes individual and household information collected in eight waves (1994-2001). We analyze data for 13 countries: Austria, Belgium, Denmark, Finland, France, Germany (German Socio-Economic Panel Study, for details see Wagner et al. 2007), Greece, Ireland, Italy, the Netherlands, Portugal, Spain and the UK (British Household Panel Study). Seven waves (1995-2001) are available for Austria and six (1996-2001) for Finland. Lacking a panel design, Sweden is omitted, as is Luxembourg,

which has a too small sample for reliable estimates. These data are ideally suited to our questions because they allow us to consider the income situation of both partners over time.

We selected a sample of women living with their partner, aged 18-50 and working at the time of the first observation. Similarly, the sample was restricted to women whose partner was 18-50 years old and also working at the time of the first observation. We added partners as they formed unions and ceased observing the respondents if their partnership ended or if the partner no longer wished to take part in the survey (30%). Thus, respondents whose partnership ended during the survey are in the analysis for the time period of their partnership. This resulted in 11,761 respondents and 66,571 person-year observations. Deletion of missing data, of observations of respondents or partners who were still in school in addition to working, and of observations with 0 incomes (see details below) resulted in information on 11,692 women with 53,801 person-year observations. Because fixed effect models require a minimum of two observations of women living with the same partner and with information on all the dependent and independent variables, the final sample was 9,373 women. Averaged over five observations each, this produced a total of 49,382 person-years of data.

3.2 Measurement

Dependent Variables

The dependent variable female income was measured with help of the natural log of her monthly gross income for each year of the survey, converted to purchasing power parities based on the exchange rates provided by the ECHP (as recommended by the ECHP provider, we took the exchange rate from the year prior to the year when income was measured; the ECHP imputed missing information on the income variables). Observations in which the respondent was not working and thus reported 0 income or 0 working hours were not considered in the analysis (14%; 7536 observations; 0 respondents). Including them would have resulted in too much deviation from a normal distribution of the female income variable and would have mixed the relevance of male income for women entering or leaving the labor market with the relevance of male income for female partner's income. We therefore do not consider extreme specialization, where one partner earns the whole household income and the other one does not contribute any income. This is likely to mean that partner income effects have been underestimated, because including women who do not work would increase the variance in the income situation of both partners. Previous research has already shown that the

partner's socio-economic position influences women's entry into and exit from the labor market (e.g. see Blossfeld and Drobnič 2001 for a summary).

To measure the female wage rate, the monthly gross income converted to purchasing power parities was divided by monthly working hours and converted to the natural log afterwards. 25 observations and 1 respondent were deleted due to missing information on working hours.

Independent Variables

Male partner income was measured with the help of the natural log of the monthly gross income for each year of the survey, converted to purchasing power parities based on the exchange rates provided by the ECHP. Observations in which the respondent was not working and thus reported 0 incomes or 0 working hours were not considered in the analysis (215 observations; 0 respondents).

Control Variables

Women's work experience and *work experience*² variables control for the underlying trajectory of female income based on seniority and experience. Work experience equals the woman's age at the time of the survey minus her age at the start of her first job. We adjusted work experience for career interruptions during the survey and the five years before the survey: (1) Survey years in which the woman was not employed were subtracted from the years since the woman started her first job; (2) For non-employment spells of one year or less before the survey, a single year was subtracted; (3) If, during the five years before the survey, the woman reported a non-employment spell longer than one year, two years were subtracted. We divided women's work experience by 10 to show average income developments over a 10 year period. Changes from one year to another are rather small. Respondents with no information on the start of their first job were deleted from the analysis (501 respondents²). To control for the motherhood wage penalty, we consider changes in the *number of children* in our analysis, including own and adopted or foster children. Observations with missing information (32 observations; 1 respondent) were deleted from the analysis. *Marital status* is a dummy variable, with a value of 1 for married and a value of 0 for cohabiting without

² We also did the analysis with the age variable instead of the work experience variable which had no missing information. The results however remained quite stable.

marriage (missing: 25 observations; 0 respondents), which captures the relevance of marriage for changes in income.

Country Context

In order to measure the time varying cultural context, we used the Gender Empowerment Measure (GEM) from the Human Development reports (UNDP 2012) of the United Nations Development Programs (see Table A for average GEM values for each country over time). The GEM is based on the percentage of parliamentary seats held by women, the percentage of administrators and managers who are women, the percentage of professional and technical workers who are women, and women's share of earned income compared to that of men. The advantage of this measurement is that it is available for each year of the survey. An exception is France, where the GEM is only available until 1997 and again from 2005 on. We therefore imputed the GEM scores for 1998, 1999, and 2001 for France using interpolation. The GEM ranges between 0.37 and 0.83. Although the GEM does not directly measure gender ideologies, it captures the consequences of gender ideologies within countries. The GEM indicator has already been used by Fuwa (2004) to explain the division of household labor in 22 countries, and by Fischer et al. (2004) to measure gender roles within countries.

The time varying economic context is measured by the purchasing power (PP) of average male wages in different countries at the different time points based on the ECHP (see Table A for average PP values for each country over time). To calculate the PP, the monthly gross male income was converted to purchasing power parities based on the exchange rates provided by the ECHP and then divided by monthly working hours. We top-coded the purchasing power of male income to 1000 and then took the mean per country. PP and GEM are significantly correlated (.65). Table 1 provides the means and standard deviations for the dependent and all independent variables.

Table 1: Description of Dependent and Independent Variables

	M	SD	Range
<i>Person-year observations (N=49,382)</i>			
Dependent variables			
Ln(female income)	7.07	.64	1.37 to 10.75
Ln(female wage rate)	3.64	.52	-1.29 to 7.32
Independent variable			
Ln(male partner income)	7.57	.51	2.76 to 11.01
Control variables			
Female work experience/10	1.92	.89	0 to 4.70
Female (work experience/10) ²	.79	.88	0 to 7.75
Number of children	1.39	1.03	0 to 8
Married ^a	.88		0/1
<i>Time varying country context variables</i>			
<i>(N=101)</i>			
Cultural context			
Gender Empowerment Measure (GEM)	.632	.11	0.37 to 0.83
Economic context			
Purchasing power of average male salaries	45.13	12.47	15.47 to 73.91
(PP)			
<i>Observations per person (N=9,373)</i>	5.30		2-8

Sources: ECHP 1994-2001, UNDP 2012; Notes: ^aMarried: 0 = *cohabiting*, 1 = *married*;
M=mean; SD=standard deviation; Ln=natural log

3.3 Methods

There are several possible mechanisms behind the relation between the incomes of partners that have not been clearly distinguished in prior research. The first mechanism – and the one we are interested in in our study – is that male partner income and resources which are related to male partner income (e.g. beneficial networks, income negotiation skills) influence female income for example by restricting it or by enhancing it. The second mechanism that causes a relationship between partners' income is that men and women with high incomes are more likely to meet and form a couple, with the same being true of men and women with low incomes. This could for example be because people find their partners in the workplace. Similarly, it is well known that men and women with a similar educational background are likely to become partners and education is an important predictor of future income. The third

mechanism refers to shared resources and restrictions in the surroundings. For example, some regional labor markets make it difficult to get a better paid job, whereas others offer various career prospects. Because both partners experience the same regional labor market conditions this is a further reason why incomes of partners are likely to be interrelated. Only the first mechanism implies that male partner income influences female income. In this study we will separate the first effect from the other two mechanisms by using fixed effect models (Allison 2005; Castilla 2007; England et al. 1988; Waldfogel 1997). Fixed effect models eliminate bias due to time-invariant unobserved factors which determine the dependent or independent variables by looking only at individual change (Allison 2005; Castilla 2007; Musick and Meier 2012; England et al. 1988). Thus, it is likely that they eliminate possible bias due to income homogamy or educational homogamy between partners as well as shared resources and restrictions in the environment which remain stable. This is important as we do not have proxies or bad proxies to control for all possible other mechanisms. Not controlling for these aspects could lead to either an overestimation or an underestimation of male partner income effects on female income. Note that those models are not able to control for shared resources and restrictions in the environment which change over time or for possibilities of reversed causation (Musick and Meier 2012). Thus, if local labor markets within countries change over time this might be an alternative explanation of positive or negative correlation in partners' income.

Our models are conservative tests of the hypotheses because they only capture the relevance of the male partner's income changes for female income and wage rate changes within a household. They do not consider the effects of the male partner's income on female income by comparing couples. The variance in the dependent variable is thus much lower than if we had also considered differences between women. This means that the effects could be larger when we consider both within and between individual variance. Fixed effect models are also common in studies on the motherhood wage penalty (e.g. Waldfogel 1997).

In our first analysis (Table 2), we examine the relevance of partner's income for female income and wage rate per country, controlling for work experience, work experience², marital status and number of children. Table 3 tests the relevance of the cultural and economic contexts for differences in the effect of the male partner's income on female income and wage rate. This is done using interaction effects between the GEM and partner income as well as the PP and partner income. All continuous variables were mean centered because this makes interaction effects and the constant easier to interpret.

4. Results

4.1 The relevance of the partner in different European countries

Table 2 shows the effect of male partner income on female income and wage rate in 13 European countries. We find that incomes of partners have a negative relationship in the Netherlands. There, a 1% increase in male partner income decreases female income by .091%. This relationship is not visible for women's wage rate in the Netherlands, showing that male partner income in the Netherlands only affects women's total income because women adjust their working hours³. Hypothesis 1, which argued that the income of the male partner is negatively related to the income and wage rate of the female partner, is partly supported in the Dutch context, but not in the other country contexts.

In most of the countries, we find that male partner income is positively related to female income. That is visible in Austria, Belgium, Denmark, Finland, France, Greece, Italy, Portugal, and Spain. The largest positive relationship is found in Portugal, where a 1% increase in the male partner's income increases the income of the female partner by .478%. The smallest positive association is found in Belgium, where a 1% increase in the male partner's income increases the income of the female partner by .079%. No significant effect of male partner income on female income is found in Germany, Ireland, and the UK.

Investigating the relevance of male partner income for women's wage rate in the same countries shows that male partner income is also positively associated with women's wage rate. In Germany, we find that male partner income is only positively related to women's wage rates. The latter association was suppressed by women's changes in working hours in the model on women's income, implying that in this country male partner income increases are positive for women's wages but negative for women's working hours. In Belgium, the significant positive relationship between the incomes of partners disappears in the models on women's wage rates, which suggests that male partner income in Belgium only affects women's total income because women adjust their working hours. No significant relationships between the wages of partners are found in Ireland and the UK. Overall, this provides some evidence for hypothesis 2, which argued that the income of the male partner is positively related to the income and wage rate of the female partner. We can further conclude that countries differ in the relevance of male partner income for female income. Section 4.2 will investigate whether this is due to the cultural and economic context.

³ Additional analysis with working hours as a predictor for women's income showed the same.

Table 2: Fixed effect models of male partner income influences on female income and wage rate - results per country

	Austria	Belgium	Denmark	Finland	France	Germany	Greece	Ireland	Italy	Nether-lands	Portugal	Spain	UK
Ln(female income)													
Constant	6.862***	7.212***	7.403***	7.240***	6.927***	7.075***	7.230***	7.132***	7.246***	6.999***	6.978***	7.198***	7.054***
Ln(male partner income)	.235***	.079**	.281***	.151***	.337***	.032	.250***	-.003	.267***	-.091***	.478***	.241***	-.017
Work experience/10 (Work experience/10) ²	.372*** -.001	.314*** -.060***	.471*** -.054***	.399*** -.092***	.160*** .085***	.441*** -.040**	.427*** -.030	.538*** .012	.207*** .022*	.627*** -.048**	.278*** -.003	.317*** -.060***	.543*** -.013
Number of children	-.080***	-.072***	-.025**	-.024*	.013**	-.147***	-.001	-.090***	-.030**	-.166***	.004	-.070***	-.177***
Married (Ref. Cohabiting)	.077	.141***	.022	.007	.060*	-.058 *	-.065	-.050	-.066	-.023	-.057	-.023	-.059*
R2 (within)	.140	.123	.424	.151	.172	.145	.370	.111	.172	.122	.352	.140	.160
F statistics	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Ln(female wage rate)													
Constant	3.461***	3.821***	3.854***	3.634***	3.367***	3.640***	3.530***	3.715***	3.735***	3.903***	3.339***	3.605***	3.613***
Ln(male partner income)	.287***	.038	.250***	.132***	.344***	.064***	.237***	.026	.303***	-.021	.460***	.241***	.036
Work experience/10 (Work experience/10) ²	.367*** -.029*	.377*** -.038**	.454*** -.036***	.354*** -.067***	.170*** .100***	.474*** -.045***	.418*** .005	.559*** -.003	.201*** .018	.525*** -.050***	.331*** .003	.254*** .009	.479*** -.024*
Number of children	-.012	-.011	-.014*	-.007	.053***	-.009	.029	.005	.003	.031**	.021	-.021	-.020*
Married (Ref. Cohabiting)	.099*	.075*	.016	-.014	.084**	-.005	.070	-.020	-.033	.044*	-.056	-.004	.006
R2 (within)	.169	.167	.455	.149	.162	.180	.263	.187	.180	.149	.338	.132	.171
F statistics	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Number of observations													
Person-year observations	2320	3686	4045	3186	4380	6163	1571	1815	4155	7237	3478	2550	4796
Respondents	463	653	742	738	837	1156	299	385	747	1360	634	522	837

Source: ECHP, 1994-2001; Notes: *p < .05 **p < .01 ***p < .001; Continuous variables were centered around the mean; Ln=natural log

4.2 The relevance of the cultural and economic context

In the following step, presented in Table 3⁴, we investigate the relevance of the cultural and economic context for the association of incomes and wages of partners. Because these models include interactions, the main effect of male partner income now represents the relationships of partner incomes in countries with average GEM scores and where the purchasing power of the average male income is also average. In model 1 we see that a 1% increase in male partner income in these country contexts results in an increase in female income by .084%. Model 2 shows that wage rates of those women increase by .107% due to male partner income increases.

The positive interaction between male partner income and GEM in model 1 means that in countries with more egalitarian gender ideologies, male partner income is even more positively related to female income than in countries with low or average GEM scores. This effect is not visible on women's wage rates in model 2. Male partner income is not more positively related to female wage rates in countries with more egalitarian gender ideologies. This implies that the larger association between incomes of partners in countries with higher GEM scores is due to women increasing their working hours as their male partner's income rises. We therefore find some support for hypothesis 3, which argued that the income of the male partner is more negatively related to female income and wage rate in countries with more traditional gender ideologies than in countries with more egalitarian gender ideologies (H3).

The interaction between male partner income and purchasing power of the average male income in model 1 shows that the relationships between male partner income and female income are smaller in country contexts with a higher PP. This interaction effect is also visible on women's wage rate in model 2. This is in line with hypothesis 4, which suggested that the income of the male partner is more negatively related to female income and wage rate in countries with high purchasing power than in countries with relatively low purchasing power (H4).

⁴ Additional models are presented in Table B in the Appendix. They illustrate the direct effects of the country indicators without interactions and the interaction effects without direct effects of the country indicators.

Table 3: Fixed effect models of male partner income influences on female income and wage rate - the influence of the cultural and economic context

	Model 1		Model 2	
	Ln(female income)		Ln(female wage rate)	
	B	SE	B	SE
Constant	7.073***	.009	3.613***	.007
Ln(male partner income)	.084***	.006	.107***	.005
Work experience/10	.094***	.013	.071***	.011
(Work experience/10) ²	-.018***	.005	-.017***	.004
Number of children	-.081***	.004	.008*	.003
Married	-.016	.009	.018	.008
Country Indicators				
GEM	.297***	.047	.319***	.041
PP	.018***	.001	.018***	.000
<i>Interactions Ln(male partner income) with ...</i>				
GEM	.143**	.049	-.018	.043
PP	-.008***	.000	-.007***	.000
R2 (within)	.175		.220	
F statistics	.000		.000	

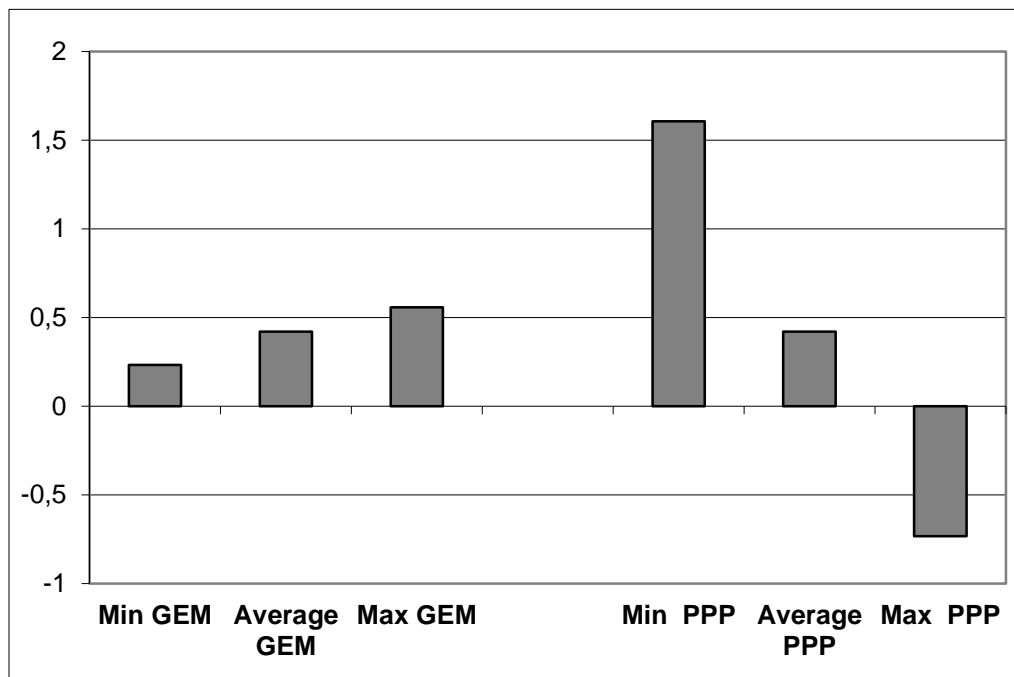
Source: ECHP, 1994-2001; Notes: *p < .05 **p < .01 ***p < .001; Continuous variables were centered around the mean; Min of centered GEM variable: -.262; Max of centered GEM variable: .193; Min of centered PP variable: -29.661; Max of centered PP variable: 28.787; B=coefficient; SE=standard error of the coefficient; Ln=natural log

Figure 1 illustrates the relevance of the cultural and economic context for the relationships between incomes of partners. We considered a 5% increase in partner income and the situation with average GEM scores (GEM=0), minimum GEM scores (GEM=-.262), and maximum GEM scores (GEM=.193) as well as average PP scores (PP=0), minimum PP scores (PP=-29.661), and maximum PP scores (PP=28.787). The following formulas are used:

$$\text{Female Income} = .084 \times \text{Partner Income} + .143 \times \text{Partner Income} \times \text{GEM}$$

$$\text{Female Income} = .084 \times \text{Partner Income} + -.008 \times \text{Partner Income} \times \text{PP}$$

**Figure 1: The relevance of the cultural and economic country context:
Increases in female income due to 5% partner income increases**



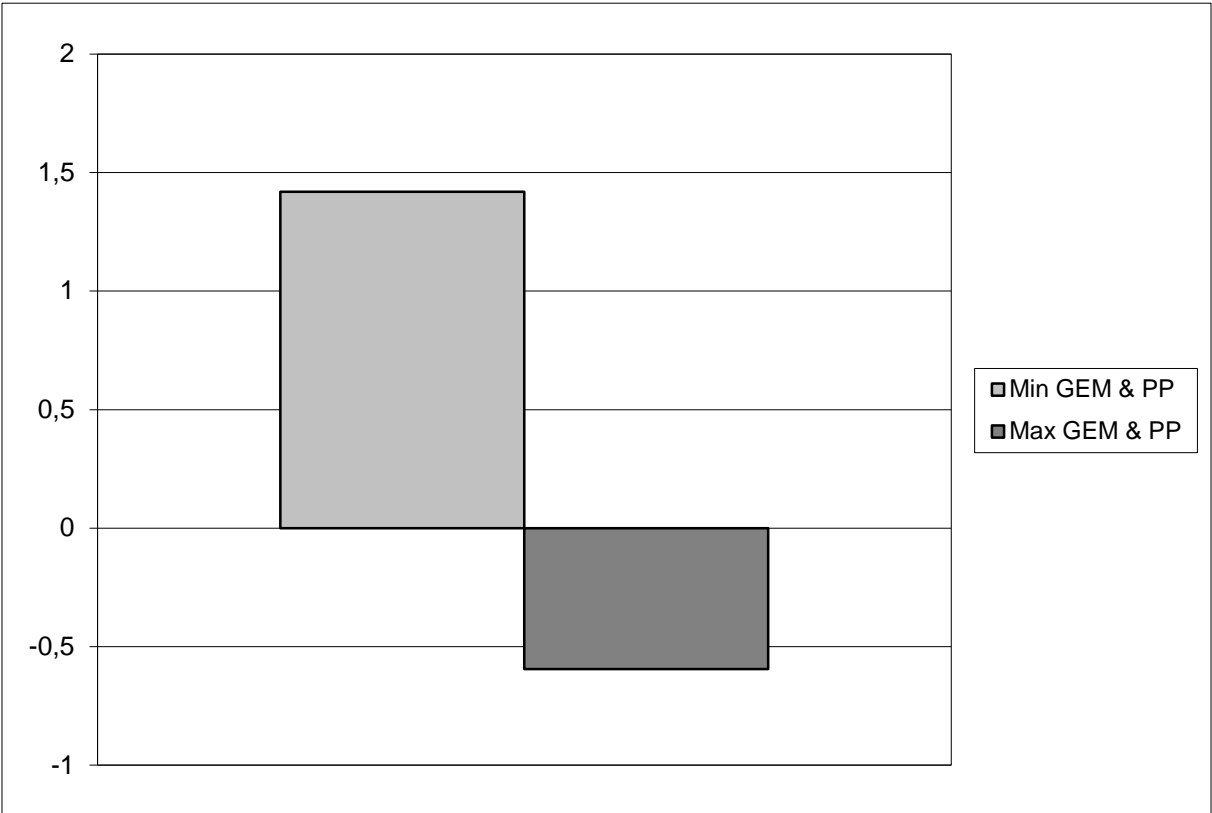
Source: ECHP, 1994-2001; Note: GEM=Gender Empowerment Measure; PP= Purchasing Power of average male income

All other variables being constant, a 5% increase in the income of the male partner increases women's income by 0.420% in country contexts with average GEM scores ($5 \times .084 = .420$), by .233% in country contexts with minimum GEM scores ($.420 + (5 \times .143 \times -.262) = .233$) and by .558% in countries with maximum GEM scores ($.420 + (5 \times .143 \times .193) = .558$). Thus, the results show that the relationships of partners' incomes are not negative in countries with more traditional gender ideologies but still less positive than in countries with more egalitarian gender ideologies. With respect to the economic context, the model predicts that women's income increases by .420% in country contexts with average PP ($5 \times .084 = .420$) and by 1.606% in country contexts with minimum PP ($.420 + (5 \times -.008 \times -29.661) = 1.606$), and that it decreases by .732% in countries with maximum PP ($.420 + (5 \times -.008 \times 28.787) = -.732$).

The Netherlands scores very high and Greece very low on the GEM and PP measures (see Table A). We therefore also investigate the situation in countries with maximum GEM and PP scores and minimum GEM and PP scores in Figure 2, offering additional insight into the influence of the cultural and economic context. Countries with a very high score on one country characteristic and a very low score on the other country characteristic do not exist

(note that the correlation between GEM and PP was .65). In a country context with maximum scores on both indicators, a 5% increase in male partner income decreases women’s income by .594% $((5 \times .084) + (5 \times .143 \times .193) + (5 \times -.008 \times 28.787) = -.594)$. In a country context with minimum PP and a minimum GEM score, a 5% increase in male partner income increases women’s income by 1.419% $((5 \times .084) + (5 \times 0.143 \times -0.262) + (5 \times -.008 \times -29.661) = 1.419)$. Thus, the economic country context seems to be more influential than the cultural context. This implies that even if the Netherlands scores relatively high on the GEM indicator the high scores on the PP indicator lead to negative partner income influences as shown in the separate analysis for the Netherlands. Similarly, for Greece especially the low PP scores seem to lead to relatively large positive partner income effects.

Figure 2: Comparing the relevance of the cultural and economic context: Changes in female income due to 5% partner income increases



Source: ECHP, 1994-2001; Note: GEM=Gender Empowerment Measure; PP= Purchasing Power of average male income

Since Portugal seems to be an outlier with very low PP and an exceptionally large positive male partner income coefficient in Table 2 we re-estimated the results of Table 3 without Portugal. This indeed changed the effect of the interaction between the cultural context and male partner income. In the model on women's income the interaction turned out to be not significant. In the model on women's wages the effect turned out to be even negative. This was not the case when deleting one of the other countries. Only deleting the Netherlands also turned the interaction effect between GEM and male partner income on women's income into non-significant. Therefore, future research with more countries needs to investigate whether these inconsistent findings are due to the limited amount of countries or if indeed the cultural context is less important for the relationship of incomes and wage rates of partners.

5. Discussion

In this study, we investigated the relevance of male partner income for female income and wage rate in different European countries applying economic and social capital theory. Moreover, we were interested in the question whether the cultural and economic country context causes differences in the influence of male partner income on female income and wage rate.

We conclude that, in line with the idea of partners' linked lives (Moen 2003; Pixley and Moen 2003), the income of the male partner is likely to influence the income and wage rate of the female partner. Thus, the correlations between the incomes of spouses shown in previous research (Henz and Sundström 2001; Juhn and Murphy 1997; Schwartz 2010; Verbakel 2008) are at least partly due to male partner income influences. We tried to make this effect visible with the help of fixed effect models. Fixed effect models only consider the relevance of changes in income by the male partner affecting income changes of the female partner (Allison 2005; Castilla 2007; England et al. 1988; Waldfogel 1997), thus controlling for income and educational homogamy as well as stable shared resources and restrictions in the surrounding. However, it is possible that our results are partly due to shared restrictions or resources which change over time e.g. local labor markets which improve over the years. Thus, an alternative interpretation of our results could be that changes in the local labor market have increased the income of both partners.

Our results do not imply that income homogamy and stable shared resources and restrictions in the environment do not also cause the correlations between the incomes of

spouses. It remains an open question which mechanisms are most influential: partner income influences, educational homogamy or shared resources and restrictions in the surrounding.

We further conclude that the relationship between incomes and wage rates of partners are mostly positive. It seems that women profit from a partner who is successful on the labor market. Women with such a partner are more able to increase their hourly wages and to invest more hours on the labor market increasing their total income. Thus, we find more evidence for the resource perspective based on social capital theory (Coleman 1990; Granovetter 1974) and little evidence for the restriction perspective based on economic theory (Becker 1991; Blau and Ferber 1986; Bryant 1990). The finding that male partner income is positively related to female income in most of the countries implies that the male partner's income situation is less likely to explain the gender income gap. To the contrary, the gender income gap seems to reduce due to processes within households.

The results of this study also imply that a country's economic context is an important moderator of the relationship between partners' incomes. Our results suggest that when the average income in a country holds a high purchasing power, couples will tend to specialize more in respect to time and effort on the labor market and at home. In contrast, the need for an additional income (England 2010) appears to encourage the female partner to use her male partner's resources for her own career advancement. Economic necessity therefore appears to work against specialization. These insights seem to explain why positive income influences of the partner were especially large in countries such as Portugal, Greece or Italy. This seems to be due to a relatively low purchasing power of average income within the countries. That only in the Netherlands male income negatively affected female income can be explained by the fact that it is the country with the highest purchasing power of average income. These circumstances encourage part-time employment by female partners which is also highly available in the Netherlands, a country where the one and a half earner family is quite common. This variation in male partner income effects might be an explanation for country differences in women's income.

Contrary to our expectations the results on the relevance of the cultural context for male partner income effects were less stable. Considering all countries in the analysis, we found that in more egalitarian contexts male partner income is more positively associated with female income than in more traditional cultures. This is in line with the arguments of Blossfeld and Drobnič (2001) and Verbakel (2010) and the findings of Fuwa (2004) which has revealed the importance of an egalitarian country context for a more equal division of

household labor within couples. However, the moderating influence of the cultural contexts disappeared when we deleted Portugal or the Netherlands from the analysis. Whether this is caused by the limited number of countries or whether the cultural context is indeed of less relevance for the relationships of incomes of partners needs to be investigated in future research with more countries. Moreover, it would be interesting to investigate regional differences in the relationships of incomes of partners as it is likely that gender cultures and norms also vary within countries.

In line with Bernardi (1999), Bernasco, de Graaf and Ultee (1998) and Verbakel (2008), we assumed that positive partner income influences take the form of social network contacts, help with income negotiation skills, or spillover of work ambition between partners. Moreover, we argued that a high household income is used to outsource care and household tasks, enabling women to work more hours. Future research could investigate whether these processes indeed exist and which of these mechanisms is most important. Moreover, further interesting insights about linked lives of partners could be gained by researching whether partners coordinate their work decisions or whether income influences between partners are more implicit and indirect. This could be done with the help of interviews asking partners to describe their decision making in respect to the division of labor and own career investments.

Our analysis did not include women who had never an income throughout the whole period. This is likely to mean that partner income effects have been underestimated, because including women who do not work would increase the variance in the income situation of both partners. Previous research has already shown that the partner's socio-economic position influences women's entry into and exit from the labor market (e.g. see Blossfeld and Drobnič 2001 for a summary). Future research is necessary to investigate how male partner influences on labor market participation and earnings are interrelated.

Overall, our results show the importance of incorporating the economic situation in country comparative research on gender inequalities and women on the labor market. Previous research has mainly considered the institutional context (e.g. Gornick, Meyers and Ross 1998, Gornick, Meyers and Ross 2003; Mandel and Semyonov 2006). Considering the cultural and economic context next to the institutional context would further allow investigating the relationship between them. Future research could further consider the institutional context for partner income influences if data on tax incentives for a dual earner, male breadwinner or one and a half earner family get available for all countries and all years of the ECHP.

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8. Appendices

Table A: Time varying country indicators

	Gender Empowerment Measure (GEM)	Purchasing power of average male salaries (PP)
	<i>M</i> of period 1994-2001	<i>M</i> of period 1994-2001
Austria	.71	44.18
Belgium	.65	53.82
Denmark	.76	60.13
Finland	.77	46.71
France	.52	44.51
Germany	.72	49.53
Greece	.45	29.19
Ireland	.59	47.99
Italy	.55	40.28
Netherlands	.72	64.58
Portugal	.59	20.79
Spain	.62	36.10
UK	.62	49.12

Source: ECHP, 1994-2001; UNDP 2012

Table B: Pooled results: Fixed effect models of income influences of the male partner for female income and wages

	Ln(female income)		Ln(female wage rate)	
	Model 1	Model 2	Model 1	Model 2
Constant	7.064***	7.049***	3.605***	3.589***
Ln(male partner income)	.053***	.152***	.078***	.176***
Work experience/10	.109***	.376 ***	.085***	.358***
Work experience ²	-.022***	.016***	-.020***	.018***
Number of children	-.081***	-.069***	.008*	.020***
Married	-.024**	.019*	.010	.054***
Time varying country indicators				
GEM	.299**		.336***	
PP	.016***		.016***	
Interaction Partner Income with ...				
GEM		.316***		.155**
PP		-.006***		-.005***
<i>R</i> ² (within)	.165	.135	.209	.169
<i>F</i> statistics	.000	.000	.000	.000

Notes: *p < .05 **p < .01 ***p < .001; Continuous variables were centered around the mean; Ln=natural log