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## Household Income Distribution and Hours of Work: An International Comparison

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**Household Income Distribution and  
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**June 1999**

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An International Comparison**

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## **I Introduction**

The aim of this paper is twofold. First to analyze the relationship between the distribution of household income and the distribution of working time in six European countries and in the United States. The second objective is to assess how the tax and transfer systems affect the gender allocation of working time within married or cohabitant households. This paper is structured in the following manner. Section 2 briefly describes the data set used (Luxembourg Income Study database) and the definition of the population and variables retained in this study. Section 3 describes the main features of income distribution, earnings inequality and household working time patterns in the selected countries. Section 4 tries to assess the impact of national tax and transfer systems on the net earnings return for various household working time patterns. In particular, we provide some preliminary estimates on the marginal effect of an increase of wife's working hours on household's net disposable income.

## **II. Data sources and variables definition**

The empirical evidence provided in this note is based on the Luxembourg Income Study database. Launched in 1983, the Luxembourg Income Study (LIS) aims to promote comparative research on the economic and social status of population in different countries. By using a common conceptual framework and by improving data comparability, LIS facilitate cross-country comparisons of earnings inequality, and other distributional issues. In order to insure a high degree of comparability demographic and socio-economics data have been harmonized by LIS.

The LIS database contains over 70 data sets from 26 countries; from these we have selected seven countries with a large variety of institutional arrangements. Six countries belong to the European Community (Belgium, Finland, Germany, Netherlands, Sweden and the United Kingdom) and one pertains to the OECD area (USA)<sup>1</sup>. Contents of the LIS database are derived directly from household's surveys and/or administrative records from the various countries (See Table A1 in the appendix for the source of the various country surveys). These countries have been selected because they provide measures of earnings, marital status, educational attainment and working time. Since we are primarily interested in the shape of earnings distribution and the design of working time patterns within households we have restricted the sample to married or cohabitant households. Because young people are often still in training, while older workers are prone to be eligible for retirement, we have further restricted our sample to persons aged 25 to 55. Concerning the employed we have limited the sample to wage earners. The exclusion of self-employed is due to data reliability and/or definition problem. First the definition of a "self-employed worker" varies across the selected countries. Second self-employment income is frequently misreported and average weekly working time for self-employed in some country was misreported (United Kingdom). Excluding self-employed may have some drawbacks. In particular as shown by other studies (see Sullivan and Smeeding 1997) households with earnings exclusively from self-employment tend to concentrate in the tails of the household income distribution. Excluding the earnings of self-employed workers

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<sup>1</sup> The relative limited number of countries selected is mainly due to lack of data, in particular working hours.

would tend to decrease measured earnings inequality for some countries, in particular for those having a relative high share of self-employed (USA and UK). The samples generally exclude persons living in institutions (hospitals, and nursing homes; the homeless; military living in barracks) and undocumented immigrants. Registered immigrants are included. Coverage in every country is 96 percent or more of the remaining civilian non-institutionalized populations. For the country and the population selected in this paper the sample size ranges from 1203 (Belgium) to 4113 (USA).

While LIS overcomes some problems of comparability, several problems remain. As mentioned above, the underlying data were originally designed in different countries and so they clearly depart from the advantage of a single survey uniformly applied to all countries. Some data set are based on expenditures survey (United Kingdom), other are separate waves of longitudinal household panel data (Belgium, Germany, and the Netherlands,) while others come from government administrative data (Finland, Sweden) or current population survey (USA). Another major drawback is that data is available only for the early 1990:s (1991-92 for all countries except Germany (1994)).

### ***Variable definition***

As mentioned above, LIS is based on household surveys, which report household income from a variety of sources, including earnings from wages and salaries, property income, private and public pensions, and means-tested transfers. Table Ab in the appendix displays the definition of the various components of household income. Four main categories of income can be distinguished: *annual earnings* consist of gross wages and salaries, *factor income* comprises gross earnings plus cash property income, *total gross income* includes social transfers and *disposable income*, corresponds to total gross income net of income tax and mandatory employee contribution. All of the selected countries have the same definition of disposable income. We also report a measure of household net disposable income per equivalent adult, using an “intermediate” income sharing rules (the square root of household size)<sup>2</sup>. Data are weighted by the number of persons in each family, so income is measured as (after tax and transfer) disposable personal income per adult equivalent.

All countries income measures are transformed into a common currency (US dollars) by using the OECD purchasing power parity indices (PPP's)<sup>3</sup>. Using a single index across countries presents a certain number of drawbacks. First by applying such an index across country, we assume implicitly that the PPP conversions, intended to reflect differences in purchasing power, is the same for the average household than for households at all points in the distribution. Second the PPP indices are

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<sup>2</sup> The adjusted net disposable income is equal to :  $\text{net disposable income}/(\text{family size})^{0.5}$ . This is a commonly used equivalence scale which increases at a decreasing rate with family size (see for instance. Atkinson, Rainwater, and Smeeding 1995 and Gottchalk and Smeeding, 1998.)

<sup>3</sup> Economic Outlook

mainly used for comparing GDP per capita. Using such index on micro data may not be appropriate when there are large differences across countries in the tax-financed provision of public goods, such as education and health. While the public goods are included in GDP they are not embodied in the money income received by households. The fact that most of the selected European countries we examine have publicly provided health or pension insurance schemes and other publicly provided goods means that the exclusion of these goods may affect relative measures of earnings inequality. This drawback is particularly problematic when earnings are compared in absolute terms (see for instance Gottschalk and Smeeding, 1998).

To compare education across countries is not without problems. We have used the same classifications as in Sullivan & Smeeding (1997) In order to measure the level of education three different categories has been defined; low, medium and high. The low education level consists of elementary school (or less) and short vocational training. The break between Low and Medium is the completion of high vocational training and secondary school (gymnasium, high school etc). High attainment level includes individuals with college or university degree (See Table Ad in the appendix). Some comparability problems are, however, to be stressed. For instance in the United Kingdom education is expressed in years of attendance rather than attainment for the other selected countries. Our classification for the UK can be regarded as a calibration in order to obtain figures that are comparable to the other countries, obviously the results must be interpreted with care. On the other hand, the fact that the German system is characterized by a high incidence of vocational education leads to an overstating of the Middle category for this country. Actually, many German workers without a University degree have comparable job skills than American College or European University graduates.

The last measurement issue we need to confront is the definition and measurement of working time (see Table Ac in the appendix). All of the selected country uses the week as unit of measurement. Nevertheless, some differences have to be stressed. While some countries notify a measure of actual average weekly working time (Belgium, Germany and United States), others report a measure of usual weekly working time inclusive overtime or regular weekly working time excluding overtime (Finland). The treatment of overtime varies also between countries, some refer explicitly to paid overtime (United Kingdom, Sweden), while others include all types of overtime. This difference in definition induces some bias, which must be kept in mind when we compare the length and the distribution of working time between different countries.

### III. Income distribution, returns to education and household composition

#### 3.1 Income distribution and earnings inequality in the selected countries

In Table 1 three household income measures are reported for married or cohabitants: households annual earnings (col. 1), total gross income (col. 2) and net disposable income adjusted or not to households size (col 3 and 4). The last three columns display the first decile, the median and the ninth decile respectively.

**Table 1.** Cross-national comparison of average earnings, gross factor and net disposable income. Percentiles. Ranking in parenthesis.

Country	Earnings (wage and salaries)	Total Gross Income	Net Disposable Income	Adjusted Disposable Income.	P10	P50 Median	P90
Belgium 1992	34422 (5)	38740 (6)	26488 (7)	14211 (7)	16450 (5)	26190 (5)	40060 (5)
Finland 1991	35938 (4)	40745 (3)	29647 (4)	16558 (4)	20950 (2)	29860 (2)	45680 (3)
Germany 1994	37807 (2)	40410 (4)	27247 (5)	15387 (5)	15580 (6)	23740 (7)	36980 (6)
Netherlands 1991	33107 (7)	36973 (7)	26979 (6)	15165 (6)	16480 (4)	24960 (6)	38290 (5)
Sweden 1992	33576 (6)	40323 (5)	29852 (3)	17166 (2)	21480 (1)	28580 (3)	41350 (4)
United Kingdom 1991	36962 (3)	41132 (2)	30055 (2)	17023 (3)	13410 (7)	27200 (4)	48700 (2)
United States 1991	46177 (1)	49381 (1)	39102 (1)	21354 (1)	17390 (3)	36400 (1)	62060 (1)

Note: All income measures in USD/year adjusted by PPP

P10: First decile, P50= Median and P90 = 90<sup>th</sup> percentile

Income Definition: Net Disposable Income (see Table A6 in the appendix for the definition)

Person Weighted Net Disposable Income (Equivalence Scale: Square Root of Family Size)

Source: LIS, own calculations

Independently of the type of earnings concept used, the United States displays the highest average income. The ranking of the European countries shows, however, a larger variation with regard to the type of income categories. For instance, Germany has the second position for gross earnings, but drops to the fifth position when net disposable income (adjusted or not to family size) is considered. On the other hand, Sweden ranks among the countries with the lowest gross earnings but ranks among the countries with the highest net disposable income; the distributional impact of the Swedish transfer and tax system explaining the relative improvement of this country. Worth noticing also is that the country ranking of net disposable income is hardly affected when net disposable income is adjusted to family size.

As shown by the fifth column, the average net income for the low-income groups (P10) is significantly higher in the Nordic country compared to the other countries, specially compared to the United Kingdom and the United States which exhibit the lowest net disposable income for this income group. In other words, **married and cohabitant households at the 10<sup>th</sup>**



percentile in the United Kingdom and the United States have a lower standard of living than comparable households in the Nordic countries.

Cross-national disparities in household earnings reflect both institutional differences (education level, industrial relation systems, wage setting and wage differential, productivity and efficiency aspects, tax and transfer systems etc) but also differences in households labour market commitments and working hours. For instance, the relative high average wage level in United Kingdom and in the United States (see Table A1 in the statistical appendix) and the relatively long average working time contribute largely to explain the relatively high gross earnings level in these countries (see below, section 3.4).

Table 2 below displays three common measures of income inequality. The first measure is the ratio of earnings at the 90th percentile to that at the 10th (P90/10), reported in the first column of Table 2.

**Table 2.** Measures of Earnings Inequality, households net disposable income. Ranking within parenthesis

Country	P90/P10	P10/P50	P90/P50
Belgium1992	2,44 (3)	0,63 (3)	1,53 (4)
Finland 1991	2,18 (6)	0,70 (6)	1,53 (4)
Germany1994	2,37 (4)	0,66 (4)	1,56 (3)
Netherlands1991	2,32 (5)	0,66 (4)	1,53 (4)
Sweden1992	1,93 (7)	0,75 (7)	1,45 (7)
United Kingdom 1991	3,63 (1)	0,49 (2)	1,79 (1)
United States1991	3,57 (2)	0,48 (1)	1,70 (2)

*Note: Greater levels of inequality are associated with higher values of P90/P10 and P90/P50, but with lower values of P10/P50*

Source: LIS, own calculations

This measure tends to emphasize the tails of the distribution without giving undue weight to extreme values. It is often helpful to break the P90/10 ratio into a bottom and a top portion, P10/50 and P90/50, as shown in the last two data columns. Greater levels of inequality are associated with higher values of P90/10 and P90/50, but with lower values of P10/50. As shown in Table 2, a married or cohabitant household at the 90<sup>th</sup> percentile in the United Kingdom and United states has almost three and half times the income of an household at the tenth percentile, while the distance is less than two times in Sweden and two and half time in the other European Countries.

The results in Table 2 are generally consistent with the stylized facts reported in other studies (see for instance, Gottschalk and Smeeding (1997)). Independently of the measures selected, earnings inequality is almost always greater in the United Kingdom and the United States than in any other European country. For the most part these rankings produce the same pattern of inequality with Nordic countries (Sweden and Finland) having the least inequality, while the United Kingdom and the United States exhibit the least equal distribution of family income among all countries covered in this study. The largest differences between the UK and US and the rest of the countries is found in the lower tail of the distribution. The high level of income inequality in

these two countries may partly be ascribed to the relatively modest level of welfare expenditures, partly to the design of the tax system (relatively low marginal tax rate).

We have so far examined differences across countries in relative incomes by focusing on percentile differences, comparing the average income of households at the 10<sup>th</sup> percentile relative to each country's 90th percentile or median. Even though these measures reflect the degree of inequality they do not take into account differences in absolute incomes across countries. While Nordic married or cohabitant households at the 10<sup>th</sup> percentile may have incomes closer to the median than the comparable low income household in the United Kingdom or in the United States, this does not necessarily mean that the Nordic low-income households have a higher standard of living. The higher median disposable income in the United States or in the United Kingdom may more than offset the higher degree of inequality.

Following standard procedure we compare the different deciles in each country to the corresponding decile in the United States. As shown in Table 3 below the value for  $(P_{10}^{sc} / P_{10}^{50 \text{ United States}})$  for the Nordic countries is roughly equal to 0.8, indicating that the Nordic median household has a level of disposable income that is roughly 80 percent of the United States median family.

**Table 3:** Differential in disposable income, at various percentile points, relative to the United States.

Country	P10i/P10 us	P25i/P25 us	P50i/P50 us	P90i/P90 us
Belgium1992	0,95	0,81	0,72	0,65
Finland 1991	1,20	0,98	0,82	0,74
Germany1994	0,90	0,75	0,65	0,60
Netherlands1991	0,95	0,79	0,69	0,62
Sweden1992	1,24	0,97	0,79	0,67
United Kingdom 1991	0,77	0,77	0,75	0,78
United States1991	1,00	1,00	1,00	1,00

Source: LIS

However, in the lower tail of the income distribution (first decile), the real net disposable incomes for married and cohabitants households in the Nordic countries clearly exceed household earnings for similar households in the United States and the other European countries. To illustrate: Swedish couples at the first decile has a disposable income that is roughly 20 percent higher than in the United State, 30 percent higher than in Germany and 55 percent higher than in the United Kingdom. From the first quartile, all the European countries are below the United States. In other words this means that real disposable income is lower than in the US at all percentiles greater than the 25<sup>th</sup> in the selected European countries. At the other end of the distribution (90<sup>th</sup> percentiles), couples in the Nordic Countries has a disposable income that is between approx. 65 % (Sweden) and 70 % (Finland) of the corresponding couples in the United States. Worth noticing also is that for all points in the income distribution (i.e. independently of the percentiles) the disposable income for British households is roughly 75 % of the household income in the United States indicating a similar profile of income distribution in the two countries (see Figure A1 on income distribution in the statistical appendix).

To sum up, the empirical evidence reported here produces some rather consistent patterns. Earnings inequality is almost always greater in the United Kingdom and the United States than in any other European country. British and American low-income groups appear to be further from the median of the distribution than in other countries. In particular, the analysis of income distribution reveals that American and British households in the lower tail of the distribution have lower absolute as well relative disposable income than comparable households in the Nordic countries. Low-income families in the other European countries have an higher disposable income than in the United Kingdom but lower than in the United States.

### **3.2 Education and income**

Sullivan and Smeeding (1997) analyzed the relationship between educational attainment and earnings inequality in several LIS-countries but failed to find evidence of a correlation between educational attainments and the inequality of earnings. However, they did find a positive correlation between returns to education and inequality. One important difference between our study and Sullivan & Smeeding's is that they only included full time earners, while our sample includes both earners and non-earners. If there is a positive correlation between education and the probability to work then the inclusion of non earners should reveal a relatively strong effect of education on earnings. Therefore we expect to find that the level of education as well as return to education is important in explaining earnings inequality.

As shown in Table A1 in the statistical appendix Sweden, closely followed by Belgium and the US, has the highest proportion of high educated, whereas Finland has the lowest. Only 11% of the spouses in Finland have a university degree as opposed to 28-29% in Sweden. The highest incidence of low educated individuals is found in the UK, where 39% of the males and 35% of the females have a primary education or less. However, as mentioned above, the figures for the UK are fragile due to the definition of this measure. Finland also has a high proportion of low educated, 26% for females and 30% for males. In the US the proportion of individuals with only a primary education is quite low, 11-12%. As expected the gender differentials in educational attainment is relatively low, except for Germany. Around, 20% of the German males have the highest education whereas only 10% of the German females belong to this group.

Table A2 displays the relationship between education and earnings inequality. The figures in the table are obtained from a simple regression analysis. For each country the following model has been estimated

$$(1) \quad \text{Log(earnings)} = \beta_0 + \beta_1(\text{education}_{\text{medium}}) + \beta_2(\text{education}_{\text{high}}) + \beta_3(\text{age}_{31-40}) + \beta_4(\text{age}_{41-50}) + \beta_5(\text{age}_{51-55})$$

where education and age are measured by dummy variables (1 if the male belongs to the group zero otherwise). Note that we have used the age and education of the male as a measure of household age and education. Since there is a high correlation between the age and education of married or cohabiting couples (except for Germany), the choice of the male is not important.

As an illustration of the interpretation, take the value 211 in the bottom right hand side of the US-table. This value means that US households with a male aged 51-55 and the highest education earns 211 % more than households with males in age 25-30 and the lowest education (the baseline)<sup>4</sup>.

Overall, household earnings increase with both age and education (see Table A2). However the impact of age and education on households' earnings differs notably between the countries. The highest return to education is, as expected, found in the US. For the youngest households the expected return to high education is 135% (compared to a low educated household). The return to education increases with age up to 211% for the oldest age group.

The Netherlands displays the lowest return to education. For the youngest households the expected return to high education is 53% (compared to a low educated household). The returns to education increase over age up to 83% for the oldest household. Thus the earnings age profile appears to be quite flat in the Netherlands. The returns to education are similar in Finland, Germany, Sweden and the United Kingdom, with the highest returns ranging from 109-129-%. Among the European countries, Belgium displays the highest return to education (157 %).

Table A3 relates the household earnings distribution and the spouse's level of education. In order to illustrate the meaning of the entries in this table take Finland as an example and use the first figure, 0.42. Thus, in Finland 42% of all the households with earnings below the first decile have a male with a low education.

A closer inspection of Table A3 reveals that the level of education is a major determinant of the level of earnings. However, once again the results differ widely between the countries. As mentioned above the US had the highest return to education, this is confirmed in Table A3 that shows that of all US-households with earnings above the ninth decile only 1% of the spouses has a low education. As a contrast, in the Netherlands 17% of the males and 20% of the females in the highest income groups belong to the lowest education group. There is also a very high proportion of low educated in high earner household in the UK, but again this result might be a consequence of the measurement problems mentioned above. Like in the US, a very low fraction of low educated spouses in Belgium is found among the high-income households. For the remaining countries (Finland, Sweden and Germany) the share of low educated in high earner household range from 15% (German females) to 6% (German males). Except for Germany, the gender difference within the countries is small.

It is also interesting to compare the number of high-educated people in low earner households. Sweden has the highest proportion (16% females and 13% males) and Finland the lowest (3% for both males females). This difference is quite large and there may be several reasons for this

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<sup>4</sup> The returns to education have been calculated as  $100 [\exp(b_2+b_5)-1]$ , where the b:s are the OLS-estimated values for the US.

finding, but remember that Finland had the lowest share of high educated and Sweden the highest. A market interpretation would be that the higher educational attainment in Sweden has reduced the return for education. However, this is not quite consistent with the results in Table A2, which reported a return for education in Sweden only slightly below those in Finland. Another interpretation is that there exist important differences in the quality of higher education between the countries. It is possible that many Swedish individuals that we coded as “highly educated” would not have belonged to this group by a Finish standard. As noted by Sullivan & Smeeding the definition of high attainment is relatively liberal in Sweden.

### **3.3 Children and family income.**

If we look at the effect of children on earnings and disposable income, we can begin to describe and investigate the extent to which the combined effects of wage structures, participation and working time patterns and family policies result in distributions of household income which meet the needs of households responsible for children. In the Nordic countries, characterized by a generous family policy, high female participation and low gender earnings inequality, small differences on earnings as well as disposable income are expected between households with and without children. The figures reported in Table A4 are consistent with this expectation. In order to study the effect of younger children, we concentrate on the first age group (25-30 years). The drop in household’s earnings due to one child is only 2% in Sweden (compared to couple without children), and there is not much difference in households with two children. In Finland the number of children (up to 2 children) does not significantly affect earnings. However, for three and more children the impact on earnings becomes negative, especially in Sweden (-17%). A major difference is that a large share of women in the Nordic countries return to the labor market when the children gets older and hence the impact of children on household earnings for older households is limited.

The UK and Germany stand in sharp contrast to the Nordic welfare states. A young household with two children in both the UK and Germany earns approximately 25% less than a young household with no children. Furthermore, the negative income effect of children remains when the households get older. A British household with two children in the oldest age group (51-55) earns 33% less than the young household with no children. The negative income effect of children is also pronounced in the Netherlands and the US while the impact of children in Belgium appears to be relatively small, except for households with 3 children or more (22 % less).

The effect of children on disposable income is shown in Table A5. Again, the Nordic countries stand out as both generous welfare states and countries where household labour market participation of parents is facilitated rather than constrained. Note that there is not one single negative figure in the table for Finland and Sweden. Thus, all households with children are better off regardless of number of children and the age of the head. For instance young households with two children have 12% higher disposable income in Finland and 8% higher in Sweden compared to young households with no children. Also, Belgium belongs to this league, with no negative entry. Again the largest negative effect is found in the UK. A young household with two children has a disposable income 16% below the comparable household with no children. The negative effect is also persistent for older households. For Germany, Netherlands and the US, there is also a clear negative income effect of children for the young households. Young German couples with two children have a lower income (about 14%) compared with

couples without children. The corresponding figures for the Netherlands and the US are 8 and 7 percent respectively.

The interesting message from Table A4 is the importance of a high female participation rate. In countries with a high female participation rate the negative effect of children on earnings are quite small. If the females return to the labor market after parental leave, the effect should be limited to an effect of very young children. Even though a comparison of Table A4 and A5 indicates the presence of a welfare system in all countries, (the effects of children are smaller on disposable income than on earnings), obviously the level of ambition in family policy differs sharply between the selected countries.

The female participation rate plays a crucial role in explaining earnings inequality. An important factor determining labor force participation is mother's return to work after childbirth. Women will choose to return to work depending on the net benefits, and a number of factors influence this choice; the relative level of wages available to women; the tax and benefit system, availability as well as cost of high quality child care, replacement ratio and duration of parental and maternity leave, organization of the school day and after school care, availability of part time jobs.

In order to discuss cross differences in family policy it is relevant to choose two polar cases, Germany and Sweden. A general description of the tax and benefit systems is given in Zimmerman (1993) and Gustafsson & Klevmarken (1993). The difference between Germany and Sweden is the difference between the one earner breadwinner model and the two-earner individual model. The German tax system gives a marriage benefit to all couples whereas the Swedish system has totally individual tax scales. There are no housewife or child deductions in Sweden but instead there is a cash child benefit paid to the mother. A consequence of the different tax system is that the marginal tax effects of part-time working wives are much smaller in Sweden. The breadwinner model is also visible in the near absence of full day childcare and also in the length of the school day. In Sweden there is subsidized full day childcare and a uniform schoolday followed by after school care.

There are also interesting differences in family policy. Sweden (1992) has 15 months of paid parental leaves, of which 12-months is at 90% of earnings before childbirth, and three months at a flat rate. There is the right to shorten work hours to a 6 hours workday until the youngest child is 8 years old, and the right to paid leave if the child is sick. In short the design of the Swedish system is such that it should be possible to combine work and family. In Germany there is a general childcare subsidy, extended to 24 months in 1992. Unlike the Swedish parental leave this subsidy is not related to previous earnings. However, the childcare subsidy from the 7<sup>th</sup> month becomes means tested against family income. In Germany there is a 24-month job protection for the mother and in Sweden a similar protection for 18 months. In addition Swedish women command relatively similar wages to their male partners on the labour market while gender earnings inequality in Germany is more marked.

The difference in these systems explains differences in female participation. As discussed above there is a substantial difference in labor force participation between Sweden and Germany. This difference is particularly large for mothers of pre-school children. According to our data only 42% of German mothers with children younger than seven years are working, while the corresponding Swedish figure is 92%. This highlights the effects of the breadwinner and the individual model. One of the most important differences concerns the probability of returning to

work after childbirth. Sweden has chosen a policy that benefits the two-earner family and German a policy that benefits the one earner family. The other countries in our study can also be classified as belonging to one of these categories. For this classification the participation rate of mothers to pre-school children is quite informative. Not surprisingly Finland have a high participation rate, 86%, and the Netherlands a low rate at 38%. Together with the Netherlands, the United Kingdom, 53%, and Belgium, 60%, can also be classified according to the breadwinner model, whereas United States, 67%, is a mixture of the two- and one-earner model.

### **3.4 Working time patterns and income distribution.**

As mentioned in the previous section, cross-national disparities in household earnings and disposable income reflect both institutional differences (education level, industrial relation systems, wage structure and gender wage differential, productivity and efficiency aspects, tax and transfer systems etc) and also cross-country differences in households labour market commitments and working hours. In this section we investigate to what extent differences in earnings level and income inequality may be explained by cross country differences in the gender division of labour and the allocation of working time within married/cohabitant households.

As shown by table A1 in the statistical appendix the female labour market commitment, measured here by employment rate, vary widely across country (between 50-93 %) while the male employment rate exhibits much lower variation (89-97 %). The Nordic countries display the highest employment rate both for male and female, while the female employment rate is low in countries as Belgium (56 %) and the Netherlands (50 %).

**Table 5:** Distribution of married/cohabitant household between dual earners single earners and no earners. Ranking within parenthesis

Country	Dual earners	Single earners (male)	Single earners (female)	No earners
Belgium	53,8 (6)	36,3 (2)	2,3 (5)	7,6 (2)
Finland	89,2 (2)	7,3 (6)	3,0 (2)	0,5 (7)
Germany	63,8 (4)	30,6 (3)	2,7 (4)	2,8 (4)
Netherlands	47,5 (7)	46,6 (1)	2,1 (6)	3,8 (3)
Sweden	92,3 (1)	5,1 (7)	1,6 (7)	1,1 (6)
United Kingdom	63,9 (5)	23,4 (4)	4,4 (1)	8,3 (1)
United States	73,1 (3)	22,2 (5)	2,9 (3)	1,8 (5)

Source: LIS, own calculations

As shown by Table 5, in all countries, except the Netherlands, the share of married or cohabitants dual earner households exceed significantly the share of single male earner households (male breadwinner model). However, the share of dual earner households varies widely across the countries ranging from around 90 % in the Nordic countries to around 50 % in Belgium and the Netherlands. Hence, the male breadwinner model is still an important

feature in Germany, Netherlands and Belgium (31 to 47 %) while its incidence is significantly lower in the United States and the United Kingdom (around 20 %) and smallest in the Nordic countries. Worth noticing also is the relatively high incidence of households with no earners in Belgium and the United Kingdom (around 8 %), compared to the other countries.

Table 6 below displays the cross-country differences in the gender allocation of working time among dual earners. Finland and the United States have the highest incidence of dual earner households where both spouses work full time. Conversely, in the Netherlands the share of dual earner household where both spouses work full time is extremely low (11 %). In the remaining European countries the share of dual earners household with either two full time or a female working part-time is more evenly distributed.

**Table 6:** Distribution of dual earners household (married or cohabitants) by working time patterns (%). Ranking within parenthesis

Country	Male working full time Female part-time	Both full time
Belgium	50,5 (3)	49,5 (5)
Finland	11,3 (7)	88,7 (1)
Germany	40,7 (5)	59,3 (3)
Netherlands	76,8 (1)	23,2 (7)
Sweden	45,7 (4)	54,3 (4)
United Kingdom	55,6 (2)	44,4 (6)
United States	27,0 (6)	73,0 (2)

Source: LIS, own calculations

As mentioned previously a part of the cross-country differences in household's earnings level may be explained by the above disparities in the gender division of labour and working time. To illustrate: the high incidence of dual full time earners in Finland, the long average working time for both men and women may partly explain the relative high average earnings in this country despite a relatively low hourly wage level (See table A1 in the appendix). Conversely, the relative low ranking of Netherlands, both in terms of earnings and disposable income, may partly be ascribed to the low female employment rate, the low incidence of dual full time earners and the high incidence of female part-time, in particular marginal part-time<sup>5</sup>, despite the highest average hourly wage. Apart from this polar case the analysis of the relationship between earnings level, income distribution and the gender division of labour is far from being obvious.

As described in the previous sections, the United States displays the highest average earnings and disposable income for married and cohabiting household. Several interrelated factors may explain this result<sup>6</sup>. The relatively high male and female employment rate (96 % and 76 % resp), the high incidence of dual earner households (70%), the relatively low incidence of female part-timers (20 %) in particular short part-timer (7 % of all female employees) and thereby the long average working hours for both male (43,8 h) and female (35.9 h), combined

<sup>5</sup> Short part-time is defined as 1-17 hours and long part-time as 18-34 hours.

<sup>6</sup> Obviously the cross country disparities in earnings level may also be related to other factors such as GDP growth.



with the relatively low dispersion in the gender distribution of working time<sup>7</sup>, explain to a large extent the higher average earnings and disposable income in the United States. On the other hand, the high wage differentials, the relatively high return to education and low average and marginal tax rate coupled to the relatively modest level of welfare expenditures explain the high income inequality in this country. Furthermore, the fact that high educated individuals tend to work longer hours (see Table A8a & A8b in the appendix), coupled with the high return to education, reinforces income inequality. Households belonging to the higher income deciles have longer total working hours (male + female) compared to households belonging to the lower tail of the income distribution. The household taxation system in the US seems to have little impact on reducing female participation or household working time distribution because of the relatively low tax rate (see next section). On the other hand, the design of the tax system in the US and relatively low marginal tax rate has not the same redistributive impact as in other countries, (such as the Nordic country), thereby contributing to the high disposable income inequality in this country.

Compared to the other European countries, the United Kingdom is characterized by both relatively high average earnings and disposable income and the highest level of income inequality (both before and after tax). Regarding the gender division of labour the United Kingdom exhibits a medium female employment rate and relatively low incidence of the male breadwinner model (20%). The main striking difference is the larger dispersion and the higher gender polarization in the distribution of working time (see Figures A2). The male distribution of working time exhibits the highest cross-country dispersion, is heavily skewed with a high incidence of long working time (more than 40 % of male employee work more than 40 hours). Even though the dispersion in female working time is also high, the female distribution of working time on the other hand is significantly flatter with a relatively high concentration of short part-timers (36 % of female part-time employees). Like in the US, high wage differentials coupled to the large dispersion and polarization in the gender distribution of working time contribute to reinforcing earnings inequality in the UK. As shown by Table 8a and 8b in the appendix, the difference in weekly average working time between young (25-30 years old) high educated men and low educated young men amounts to 13 hours a week. For married or cohabitating women, the working time discrepancy is of same magnitude. Difference in working time length between high educated and low educated households and relatively high returns to education reinforce income inequality. The fact also that the UK is characterized by a relative high degree of positive assortive mating (high incidence of household where both spouses are low or high educated, see Table A3 in the appendix) complete the picture. Highly educated well paid men and women work relatively longer average working hours than low educated one and have a clear tendency to live together. Another factor which main explain the positive association between working time and the large income disparity in the UK compared to other countries is the large incidence of couples with no earners (8 %).

The Nordic countries are both characterized by relatively low average earnings, high average disposable income and the lowest level of income inequality. The two countries exhibit the highest employment rates and the highest share of dual earner household (over 90 %). As noted previously, individualised taxation systems in a context of high overall and marginal tax rates reinforce the dual breadwinner model in the Nordic countries. The main difference between the two countries concerns the female distribution of working time, with a much higher

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<sup>7</sup> See Figures A2 in the statistical appendix

incidence of female full time work in Finland (90 %). Even though Sweden exhibits a high share of female part-timers the proportion of marginal part-time work compared to other countries is very low. The relatively low average earnings in our two Nordic countries may be explained by the comparatively low hourly wage (see table A1). On the other hand, the relatively high average disposable income is related to the generous welfare system. The low income inequality in the Nordic country can be largely explained by the low overall and gender wage differential (compressed wage structure), the high incidence of dual earner household, by the redistributive impact of the transfer and tax system and by the lower dispersion in the gender distribution in working time. In both countries, the difference in average working time between low and high educated men amount to around 1 hour. The difference on the other hand between cohabitating and married women is greater at around 5 hours a week, but much lower than in the UK. Hence in Sweden a part of income dispersion seems to be related to variation in women's working time and/or educational attainment. Since the gender dispersion in weekly working time in Finland is very low (about 2 hours compared to 7 hours in Sweden see Table A1 in the appendix), the variation in earnings seems more related to disparities in household human capital endowment and wage differentials between occupational groups.

As noted previously, the remaining three countries, the Netherlands, Belgium and Germany belong more to the so-called continental welfare state. Within these three countries, however, there are considerable differences in gender labour market commitments, household allocation of working time, income distribution and welfare system.

The Netherlands exhibits the lowest earnings, a low disposable income and a medium income inequality. Once again the Netherlands constitutes an extreme case, with a clear dominance of traditional male-breadwinner model (42% of households), the lowest share of dual earner household where both spouses work full time (11 %), the highest incidence of female part timers, in particular short part-time (40 % of all part-time employees). Compared to the male, the distribution of female working time is negatively skewed, very flat with a high dispersion of working time. On the other hand the male distribution of working time is strongly peaked around 38-40 hours (75 %). Both female and male average working time are also among the shortest in the countries analyzed (see Table A1 ). Hence, the relatively low earnings and disposable income levels despite hourly wage rates among the highest in the sample countries may be largely explained by the low share of dual full-time breadwinner households and the high incidence of female short part-time work. The Netherlands, along with Sweden, has the lowest level of earnings inequality but is similar to the two other continental welfare states with regard to disposable income inequality. The low earnings inequality may be explained by a relatively low returns on education and by a relatively low wage dispersion for married and cohabitant male employees. The weak female labour market commitment or the large share of male breadwinner household in the Netherlands can hardly be explained by the design of the Dutch taxation system (individual taxation) but is primarily related to the very limited provision of childcare facilities.

Germany has relatively high average earnings but relatively low disposable income and medium income inequality, a relatively low participation rate for married women (65 %) and a relatively high share of traditional male-breadwinner households (30%). Germany is also characterized by a large incidence of long working time (36% with a weekly working time exceeding 40 hours)

for men, a medium incidence of female part-time (29 %) and a relatively low incidence of short part-time (12 % of all female employees). Both male and female distributions of working time are characterized by a high dispersion but the male working time is positively skewed while the female is negatively skewed (see Figures A2). The high average earnings in Germany is related to high average hourly wage rates and long average hours for males (43.5 h). Income inequality in this country is primarily related to regional disparity in average pay levels and wage structures, in particular between East and West Germany (see section 5 below). Overall, the high levels of tax subsidy to the family through the tax splitting system, the high wages for men and the relative absence of childcare services for children under three years of age reinforce the housewife system of childcare and the male breadwinner system of family provisioning.

Finally, Belgium, like the Netherlands, has relatively low average earnings and the lowest disposable income. Belgium exhibits a relatively low female employment rate (57 %) and a relatively high share of traditional male-breadwinner model (35%). The male distribution of working time is characterized by a relatively high working time dispersion and is positively skewed, with a relatively high incidence of long working time (20 % of males have a weekly working time exceeding 40 hours). The female distribution of working time has only a medium level of dispersion and a relatively low incidence of female short part-time (7% of all female employees). The relatively low average hourly wage, the low gender employment rate and the relatively high incidence of the traditional male-breadwinner model explain the relatively low ranking of Belgium in terms of earnings and disposable income. Like the United Kingdom, Belgium has a relatively high share of couples with no earners (8 %) which partly may explain why Belgium has the highest earnings inequality after the United Kingdom and the US.

A simple aggregate correlation analysis between the various national employment and working time regimes and the cross-country variation in earnings and income inequality is reported in Table 7. Some interesting facts emerge. Cross-country disparities in household earnings level do not appear to be strongly related to disparities in the female employment rate. However, a larger part of the cross-country variation in earnings and disposable income may be ascribed to differences in both female average working time and the overall average working time at the household level, here measured by the total average household working time (male + female working time). As far as income inequality is concerned, the cross-country differences in female employment rate and the incidence of male breadwinner couples explain only a minor part of cross-country income inequality. On the other hand, the extent of income inequality seems more strongly related to the cross differences in the incidence of couples with no earners or with single female earners. Even though gender disparities in labour market commitment and household working time may affect the patterns of income inequality within a country, the cross-country disparity in earnings inequality seems essentially related to cross country differences in overall wage structure and occupational distribution.

**Table 6: Taxonomy**

Country	Earnings	Net Disposable Income	Income inequality	Employment rate		Incidence of Female part-time	Average Working hours		Couples with no earners	Incidence of male-bread winner model (Male full time, female not working)
				Male	Female		Male	Female		
Belgium	Medium	Low	Medium	Low	Low	Medium	Medium	Medium	High	High
Finland	Medium	Medium	Low	High	High	Low	Medium	Long	Low	Low
Germany	High	Low	Medium	High	Med.	Medium	Long	Medium	Low	High
Netherlands	Low	Low	Medium	High	Low	High	Medium	Short	Low	High
Sweden	Low	Medium	Low	High	High	High	Medium	Medium	Low	Low
United Kingdom	High	Medium	High	Low	Med.	High	Long	Short	High	Low
United States	High	High	High	High	High	Medium	Long	Long	Low	Medium

**Table 7 : Correlation matrix. Absolute earnings, income inequality, employment rate and working time patterns**

Variables	Household Earnings	Disposable income	Income Inequality (P90/P10)	Female employment rate	Female average working time	Household working time	Dual earners	Single earners (Male)	Single earners (Female)	No earners
Household Earnings	1,00									
Disposable income	0,89	1,00								
Income inequality (P90/P10)	0,71	-0,60	1,00							
Employment rate women	0,15	0,39	-0,17	1,00						
Female average weekly working time	0,49	0,52	-0,05	0,78	1,00					
Household working time	0,68	0,62	0,27	0,65	0,90	1,00				
Dual earners	0,12	0,36	-0,23	1,00	0,78	0,64	1,00			
Single earners Males	-0,12	-0,35	0,12	-0,99	-0,76	-0,67	-0,98	1,00		
Single earners female	0,37	0,22	0,77	-0,03	-0,04	0,22	-0,11	-0,04	1,00	
No earners	-0,19	-0,33	0,44	-0,64	-0,59	-0,35	-0,68	0,53	0,47	1,00

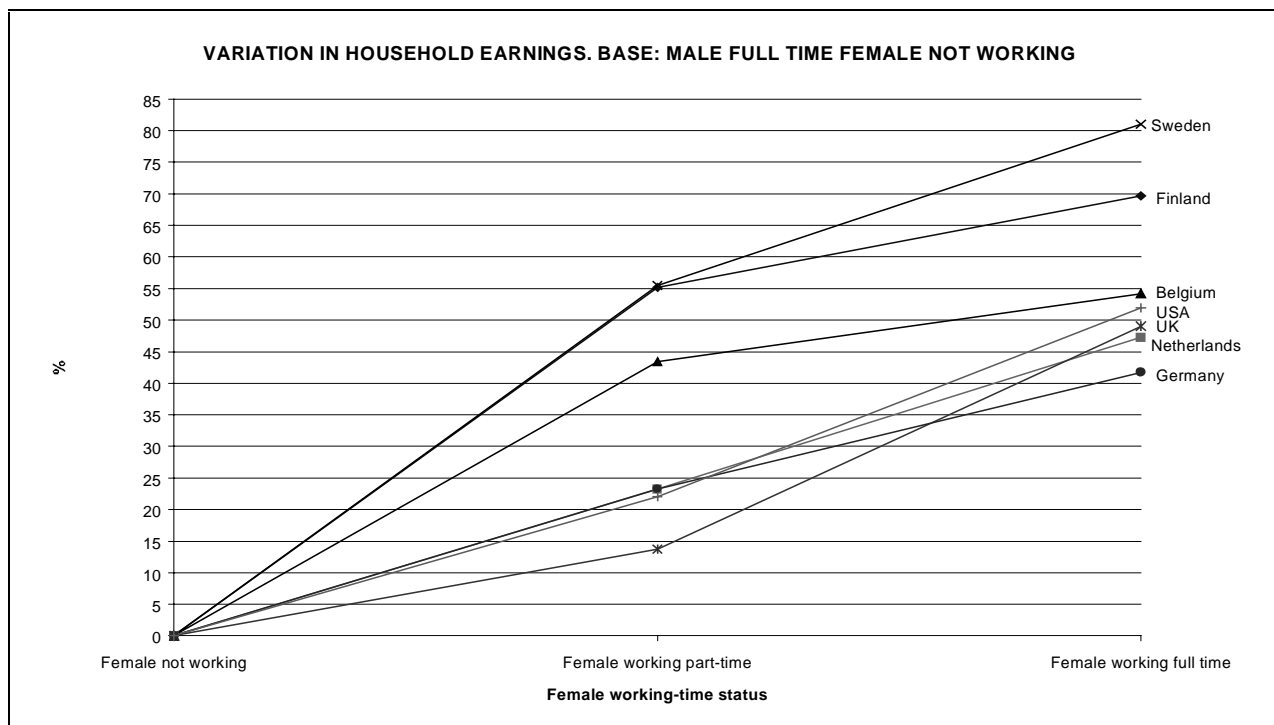
## IV. Returns on working hours

The purpose of this section is to further analyze the relationship between household income distribution and gender distribution of working time. More precisely, the objective here is to assess to what extent the variation of household income within the selected countries can be explained by the variation in household working time. As before, we concentrate our analysis here on two income categories: household earnings (wage and salaries) and household disposable income.

### 4.1 Gender distribution of working time and household distribution of earnings (wage and salaries)

Figure 1 below displays the variation of gross earnings between different categories of households. Three type of households are considered: male breadwinner households (male working full time women not working), household where the husband works full-time and the wife works part-time and lastly households where both spouses work full-time. Figure 1 shows the variation of household average earnings compared to household earnings in the traditional male breadwinner model. In a first step we do not control for differences in household composition and characteristics (age, number of children human capital endowment) or for the variation in actual working time within the three household categories.

**Figure 1:** Percentage Changes in household earnings between different categories of household. Base: households where males work full time and females do not work.



Source: LIS and own calculations.

As shown by Figure 1, the impact on average earnings of a lengthening of household working time vary widely between the seven countries. Average earnings in a dual-earner household where both spouses work full-time is 70-80 % higher in Finland and Sweden compared to

average earnings in a traditional male breadwinner. The corresponding figure for the remaining countries range between 40 % (Germany) up to 55 % (Belgium).

As far as the differences in average earnings between different household categories is concerned, some interesting facts emerge. Two types of countries may be distinguished: first, the countries where a lengthening of women's working time leads to a proportional increase of average earnings (Germany, the Netherlands, UK and USA); secondly, the countries (the Nordic countries and Belgium) where the same variation in working time means a less than proportional increase of household average earnings (ie average earnings increases but at a decreasing rate). Some tentative explanations can be put forward. The decreasing rates of return in the last three countries may be ascribed to differences in average earnings between the various household categories, i.e. differences in average paid level and educational attainment or/and major differences in household composition (age, number of children etc). On the other hand the cross-country differences in the returns of working time may be ascribed to cross-country differences in average earnings level among male breadwinner households. Hence, if for instance average earnings in the male breadwinner household is significantly higher, say in Germany, the relative lower return on working time in Germany, could be ascribed to differences in average earnings in this household category between Germany and the other countries

Figure 1 shows clearly that the cross-country dispersion in average earnings is much higher among household where the wife work part-time than among dual earners household where both spouses work full time. The very high inter-country dispersion in average earning between household where the wife work part-time can obviously in part be ascribed to large differences in average working time among women part-timers. As noted in the previous section the share of short part-timer in Sweden is very low compared for instance to other countries like the Netherlands and the UK. These cross-country differences in average working time among part-timer may partly explain the cross-country differences in average gross earnings between households where the wife works part-time. It should also be noted that in the UK part-timers earn relatively low hourly wages compared to female full-time workers, while such wage differentials are not apparent in other countries such as the Netherlands (Fagan et al. 1995) Conversely, the relative lower cross-country dispersion in average earnings among households where both spouses work full time is explained by the lower country dispersion in average working time among full timers.

A part of the differences between the Nordic and the other countries, may also be ascribed to differences in the country overall wage structure (pay differential) and also to difference in gender wage differential. Hence the fact that Finland and Sweden display the highest return of female working time on earnings may be partly ascribed to the relatively compressed wage structure and low gender wage differential. But some interesting differences must be stressed between Finland and Sweden. In Finland a large share of women work full time, while in Sweden a relatively larger share of women work long part-time. Hence, in Finland a large part of earnings inequality may be ascribed to wage differentials between occupational groups while the differences in average earnings in Sweden depends more on differences in household average working time. On other hand in the US and the UK the lower return to women's working time is a reflection of the relatively higher wage differential and also related to differences in male average earnings level between different type of household.

The case of Germany is also interesting, since this country displays the lowest return on women working time. Probably this result may be related to regional differences in wage levels and working time distribution between East and West Germany. As mentioned previously, notable regional disparities appear in the gender division of labour between East and West. East Germany

displays a much higher share of dual earner household, in particular households where both spouses work full time. Furthermore, in each household category in the East part of Germany, the average earnings level is lower than in West. The fact that Germany exhibits the lowest return could then be related to this regional compositional factor in pay structure and working time distribution.

In the previous section, we reported some simple cross-country correlation between working hours and income levels. The cross-country analysis so far indicates a rather low correlation between household working time and income inequality. In order to complete this analysis a simple regression model has been estimated for each country. The dependent variable is household gross earnings and the independent variables (apart from an intercept) are the spouses' working hours. Of course, the regression model used here should be considered from a purely descriptive perspective and not given any behavioral interpretation. The results, in Table A11, demonstrate the relatively small importance of working hours for variation of household gross earnings. The measure of  $R^2$  varies from 0.13 for Finland to 0.37 in the UK and 0.39 for Belgium. Thus, at most variation of spouses' working hours can explain 40% of the variation in household earnings. We can then argue that the major factors explaining earnings disparities in the selected countries must be found in other factors such as wage differentials and occupational structure rather than in household working time distribution. However, some interesting differences between countries should be noted. The fact that the variation of household working time explains only a smaller part of household variation in earnings in Finland is probably due to the fact that this country displays the highest concentration of working time with a high share of household where both spouses work full-time. Besides as noted in section 3, Finland displays with Sweden the lowest household earnings dispersion. In other words, these countries are characterized by both low earnings inequality (compressed wage structure), relatively low gender wage differential, high female labour market commitments and relatively lower gender differences in average working time. On the other hand, the fact that variation in household working time explains a larger part of household variation in household earnings in Belgium, the Netherlands, and the UK may also be related to the higher household working time dispersion (both in terms of labour force participation and gender disparities in average working time). As noted before, Belgium and the Netherlands display the highest share of married/cohabitating women not working while the UK exhibits a large share of women working short part-time. Belgium and the UK have also the largest share of households where both spouses are not working. As far as these three countries are concerned, the result of the estimation shows that there is a relative high correlation between the household gender division of labour and household earnings inequality, while in the remaining countries the correlation is much weaker.

As expected, the result of estimation shows that the marginal rate of return is always higher for the male. The smallest gender difference in the marginal rate of return is found in Finland (11%), Belgium (14 %), Sweden (21 %) and the largest in the Netherlands (54%), Germany (51%) and the US (46%).

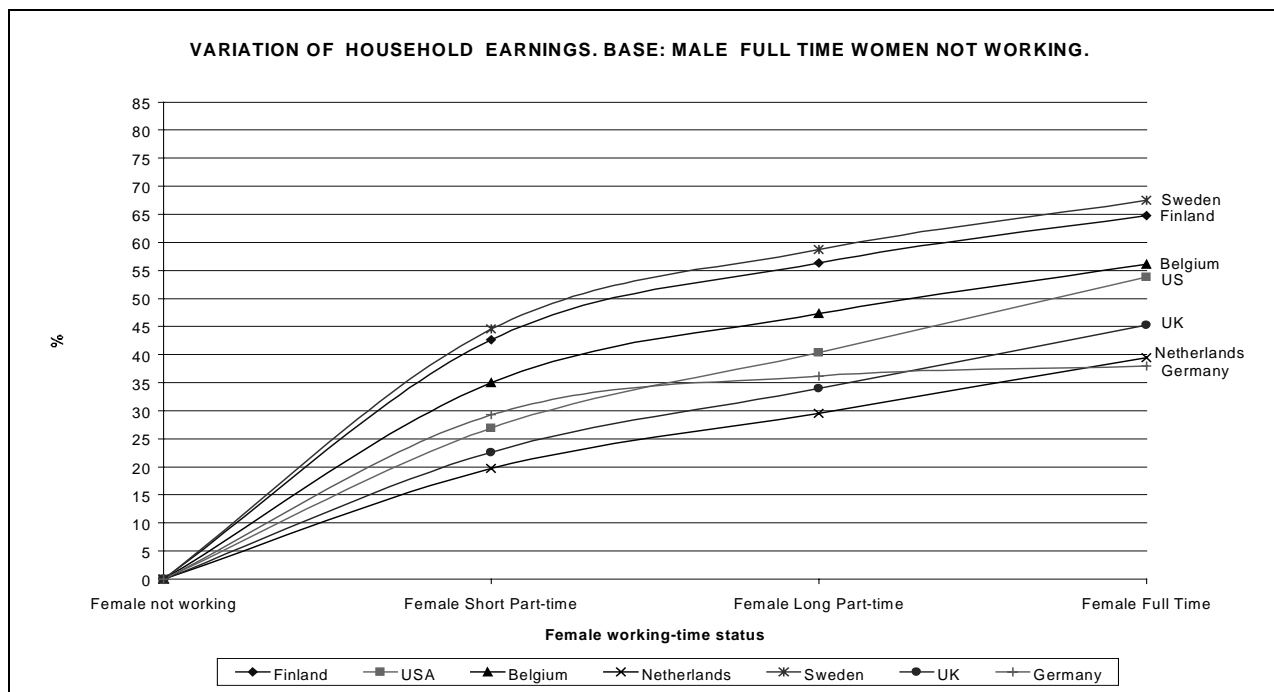
In order to take into account differences in household composition and working hours we have estimated a model where the explanatory variables have been extended by square of hours, education, age and children (See Table A12 in the appendix). This results in a strong increase in goodness of fit, ranging from 0.34 for Sweden to 0.59 for Belgium. With the exception of the females in the Netherlands, the marginal rates of return for working hours have the expected concave shape, that is a positive coefficient for hours and a negative for hours squared.

Apart from the effects of hours on earnings Table A12 also presents the effects of education, age and children. The effect of education has been discussed in section 3.2 (Table A2) but now we

control not only for age. All significant education coefficients are positive, indicating a positive return of education compared to the lowest education level. The coefficient for high education is always above those for medium education level. Concentrating on the effect on high education, there is always a significant effect and it is always higher for the males. Two countries, the Netherlands and Sweden are characterized by small returns to education whereas Finland and the US exhibit higher returns on education. Again the results for Germany indicates a relatively high return for males but a very low return for females. The effects of children were analyzed in section 3.3 (Table A4), but again Table A12 controls not only for the age effect. In general the results from Table A4 are in agreement to those reported in Table A12 (a large negative effect of children on earnings in Germany and UK), but one difference is that there is now a relatively strong negative effect in Sweden<sup>8</sup>.

Figure 2 below synthesizes the result of the regression analysis.

**Figure 2:** Percentage changes in household earnings between different categories of household. Base: male working full time and females not working.



Source: LIS and own calculations

Compared to Figure 1 we now control both for the variation in household working time and differences in household composition and characteristics (age, number of children and spouses educational attainment). As before, the reference scenario is the male breadwinner model and Figure 2 shows the net return of a lengthening of wife's working time on household earnings<sup>9</sup>. As shown by Figure 2 the profiles have the expected shape (concave) and the ranking between countries is similar to Figure 1. Compare to the previous Figure the returns on working time are lower when we control for household socio-economic characteristics, but the differences are

<sup>8</sup> The result for Sweden is partly due to the compensation for parental leave scheme not accounted in gross earnings (wage and salaries).

<sup>9</sup> Compare to Figure 1, we introduce a new category (short part-time). For each category the following assumption has been made. In each household category the male is assumed to work full time, female short part time corresponds to 20 hours, long part time to 30 hours and full-time to 40 hours.



relatively small. The Nordic countries still exhibit the highest returns on average earnings when women working time increases. In all countries the transition from the male breadwinner model to another category of household implies an increase of average household earnings, but in all countries we found a decreasing marginal return for female working time.

A lengthening of household total average working time from 40 to 60 hours (transition from male breadwinner model to household where the wife work short-part-time, i.e an increase of household working time with 50 %), increases household earnings by about 45% in the Nordic countries compared to 35 % in Belgium and 20 % in the Netherlands. The transition from the male breadwinner household to a household where both spouses work full-time (i.e from 40 to 80 hours a week, 100 % increase) leads to a 70 % increase of household average earnings in the Nordic countries compared to only around 40 % in the Netherlands and Germany<sup>10</sup>. The low return of spouse's working time in the last two countries is probably related to the lower female educational attainment and the relatively low returns on female education. Worth noticing also is that in Germany the transition from a situation where the wife work long part time to a situation where both spouses work full time leads to unchanged household earnings. This situation, as noted previously, is certainly related to large differences in the wage structure between the East and West Germany (see next section).

The assumption made previously that a part of the cross-country variation in average earnings for households where the wife work part-time could be explained by cross-country differences in average working time for women part-timers may now be partly relaxed. Controlling for the dispersion of female working time and household characteristics still leads to sensible cross-country differences in household average earnings among household where the wife works part-time. Hence, the main differences between countries may be ascribed to specificity in the country overall wage structure and gender pay differential. Once again, the relatively high return on earnings of an increase of household working time in the Nordic countries may be ascribed to a relatively more compressed wage structure and low pay differential.

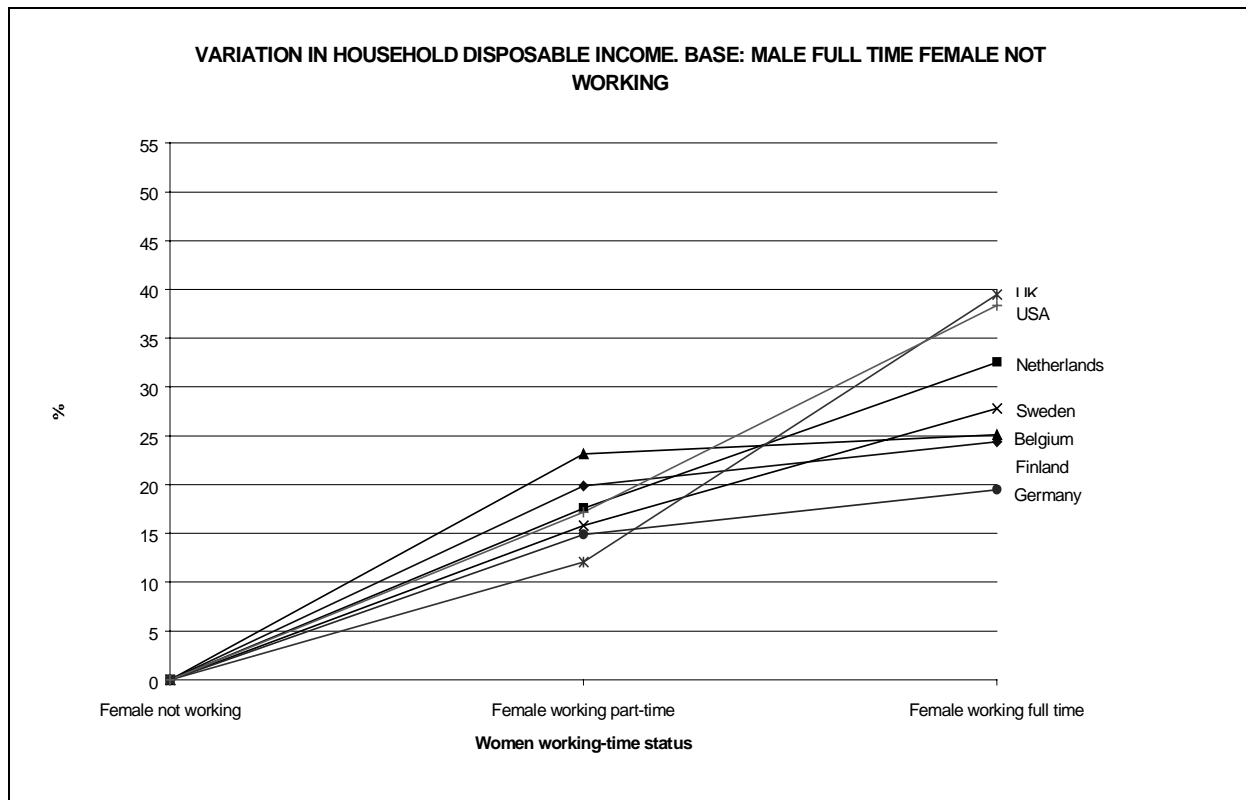
#### ***4.2 Impact of variation of household working time on disposable income.***

Next, we focus on analyzing the relation between distribution in working hours and household disposable income. In principle the effect of a change in working hours on disposable income is a measure of marginal effects. That is, how much does the disposable income change as a result of a small change in working hours. The important difference compared to earnings is that disposable income takes into account the impact of tax and benefit system. Figure 3 below illustrates the return of an increase of wife's working hours on household disposable income. The figure is similar to Figure 1 and as before the reference scenario is a pure male breadwinner model (male working and female not working).

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<sup>10</sup> If all individuals had the same hourly wage, a 100 % increase in household working time would lead to 100 % increase in household earnings. Hence the disparities in the various profiles and average returns is essentially related to differences in the distribution of hourly wage between the different household categories and between countries.

**Figure 3:** Changes in household disposable income as female working hour increases. Percentage changes in income compared to households where males work full time and females do not work.



Source: LIS and own calculations.

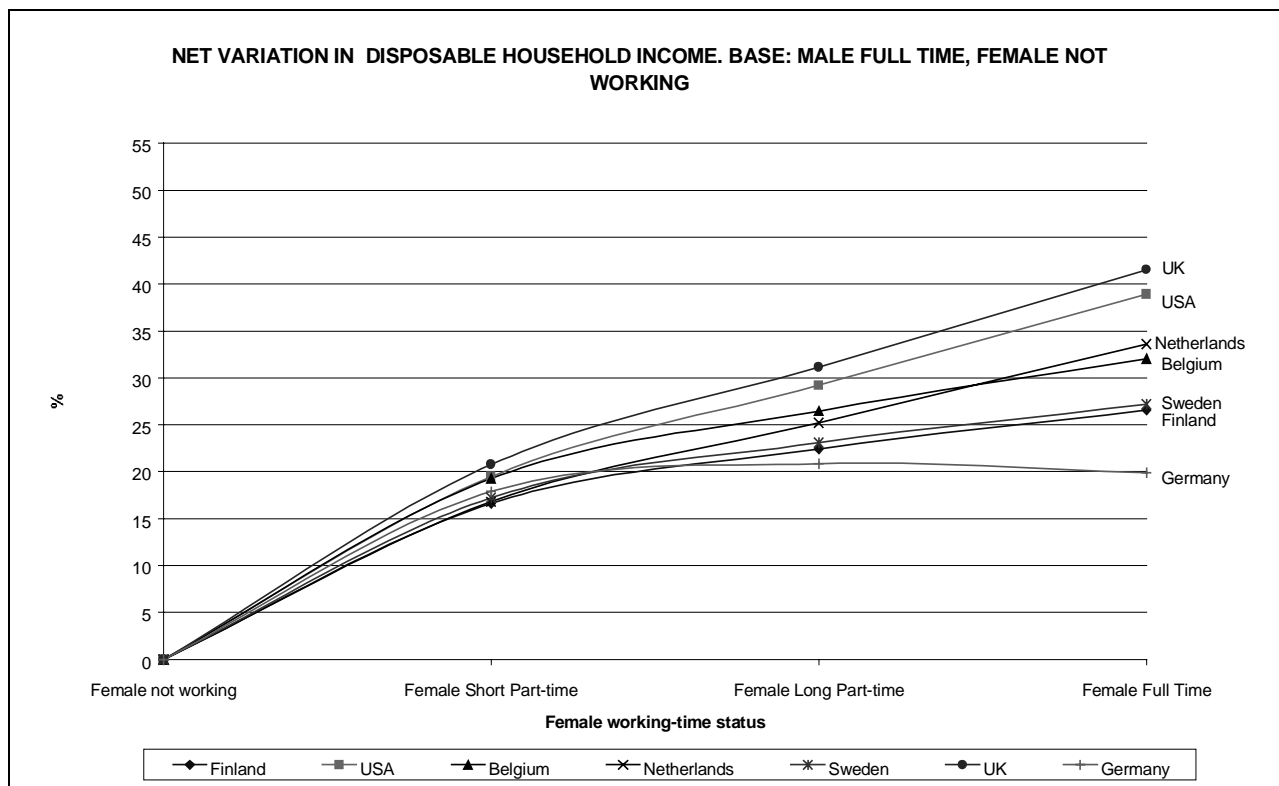
Like for household earnings, the impact of an increase of a wife's working time on household disposable income varies among the countries (see Figure 3). However, some interesting differences appear when we contrast the impact on household earnings (Figure 1) with the impact on disposable income (Figure 3). Firstly, there is a much smaller cross-country variation in disposable income, within and between household categories. Obviously, the tax and transfer system reduce, as expected, income inequality between household categories. Secondly, the ranking between countries is now entirely different from the ranking obtained for household gross earnings.

As previously mentioned, the returns on earnings from the transition from wife's inactivity to full time working was highest in the Nordic countries (around 70 %) and sensibly lower in the remaining countries, (ranging between 40-50 %), especially in Germany. Given the prevailing tax and the social transfer system, the highest return from the transition from the traditional male breadwinner model to a dual full-time earner household is now found in the UK and USA (about 40 % net increase) while the lowest return is still found in Germany (19 %). For the remaining countries (Belgium, the Netherlands, Finland and Sweden), the marginal return is roughly of the same order of magnitude (25-32 % net increase). It is also worth noticing that the type of transitions affects the rate of returns. To illustrate: the transition from the pure male breadwinner model to a situation where the woman works part-time leads to a significantly higher returns in Belgium and Finland, compared for instance to the UK. Even though the general income tax level is low in the UK this does not mean that the marginal effects are small. The design of the tax and

welfare programmes is such that there are substantial marginal effects for low-income households, partly explaining the relatively low marginal return from the pure male breadwinner model to the situation where the wife works part-time. The transition from a situation where the wife works part-time to the situation where both spouses work full time leads to almost unchanged disposable income in Belgium and to a low marginal return in Finland and Germany. Conversely the marginal returns for this kind of transition is significantly higher in the Netherlands, Sweden, UK and the USA.

Finally, in order to isolate the effect of household working hours, a model is estimated using household disposable income as dependent variable and hours, square of hours, education, age and children as independent variables (the results of estimation are reported in Table A13). Thus, this is the same model as presented in Table A12 and in Figure 2, with the exception that disposable income instead of earnings is used as dependent variable. As before we restrict the sample to married or cohabitating households where the male works full time. Again, the marginal rate of return for working hours has the expected concave shape, (with the exception of the females in the Netherlands). In order to illustrate the “marginal effects”, the impact of female working hours on disposable income is summarized in Figure 4 below.

**Figure 4:** Changes in household disposable income as female working hour increases.



Source: LIS and own calculations

The profiles have the expected shape and the ranking between countries is similar to the ranking in Figure 3. The estimated cross-country differences can be related to cross-country disparities in average tax level. The Nordic countries display the highest average tax rate which explain the lower return in these countries compared to the other countries. A part of the changes in the

cross-country ranking may hence be ascribed to the design of the various country tax and transfer system. In the US and the UK relatively low average and marginal tax leads to relatively higher returns for household disposable income but also higher income dispersion between household categories. On the other hand, relative higher marginal tax, and more generous transfer system, (ie. the redistributive impact of the transfer and tax system) in the Nordic countries lead to small differences in disposable income between household categories, in particular in households where the wife work long part-time and households where both spouses work full time.

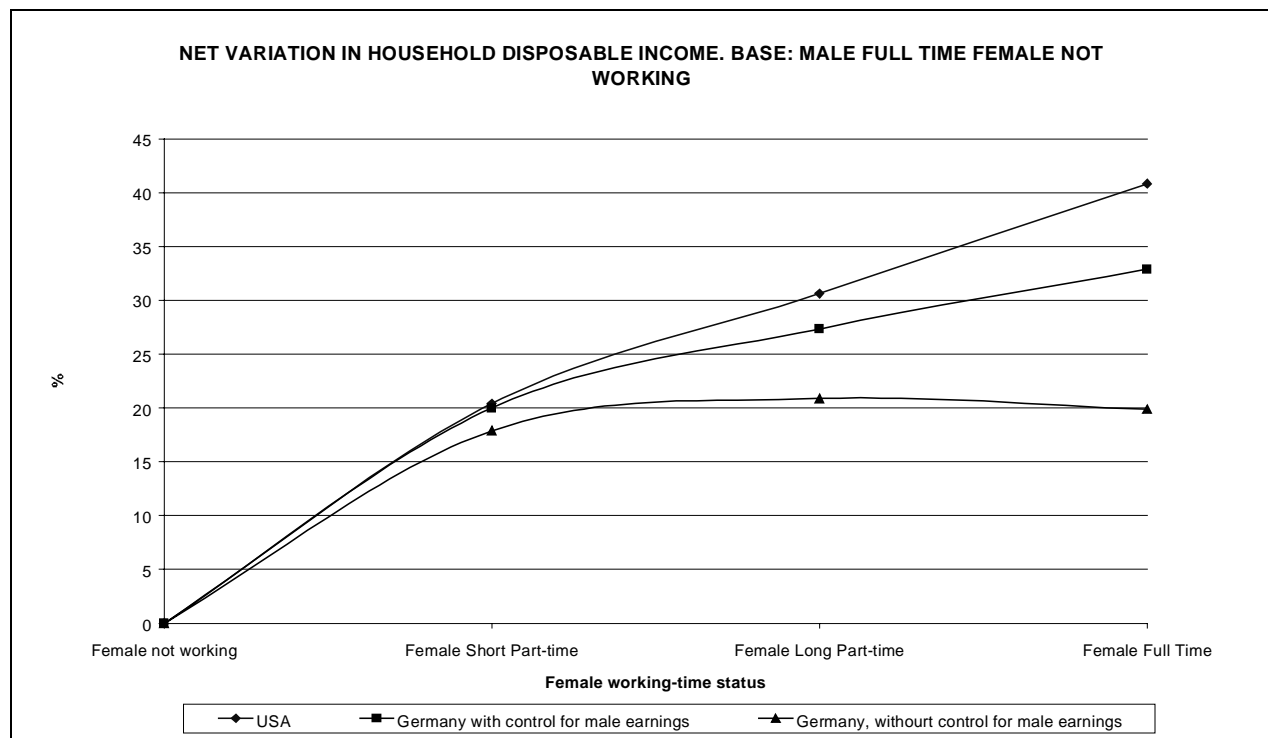
Except for the UK and the Netherlands, the tax and benefit system leads to a significant lower rate of returns. For the majority of countries the returns of a lengthening of wife's working time on disposable income is clearly lower than the return on labour income before tax (earnings). To illustrate: a comparison between Figure 2 (earnings) and Figure 4 (disposable income) shows that in the UK and the Netherlands the differences in gross earnings between male breadwinner household and household where both spouses work full time is of the same order of magnitude as for disposable income<sup>11</sup>. Conversely, in the Nordic countries the increase of average earnings for the same transition is about 70 % while the increase of disposable income amounts to only 28 % . So we may argue that tax and transfer system in the UK and the Netherlands do not affect significantly the profile and the variation of earnings between the various household types, while in the other countries, the tax and transfer system reduce the returns of working time and also income inequality between different household categories.

Indeed the transition from a situation where the wife works long-part-time to a situation where both spouses works full time leads to a slight decrease of disposable income in Germany. Hence, the results of the estimation seems to indicate a strong negative marginal effect for German female's transition from long part-time to full time. This contrasting pattern might be due to the German tax splitting system, which tends to penalize the second earner. However, as mentioned above, the contrasting German profile could also be ascribed to disparities in average male earnings between different type of household. Actually, the decrease of disposable income in Germany when both spouses work full time could be explained by the fact that male average earnings is significantly lower in households where both spouses work full-time. Since, as noted previously, average earnings in the former East Germany are lower and the share of dual earners where both spouses work full time is significantly higher than in West Germany, the result we found in the first set of regressions could be partly ascribed to this regional disparity in male earnings level and household working time distribution. In order to verify whether the estimated profiles are connected to some specificity in the income distribution between different types of household, we performed a new set of estimations where we control for the variation in male gross earnings.

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<sup>11</sup> for the UK 45 % versus 42 % and 40 % versus 37 % in the Netherlands.

**Figure 5:** Changes in household disposable income as female working hour increases



Source: LIS and own calculations

The inclusion of male earnings in the regression does not significantly affect the estimated profiles, except for Germany. The negative impact linked to the transition from female long part-time to full time in Germany now vanishes. But compared to the other countries, the concavity of the curve remains much more pronounced in Germany (see figure 5 above for a comparison between the US and Germany).

We may still argue that the tax splitting system coupled to relatively high marginal taxes in Germany clearly strengthens the male breadwinner model, in particular for highly educated and high-income groups. But the main differences in disposable income between the various types of household depends mainly on disparities in the gender distribution of working time, pay level and wage differential between East and West Germany. The taxation and transfer systems in the UK, the US and the Netherlands do not appear to penalize either the transition from women inactivity to market work or the transition from part-time to full time. On the other hand, even though the taxation and transfer system do not seem to affect women's participation rate in Belgium, Sweden and Finland, the result of the estimation indicates a slight decreasing marginal rate of returns in the transition from long part-time to full time in these countries, even if this impact is, as expected, lower than in Germany.

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## Appendix: Definition and Sources

Table Aa: Source of the country survey data

COUNTRY	SURVEY NAME
Belgium 1992	Panel Survey of the Centre for Social Policy
Finland 1991	Income Distribution Survey
Germany 1994	German Social Economic Panel Study (GSOEP)
Netherlands 1994	Socio-Economic Panel (SEP)
Sweden 1992	Income Distribution Survey (Inkomstfördelningsundersökningen)
United Kingdom 1991	The Family Expenditure Survey
USA 1991	March Current Population Survey

Sources: 1998 Luxembourg Income Study all rights reserved

Table Ab Definition of LIS household income variables

	VARIABLE DEFINITION
	<b>Earnings</b> ( <i>Gross wages and salaries</i> )
+	Cash property income
=	<b>Factor Income</b>
+	Sick Pay
+	Disability Pay
+	Social Retirement benefits
+	Child or family allowances
+	Unemployment compensation
+	Maternity pay
+	Military/vet/war benefits
+	Other social insurance
=	<b>Social Insurance Transfers</b>
+	Means-tested cash benefits
+	Near-cash benefits
=	<b>Social Transfers</b>
+	private pensions
+	Public sector pensions
+	Alimony or Child Support
+	Other regular private income
+	Other cash income
=	<b>Total Gross Income</b>
-	Mandatory employee contribution
-	Income tax
=	<b>Disposable Income</b>

Source: Luxembourg Income Study all rights reserved Last update: 23/01/98

**Table Ac: Definition of weekly working time**

<b>Country</b>	<b>Definition of weekly working time</b>
Belgium1992	Average actual weekly working time
Finland 1991	Average usual weekly working hours (regular)
Germany1994	Average actual weekly working time inclusive overtime
Netherlands1991	Average usual weekly working hours incl. overtime
Sweden1992	Average usual weekly working hours incl. paid overtime usually worked
United Kingdom 1991	Usual weekly working time (excluding breaks) incl. paid overtime usually worked
United States1991	Average actual weekly working time

**Source: Luxembourg Income Survey and National survey.**



**Table Ad:** Definition of educational attainment.

Country	Description d10,d11	Coding	Country	Description d10,d11	Coding
<b>Belgium 92</b>	1 kindergarden 2 primary education 3 special primary educ	Low	<b>Sweden 92</b>	0 unspecified 2 primary 1 3 primary 2	Low
	4 2lev. lw. cycle prof 5 2lev. lw. cycle tech 6 2lev. lw. cycle gene 7 special 2nd level 8 2lev. up. cycle prof 9 2lev. up. cycle tech 10 2lev. up. cycle gene	Medium		4 secondary 1 5 secondary 2	Medium
	11 higher non-univ. 2-3 12 higher non-univ. 4 y 13 university 14 other 15 other 2lev. low. cyc 16 other 2lev. up. cycl 17 other higher educati	High		6 university 1 7 university 2 8 research	High
<b>Finland 91</b>	no educ/unknown/<9 y	Low	<b>United-Kingdom 91</b>	0 - 15	Low
	3 10-11 years 4 12 years 5 13-14 years	Medium		16 - 20	Medium
	6 15 years 7 16 years 8 post-graduate educ	High		21 - 34	High
<b>Germany 94</b>	1 no degree 2 no degree, w/tech 3 other degree 4 other degree, w/tech 5 secondary 7 non-class sec	Low	<b>USA 91</b>	1 elementary school 2 some high school	Low
	6 secondary, w/tech 8 non-class sec, w/tec 9 tech school degree 10 tech school, w/tech 11 high school degree 12 high school, w/tech	Medium		3 high school diploma 4 some college 5 associate degree	Medium
	13 technical college 14 univ,tech college 15 foreign univ	High		6 bachelor degree 7 masters degree 8 doctorate	High
<b>Nether-lands 91</b>	2 primary	Low			
	3 secondary lower 4 secondary higher	Medium			
	5 tertiary lower 6 postgrad or old mast	High			

## Statistical Appendix

**Table A1.** Mean values for LIS samples of married/cohabitants where the age of the spouses is between 25-55 and self-employed are excluded.

	Finland 91	USA 91	Belgium 92	Nether- lands 91	Sweden 92	United Kingdom 91	Germany 94
	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN
<b>Female variables:</b>							
hours worked per week	34.1	27.5	17.7	12.3	31.2	19.6	20.8
hours worked per week (employees)	37.0	36.0	31.3	24.5	33.7	28.4	32.2
hours=0	0.08	0.24	0.44	0.50	0.07	0.31	0.35
hours 1-34	0.10	0.21	0.27	0.37	0.42	0.38	0.28
hours > 34	0.82	0.55	0.30	0.13	0.50	0.31	0.36
age 25-30	0.18	0.21	0.20	0.23	0.19	0.22	0.21
age 31-40	0.40	0.43	0.38	0.41	0.36	0.37	0.42
age 41-50	0.35	0.31	0.34	0.30	0.38	0.33	0.30
age 51-55	0.07	0.06	0.08	0.07	0.07	0.08	0.07
education low	0.26	0.12	0.17	0.22	0.20	0.35	0.21
education medium	0.63	0.66	0.56	0.64	0.51	0.53	0.69
education high	0.11	0.22	0.27	0.14	0.29	0.12	0.10
gross wage/salary	13455	13302	9145	6181	11979	8674	9429
Imputed hourly wage rate <sup>1</sup>	7.7	9.0	10.9	9.7	7.5	8.4	9.0
<b>Male variables:</b>							
hours worked per week	37.9	41.6	36.8	36.5	39.6	38.8	41.3
hours worked per week (employees)	39.3	43.6	41.3	38.9	41.0	44.4	43.6
hours=0	0.04	0.05	0.11	0.06	0.03	0.13	0.05
hours 1-34	0.03	0.03	0.05	0.07	0.04	0.03	0.03
hours > 34	0.94	0.93	0.84	0.87	0.92	0.84	0.89
age 25-30	0.12	0.14	0.12	0.13	0.12	0.14	0.12
age 31-40	0.39	0.40	0.40	0.41	0.34	0.37	0.41
age 41-50	0.37	0.35	0.33	0.33	0.41	0.34	0.32
age 51-55	0.12	0.11	0.14	0.13	0.14	0.14	0.15
education low	0.29	0.13	0.17	0.21	0.28	0.39	0.16
education medium	0.59	0.62	0.55	0.57	0.44	0.48	0.65
education high	0.12	0.26	0.28	0.22	0.28	0.13	0.19
gross wage/salary	20561	30674	23156	25698	21451	25657	26474
Imputed hourly wage rate <sup>12</sup>	10.6	14.2	12.5	14.3	10.5	13.0	12.7
<b>Household variables:</b>							
number of persons in unit	3.4	3.7	3.6	3.5	3.3	3.4	3.4
number of earners in unit	2.2	2.0	1.6	1.7	2.1	1.8	1.8
number of children < 18	1.2	1.3	1.2	1.2	1.3	1.1	1.1
total unit earnings	35938	46177	34422	33107	33576	36962	37807
total unit factor income	36774	47526	34448	33575	34950	38204	38471
total unit gross income	40745	49381	38740	36973	40323	41132	40410
Disposable income after taxes	29647	39102	26488	26979	29852	30055	27247
Adjusted disposable income <sup>13</sup>	16558	21354	14211	15165	17166	17023	15387
Sample size	3704	4113	1203	1535	3588	2052	2052

Note: All income measures in USD/year adjusted by PPP

<sup>12</sup> Hourly wage rates have been imputed as gross wage/salary divided by hours worked per week multiplied with 52 weeks

<sup>13</sup> The adjusted net disposable income is equal to : net disposable income/(family size)<sup>0.5</sup>

**Table A2.** Education and earnings: Percentage Earnings differentials based on education and age.

Baseline; head of household low education and age 25-30

Age of head	Finland 91			Netherlands 91			Belgium 92		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
25-30	.	15	66	.	9	53	.	36	102
31-40	15	33	91	-3	6	49	8	47	118
41-50	43	64	136	8	18	66	28	74	159
51-55	38	58	128	20	31	83	27	73	157
	Sweden 92			United Kingdom 91			Germany 94		
25-30	.	14	45	.	32	79	.	30	83
31-40	20	36	74	8	43	93	0	30	83
41-50	44	63	109	33	76	138	20	57	120
51-55	44	64	109	24	64	122	25	63	129
	USA 91								
25-30	.	65	135						
31-40	16	92	174						
41-50	32	117	210						
51-55	32	118	211						

Note: the estimated model is

$$\text{Log(earnings)} = \beta_0 + \beta_1(\text{education}_{\text{medium}}) + \beta_2(\text{education}_{\text{high}}) + \beta_3(\text{age}_{31-40}) + \beta_4(\text{age}_{41-50}) + \beta_5(\text{age}_{51-55})$$

**Table A3** Distribution of household earnings and level of education

			Below first decile	Below first quartile	Below the median	Above third quartile	Above ninth decile
<b>Finland 91</b>	Male	Low	0.42	0.37	0.36	0.14	0.07
		Medium	0.55	0.58	0.59	0.42	0.32
		High	0.03	0.05	0.04	0.44	0.61
	Female	Low	0.35	0.30	0.29	0.15	0.09
		Medium	0.62	0.67	0.66	0.48	0.40
		High	0.03	0.03	0.04	0.36	0.51
<b>Netherlands 91</b>	Male	Low	0.38	0.31	0.25	0.18	0.17
		Medium	0.57	0.65	0.65	0.39	0.36
		High	0.05	0.04	0.09	0.43	0.47
	Female	Low	0.40	0.29	0.24	0.18	0.20
		Medium	0.56	0.67	0.71	0.52	0.45
		High	0.04	0.04	0.06	0.29	0.34
<b>Belgium 92</b>	Male	Low	0.45	0.35	0.24	0.05	0.02
		Medium	0.50	0.59	0.62	0.37	0.31
		High	0.05	0.06	0.14	0.58	0.66
	Female	Low	0.44	0.35	0.26	0.06	0.04
		Medium	0.46	0.57	0.62	0.45	0.40
		High	0.10	0.08	0.12	0.49	0.55
<b>Sweden 92</b>	Male	Low	0.36	0.33	0.35	0.12	0.08
		Medium	0.51	0.51	0.49	0.33	0.22
		High	0.13	0.15	0.17	0.55	0.70
	Female	Low	0.31	0.27	0.24	0.10	0.07
		Medium	0.52	0.55	0.57	0.37	0.29
		High	0.16	0.17	0.19	0.54	0.64
<b>United Kingdom 91</b>	Male	Low	0.56	0.52	0.47	0.23	0.21
		Medium	0.39	0.42	0.46	0.49	0.44
		High	0.05	0.06	0.06	0.28	0.34
	Female	Low	0.45	0.44	0.41	0.25	0.23
		Medium	0.50	0.51	0.54	0.51	0.47
		High	0.04	0.04	0.05	0.24	0.31
<b>Germany 94</b>	Male	Low	0.35	0.34	0.30	0.13	0.06
		Medium	0.56	0.59	0.63	0.54	0.50
		High	0.10	0.07	0.07	0.33	0.44
	Female	Low	0.42	0.38	0.33	0.19	0.15
		Medium	0.52	0.57	0.62	0.64	0.61
		High	0.05	0.05	0.05	0.17	0.24
<b>USA 91</b>	Male	Low	0.39	0.31	0.22	0.03	0.01
		Medium	0.52	0.60	0.65	0.49	0.40
		High	0.09	0.10	0.13	0.49	0.59
	Female	Low	0.38	0.29	0.20	0.03	0.02
		Medium	0.56	0.63	0.69	0.58	0.50
		High	0.06	0.09	0.11	0.40	0.48

**Table A4.** Children and earnings: Percentage Earnings differentials based on number of children and age.

Baseline; no children and age 25-30

Age of head	Finland 91				Netherlands 91				Belgium 92			
	Number of children				Number of children				Number of children			
	0	1	2	3>	0	1	2	3>	0	1	2	3>
25-30	.	0	2	-8	.	-8	-13	-12	.	-5	-3	-22
31-40	18	18	20	9	3	-6	-11	-10	8	3	5	-15
41-50	43	43	45	32	12	3	-3	-2	20	14	17	-6
51-55	33	33	35	23	15	6	0	1	11	6	9	-13
	Sweden 92				United Kingdom 91				Germany 94			
25-30	.	-2	-3	-17	.	-10	-22	-31	.	-12	-25	-29
31-40	24	21	21	3	11	0	-13	-23	20	5	-10	-15
41-50	45	41	41	20	18	6	-7	-18	33	17	1	-5
51-55	40	37	37	16	-4	-13	-24	-33	29	13	-3	-8
	USA 91											
25-30	.	-4	-12	-22								
31-40	21	16	6	-5								
41-50	32	27	16	3								
51-55	23	18	8	-4								

**Table A5.** Children and disposable income: Percentage income differentials based on number of children and age.

Baseline; no children and age 25-30

Age of head	Finland 91				Netherlands 91				Belgium 92			
	Number of children				Number of children				Number of children			
	0	1	2	3>	0	1	2	3>	0	1	2	3>
25-30	.	7	12	17	.	-5	-8	-2	.	0	9	12
31-40	10	18	24	29	0	-5	-8	-2	7	7	16	19
41-50	22	30	37	43	13	7	4	10	20	20	31	34
51-55	21	29	36	42	12	6	3	10	11	11	21	24
	Sweden 92				United Kingdom 91				Germany 94			
25-30	.	2	8	10	.	-11	-16	-20	.	-8	-14	-11
31-40	6	8	15	16	14	1	-5	-9	15	6	-1	2
41-50	14	16	24	25	25	11	5	1	29	19	12	15
51-55	14	15	23	24	9	-4	-9	-13	25	16	8	12
	USA 91											
25-30	.	-2	-7	-13								
31-40	19	17	10	3								
41-50	34	32	24	16								
51-55	28	26	19	11								

**Table A6a.** Household working pattern.

Male	Finland 91				Netherlands 91				Belgium 92			
	Female				Female				Female			
	0	1-34	34 >	Total	0	1-34	34 >	Total	0	1-34	34 >	Total
0	0,54	0,24	2,78	3,56	3,78	1,24	0,85	5,86	7,56	0,83	1,50	9,89
1 - 34	0,30	0,67	1,92	2,89	2,67	3,06	1,04	6,78	1,50	1,41	2,41	5,32
34 >	6,99	9,17	77,39	93,55	43,97	32,90	10,49	87,36	34,83	25,27	24,69	84,79
Total	7,83	10,09	82,08	100,00	50,42	37,20	12,38	100,00	43,89	27,51	28,60	100,00
	Sweden 92				United Kingdom 91				Germany 94			
0	1,10	0,56	0,99	2,65	8,28	2,53	1,90	12,72	2,79	0,76	1,98	5,53
1 - 34	0,28	1,61	1,61	3,49	1,12	0,83	0,97	2,92	0,94	0,86	0,81	2,64
34 >	4,79	40,76	48,31	93,86	22,27	34,50	27,58	84,36	29,70	24,97	37,16	91,83
Total	6,17	42,93	50,90	100,00	31,68	37,87	30,46	100,00	32,92	27,03	40,05	100,00
	USA 91											
0	1,85	0,80	2,12	4,77								
1- 34	0,66	0,61	1,53	2,80								
34 >	21,49	19,09	51,86	92,44								
Total	24,00	20,50	55,51	100,00								

**Table A6b.** Educational Attainment and Working time status, Males employees

Working hours	Finland 91				Netherlands 91				Belgium 92			
	Level of education				Level of education				Level of education			
	Low	Medium	High	Total	Low	Medium	High	Total	Low	Medium	High	Total
1-17	0.26	0.21	0.1	0.57	0.33	0.33	0.39	1.04	0.18	0.28	0.28	0.73
18-35	1.27	2.59	1.73	5.59	1.24	2.60	2.99	6.84	0.46	2.02	4.5	6.98
> 35	26.7	52.89	14.24	93.84	18.75	54.17	19.2	87.14	11.48	54.55	26.26	92.29
Total	28.2	55.68	16.08	100.0	20.31	57.10	22.5	100.0	12.12	56.84	31.04	100.00
	Sweden 92				United Kingdom 91				Germany 94			
1-17	0.14	0.22	0.08	0.45	0.11	0.28	0.00	0.39	0.31	0.83	0.21	1.34
18-35	1.03	1.62	1.23	3.58	1.23	3.91	2.29	7.43	0.93	0.83	0.72	2.48
> 35	25.3	42.45	27.82	95.67	34.12	46.18	11.8	92.18	20.37	61.27	14.54	96.18
Total	26.5	44.30	29.14	100.00	35.46	50.36	14.1	100.00	21.61	62.92	15.47	100.00
	USA 91											
1-17	0.07	0.25	0.12	0.45								
18-35	1.10	2.26	0.95	4.31								
> 35	11.1	57.72	26.36	95.25								
Total	12.3	20.43	54.96	100.00								

**Table A6c.** Educational Attainment and Working Time Status, Females employees

Working hours	<b>Finland 91</b>				<b>Netherlands 91</b>				<b>Belgium 92</b>			
	Level of education				Level of education				Level of education			
	Low	Medium	High	Total	Low	Mediu	High	Total	Low	Medium	High	Total
1-17	0.73	1.35	0.24	2.33	7.43	21.23	2.71	31.37	1.18	4.12	2.06	7.36
18-35	3.47	7.77	3.68	14.92	9.55	25.47	10.38	45.40	3.09	21.21	19.15	43.45
> 35	21.3	50.46	10.94	82.75	4.25	13.33	5.66	23.33	3.98	26.95	18.26	49.19
Total	25.5	59.59	14.87	100.0	21.23	60.02	18.75	100.0	8.25	52.58	39.47	100.00
	<b>Sweden 92</b>				<b>United Kingdom 91</b>				<b>Germany 94</b>			
1-17	0.99	1.74	0.46	3.19	8.56	12.77	1.85	23.18	3.54	7.65	0.65	11.84
18-35	8.61	24.64	11.74	44.99	14.27	20.11	5.35	39.73	7.08	20.79	3.03	30.90
> 35	8.61	24.29	18.93	51.83	10.56	20.90	5.63	37.09	11.84	39.28	6.14	57.26
Total	18.2	50.67	31.13	100.00	33.38	53.78	12.8	100.00	22.45	67.73	9.82	100.00
	<b>USA 91</b>											
1-17	0.54	5.13	1.61	7.27								
18-35	2.46	17.66	5.00	25.12								
> 35	6.04	43.88	17.69	67.61								
Total	9.03	66.67	24.30	100.00								

**Table A7a.** Mean values of household gross earnings and household working hours

		<b>Finland 91</b>	<b>Nether- lands 91</b>	<b>Belgium 92</b>	<b>Sweden 92</b>	<b>United Kingdom 91</b>	<b>Germany 94</b>	<b>USA 91</b>
<b>Male hours</b>	<b>Female hours</b>	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN
<b>0</b>	<b>1 - 34</b>	12,450	15,684	13,543	9,816	10,421	20,094	6,694
<b>0</b>	<b>34 &gt;</b>	15,907	19,996	17,859	13,449	17,634	18,305	23,673
<b>1-34</b>	<b>0</b>	16,165	26,428	26,825	11,456	24,381	19,847	11,343
<b>1 -34</b>	<b>1 -34</b>	34,791	36,213	50,143	22,929	33,779	40,608	21,426
<b>1 -34</b>	<b>34 &gt;</b>	36,847	36,526	44,437	28,629	42,194	35,512	31,431
<b>34 &gt;</b>	<b>0</b>	22,476	30,245	28,999	21,145	33,145	31,008	36,293
<b>34 &gt;</b>	<b>1 -34</b>	34,875	37,274	41,587	32,877	37,688	38,216	44,290
<b>34 &gt;</b>	<b>34 &gt;</b>	38,135	44,537	44,718	38,280	49,393	43,952	55,146

**Table A7b.** Mean values of household disposable income and household working hours

		<b>Finland 91</b>	<b>Nether- lands 91</b>	<b>Belgium 92</b>	<b>Sweden 92</b>	<b>United Kingdom 91</b>	<b>Germany 94</b>	<b>USA 91</b>
<b>Male hours</b>	<b>Female hours</b>	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN
<b>0</b>	<b>0</b>	13,256	13,796	13,560	17,299	12,971	8,666	12,701
<b>0</b>	<b>1 - 34</b>	22,348	21,823	23,352	22,953	18,615	24,746	17,738
<b>0</b>	<b>34 &gt;</b>	22,956	21,151	18,169	20,727	24,427	19,009	30,314
<b>1 -34</b>	<b>0</b>	24,052	25,452	22,760	21,386	25,498	18,718	17,572
<b>1 -34</b>	<b>1-34</b>	29,605	29,951	36,614	26,401	26,600	29,780	22,529
<b>1 -34</b>	<b>34 &gt;</b>	30,203	27,185	30,416	27,143	34,098	25,827	29,416
<b>34 &gt;</b>	<b>0</b>	24,492	24,723	24,007	25,106	26,544	24,279	32,286
<b>34 &gt;</b>	<b>1-34</b>	29,361	29,074	29,564	29,080	29,752	27,897	37,835
<b>34 &gt;</b>	<b>34 &gt;</b>	30,459	32,769	30,029	32,089	37,022	29,005	44,675

Note: All income measures in USD converted by PPP



**Table A8a.** Male average weekly working hours by age and education level (Hours per week).

Age of head	Finland 91			Netherlands 91			Belgium 92			
	Education			Education			Education			
	Low	Medium	High	Low	Medium	High	Low	Medium	High	
25-30	36,2	39,2	37,7	36,3	37,7	37,4	22,3	40,7	40,3	
31-40	38,9	39,6	38,9	35,5	37,1	38,1	27,2	39,6	41,2	
41-50	39,7	40,0	39,3	36,2	37,6	37,5	33,1	36,9	41,7	
51-55	35,7	36,7	40,5	23,5	34,3	37,0	23,1	29,4	39,7	
	Sweden 92			United Kingdom 91			Germany 94			
25-30	39,0	39,4	38,3	31,5	39,3	44,2	37,5	43,2	43,3	
31-40	39,9	40,1	40,6	36,1	41,4	40,3	38,9	43,2	42,8	
41-50	40,3	41,0	41,6	38,6	39,8	42,6	36,8	42,2	43,4	
51-55	38,8	39,0	42,5	33,3	34,3	33,5	29,4	42,1	43,2	
	USA 91									
25-30	40,4	43,1	44,0							
31-40	37,6	42,6	45,4							
41-50	35,7	40,4	44,6							
51-55	35,2	38,2	43,5							

**Table A8b.** Female average weekly working hours by age and education level (Hours per week).

Age of head	Finland 91			Netherlands 91			Belgium 92			
	Education			Education			Education			
	Low	Medium	High	Low	Medium	High	Low	Medium	High	
25-30	29,4	33,3	37,0	18,9	16,2	28,8	9,8	24,6	31,0	
31-40	32,4	34,2	36,5	9,6	9,1	17,5	9,5	18,0	26,8	
41-50	35,7	35,3	36,3	11,7	9,6	16,8	7,0	12,4	25,5	
51-55	32,3	33,9	35,0	5,1	4,9	6,7	6,0	2,9	15,5	
	Sweden 92			United Kingdom 91			Germany 94			
25-30	25,5	31,4	34,2	15,9	19,0	29,1	15,2	26,1	32,4	
31-40	27,6	29,9	33,1	17,0	17,8	22,1	16,5	22,1	24,4	
41-50	30,6	31,7	35,5	18,6	22,7	23,8	18,4	25,8	31,2	
51-55	26,3	33,2	36,2	15,5	15,5	24,3	15,5	20,9	22,5	
	USA 91									
25-30	15,2	26,1	32,4							
31-40	16,5	22,1	24,4							
41-50	18,4	25,8	31,2							
51-55	15,5	20,9	22,5							

**Table A9a.** Male average weekly working hours by age and education level (Hours per week).  
*Male employees*

Age of head	Finland 91			Netherlands 91			Belgium 92		
	Education			Education			Education		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
25-30	38,2	40,0	37,7	37,1	38,4	37,4	44,5	41,9	42,1
31-40	40,4	40,6	38,9	38,5	39,2	38,3	39,2	40,5	41,8
41-50	41,9	40,6	39,4	40,3	39,8	38,8	39,6	41,5	43,5
51-55	40,7	40,6	40,5	36,7	39,0	38,2	38,0	39,7	40,8
	Sweden 92			United Kingdom 91			Germany 94		
25-30	40,3	40,5	39,6	44,1	44,1	45,3	41,5	45,6	45,1
31-40	41,1	41,2	40,8	45,3	44,7	43,8	41,8	44,4	44,7
41-50	41,8	42,2	42,1	45,3	43,4	44,1	40,9	43,9	45,2
51-55	41,0	41,1	42,8	43,6	44,1	40,5	39,4	43,5	45,0
	USA 91								
25-30	42,1	43,8	44,7						
31-40	42,2	43,9	45,6						
41-50	41,6	43,1	45,4						
51-55	40,4	42,0	45,5						

**Table A9b.** Female average weekly working hours by age and education level (Hours per week).  
*Female employees.*

Age of head	Finland 91			Netherlands 91			Belgium 92		
	Education			Education			Education		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
25-30	37,1	37,2	37,7	30,3	27,7	32,6	29,5	33,2	34,4
31-40	37,0	37,1	37,1	19,4	20,5	25,1	32,2	30,0	30,7
41-50	38,8	37,6	37,3	22,6	20,8	24,1	26,8	30,4	32,2
51-55	37,1	36,8	36,4	17,5	14,9	20,0	30,0	25,6	26,6
	Sweden 92			United Kingdom 91			Germany 94		
25-30	31,8	33,2	36,1	27,3	29,5	35,5	31,3	36,1	39,1
31-40	32,1	31,5	34,0	26,1	26,4	33,0	30,3	32,1	36,9
41-50	33,3	33,7	36,1	27,1	29,6	27,6	31,5	34,0	34,6
51-55	33,4	36,0	36,8	25,3	24,1	32,3	28,9	33,3	32,6
	USA 91								
25-30	35,5	35,0	38,6						
31-40	34,3	35,0	36,8						
41-50	38,5	36,6	37,4						
51-55	38,3	33,8	36,8						

**Table A10a.** Male weekly working hours: mean values and standard deviations.

Working hours:	Finland 91	USA 91	Belgium 92	Netherlands 91	Sweden 92	United Kingdom 91	Germany 94
	Mean (std)	Mean (std)	Mean (std)	Mean (std)	Mean (std)	Mean (std)	Mean (std)
1 - 19	11.4 (4.2)	11.6 (4.5)	14.3 (4.4)	10.1 (6.8)	12.3 (4.7)	13.3 (4.8)	10.3 (3.8)
20 - 40	38.1 (2.1)	39.3 (2.8)	37.6 (3.4)	38.1 (3.0)	39.3 (2.8)	37.5 (2.8)	38.6 (2.4)
41 - 60	50.3 (5.2)	49.9 (5.2)	49.6 (8.0)	49.0 (6.0)	50.3 (6.1)	48.6 (5.7)	47.7 (5.5)
1 -	40.5 (7.6)	43.8 (5.1)	41.2 (9.0)	38.9 (6.6)	41.5 (7.2)	44.4 (10.1)	43.7 (9.2)

**Table A10b.** Female weekly working hours: mean values and standard deviations.

Working hours:	Finland 91	USA 91	Belgium 92	Netherlands 91	Sweden 92	United Kingdom 91	Germany 94
	Mean (std)	Mean (std)	Mean (std)	Mean (std)	Mean (std)	Mean (std)	Mean (std)
1 - 19	12.3 (4.5)	11.7 (4.6)	15.9 (4.0)	11.0 (4.9)	12.7 (4.1)	12.1 (4.5)	11.6 (3.4)
20 - 40	36.8 (3.7)	36.1 (6.2)	32.6 (7.1)	29.8 (7.6)	33.8 (7.0)	32.0 (6.8)	33.1 (5.3)
41 - 60	48.3 (4.5)	48.1 (5.1)	47.2 (4.9)	47.0 (7.0)	49.5 (5.4)	46.6 (5.0)	45.9 (4.9)
1 -	37.5 (7.4)	36.0 (10.4)	31.1 (10.5)	23.5 (11.5)	33.7 (8.9)	28.1 (12.7)	33.2 (12.2)



**Table A11.** Regression results of household Earnings on working hours

	Finland 91		Nether- lands 91		Belgium 92		Sweden 92		United Kingdom 91		Germany 94		USA 91	
	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std
Intercept	8,2608	1,2268	5,5442	1,0795	7,3287	1,1398	3,5256	1,1122	6,9268	0,9503	11,8227	1,2639	5,2592	1,3153
Men hours	0,4014	0,0268	0,6140	0,0276	0,5189	0,0278	0,4653	0,0257	0,5226	0,0217	0,4439	0,0283	0,6775	0,0285
Wife hours	0,3603	0,0209	0,3978	0,0211	0,4469	0,0251	0,3675	0,0212	0,4470	0,0225	0,2941	0,0200	0,4643	0,0193
<b>R<sup>2</sup></b>	0,1312		0,3631		0,3924		0,1859		0,3676		0,2052		0,2278	

**Table A12.** Regression results of household earnings on working hours, education, age and children.

	<b>Finland 91</b>		<b>Nether- lands 91</b>		<b>Belgium 92</b>		<b>Sweden 92</b>		<b>United Kingdom 91</b>		<b>Germany 94</b>		<b>USA 91</b>	
	<b>Estimate</b>	<b>Std</b>	<b>Estimate</b>	<b>Std</b>	<b>Estimate</b>	<b>Std</b>	<b>Estimate</b>	<b>Std</b>	<b>Estimate</b>	<b>Std</b>	<b>Estimate</b>	<b>Std</b>	<b>Estimate</b>	<b>Std</b>
Intercept	-11,2655	1,3792	-7,0136	1,5331	-10,8713	1,7398	-10,5690	1,4805	-9,6064	1,5870	-0,7902	1,7677	-23,0024	1,8479
Men hours	0,8283	0,0535	0,8851	0,0615	0,7862	0,0534	0,6750	0,0567	0,9053	0,0485	0,8309	0,0635	1,0428	0,0639
Men hours <sup>2</sup> /1000	-7,5418	0,8484	-4,9995	1,0869	-5,1637	0,7413	-4,1870	0,7976	-6,1784	0,6983	-6,0692	0,8888	-6,7963	0,8805
Wife hours	0,5946	0,0574	0,2982	0,0596	0,6075	0,0679	0,5850	0,0586	0,3752	0,0515	0,6132	0,0629	0,4889	0,0540
Wife hours <sup>2</sup> /1000	-5,7576	1,2283	3,5177	1,6175	-5,0166	1,5270	-5,7052	1,1016	-0,1081	1,0438	-7,9698	1,3719	-1,8652	1,1203
Men education medium	3,9999	0,4695	-0,4024	0,6930	3,6219	1,1065	1,8541	0,5593	6,1910	0,8375	1,7077	1,0176	7,7722	1,0402
Men education high	15,6852	0,7660	7,7880	0,8628	12,8007	1,3628	9,1777	0,6714	14,0039	1,3168	13,2666	1,3091	19,5074	1,2378
Wife education medium	1,2191	0,4883	0,5805	0,6773	1,3190	1,1037	2,1614	0,6268	2,8528	0,8480	1,6621	0,9353	5,9344	1,0800
Wife education high	10,3086	0,8023	5,0088	0,9938	7,0080	1,3816	5,5003	0,7487	9,2758	1,4078	4,3107	1,4672	13,1513	1,3207
Men age 31-40	2,4608	0,7769	2,7579	1,0640	1,2627	1,4339	4,1171	0,8935	4,6517	1,2070	1,6200	1,2546	6,4257	1,0878
Men age 41-50	6,7171	0,9547	4,8753	1,3136	3,3759	1,8409	7,6690	1,0653	7,9134	1,5190	5,3033	1,5194	9,7259	1,2949
Men age 51-55	7,3613	1,1964	8,7050	1,7048	7,5793	2,2484	6,7616	1,2899	7,5175	1,8604	6,4135	1,8202	8,2578	1,6680
Wife age 31-40	2,4554	0,6997	2,2031	0,9069	5,3719	1,2798	1,7718	0,7785	1,8417	1,0806	2,1452	1,0703	3,0275	0,9643
Wife age 41-50	7,0521	0,8844	6,3182	1,2249	11,9467	1,6813	3,5049	0,9790	6,1541	1,4447	4,2921	1,4002	8,0177	1,2287
Wife age 51-55	6,1681	1,2707	4,7479	1,8591	7,8977	2,3508	4,0829	1,3664	4,6795	1,9922	1,8433	2,0245	10,0488	1,8774
One child	0,1726	0,5382	0,8555	0,8412	-0,6513	0,9880	-1,8567	0,6259	-1,2601	0,9293	-4,9215	0,8832	0,3590	0,8232
Two children	0,0447	0,5523	0,4671	0,8258	-1,1423	1,0548	-1,7652	0,6598	-3,2988	0,9498	-5,6161	1,0284	-2,0655	0,8417
3 or more children	-0,4757	0,7526	0,6876	1,0392	-1,6493	1,3708	-3,2205	0,8153	-3,7969	1,2695	-4,2300	1,3850	-1,4644	1,0249
<b>R<sup>2</sup></b>	0,4078		0,5199		0,5952		0,3435		0,5059		0,3872		0,4226	
<b>Men hours elasticity</b>	0.27		0.57		0.43		0.41		0.45		0.36		0.43	
<b>Wife hours elasticity</b>	0.19		0.14		0.22		0.21		0.20		0.15		0.23	

Note, all variables except working hours are dummy variables taking the value one if the individual or household belongs to the group, otherwise zero.

**Table A13.** Regression results of Disposable income on working hours, education, age and children. The sample is restricted to households where the males work full time.

	Finland 91		Netherlands 91		Belgium 92		Sweden 92		United Kingdom 91		Germany 94		USA 91	
	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std
Intercept	13,4548	4,7716	22,0770	8,9357	0,1000	4,0138	3,5438	5,9767	12,2311	4,4645	-1,9586	4,6473	-16,7759	6,3956
Men hours	0,0366	0,1976	-0,3196	0,3692	0,4276	0,1477	0,4434	0,2347	-0,0425	0,1612	0,6982	0,1821	0,9205	0,2507
Men hours <sup>2</sup> /1000	-0,0026	1,9862	5,3675	3,6472	-3,0085	1,2886	-3,2323	2,2099	1,4393	1,4587	-5,4478	1,7103	-7,0337	2,3946
Wife hours	0,2444	0,0354	0,2078	0,0469	0,2704	0,0392	0,2616	0,0501	0,2756	0,0423	0,3132	0,0394	0,3143	0,0422
Wife hours <sup>2</sup> /1000	-2,0439	0,7573	1,3438	1,2625	-1,9548	0,8686	-2,2746	0,9285	-0,9552	0,8536	-4,8121	0,8489	-0,9840	0,8737
Men education medium	2,3159	0,2845	-0,8755	0,5633	1,8597	0,7221	1,1062	0,4516	4,7808	0,6969	1,4516	0,6542	6,7240	0,8380
Men education high	8,8581	0,4594	4,2176	0,7005	5,8104	0,8734	5,5592	0,5349	10,3670	1,0790	8,7819	0,8391	15,4050	0,9810
Wife education medium	0,7042	0,2950	0,0400	0,5458	0,7032	0,7099	1,5659	0,5068	2,9321	0,6995	0,7671	0,5918	4,8970	0,8683
Wife education high	5,4449	0,4847	3,2425	0,8091	3,5971	0,8805	4,2902	0,5987	7,5068	1,1424	3,1372	0,9432	10,2981	1,0482
Men age 31-40	1,1983	0,4635	1,7838	0,8446	0,9423	0,8597	1,6360	0,7260	3,6901	0,9747	0,5864	0,7832	4,8650	0,8485
Men age 41-50	3,2004	0,5724	3,6842	1,0463	2,9439	1,1176	2,9853	0,8581	7,2286	1,2485	2,9427	0,9655	8,5500	1,0187
Men age 51-55	3,7389	0,7282	6,6329	1,3801	5,9025	1,4279	2,9564	1,0384	6,3940	1,5711	4,7526	1,1487	7,5937	1,3265
Wife age 31-40	1,3574	0,4164	1,7206	0,7223	2,2276	0,7685	0,5863	0,6387	1,8118	0,8775	1,5049	0,6699	2,1666	0,7539
Wife age 41-50	3,7380	0,5293	5,1153	0,9901	6,3551	1,0187	1,3664	0,7905	5,3487	1,1978	3,1041	0,8874	6,0549	0,9674
Wife age 51-55	3,4714	0,7729	3,0527	1,5502	3,9102	1,4783	2,1649	1,1054	5,7605	1,7016	1,6038	1,2696	9,3200	1,4884
One child	1,6491	0,3258	0,1900	0,6831	1,3085	0,5992	0,0340	0,5001	-0,7629	0,7603	-1,0785	0,5596	0,4800	0,6476
Two children	2,4661	0,3331	0,3964	0,6697	2,2580	0,6315	1,4420	0,5275	-1,6908	0,7860	-1,4265	0,6532	-0,5827	0,6598
3 or more children	4,6326	0,4535	1,9821	0,8344	5,8204	0,8441	3,6362	0,6597	-1,7139	1,0950	0,3948	0,9096	0,7307	0,8050
R <sup>2</sup>	0,3166		0,3326		0,3926		0,1463		0,2834		0,2752		0,3376	

Note, all variables except working hours are dummy variables taking the value one if the individual or household belongs to the group, otherwise zero.

**Table A13a.** Marginal effects: changes in household disposable income as female working hours change. Percentage changes in income compared to households where males work and females do not work.

	<b>Finland 91</b> Variation in net disposable income	<b>Netherlands 91</b> Variation in net disposable income	<b>Belgium 92</b> Variation in net disposable income
Female 0	0,0	0,0	0,0
Female 1-34	19,6	15,4	24,3
Female 35 >	23,8	24,9	25,7

	<b>Sweden 92</b> Variation in net disposable income	<b>United Kingdom 91</b> Variation in net disposable income	<b>Germany 94</b> Variation in net disposable income
Female 0	0,0	0,0	0,0
Female 1-34	15,9	7,5	24,8
Female 35 >	27,2	31,7	18,2

	<b>USA 91</b> Variation in net disposable income
Female 0	0,0
Female 1-34	11,3
Female 35 >	30,4

Note: as an illustration of the interpretation of the entries, take 30.4 in the bottom right hand side of the US table. Thus, a US household where the male works and the female works full time have a disposable income 30.4% above a household where the males works and the spouse works zero hours.



**Table A 13b.** Marginal effects: changes in household disposable income as female working hours change. Percentage changes in income compared to households where males work and have the lowest education and females do not work.

Working hours	Finland 91			Netherlands 91			Belgium 92		
	Male Education			Male Education			Male Education		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
Female 0	0	2	46	0	-11	15	0	7	32
Female 1-35	13	24	66	-1	6	32	15	24	60
Female 35 >	23	30	72	8	19	30	28	29	55

Working hours	Sweden 92			United Kingdom 91			Germany 94		
	Male Education			Male Education			Male Education		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
Female 0	0	4	40	0	8	54	0	10	65
Female 1-35	15	26	43	10	22	67	10	32	137
Female 35 >	29	31	63	39	46	81	32	37	67

Working hours	USA 91		
	Male Education		
	Low	Medium	High
Female 0	0	48	124
Female 1-35	25	65	128
Female 35 >	55	97	165

Note: as an illustration of the interpretation of the entries, take 165 in the bottom right hand side of the US table. Thus, a US household where the male have the highest education and the male works and the female works full time have a disposable income 165% above a household where the male works and the spouse works zero hours and the male have the lowest education.

**Table A14:** Distribution of household (married or cohabitants) by working time patterns (%). Ranking within parenthesis

Country	Male working full time, women not working	Male working full time Female part-time	Both full time
Belgium	34,8 (2)	25,3 (5)	24,7 (6)
Finland	7,0 (6)	9,2 (7)	77,4 (1)
Germany	29,7 (3)	25,0 (4)	37,2 (4)
Netherlands	44,0 (1)	32,9 (2)	10,5 (7)
Sweden	4,8 (7)	40,8 (1)	48,3 (3)
United Kingdom	22,3 (4)	34,5 (3)	27,6 (5)
United States	21,5 (5)	19,1 (6)	51,9 (2)

Source: LIS and own calculation.



**Table A15.** Regression results of Disposable income on working hours, education, age and children.

	Finland 91		Nether- lands 91		Belgium 92		Sweden 92		United Kingdom 91		Germany 94		USA 91	
	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std
Intercept	8,3886	0,8034	7,9858	1,1470	4,8794	0,9755	9,8449	1,1272	3,9296	1,2095	7,0034	1,0818	-5,7172	1,3994
Men hours	0,2394	0,0312	0,2706	0,0460	0,2598	0,0299	0,2078	0,0431	0,3167	0,0370	0,3359	0,0389	0,4825	0,0484
Men hours <sup>2</sup> /1000	-1,9740	0,4942	-0,5365	0,8132	-1,6387	0,4156	-1,0055	0,6073	-1,6481	0,5322	-2,1569	0,5389	-2,6273	0,6668
Wife hours	0,2551	0,0334	0,2141	0,0446	0,2794	0,0381	0,2354	0,0446	0,2438	0,0392	0,3512	0,0380	0,3026	0,0409
Wife hours <sup>2</sup> /1000	-2,3126	0,7155	0,9483	1,2102	-2,0868	0,8561	-1,9517	0,8388	-0,1820	0,7955	-5,2850	0,8262	-0,7675	0,8484
Men education medium	2,3560	0,2735	-0,4191	0,5185	1,9193	0,6204	1,2355	0,4259	4,4292	0,6383	1,2582	0,6143	5,9709	0,7877
Men education high	8,7217	0,4462	4,6994	0,6455	6,1637	0,7641	5,5112	0,5112	9,5249	1,0036	8,4071	0,7916	14,4931	0,9374
Wife education medium	0,6499	0,2845	0,3547	0,5068	0,1423	0,6188	1,5195	0,4772	2,2975	0,6463	0,9189	0,5671	4,5953	0,8179
Wife education high	5,3748	0,4674	3,2374	0,7435	2,7163	0,7747	4,0892	0,5700	7,0134	1,0729	2,9138	0,8873	10,3776	1,0002
Men age 31-40	1,2800	0,4526	1,6678	0,7960	0,8532	0,8040	1,3748	0,6803	3,0845	0,9199	0,3946	0,7578	4,9947	0,8238
Men age 41-50	3,1115	0,5561	3,4790	0,9828	2,9013	1,0322	2,8519	0,8111	6,5085	1,1577	2,4132	0,9236	8,4083	0,9806
Men age 51-55	3,8554	0,6970	6,3506	1,2755	5,8033	1,2607	2,9091	0,9821	6,4076	1,4179	4,1509	1,1005	7,8117	1,2632
Wife age 31-40	1,3584	0,4076	1,4351	0,6785	2,4802	0,7175	0,8453	0,5928	1,8794	0,8235	1,4835	0,6456	2,1698	0,7302
Wife age 41-50	3,9236	0,5152	4,7413	0,9164	6,5591	0,9427	1,5002	0,7454	4,7041	1,1010	3,6754	0,8487	6,1645	0,9305
Wife age 51-55	3,5934	0,7402	3,3107	1,3909	4,2892	1,3181	2,1632	1,0404	4,6606	1,5184	2,3799	1,2242	9,0836	1,4218
One child	1,7377	0,3135	0,2530	0,6294	1,0779	0,5539	0,0283	0,4766	-0,6204	0,7083	-0,9413	0,5385	0,8268	0,6234
Two children	2,6543	0,3217	0,4040	0,6178	2,4450	0,5914	1,6385	0,5024	-1,6475	0,7238	-1,0173	0,6288	-0,2206	0,6375
3 or more children	4,7681	0,4384	1,8393	0,7775	6,3053	0,7686	3,7166	0,6208	-0,9382	0,9675	1,6950	0,8415	1,1082	0,7761
<b>R<sup>2</sup></b>	0,3403		0,3601		0,4718		0,1734		0,3502		0,3149		0,3716	
<b>Men hours elasticity</b>	0,12		0,31		0,19		0,17		0,24		0,24		0,28	
<b>Wife hours elasticity</b>	0,11		0,10		0,14		0,12		0,15		0,10		0,18	

Note, all variables except working hours are dummy variables taking the value one if the individual or household belongs to the group, otherwise zero.

**Table A16.** Regression results of Disposable income on working hours, education, age and children.  
The sample is restricted to households where the males work full time.

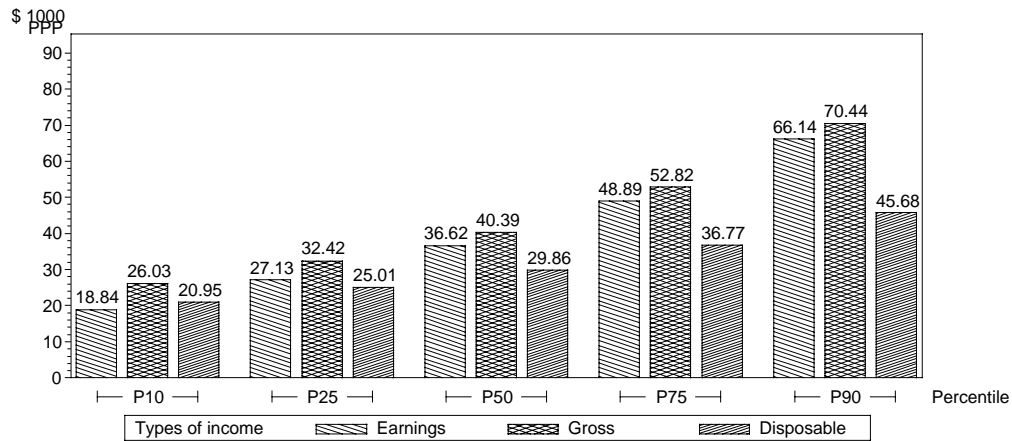
	Finland 91		Nether- lands 91		Belgium 92		Sweden 92		United Kingdom 91		Germany 94		USA 91	
	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std	Estimate	Std
Intercept	13,4548	4,7716	22,0770	8,9357	0,1000	4,0138	3,5438	5,9767	12,2311	4,4645	-1,9586	4,6473	-16,7759	6,3956
Men hours	0,0366	0,1976	-0,3196	0,3692	0,4276	0,1477	0,4434	0,2347	-0,0425	0,1612	0,6982	0,1821	0,9205	0,2507
Men hours <sup>2</sup> /1000	-0,0026	1,9862	5,3675	3,6472	-3,0085	1,2886	-3,2323	2,2099	1,4393	1,4587	-5,4478	1,7103	-7,0337	2,3946
Wife hours	0,2444	0,0354	0,2078	0,0469	0,2704	0,0392	0,2616	0,0501	0,2756	0,0423	0,3132	0,0394	0,3143	0,0422
Wife hours <sup>2</sup> /1000	-2,0439	0,7573	1,3438	1,2625	-1,9548	0,8686	-2,2746	0,9285	-0,9552	0,8536	-4,8121	0,8489	-0,9840	0,8737
Men education medium	2,3159	0,2845	-0,8755	0,5633	1,8597	0,7221	1,1062	0,4516	4,7808	0,6969	1,4516	0,6542	6,7240	0,8380
Men education high	8,8581	0,4594	4,2176	0,7005	5,8104	0,8734	5,5592	0,5349	10,3670	1,0790	8,7819	0,8391	15,4050	0,9810
Wife education medium	0,7042	0,2950	0,0400	0,5458	0,7032	0,7099	1,5659	0,5068	2,9321	0,6995	0,7671	0,5918	4,8970	0,8683
Wife education high	5,4449	0,4847	3,2425	0,8091	3,5971	0,8805	4,2902	0,5987	7,5068	1,1424	3,1372	0,9432	10,2981	1,0482
Men age 31-40	1,1983	0,4635	1,7838	0,8446	0,9423	0,8597	1,6360	0,7260	3,6901	0,9747	0,5864	0,7832	4,8650	0,8485
Men age 41-50	3,2004	0,5724	3,6842	1,0463	2,9439	1,1176	2,9853	0,8581	7,2286	1,2485	2,9427	0,9655	8,5500	1,0187
Men age 51-55	3,7389	0,7282	6,6329	1,3801	5,9025	1,4279	2,9564	1,0384	6,3940	1,5711	4,7526	1,1487	7,5937	1,3265
Wife age 31-40	1,3574	0,4164	1,7206	0,7223	2,2276	0,7685	0,5863	0,6387	1,8118	0,8775	1,5049	0,6699	2,1666	0,7539
Wife age 41-50	3,7380	0,5293	5,1153	0,9901	6,3551	1,0187	1,3664	0,7905	5,3487	1,1978	3,1041	0,8874	6,0549	0,9674
Wife age 51-55	3,4714	0,7729	3,0527	1,5502	3,9102	1,4783	2,1649	1,1054	5,7605	1,7016	1,6038	1,2696	9,3200	1,4884
One child	1,6491	0,3258	0,1900	0,6831	1,3085	0,5992	0,0340	0,5001	-0,7629	0,7603	-1,0785	0,5596	0,4800	0,6476
Two children	2,4661	0,3331	0,3964	0,6697	2,2580	0,6315	1,4420	0,5275	-1,6908	0,7860	-1,4265	0,6532	-0,5827	0,6598
3 or more children	4,6326	0,4535	1,9821	0,8344	5,8204	0,8441	3,6362	0,6597	-1,7139	1,0950	0,3948	0,9096	0,7307	0,8050
<b>R<sup>2</sup></b>	0,3166		0,3326		0,3926		0,1463		0,2834		0,2752		0,3376	
<b>Wife hours elasticity</b>	0.11		0.11		0.13		0.12		0.16		0.08		0.18	

Note, all variables except working hours are dummy variables taking the value one if the individual or household belongs to the group, otherwise zero.

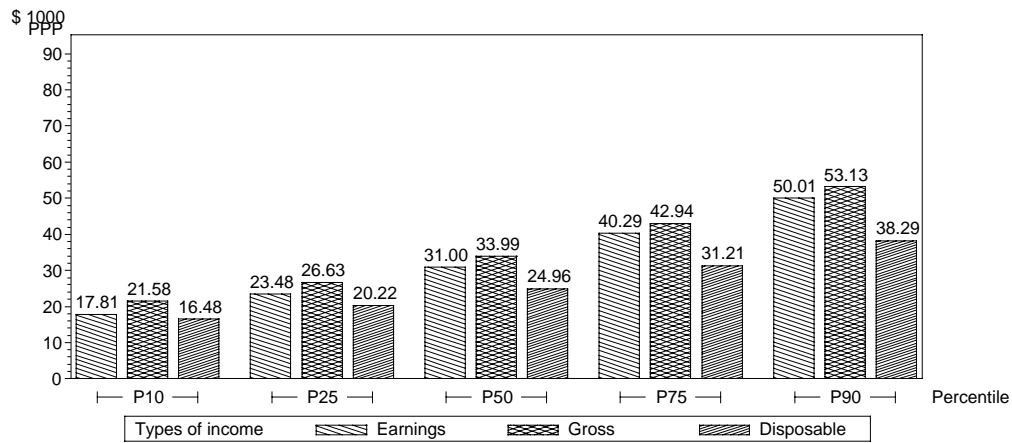


# Figure A1: Income distribution

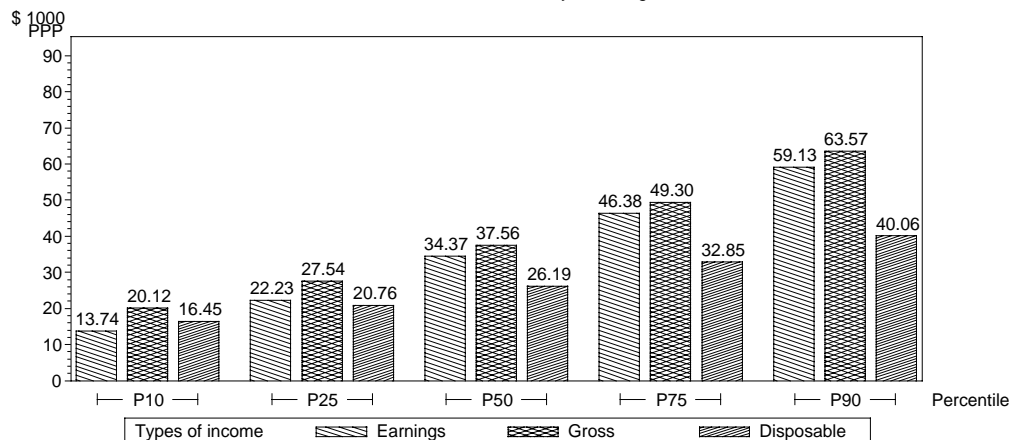
**Figure 1. Household Income distribution in Finland 1991**  
Head of household 25-55 years of age



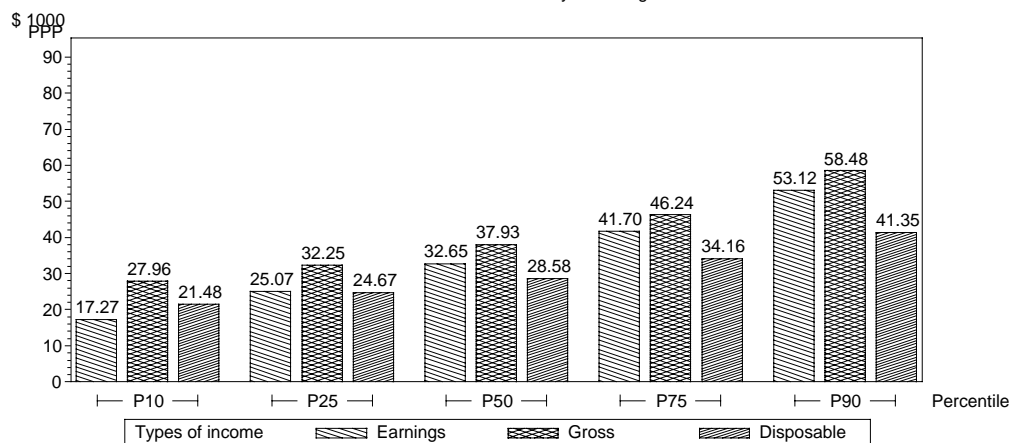
**Figure 2. Household Income distribution in the Netherlands 1991**  
Head of household 25-55 years of age



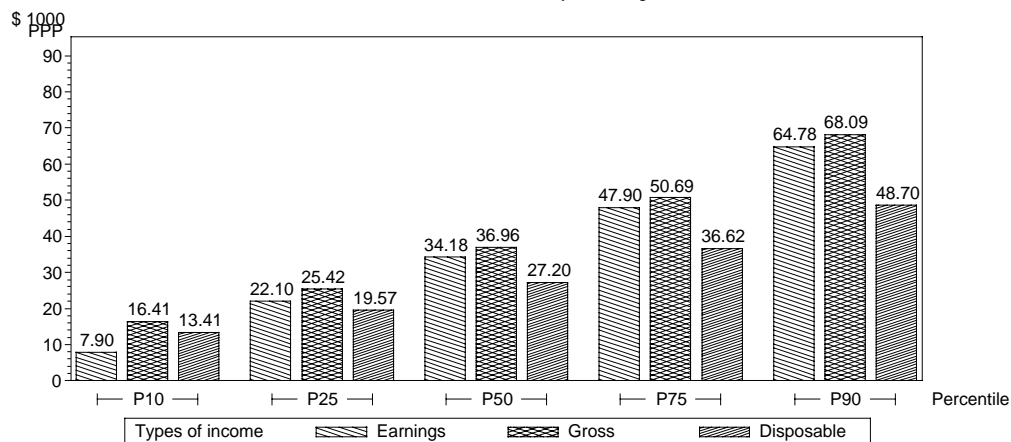
**Figure 3. Household Income distribution in Belgium 1992**  
Head of household 25-55 years of age



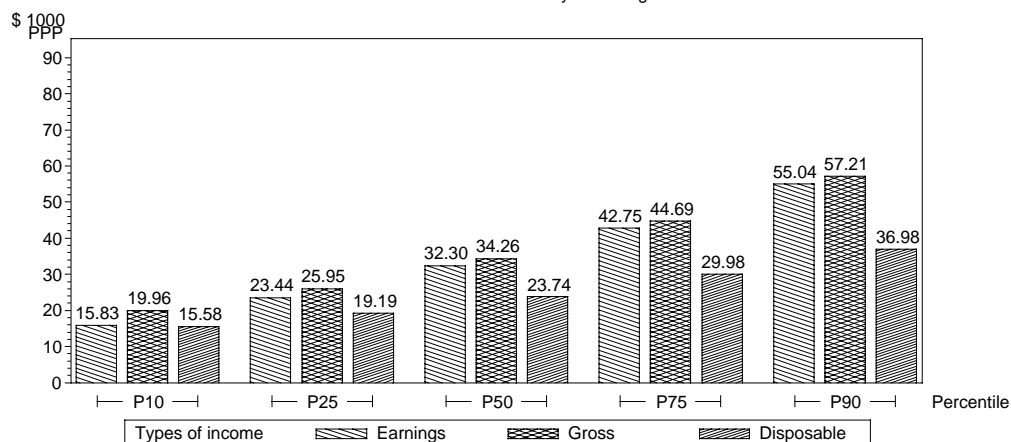
**Figure 4. Household Income distribution in Sweden 1992**  
Head of household 25-55 years of age



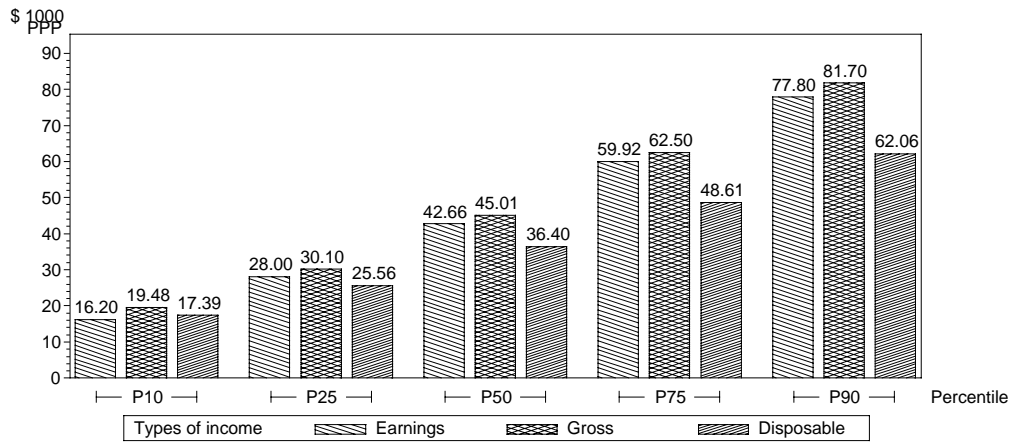
**Figure 5. Household Income distribution in United Kingdom 1991**  
Head of household 25-55 years of age



**Figure 6. Household Income distribution in Germany 1994**  
Head of household 25-55 years of age

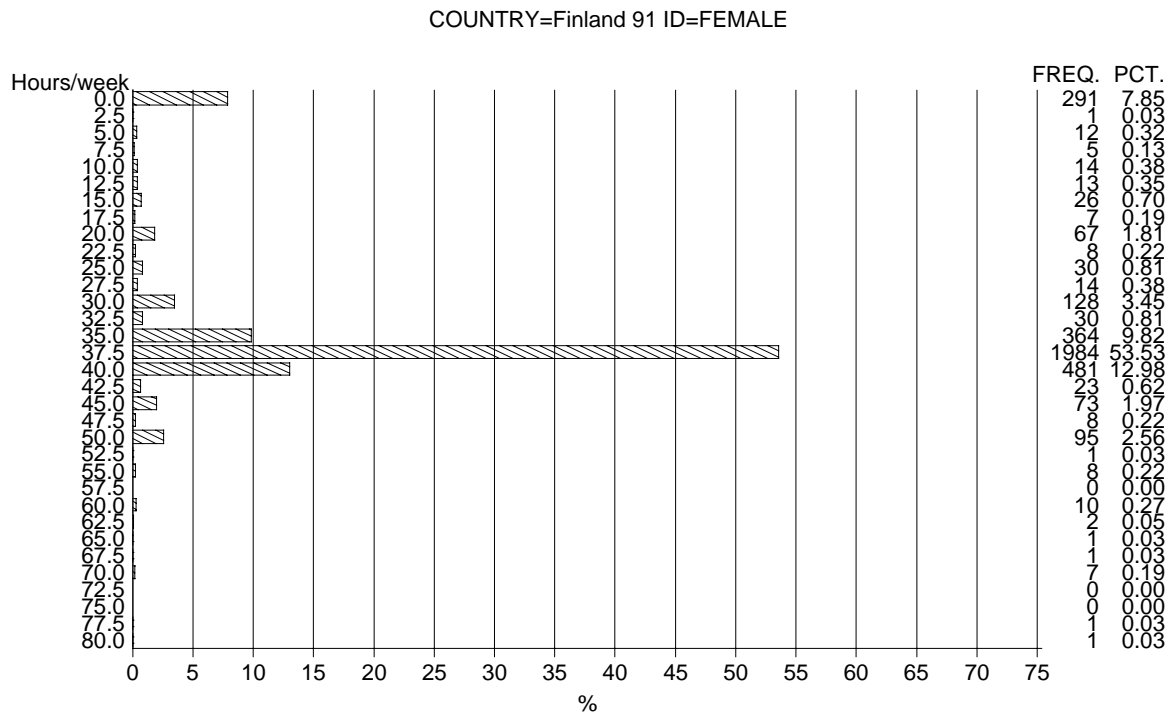
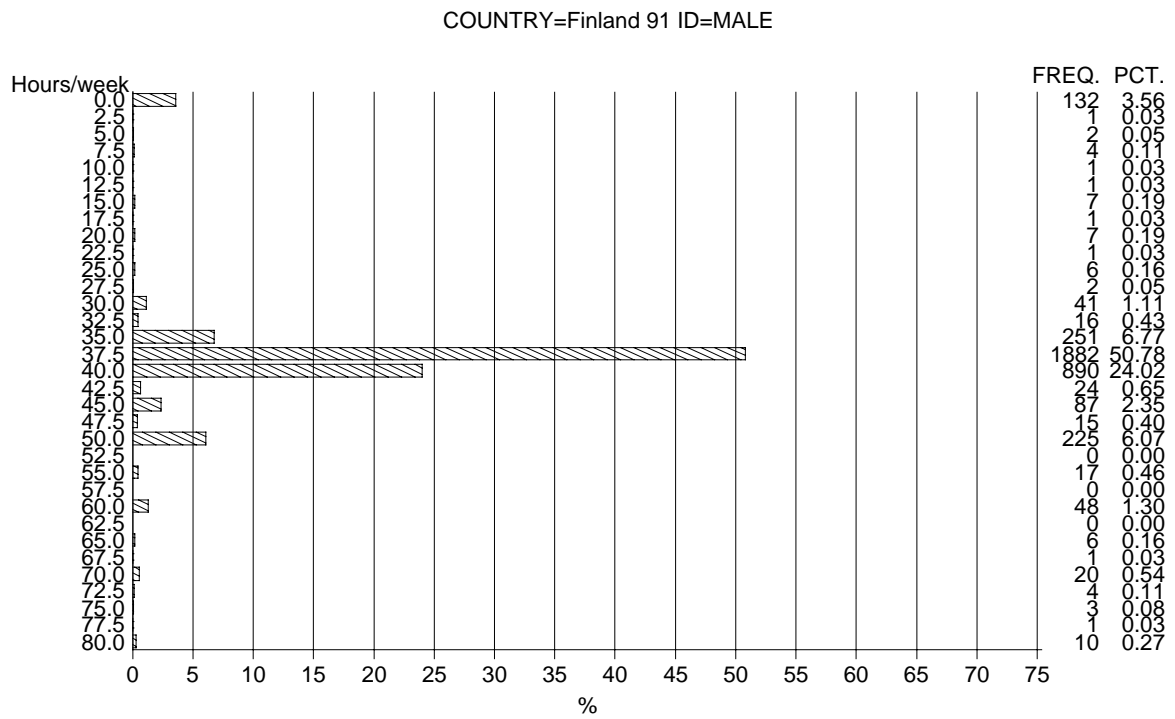


**Figure 7. Household Income distribution in USA 1991**  
 Head of household 25-55 years of age

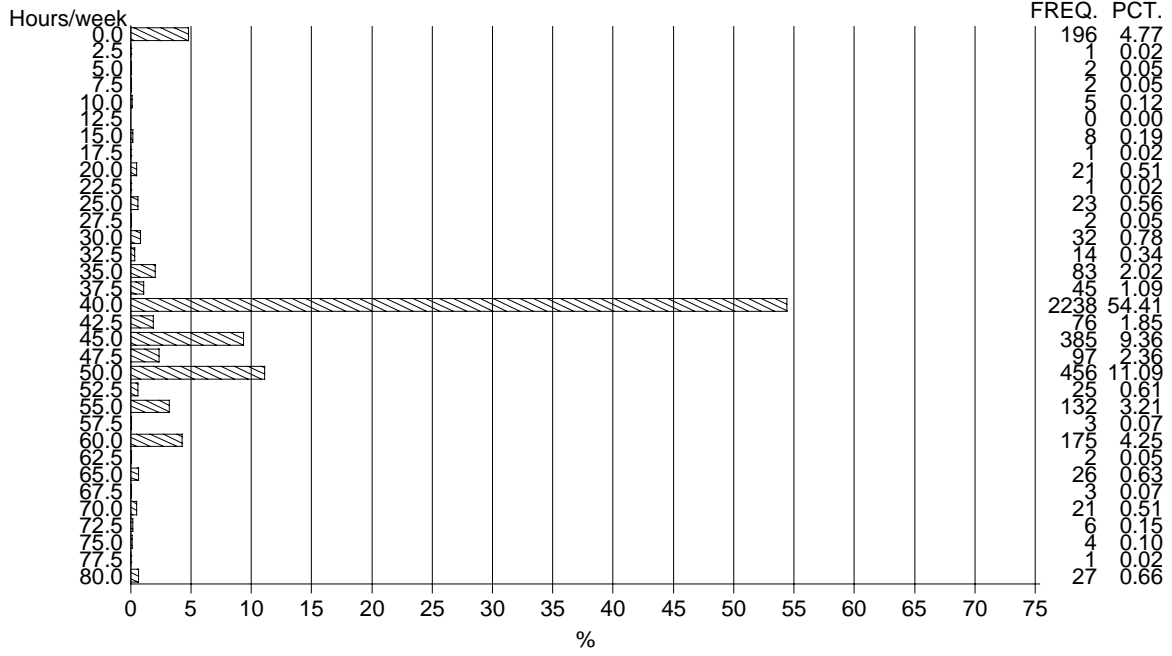




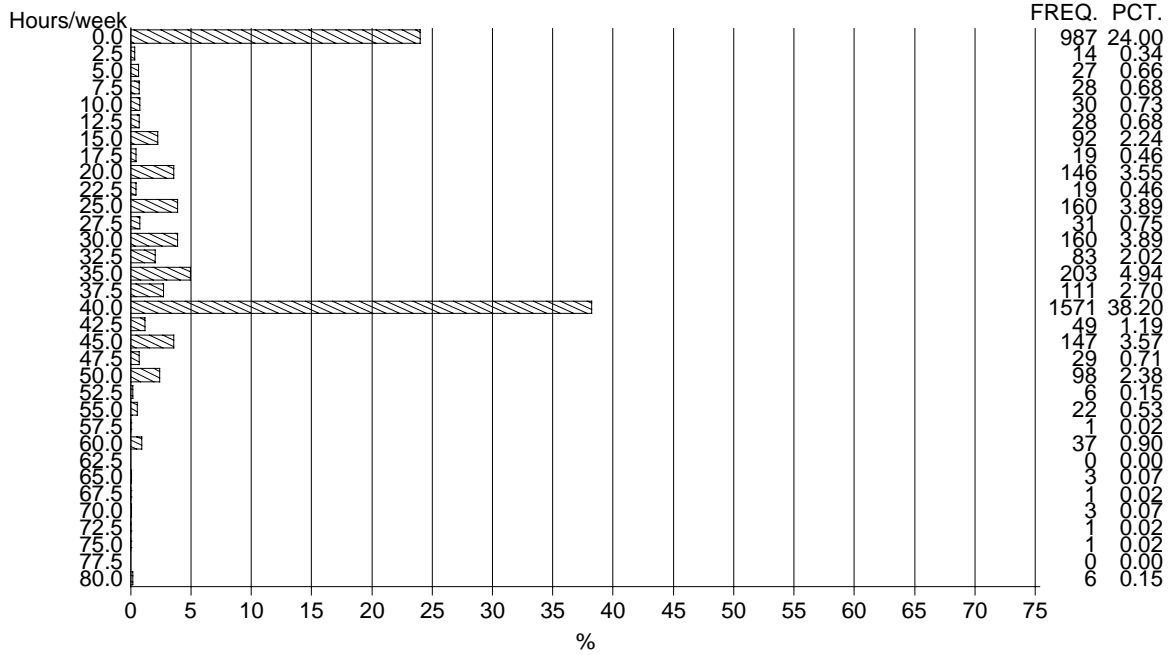
**Figure A2: Gender working time distribution**



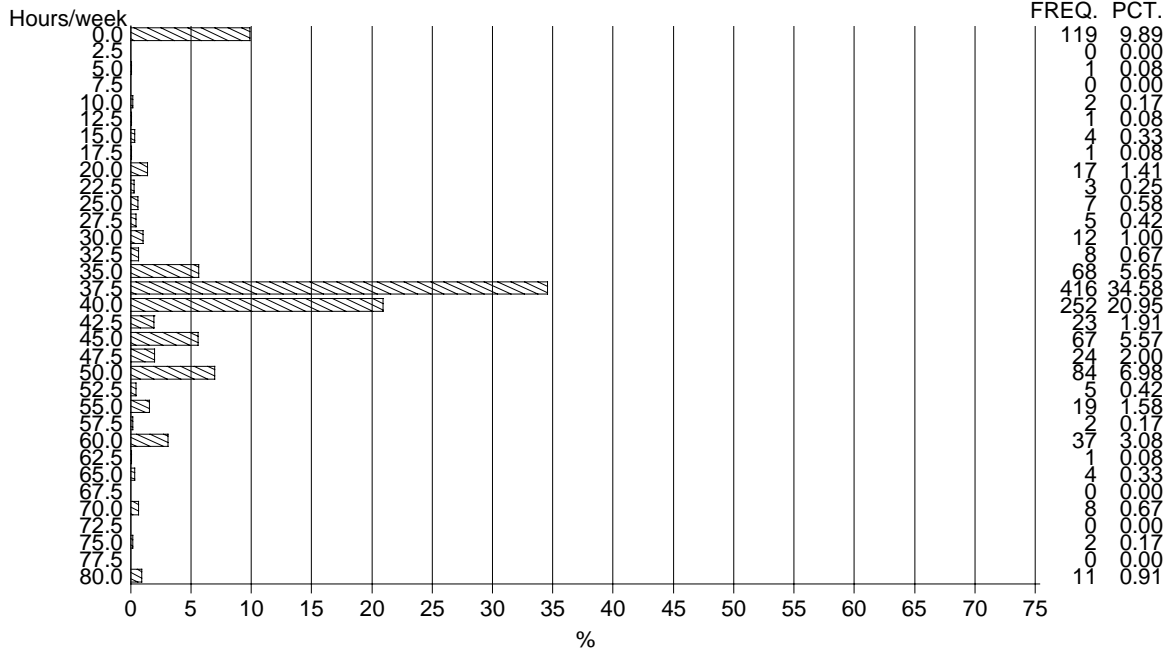
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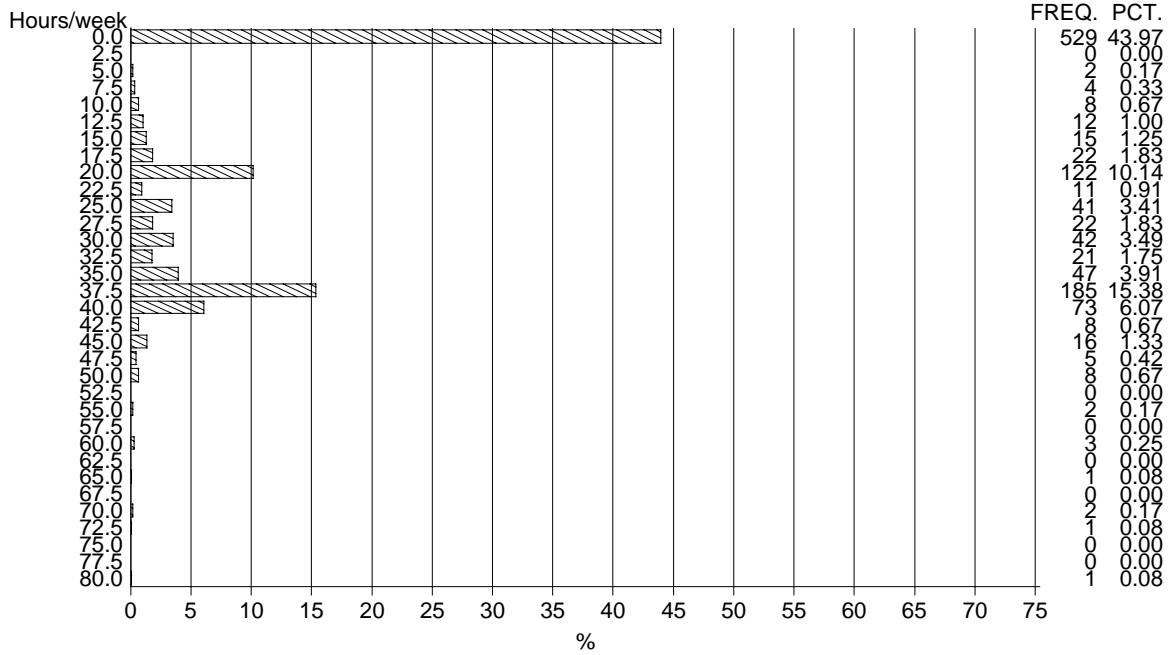
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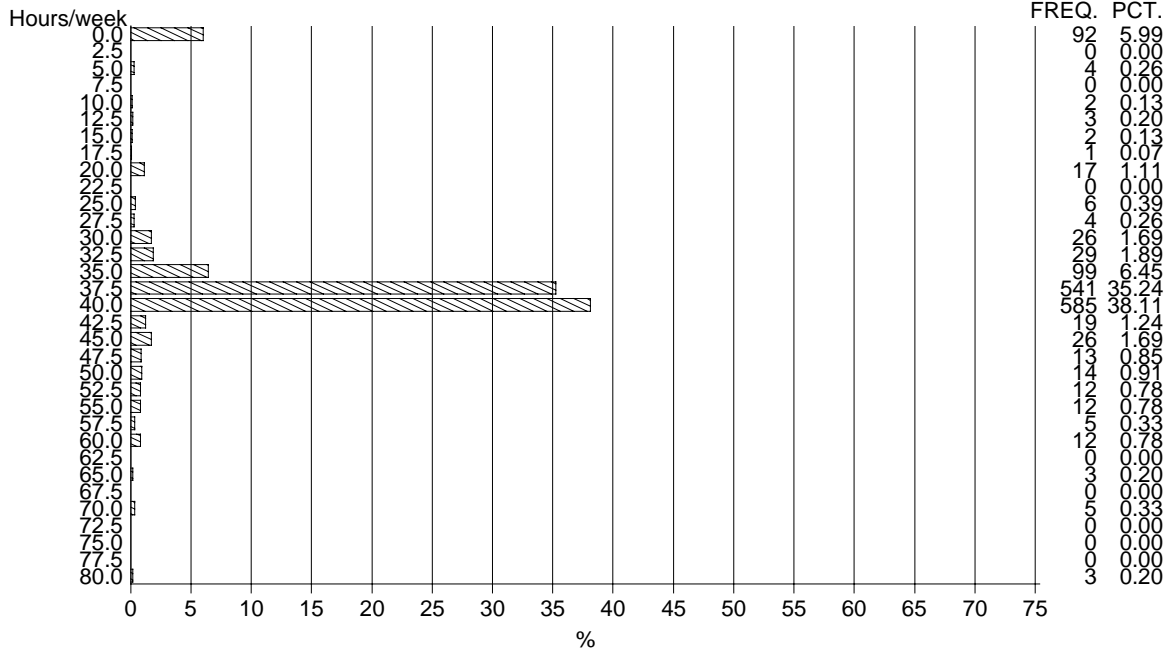
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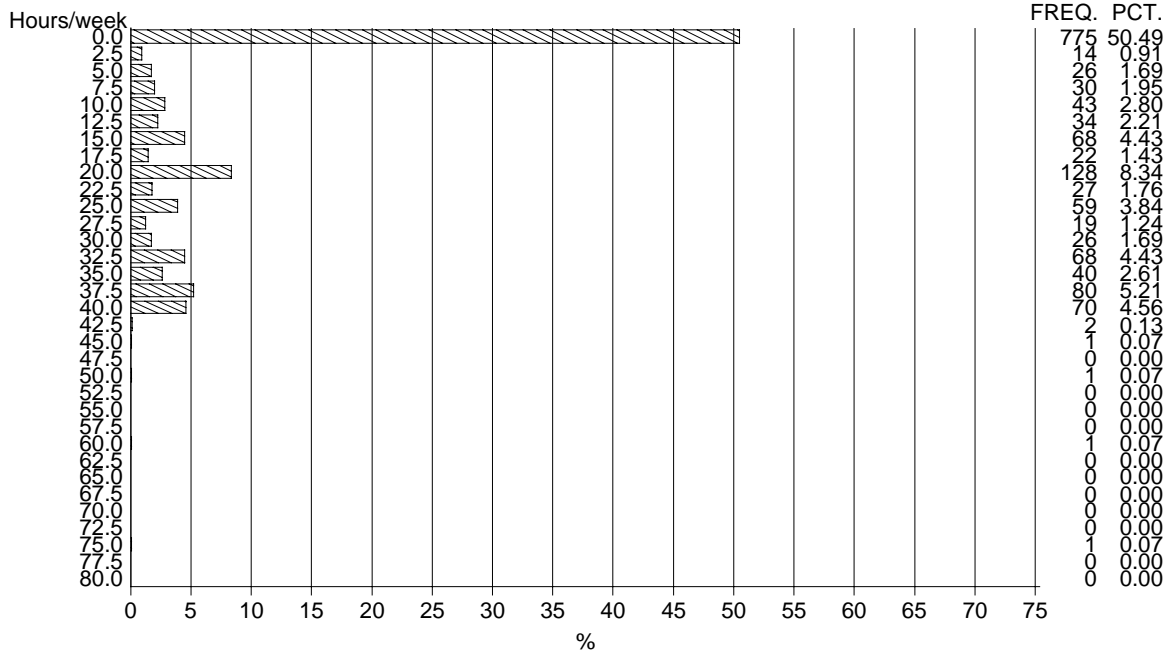
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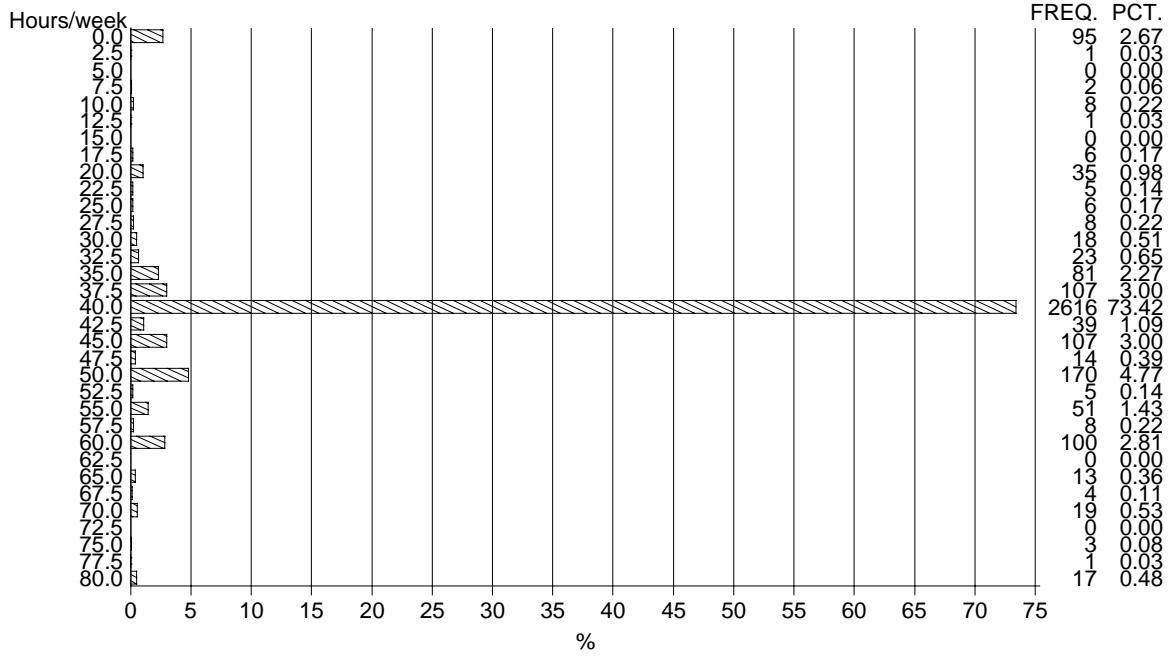
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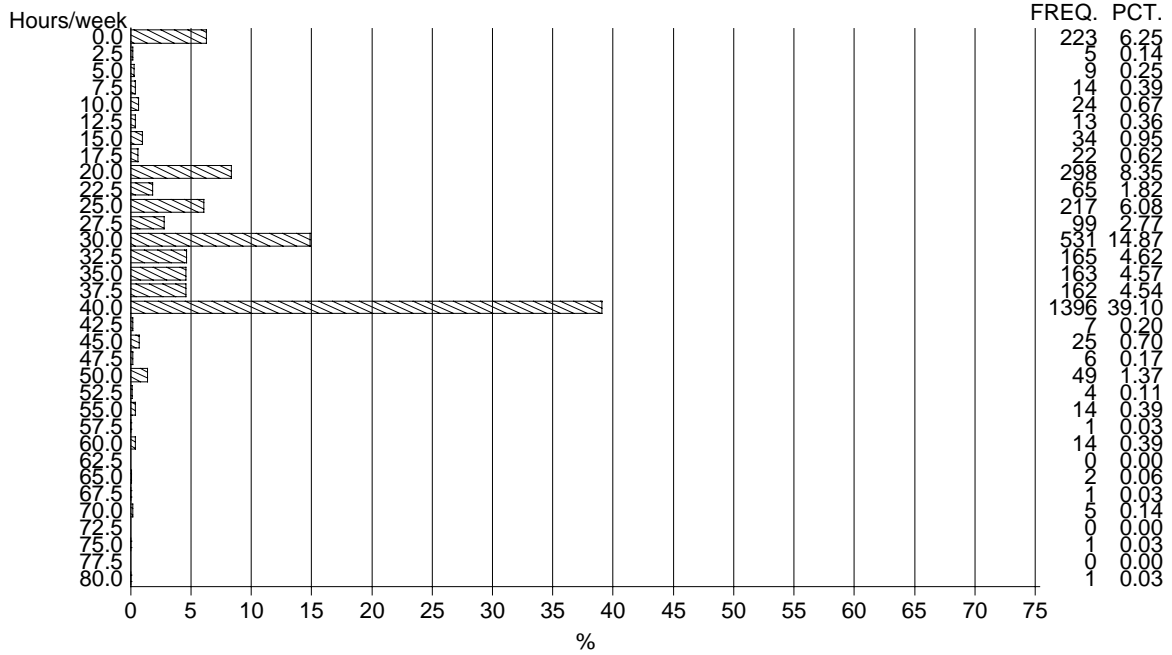
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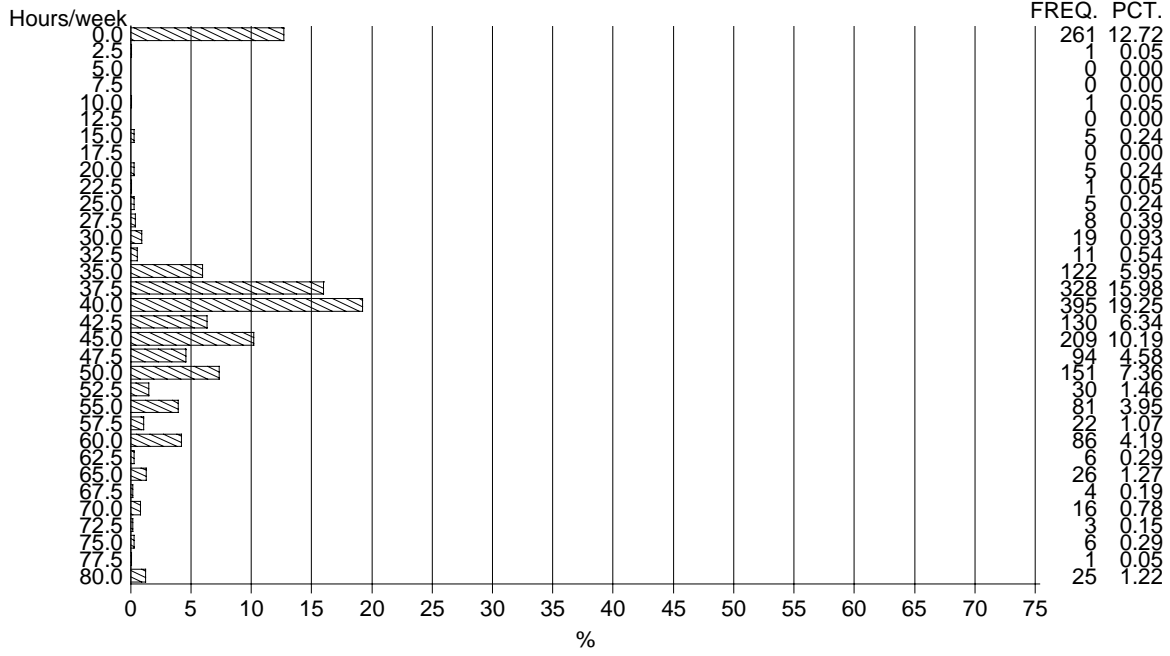
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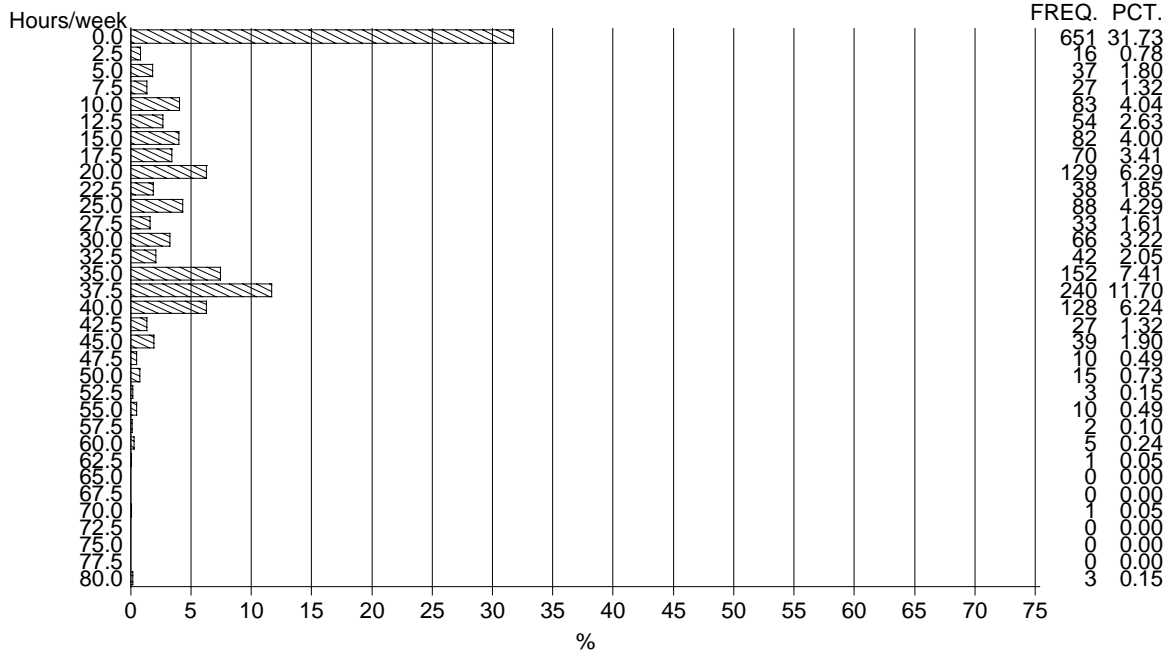
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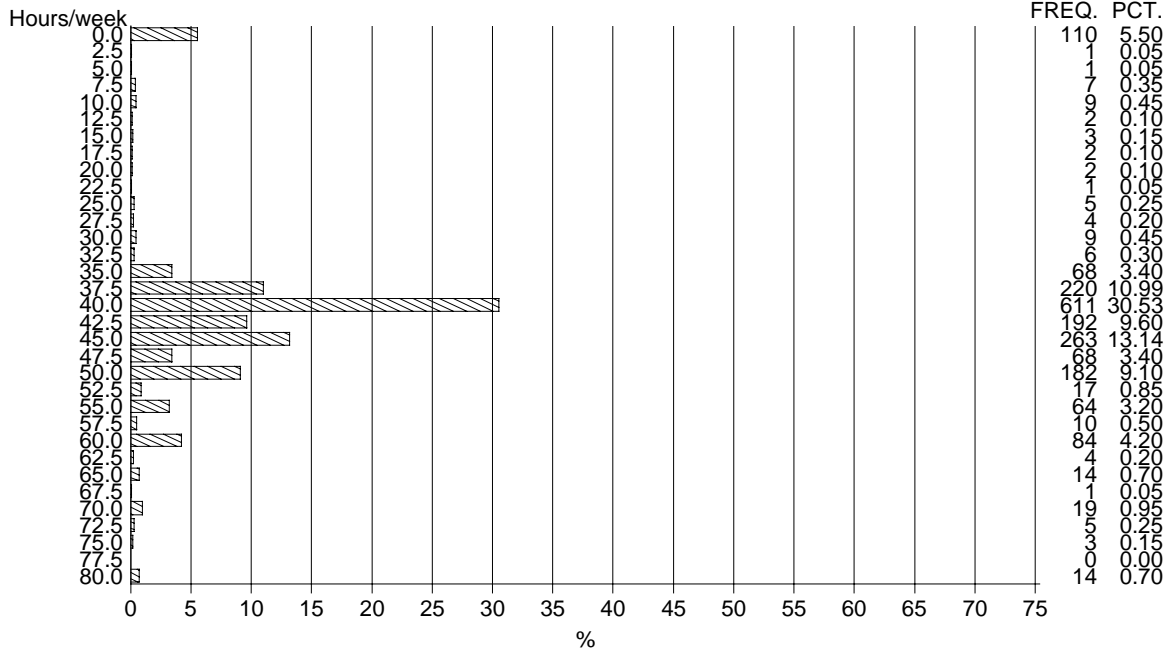
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