Women Labor Market Performance in Europe: Trends and Shaping Factors

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Abstract

We investigate the changes in women's employment patterns across EU countries over the last 20 years both in terms of labour market participation and type of jobs using individual data from ECHP and EUSILC databases. Using a logistic multilevel model, we then pin down the role played by institutional, policy and cultural changes in explaining women's employment. The key results indicate that the increasing (positive) effect of the level of education, the diminishing (negative) effect of fertility choices, as well as an attenuation of the cohort effects have played an important role in explaining women's participation to the labour market, with important differences across EU countries characterized by different institutional and welfare settings. Moreover, in the Southern countries, the improvement in women labour market participation is associated with a general decline in the quality of occupation, with an increase in the share of women involved in temporary positions and part time jobs

Keywords: Female labour force participation , Trends, Labour Market Institutions, Multilevel analysis

JEL Classification codes: J11, J21, J22

1 Introduction

Over the last two decades, many European countries experienced an increase in female labour force participation and employment. On average, the participation rate has increased from around 55% in the early 90s to more than 66% in 2008 (Figure 1). In the same period the women employment rate has moved to the same direction, by increasing from 49% to 61% (Figure 2). This steadily improvement in women labour market position has led to a significant decline in the gender employment gap, defined as the difference in the employment rate between men and women, which have nearly halved since 1990, from more than 25% to almost 14% in 2008. The observed aggregate increase in participation and employment reflects substantial differences and heterogeneity both within different groups and across countries suggesting an important role for cross-countries heterogeneity in the factors which affect women labour market outcomes.

The existing literature has identified a number of factors which could have contributed to the overall changes in women labour market behavior: changes in cultural attitudes towards work (particularly in countries where participation is traditionally lower), demographic factors (with a larger share of population in prime working age), changes in the characteristics of the female population (e.g. fertility decision both in terms of the number of children and age at which having the first child), and educational choices, but also reforms of the welfare state and changes of the labour market institutions and policies specifically targeted at groups with lower attachment to the labour market. Changes in the labour market behavior of women with specific characteristics (e.g. small children) may reflect changing preferences (cultural attitude to work) but also changing in restrictions which prevent women from participating.

The recent empirical literature (Petrongolo, 2004) has questioned on the role played by the growth of "atypical" jobs during the last decade, typically part-time and temporary occupations, in explaining the recent labor market developments. Part-time work may provide an opportunity for flexible hours

of work, and for combining wage work with family commitments, especially for women. However, some cases of part-time work might as well be considered as a form of underemployment, paying lower wages and providing low occupational attainments and job security (OECD 1999). Similarly, temporary contracts may provide firms with a useful mean of worker screening, and therefore represent stepping-stones towards permanent employment. Alternatively, they may simply end up being used as a cheaper option to adjust firm-level employment, especially in countries where regular worker are over-protected, with lower wages and severance payments, and poor human capital accumulation. The incidence of part-time jobs and, to a less extent, temporary jobs, is traditionally higher among women than among men (see Figure 3 and Figure 4). On average, more women work part-time in central and northern Europe than in the south, while no major geographical pattern can be detected for men. The incidence of temporary contracts varies more across countries than across gender. The figures for women are slightly higher than for men, but replicate quite closely the international pattern. However, although men and women both experienced an increase in part-time and temporary employment over the last twenty years, the progressive deregulation of the labour market could not necessarily be gender neutral. As a matter of fact, while the male flexibility experience typically occurs at the beginning and end of their working life, women experience involvement in temporary and part-time occupations throughout their working life.[1] As a consequence, on the one hand the increasing availability of "atypical" jobs and more flexible forms of employment, may have helped women to better integrate in the labour market and narrow the employment gap with men. On the other this integration process may have occurred at the expense of increasing gender

[1] There is a large literature which shows that part-time work may have negative effects on wages and career prospects (especially in countries where it is widespread). Part-time jobs tend to be more frequent in low-qualified occupations with a negative impact on women's career opportunities. In the UK and US mothers are more likely to work in part-time jobs and earn lower wages compared with women without children. Mothers working part-time also have significantly lower hourly wages in Germany and Sweden (Ermisch and Wright, 1993; Gustafsson, 2006).

job segregation, to the extent that differences across genders in the "quality" of occupation are not fully explained by different preferences or productivity of men and women.

The objective of the paper is twofold. The first is to assess recent trends in women employment and participation with a particular attention on the changes in the "type" of occupation (temporary vs. regular and part-time vs. full-time) women are involved in. We begin our analysis by developing a time-variant country- specific synthetic indicator for female labour market performance (relatively to men) which considers both the quantitative (employment and participation) and qualitative (type of contract) dimensions. We use regression models to look at how women perform in their employment characteristics by estimating binary choice regression models for the period 1994-2009 for the probabilities of participating to labour force, being employed, working part-time and holding a fixed-term contract, controlling for a number of individual and job characteristics. We also investigate the presence of trends which differ both across groups of countries and across individuals with different characteristics. In the second part of the paper we focus on the role played by the interplay of macro institutional factors and policies and individual characteristics in explaining the observed trends and cross-country differences by means of a multilevel approach.

The rest of the paper is organized as follows. Section 2 presents a brief review of the related literature whereas section 3 describes the data used throughout the analysis. We summarize the large quantity of micro-level information available for different European countries and across time using a synthetic indicators of female labor market performance in Section 4.. The results of the multivariate regression analysis of women's involvement in the labour market across time and countries are reported in section 5. Finally, the role of labour market institutional framework and public policies is using a multilevel approach in section 6. Section 7 concludes.

2 Literature review

With foundations in microeconomics, the traditional economic literature on women's employment has largely focused on the costs and benefits of paid labour relative to domestic work and other pursuits. According to neoclassical models of labour supply, a woman's attachment to the labour market is strictly related to the balance between her reservation wage and her market wage. The reservation wage is the lowest wage rate at which a worker would be willing to accept a particular type of job. It depends on several factors and may also change over time. In this view, housework and family-care duties typically reduce women's involvement in labour force by increasing their reservation wage. Indeed, families with women in paid labour need to outsource household labour; when the hourly market price for household labour is larger than the hourly woman's market wage, then the woman typically opts out of the labour force.

A large number of research paper has proved the negative association between household-related responsibilities and women's employment (see, among many others, Goodpaster, 2010; Leigh, 2010; and Munasinghe et al., 2008). Education has been found as another major determinant of women's employment, by increasing women's potential market wages and, in turn, affecting fertility decisions (Gustaffsson and Kenjoh, 2008; Euwals et al. (2011)).

Recent researches contend that the overall increase in women's labor force participation and attachment to work may be attributed to structural changes in the economy that influence the demand for, and supply of, women workers. In particular, cultural norms on gender roles and welfare state developments are found to be responsible for the general increase in women's labor force participation in OECD countries from 1960 to 1990.

Several studies find that women's employment responds positively to policies alleviating the financial burden of child-rearing, both in the form of family-related subsidies (see, for example, Bardasi and Gornick, 2003; Jaumotte, 2003; Sánchez-Mangas and Sánchez-Marcos, 2008) and fiscal reductions (Eissa and Liebman, 1996; Alesina and Ichino, 2007). In particular, countries with more

generous parental leave schemes or public childcare facilities are characterized by a larger involvement of women in paid labour (see, for example, Berlinski and Galiani, 2007; Powell, 1998; Anderson and Levine, 1999; Attanasio, et al. 2008). Interestingly, some researches compare the effectiveness of monetary support versus the public provision of child-care services. For example, Apps and Rees (2004) find that, among OECD countries, those supporting motherhood through childcare facilities rather than child benefits tend to exhibit both higher rates of women's labor supply and higher fertility rates. Similarly, Lundin et al. (2008) point out that women's labor supply may be more elastic to the quantity of publicly provided childcare facilities than to their price.

The existing results on the allocation of time between the provision of informal care to the elderly and labour market work are instead less clear-cut and mostly for the US context. Available evidence on the effect of parental care on the propensity to be employed provides mixed results. Early studies by Wolf and Soldo (1994) and Stern (1995) provide no evidence of a negative relationship between elderly care and women's employment. Conversely, more recent findings show that caring for parents living outside the household and intergenerational co-residence is more commonly found to exert a large negative impact on the labour supply of both men and women (see, Ettner, 1996; Heitmueller, 2007; Johnson and Lo Sasso, 2000).

Finally, a number of studies have documented the impact of labour market institutions on women's employment and labour market participation in European countries (see, among others, Jaumotte (2003) and Genre et al. (2005 and 2010)). They find that labour market institutions matter for women's attachment to employment and labour force. In particular, according to Genre et al. (2005 and 2010), higher union density, more employment protection and more generous unemployment benefits lower participation rates. Conversely, Baller et al. (2009) find that a number of observed determinants, such as labour taxes, union density, unemployment benefits and the average number of children have had an impact on women's labour force participation rates, although the specific impact varies across age groups and countries.

3 Data and descriptive statistics

We combine annual micro data from two different sources, the ECHP (European Community Household Panel) and the EU-SILC (European Union Statistics on Income and Living Conditions), to create a unique dataset of comparable household and individual level characteristics across countries and over time.

The ECHP micro data is a household survey with a common conceptual framework conducted across EU-15 Member States under the supervision of Eurostat. ECHP data were first collected in 1994, when a sample of 60,500 nationally representative households (i.e. approximately 130,000 adults aged over 16) were interviewed in 12 member states. Austria has joined the project in the second wave in 1995, Finland in 1996, and Sweden in 1997. Therefore since then the data is covering all (old) EU-15 member states. The total duration of the ECHP is 8 years, running from 1994 to 2001. The dataset includes information on family size and composition, living conditions and several income measures. Therefore it provides a source of mutually comparable income data of EU member countries at the turn of the twentieth and twenty-first centuries.

EU-SILC (European Union Statistics on Income and Living Conditions) is the successor of the ECHP. The EU-SILC provides harmonised cross-sectional and longitudinal multidimensional micro data on income and social exclusion in European countries. After its start in 2003 with 7 European countries, in the 2004 wave it covered all old EU-15 member states except Germany, Netherlands and the UK. Since 2005, the dataset involves the 25 EU member states, plus Norway and Iceland, and it is the largest comparative survey of European income and living conditions. The 2009 wave has been recently released.

In order to obtain a unique dataset of comparable household and individual level characteristics across EU countries within the period 1994-2009, we limited the analysis to the EU-15 Member States[2] and selected individual and household characteristics. Summary statistics of the women and men samples are presented

[2] Namely, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom.

in Tables 1 and 2.

The overall sample includes 1,657,367 individuals between 25 and 64 years old of which 851,010 women and 806,357 men. The employment and participation rates stand at 59% and 66%, respectively, for the female sample, and increase to approximately 80% and 86%, respectively, for the male sample. The percentage of highly educated women and men is 27% and women are slightly more represented than men among the lowest educated individuals. Over 65% of respondents in both samples declares to live in-couple. 42% of women and 23% of men lives in households with at least one child under 14 years old, and 18% of them lives in households with at least one pre-school age child. Co-living with elderly (that is, individuals with 70 years old or more) involves just 6% of all individuals in our sample. Among those living in-couple, approximately 27% is the percentage of those whose partner has achieved a lower or an upper secondary education (ISCED 0-2 and ISCED 3-5); 20% is the percentage of highly-educated partners (ISCED 5-7). The variable "cycle" measures the business cycle frequencies of national GDP over the survey years, 1994-2009. This variable has been obtained by implementing the filter proposed by Hodrick and Prescott (1997).[3]

[TABLES 1 & 2 AROUND HERE]

4 A micro-data based unified framework for cross-country comparison

The purpose of this section is to present some evidence about trends of women labor market performance in Europe, which is valuable for a cross-country comparison. The analysis introduces a synthetic index of labor market performance, which measures the extent to which women and men can be distinguished from each other on the basis of commonly observed social and economic characteris-

[3] Italy and Spain are over-represented in the sample (16% of the surveyed observations live in Italy and 11% live in Spain).

tics in different countries and across time. The results are thus able to convey information relevant to the ongoing political debates about changes in female work status by measuring the degree of distinction between women and men along different labor market indicators and controlling for a set of standard individual characteristics.[4]

The index can be computed for different education and age groups and splitting countries by institutional regimes. It can then serve to provide reliable answers to questions such as: are the differences between women and men today larger than they were in the recent or distant past? In which countries are these tendencies more pronounces? And how rapidly do these differences shrink? Are there differences by education or age groups? We compute the index using data capturing conditions in 15 European countries as recent as 2009, and as distant as 1994 and performing statistical tests assessing the statistical significance of the observed differences across time.

Borrowing from Vidgor (2008), who measures differences between native and immigrants in US along cultural and economic lines, we measure difference between men and females in Europe using as labor market performance indicators the activity rate, the employment rate and the type of contract (permanent vs temporary, full-time vs part time). Such an approach summarizes the large quantity of micro-level information available for different European countries and across time in a way that eases cross-country comparisons. Technical details can be found in the Appendix 1 of this report. In words, the procedure predicts which individuals are females on the basis of observed characteristics and then uses this finding to measure the gap between men and females for a chosen outcome, such as the activity rate, by constructing a numeric index. The method requires no prior assumptions regarding which characteristics are most effective in distinguishing women from men. Moreover, the inclusion of irrelevant characteristics—that is, ones that do not actually help distinguish women from men—has no impact on the index. Such an index ranges between 0 and 1.

[4] Appendix 1 provides both a general and a more technical overview of the method used to compute the index.

It can be interpreted as an index of dissimilarity: the larger is the distance from 1, the more females are different from men along the inspected labor market indicator, controlling for other individual characteristics.

We construct four different indices capturing gaps between women and men in labor market participation (activity gap index), unemployment (employment gap index), employment with a temporary contract (type of contract index 1) and employment with a part-time contract (type of contract index 2), which are detailed in the Appendix 1 to this report.

An important methodological achievement of our framework with respect to broad statistical analysis of labor market aggregate indicators lies in its ability to separate behavioral trends from the ones that simply reflect changes in demographic and social characteristics of men and female across countries and over time. Indeed, changes in outcomes reflecting changes in preferences and beliefs over and above those stemming from natural demographic trends are of particular interest for policy purposes. Our methodological framework uncovers aggregate tendencies with the ability to control for a variety of confounding factors. In our analysis we control for differences in demographic factors using individual information on age and the education level as well as in family structure using marital status, partner education and number of children.

The activity index, capturing difference between women and men inside and outside the labor market, reveals behavioral differences more likely to come from the supply side of the labor market, whereas the employment index, focusing on gender differences for the individuals in the labor market only, captures behavioral differences more likely to come from the demand side. The indices by type of contract are finally designed to uncover further differences within employment schemes.

For each European country and each year between 1994-2000 (ECHP data) and between 2004-2009 (EU-SILC data) we compute the four different indicators and perform T-test statistics to assess significant difference between begin and end of the observed time window. The complete list of results is collected in Appendix 2 Tables A1-A4.

In other to understand the ability of our framework to convey more precise information about women labor market performance as against the one revealed by the analysis of aggregate labor market indicators, we discuss our evidence in contrast to the facts that would emerge when using OECD aggregate data.

Figures 1-4 show the activity rates, employment rate, permanent employment rates and full-time employment rates using the Labour Force Statistics collected by OECD, which are separated by gender.

Figures 5-8 display the results of our analysis using our corresponding summary indicators of women-men gaps. Countries for which the gaps over the period are found to be statistically insignificant are depicted using a constant line.

Both sets of tables point towards the well-know onset of female labor participation and employment with a gender gap shrinking over time. However, a closer look at Figures 5-8 reveals important cross-country differences that were not captured in Figures 1-4. It appears that only some of the marked trends in Figures 1-4 are statistically significant, once we control for changes in demographic and social characteristics between men and females over time. On the other hand, some of the less pronounced trends in Figures 1-4 turn out to be instead statistically significant using our methodology in Figures 5-8. It appears, for example, that the marked change in female employment in Figure 2 (OECD aggregate data) in Belgium and Luxemburg is mainly due to demographic trends and other characteristics of the female labor force factors rather than to changes in preferences and beliefs. Indeed, when controlling for these factors, i.e. when looking at the results obtained using our indicators (Figure 6) the changes in the employment gap between men and women in Belgium and Luxemburg are not statistically significant. On the other hand, pale differences emerging from aggregate data can reflect important behavioural differences if other characteristics remain roughly constant during the inspected period. For example, the weak increase in the female activity rate in Germany (Figure 1) seem to be an important trend in the observed period, with a man-female gap closing by about 20% (Figure 5).

Let us now focus our attention on the information delivered by our different indices within countries.

Figure 9 plots our four summary indicators of dissimilarity between women and men's behavior for each country and over time. Interestingly, it appears a picture with features that are common to most of the European countries. Firstly, we find a marked increase in female labor market participation, which does not correspond to a similarly pronounced increase in employment rates. Secondly, it appears a relevant increase in both temporary and part-time employment of women compared to men. This is an important fact that deserves further investigation. Although these types of contracts can be chosen in certain needs, a larger incidence of temporary and part-time jobs for women can also reflect a transition phase towards the integration of such group into the permanent and full-time labor market. Distinguishing between those different explanation is a complex issue, which we cannot address here with the available data. Nevertheless, we continue our explorative analysis to document in which countries and for which age and education groups the relationship between an higher female labor market participation and higher share of female temporary and part-time employment is stronger.

For this purpose, we follow the Ferrera's (1996) classification and split countries by institutional regimes, distinguishing between the traditional four groups: liberal countries (UK), continental countries (Austria, Belgium, Luxembourg, Netherlands, Germany, Ireland and France), Nordic countries (Denmark, Sweden and Finland) and Southern countries (Greece, Spain, Portugal and Italy). We investigate the correlation between female labor force participation and type of employment using the following baseline regression model:

$$I_{it}^{AC} = \delta I_{it}^{EC} + \sum_{j=1}^{4} \gamma_j r_{ij} I_{it}^{EC} + cty_i + \varepsilon_{it} \tag{1}$$

where I_{it}^{AC} is the activity index of country i at time t, I_{it}^{EC} is the type of employment contract index of country i at time t (type of contract 1, i.e. temporary versus permanent, or 2, i.e. full time versus part time), r_{ij} denotes

dummy variables taking value 1 if country i is in regime j ($j = 1, ...4$) and 0 otherwise, cty_i denotes country dummies and ε_{it} is a random error term. Table 3 collect the OLS results. Column one and two report on the specifications including the two type of contract indicators separately whereas in the last column both indicators are included. Looking at column one, it appears that the countries where an increase in women labor market participation shows a significant association with a larger share of temporary jobs for women are southern European countries. Those countries are also the ones lagging behind the Nordic countries and the US women labor participation rates. Male-female participation gaps by the end of the 20th century in Greece, Spain, and Italy were still around 30% as opposed to 12.9% in the US. When the other indicator of type of employment is taken into consideration (column two) we find a significant negative association for all countries, except for the UK (in the liberal regime).

This evidence thus depicts a picture of Europe where for those countries with higher rates of participation, i.e. UK, a favorable trend in women labor market participation is also accompanied by a favorable trend in full time employment. Whereas in the rest of Europe (with lower rates of participation), an increase in the number of women in the labor force (compared to men) comes at a cost of lower quality jobs, i.e. of larger shares in temporary employment.

Table 4 collects the results which are obtained when performing the same analysis by age groups. It appears that these trends are driven by prime age women (Table 4), while fewer and less pronounced correlation are revealed for old and young women. Finally, Table 5 collects the results which are obtained when performing the same analysis when splitting our sample by education level. Interestingly, we find that these tendencies are not true for skilled women. The effects seem to be driven by women in the least skilled group (columns 1-3).

[TABLES 4 & 5 AROUND HERE]

5 Multivariate regression analysis

5.1 The empirical strategy

In this section, we use multivariate regression analysis to look at how women perform in their labour market status and employment characteristics. We estimate probit models for the probabilities of participating to the labour force, being employed, holding a fixed-term contract and being part-time. Indicating individual i and (discrete) time t by corresponding subscripts, our basic regression model specifies the employment status as:

$$y^*_{ijt} = \delta \mathbf{X}_{ijt} + \gamma age_{ijt} + \lambda trend_t + \sigma cycle_{jt} + cty_j + \varepsilon_{ijt} \tag{2}$$

where y is the labour market status (active, employed and type of contract, namely temporary and part-time) at time t for individual (female) i in country j, X are a set of individual characteristics observed at time t, *age* are dummies for the age group of individual i (25-34; 35-44; 45-54; 55-64) capturing cohort effects, *cycle* is a business cycle indicator (country specific and time variant), *trend* is a common linear trend and *cty* are country dummies.

In order to investigate the differences in women labour market behavior across countries with different welfare-regimes (which also partly reflect differences in cultural attitudes to female labour market participation), we follow the classification used in the previous section and divide countries of our sample into four major groups: Southern (Spain, Italy, Greece, Portugal), Social Democratic (Sweden, Finland, Denmark), Liberal (United Kingdom) and Continental (Austria, Belgium, France, Germany, Netherlands, Ireland, Luxemburg). Observe that, following Siaroff's (1994) intuition, Ireland is included among later female mobilization countries.

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$$\begin{aligned} y_{ijt} \quad = \quad & \delta \mathbf{X}_{ijt} + \gamma age_i + \lambda trend_t + \sigma cycle + \\ & \omega(welfare_j \times age_i) + \upsilon(welfare_j \times \mathbf{X}_{ijt}) + \\ & \rho(welfare_j \times trend_t) + welfare_j + \varepsilon_{ijt} \end{aligned} \tag{3}$$

where $welfare_j \times age_i$ captures differences across welfare regimes in the age-effects of individual i (e.g. individuals of the same age group may behave differently in different welfare regimes); $welfare_j \times X_{ijt}$ captures the effect of the welfare regimes on the attitude to work of women with certain characteristics (e.g. does the number of children affect differently the participation rate of women in countries like Italy and Sweden?); $welfare_j \times trend_t$ captures changes over time of the labour market status of women in countries characterized by different welfare regimes.

Finally we account for changes over time of women attitude to work by interacting the trend indicator with the relevant individual characteristics and estimate the following model

$$\begin{aligned} y_{ijt} &= \delta \mathbf{X}_{ijt} + \gamma age_i + \lambda trend_t + \sigma cycle_{jt} + \\ &\quad \omega(trend_t \times age_i) + \chi(trend_t \times \mathbf{X}_{ijt}) + cty_j + \varepsilon_{ijt} \end{aligned} \tag{4}$$

where $trend_t \times X_{ijt}$ captures changes over time in the labour market status of women with certain characteristics (e.g. does the participation rate of women with a high level of education change in 2007 with respect to 1994?). Specification 4 is run both for the pooled sample (15 countries) and for the countries in the four welfare regimes separately.

5.2 Results

5.2.1 Baseline Model

Table 6 reports the impacts of the variables of interests on the probability of participating (column 1), being employed (column 2), holding a fixed-term contract (column 3) and working part-time (column 4).

[TABLE 6 AROUND HERE]

Not surprisingly, the results reported in column (1) and (2) are qualitative the same, with some differences in the magnitude of the impacts. While activity rates are widely used as an indicator for labour market involvement, it is in-

creasingly recognized that employment and hours worked are the key indicators for assessing women labour market integration (*Jonung and Persson, 1993*). One reason is that women unemployment is often hidden among those defined as inactive because of the low work attachment of women holding to some specific groups (typically low skilled women with young children). Considering the impact of household and personal characteristics on women labor market status (active and employed), the results are in line with those reported in the previous empirical literature. Being married is negatively related to women participation and employment. Children have a negative impact on female and the effect is significantly stronger in presence of children under 4 years of age. Participation (and employment) goes up gradually when the child starts attending school and the child effect reduces significantly only when she attends secondary school (around 14 years). Also the number of children has a negative (and significant) disincentive effect on labour market participation. Note that the reported coefficients should not be interpreted as casual effects, as both participation and fertility may be simultaneous decision. This implies that the casual effect of children on participation can be lower than those estimated.

In the face of the ongoing dramatic development of the aging population in Europe, we also include a dummy for the presence in the household of an elderly person above the age of 70 as a proxy for elder care burden.[5] In many countries the responsibility of providing care for elderly persons is likely to fall on families, and in practice on women. Moreover, the choice of having an elderly relative living in the household is a better proxy of care burdens than having children, since the variable is less affected by endogeneity issues that may arise in the estimation as a consequence of the possible causal relationship between labor market status and the rational choice of having a child (Cipollone and D'Ippoliti, 2011). As expected the estimated impact of elderly care responsibilities on both participation and employment status is negative and significant.

[5] Ettner (1995) points out that, although the decision to care for a senior person and the decision of fertility differ in many aspects, the influence of the commitment to caring for the elderly can be studied similarly to the commitment towards children.

Education is also another important determinant of the female labour market status. Within the context of our model, the control for education is mainly a proxy for the wage rate. According to our estimates, a high level of education leads to more participation. The level of education of the partner has also a significant impact on female participation and employment, the coefficients of the dummies for secondary education and tertiary education being positive and highly significant. Finally the age effects show the familiar hamp-shaped pattern in both the participation and employment, implying an increase in the probability of participating for the age group 35-44, and then a lower probability for older groups. Notice that the probability of being employed is significantly lower only for women in the old group (55-64) while the turning point for participation occurs earlier in the life-cycle.

After controlling for personal characteristics and country unobserved time invariant effects, the trend indicator is positive and significant for both the probability of being employed and being in the labour force, implying that on average, the probabilities of participating and being employed in 2009 are 0.18 and 0.20 percent higher than in 1994 respectively.

Columns (3) and (4) provide estimates of the impact of personal/household characteristics on the probability of holding a fixed-term contract and working part-time. Temporary work is more frequent among single women and women without children. Among women with kids, the incidence of temporary workers is larger for those who have children in pre-primary (3-6 age old) and primary education (6-14 age old). Temporary work arrangements are more likely for women with a low level of education and for women with a partner with a low level of education. Finally, the probability of holding a fixed-term contract declines with age, and this in line with evidence for Europe which suggests that the share of temporary contracts is much higher in the inflow of newly-created jobs than in the existing stock.[6]

Regarding part-time employment (column 4), the results show that part-

[6] See Blanchard and Landier (2002) for France, Dolado et al (2002) and Guell and Petrongolo (2003) for Spain.

time among women is largely explained by family ties, the incidence being significantly higher for married women with small children. It declines with women education level and, interestingly, increases with the partner level of education as the presence of higher extra family income make women more willing to accept a reduction in worked hours in order to reconcile paid activity and unpaid domestic labour. Differently from temporary employment, the probability of a part-time job increases with age.

5.2.2 Female labour market outcomes and welfare regimes

Table 7 reports the results of model 3, in which the coefficients of the probit model are allowed to vary across countries characterized by different welfare regimes (the base group is the UK).

[TABLE 7 AROUND HERE]

The marital status has a larger negative impact on women labour market involvement in those countries characterized by more traditional family structure such as continental and southern countries. The presence of young children has a negative impact on both participation and employment rates regardless the welfare regimes, though with some important differences in the magnitude of the effects. It is in the UK that the age of the latest child appear to be most critical, while in the Southern countries, which are also the countries with lower employment rates for mothers, the age of the youngest child has a lower impact on both participation and employment. This may be simply due to differences in the composition of the labour force. In countries where female labour force participation is low, women in employment are typically characterized by a higher level of education implying a stronger labour market attachment. Moreover in countries such as Italy, Greece and Spain, family networks compensate for the lack of availability of the service system. For example, extended family members, normally grandparents, often provide child care services allowing mother to continue work when their children are young due to the limited services provided by publicly-funded day care facilities. Finally, labour market institutional

rigidities in Southern countries which make more difficult (re)entering the labour market after a period of temporary leave, may stimulate higher continuity in work attachment. This difficulty in reentering the market seems to be confirmed by the fact that while mothers participation and employment increase steadily as the youngest child grows up, mostly through a re-entry to part time employment mainly in Social Democratic countries but also in the UK and continental Europe, in the Southern countries the presence of children negatively affects female labour market integration, even when the child is of school age. The estimates show that the probability of participating (being employed) for women with a child older than 14 in the South of Europe is almost 5 percentage points lower than in the UK and Social Democratic countries, and 2 percentage lower than in continental countries.

The presence of an elderly relative at home affects women labour behavior differently in countries with different cultural attitude towards elderly relatives. The overall effects of elder care is negative despite the welfare regime we consider. However, the impact is much lower in the Southern countries where cohabiting with an elderly relative is a quite diffuse practice and it is not necessarily related to the need of providing care to senior persons.

Finally, the highest female participation (and employment) rate is found among those aged in their late thirties/early forties in all the welfare regimes groups we consider. However the decline in women involvement occurs at a later stage of the life cycle in Social Democratic and continental countries. Moreover, the participation (employment) gap between old-aged women (55-64) and younger groups is significantly larger in Southern countries. This is explained both by cultural reasons (older women are of a generation in which low female labour market involvement is expected as part of a male breadwinner system) and by the presence of early retirement pension schemes which favoured an early drop out In column (3) we report the results concerning the differences across welfare regimes of female temporary occupation. After controlling for individual characteristics we notice that the incidence of temporary contracts is much higher in Southern countries and, to a less extent, in Continental and

Social Democratic countries than in the UK. Moreover, countries in the South of Europe exhibit also a positive trend over the last 15 years. The most shrinking cross-countries difference in the personal characteristics of women holding fixed term position is the level of education. While in the UK and Social Democratic countries women with higher educational qualifications are more likely to be on fixed-term contracts, this tendency is reversed in the Southern and Continental Europe. This suggests the different nature of fixed-temporary contracts in the two groups of countries: more likely to be stepping stones towards permanent high-skilled jobs in the former, cheaper options, with lower wages and severance payments, and poor human capital accumulation in the latter.

Regarding part-time incidence (column 4), results show that part-time occupation is mainly an option for married women with kids regardless the welfare regimes, though the presence of small children have a strong impact on part time decision in the UK rather than in the other countries. Once we control for the presence of children, the incidence of part time jobs differs across age group with a larger share of part timers in the older groups in the UK, and to a less extent Continental and Democratic countries. Differences across age groups appear to be much less marked in the Southern regime where, differently from the other countries in the sample, the incidence of part time jobs drops significantly for women in the oldest age group (55-64).

5.2.3 Trends across welfare regimes

In Table 8, we report the estimated coefficients of specification 4, in which we allow the impact of the main determinants of female labour behavior to vary over time. Table 9 and Table 10 show the results for participation and employment using the same specification as in table 3, estimated for each welfare regimes separately.

[TABLE 8 & 9 & 10 AROUND HERE]

Overall, the evidence shows that the positive trends in both female employment and participation differ substantially depending on the personal and

family characteristics of women. Over time the participation/employment increases for women with small children. However, such increase is not uniform across welfare regimes. From the results reported in table 9 and table 10, it emerges that the negative impact of young children on women labour market involvement declined significantly in Social Democratic countries and to a less extent in Continental and Southern countries, while no trend has been detected for the UK. This phenomenon may be partly related to a larger availability of market (child care services) or non market substitutes (husband's or relative's help in child care activities) accompanied by a shift in people's value in all European countries, and to a larger extent in more traditional countries, from the traditional breadwinner arrangements in favour of a more equal role for men and women within the household. This change in the attitude of women with children to work has also been favoured by the expansion of flexible forms of employment (fixed term contract and part time jobs), albeit from different starting points, which have allowed mothers to better combine traditional family responsibilities such as childrearing with paid work.

The negative impact of informal elderly care on employment and participation has increased over time (with the exception of Social Democratic countries). According to our results the presence of a co-living elderly persons has a positive (an significant) impact on female labour market involvement at the beggining of the sample period and then turns to be negative. This seems to be related to the changing role of elderly relatives within the family, from providers of unpaid help in household and child care activities within the extended family to recipients of informal long-term care in the nuclear family (Leitner, 2003; Saraceno, 2010, Saraceno and Naldini, 2007).

Education (and partner's education) appears to have an increasing role in stimulating women labour market involvement. Tables 4 and 5 show that the estimated trend is positive in both participation and employment in Continental countries. We also estimate a significant increase in the share of highly educated women leaving the inactivity status in the UK, and leaving the unemployment status in the Southern countries.

Finally, the trend effect differs substantially also across age groups and across welfare regimes. While in the UK, the trend effect is quite homogenous across women in different age groups, in Continental and Southern countries, the increase in participation and employment is more evident for older age groups and this is partly explained by cohort effects. In fact, while there is not a substantial difference in the labour market behavior of women in their mid 20s and 30s (born after the early 1960s and grew up and educated after the women movement in the 70s), for those in their mid 30s and 40s, the participation rate has increased by 11 percentage points, and for those older than 45 by almost 20 percentage points.

Regarding the trend in part time occupations (Table 8 column 4), the most interesting result is the increasing involvement in part time jobs of women with children, and the trend is much stronger for women with children younger than 14. This result is in line with the existence of a relationship between the observed increase in the labour market activity of women with children over the sample period and the increasing availability of part-time jobs. Moreover, since the trend effect on part time mothers occupation is much stronger than the estimated trends on mother participation/employment, the result suggests a shift from full time position to part time position of women with children who were already in employment.

6 Multilevel analysis

In this section we investigate the relevance of the labour market institutional framework and public policy in explaining the trends and cross-country differences in woman labour market involvement we estimate in the previous section. We will refer to the variable of institutional context and public policy as "macro" factors. In the analysis we will allow the interactions between micro (individual characteristics) and macro factors in order to detect any possible indirect effect of institutions and policies on employment and participation through the impact of micro determinants. The intuition is straightforward: both macro factors and

individual characteristics may be systematically related to the probability of being active/employed. However, an indirect impact may be in place when macro factors affect also the way micro characteristics impact women behaviour. In order to simultaneously estimate the impact of micro and macro factors within a unified regression model, we use a multi-level analysis approach. This method allows to consider a wider set of determinants of women's employment than is possible with a standard regression approach and to disentangle the direct and indirect effect of both micro and macro determinants (e.g. to estimate the simultaneous role of family care responsibilities, such as child care and elderly care and family policy in determining female participation).[7]

In our multi-level analysis we focus on how institutional and policy factors affect women behavior between unpaid family responsibility and paid occupation. There is a large consensus on the role played by the labour market institutional context and policies in affecting women labor market behavior and work attachment. The empirical analysis in the prevision section shows that the impact of household related responsibilities to woman labour market behavior exhibits a country-specific patterns.[8] Moreover, we estimate an increasing involvement of women with young children in the labour market, though we detect a trend with opposite sign when we consider the effect of elderly care responsibilities. Recent empirical works provide evidence that the provision of child care facilities, parental leaves and subsidies for day-care spaces and, more generally, policies aimed to alleviating the financial burden of child-rearing, have a positive effect on female labour integration by either increasing work attachment (less women leaving occupation after childbirth) or facilitating women re-entry into the labour market as children grow up (Sànchez-Mangas and Sànchez-Marcos, 2008, Lefebvre et al., 2009).

[7] Differently from the standard difference-in-difference approach, which uses interaction terms between micro and macro level variable, the multilevel method allows us to control for the fact that observations may be clustered by country and therefore, standard error estimates are more reliable.

[8] Our results are in line with the findings in several related papers (see among the others Bardasi and Gornick 2003; Jaumotte 2003; Del Boca et al. 2009).

Next to fiscal and social policies for the support of working mothers, the role played by changes in the institutional context is gaining an increasing attention in the political debate. In the last two decades, the labour markets in many European countries have experienced deep changes towards a higher degree of flexibility with the objective of increasing competitiveness, employment creation and redistribution of work. Though the idea of deregulation was the common factor behind the waves of reforms, the promotion of flexibility was pursed through very different types of interventions. In the Social Democratic countries, reforms were mainly aimed to reduce the protection on insiders by reducing the degree of employment protection on regular forms of employment on the one hand, and increasing income security on the other.[9] In the Southern countries and some Continental countries flexibility has been obtained through marginal reforms which aimed to deregulate the use of temporary or "atypical" forms of employment while leaving largely unchanged the legislation applying to the stock of workers employed under permanent (open-end) contracts. In other countries, as for example in Netherlands, the emphasis of the reforms was to promote flexible working time and part time arrangements. Such reforms can be regarded as beneficial to women in the measure they facilitate labour market integration, which may occur however at the risk of a reinforcement of the traditional separation of gender roles in the labour market and family. The link between labour market deregulation and women participation is less obvious, though there are a number of empirical studies which shows how the effects of strict Employment Protection Legislations (EPL) are disproportionately larger for those individuals (such as prime-age women) who are more subject to labour market entry problems. As a result, in a rigid labour market employment opportunities for prime age women are significantly reduced because they are more likely than men to move between employment and inactivity, in particular when seeking to balance the competing demands of work and family life (OECD, 2004; Heckman, J. and C. Pages, 2000). From the *security* side, whether the presence of a generous unemployment benefit system accompanied

[9] This is the so called Danish model of *flexicurity*.

by active (and activation) policies increases incentives to work largely depends on the eligibility requirements. In many countries the access to social security and to active labour policies are interdependent and depends on the past work history of workers (for example contribution records showing recent and continuous employment). These requirements may present a barrier for women who may have interrupted careers and work part time. This implies that while on the one hand the burden of flexibility is increasingly borne by women, on the other women are more likely to be excluded from the access to benefits and active policies. So if women are supposed to benefit from the combination of flexibility in the labour market and security in the social system, the tendency towards the flexibilization of the labour market may exert a negative impact on the incentives to participate when flexible occupations are perceived to be lower quality jobs.

Based on the results obtained in the previous section and on the findings of the related literature, we test two main hypotheses:

H_1 : In countries with more progressive social policies in terms of income contributions to families with young children (including the maternity, parental and childcare leaves) and dependent elderly persons, housework and family related responsibilities have a weaker impact on women' involvement in labour market

H_2 : Changes in the institutional setting towards a model characterized by lower barriers to hiring and firing combined with a higher social protection (passive labour market policies and active labour market policies), has a positive impact on female labour market activity/employment of women and the impact is larger for women who are more involved in family (unpaid) occupations.

6.1 The macro policy and institutional indicators

We collect several variables related to the country-specific socioeconomic context that are expected to affect the influence of housework and family related

responsibilities on women's attachment to local labour markets. We distinguish six relevant dimensions of cross-countries heterogeneity: the extent of employment protection legislation, passive and active labour market policies, subsidies targeted to elderly people, subsidies targeted to families, and the extent of parental leave. Table 11 presents a detailed description of these dimensions, by focusing on their construction and their specific components.

[TABLE 11 AROUND HERE]

In order to obtain uncorrelated synthetic indicators from the six macro variables, we employ a Principal-Component Analysis (PCA) separately on the institutions-related dimensions and on the policies-related dimensions to extract the relevant factors, which are then rotated using the varimax method. In keeping with common practice (Nardo et al. (2005), Nicoletti et al. (1999), Kline (1994)), two factors satisfying the following requirements have been selected: eigenvalues larger than 1, individual contribution to the explanation of the overall variance larger than 10%. Within in factor, dimensions are weighted according to the proportion of the cross-countries variance explained by the factor itself.

The results of the two PCA procedures are presented in Table 12. Each factor explains 50% of the underlying variance. The first factor is highly correlated with parental leaves and family subsidies (with factor loadings larger than 0.8) and moderately correlated with the extent of subsidies to the elderly (factor loading approximately equal to 0.26). The higher the load the more relevant in defining the factor's dimensionality. Hence our first factor reasonably represents the generosity of national welfare regimes to households with dependent children.

The second factor is defined by active and passive labour market policies (with factor loadings larger than 0.9), while the extent of employment protection legislation exerts an inverse impact on the factor (with negative factor loading, -0.15). Hence, it seems that this factor resumes the degree of flexicurity of national labour market institutions. The similarity between the standard definition of flexicurity and our second factor is straightforward. Indeed, the

European Commission defines flexicurity as an integrated strategy to simultaneously enhance flexibility and security in the labour market. It is traditionally implemented across three main components: 1) flexible and reliable contractual arrangements, which are negatively correlated with employment protection; 2) effective active labour market policies; and 3) modern social security systems providing adequate income support during employment transitions, which are positively correlated with passive labour market policies.

[TABLE 12 AROUND HERE]

6.2 The empirical specification and results

Our econometric specification consists of a multi-level analysis based on our (simplified) baseline probit model 2.

We then allow both the intercept and the impacts of some individual characteristics (namely having small children and co-residing with an old-aged dependent) to depend on two country (time variant) macroeconomic factors: INST (labour market institutional context) and POL (family oriented policies).

Our random coefficient model is composed by an individual first-level regression, estimated for each age group separately, of the following type:

$$y_{ijt} = \gamma_{0jt} + \gamma_{1jt} CHILD_{ijt} + \gamma_{2jt} ELDERLY_{ijt} + \sum \delta_k x_{kijt} + \varepsilon_{ijt} \qquad (5)$$

and a second level set of regressions as follows:

$$\begin{aligned} \gamma_{0jt} &= \omega_{00} + \omega_{01} INST_{jt} + \omega_{02} POL_{jt} + u_{0jt} \\ \gamma_{1jt} &= \omega_{10} + \omega_{11} INST_{jt} + \omega_{12} POL_{jt} + u_{1jt} \\ \gamma_{2jt} &= \omega_{20} + \omega_{21} INST_{jt} + \omega_{22} POL_{jt} + u_{2jt} \end{aligned}$$

We implement Generalized Linear Latent Models to estimate a two-level Random-Intercept Probit model and a two-level Random-Coefficient Probit model, taking into account the nesting of individuals in their country of origin

[10]. Differently form the analysis carried on section 5 we now focus on women in the prime age group (25-64) because family care burdens, such as child care and elder care, are less relevant and plausible for women holding to the old age-group. The model is estimated for whole sample (pooled model) and then for each age group separately. We also test whether and to what extent changes in family policies and labour market institutions affect the labour market decisions of women with different levels of education and estimate 5 for the three education groups (primary, secondary and tertiary education).

The results are reported in Tables 13 and 14 for the activity rate and participation rate respectively.

[TABLES 13 & 14 AROUND HERE]

The influence of individual-level variables on female labor market decisions is in line with the results in the previous section. Both the POL and INST indicators exert a significant impact on women likelihood of being employed and being active, though the effect is mediated by type of unpaid work involvement (presence of child or/and elder person) and differs substantially across age groups. Regarding the role of family policies, the availability of child subsidies and child friendly policies have a positive impact on the activity rate though the effect appears to be significant only for relative young women (25-34) at the early stage of their work life. Measures to help women to combine caring responsibilities appear also to have a positive and significant effect on employment chances of women co-habitating with an elderly person. The effect reverses in the later stages of work life, when the presence of family subsidies reduce the incentives to remain into the labour force for those women leaving with an elderly person.

More flexibility combined with more security (represented by INST indicator in the regression) is employment-enhancing for young women with small children, but the effect disappears for women in the older age groups. Quite surprisingly, higher labour flexibility is detrimental for labour market involvement of women co-habitating with an elderly person.

[10] Cippolone and D'Ippoliti (2011) carried on a similar analysis for Italy, exployiting territorial etherogeneity at regional level.

This result may be related to the fact that just few countries in Europe have combined the two dimensions of flexibility and security[11], and, in most cases, deregulation is moving forward without sufficient social compensation. In this respect, the growing availability of flexible low-paid jobs, which very often substitute more stable forms of employment, make unpaid elderly caring more attractive than paid occupation, especially in countries where family caring activities are supported by monetary allowance that can be freely used to complement the family budget or the elder person contributes with his/her pension to the household income.[12]

Table 15 and Table 16 report the impact of the macro factors estimated for the three education groups separately. The results confirms substantially those reported in Table 13 and Table 14.

[TABLES 15 & 16 AROUND HERE]

Interestingly the impact of family care burden on women participation/employment declines with the level of education, highly educated women showing a higher propensity to be involved in paid work even in presence of family care responsibilities.

Family policies provide a set of incentives/opportunities to remain in the labour market for medium and high educated women with children, but the effect is negative for low skilled women, whose employment opportunities are limited both in terms of quality of jobs available and wages. Similarly, larger family subsidies have a negative impact on participation of low educated women who are involved in elderly care. The effect turns to be positive for medium educated women and not significant for high educated women. These results show how women choices between work and care and the effects of policies crucially depend on the outside family options and their labour market potential outcome. In general, cash benefits increase household income and rise the reservation

[11] Combining the two axes of flexibility and security, Tangian (2007) concludes that only Denmark and Netherlands are developing both dimensions.

[12] See Simonazzi (2009) for a detailed anlaysis of the recent dynamics of the care sector in the EU countries.

wage at which women are available for working. It can therefore be expected that high compensations of child-related and elder-related costs discourage the labour market participation of those in charge of family care, typically women, when the labour market opportunities are poor.

Consistently with the results found in the previous set of estimations, the INST indicator is positively related to the likelihood of participating and being employed regardless the level of education of the mother, implying that a larger availability of flexible forms of employment increases the likelihood of entry (or re-entry) the labour market for women with young children. However, the negative effect of elderly care on participation and employment is larger in a more deregulated labour market. Such effect holds for low-medium educated women (whose work propensity is lower and work opportunities are in general poorer) but not for well educated women whose labour market opportunities are less vulnerable to institutional changes.

The variance partition coefficient (VPC) of the pooled model is approximately equal to 0.06, which indicates that 6% of the variance in employment and participation rates can be attributed to differences between countries. This coefficient globally increases when the models are separately estimated by age-group and educational level. In particular, it seems that macroecononomic heterogeneities are particularly relevant in explaining cross-countries differences in employment and participation rates of younger and less skilled women (VPC increases up to 20% and 11% respectively), while individual heteorgeneity account for more than 95% of those differences for women between 45 and 55 years old. Our macro factor are able to explain almost 50% of the overall cross-countries variance, as shown by the level-2 variance partition coefficients of our employment and participation rates estimates.

7 Conclusions

In the EU the female participation and employment rates have increased substantially over the last two decades, yielding to a gradual decline in the employ-

ment gender gap. In many countries the observed patterns in both participation and employment have occurred in conjunction with a progressive deregulation of the labour market and a growing attention towards policy interventions aimed to increase women labour market attachment.

Our analysis provides evidence on trends of women labour market involvement (both in quantitative and qualitative terms) by looking at the evolution of women labour market outcomes over time and across different welfare regimes.

Once individual characteristics and country specific factors have been controlled for, we document an increase in female labor force participation with respect to men with interesting qualifications across welfare regimes. We also find that an increase in women labor participation (with respect to men) is associated to larger shares of women in temporary and part-time jobs in Southern European countries. In Nordic countries the increase in women labor participation is instead associated with larger shares of women in full-time employment. These results are mainly driven by women in prime-age, i.e. 25- 54 years old, and with a low level of education. This suggests that on the one hand the increasing availability of "atypical" jobs and more flexible forms of employment, may have helped women to better integrate in the labour market and narrow the employment gap with men. On the other this integration process has mainly occurred at the expense of increasing gender gap in terms of quality of occupation, to the extent that differences across genders in the "quality" of occupation are not fully explained by different preferences or productivity of men and women. This seems to be particular true in those countries, such as the Southern countries, where family oriented policies are still less developed an the same time, the extended family (traditionally a source of support) has been gradually evolving into the smaller nuclear family.

Our regression analysis reveals that individual characteristics still play an important role in shaping women labour market behavior, though the impact is mediated by the institutional and political context where women operate. In particular, the allocation of time and effort between informal family activity and paid work appears one of the key factors influencing participation rate. In

this respect the presence of children, especially of pre-school age, is not the only family burden which limits women active involvement in the labour market. The rapid ageing of the population has led in the last decades to consider the effect of the need to care for the elderly in the studies concerning female labour supply. Our results show that the participation/employment increases for women with small children. However, such increase is not uniform across welfare regimes. It emerges that the negative impact of young children on women labour market involvement declined significantly in Social Democratic countries and to a less extent in Continental and Southern countries, while no trend has been detected for the UK. On the other hand, the negative impact of informal elderly care on employment and participation has increased over time. According to our results the presence of a co-living elderly persons has a positive (an significant) impact on female labour market involvement at the beginning of a sample period and then turns negative. This seems to be related to the changing role of elderly relatives within the family, from providers of unpaid help in household and child care activities within the extended family to recipients of informal long-term care in the nuclear family.

These trends are related to the institutional and policy changes which have interested almost all the European countries since the end of the 90s. Such changes had an important impact on the labour market "opportunities" of women by affecting the quality of potential jobs available, the chances to (re-)enter the labour market and the opportunity costs of employment (vs. non-employment).

A central result of our multilevel analysis is that although elderly care and children care appear to be similar under many aspects, the policy incentives and the institutional setting affect differently women labour market choice if women have a commitment towards an elder relative rather than towards children. One possible reason for the observed differences is the fact that an elder person often contributes with her pensions to the household income, thus increasing the reservation wage at which women are available to work. This implies that the discouraging impact of eldercare is different from children care and it is stronger

for low skilled women, when the labour market opportunities are poor and in presence of large cash benefits.

The results of the multilevel estimantion go to this direction. The observed change in the attitude to work of women with children has been favoured by the expansion of flexible forms of employment (fixed term contracts and part time jobs) since this has made less difficult the labour market access and the reconciliation of family child responsibilities with paid work. This positive effect is stronger for women in the early stage of their work life despite the level of education. Generous child benefits and maternity/paternity leaves have a positive impact on women labour market attachment of young women, and the effect is stronger for medium/high educated groups.

Family subsidies work in the opposite direction for low skilled women with elderly care responsabilities, since monetary subsidies have a stronger income effect on those individuals with a lower market wage. Interestingly, the deregulation of the labour market has a negative impact on the participation rate of women co-habiting with an elder relative. Such effect holds for low-medium educated women (whose work propensity is lower and work opportunities are in general poorer) but not for well educated women whose labour market opportunities (and the quality of job opportunities) are less vulnerable to institutional changes.

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A APPENDIX 1

A.1 Vigdor index: methodological framework

Let us define D to be a binary variable taking the value 0 if the individual is in group 0, 1 if he/she is in group 1.

We are interested in assessing differences between group 0 and group 1 using a one-dimensional measure of how different are the distributions of some characteristics x between group 0 and 1.

Let us denote by $f_o(x)$ the density function of x among group 0 individuals (reference group), $f_1(x)$ the density function of x among group 1 individuals.

Vigdor (2008) estimates a model for

$$P(D=1|x) = \frac{pf_1(x)}{pf_1(x)+(1-p)pf_0(x)} = \frac{pf_1(x)}{f(x)} = \rho(x), \tag{6}$$

where p is the proportion of group 1 individuals in the population and $f(x)$ is the density function of x in the population. A generalization of the Vidgor index which is between zero and one and is composition invariant (i.e. it does not depend on p) is:

$$I = 2\int \frac{f_0(x)f_1(x)}{f_0(x)+f_1(x)}dx = 2\int \frac{1}{1+g(x)}f_1(x)dx.$$

Such an analysis is based on the ratio $g(x) = \frac{f_1(x)}{f_0(x)}$ which will be equal to 1 if group 0 and 1 have the same distribution of x. This implies that any difference in the observed x will result in a discrepancy between group 0 and 1 in the synthetic index.

An important empirical issue is that there might be some characteristics– let us denote these by z – whose differences between group 0 and 1 are not appropriate to take into consideration in infer a behavioral difference between group 0 and 1. For example, we might not want to label differences in the age structures between two groups as differences in labor market behavior between the two groups. The unconditional distribution of x (as in (6)) will be different if individuals in group 0 and 1 have a different distribution of z. An analysis based

on (6) would be misleading. For example, if group 0 and group 1 are women and men, we do not want to capture differences in labor market performance between women and men due to different gender population structure. Gender demographic trends are correlated to differences in employment, labour market participation or job types, but they are not a matter of research themselves. Therefore, we need to work with the distribution of x given z.

Denote by $f_o(x|z)$ the density function of x given z among group 0 individuals, $f_1(x|z)$ the density function of x given z among group 1 individuals. Define the marginal distributions of z among group 0 and 1, $h_o(z)$ and $h_1(z)$ respectively. We are thus interested in the ratio between density functions:

$$g(x|z) = \frac{f_1(x|z)}{f_0(x|z)} = \frac{f_1(x|z)}{f_0(x|z)} \frac{h_o(z)}{h_1(z)}. \tag{7}$$

A generalization of the Vidgor index which allows for the presence of z variables, while remaining composition invariant, is:[13]

$$I = 2 \int \frac{1}{1 + g(x|z)} f_1(x|z) h_1(z) dx dz \tag{8}$$

Empirically, one has to get an estimate of $g(x|z)$. One way to proceed is as follows.

Estimate a probit model for being an individual of group 1 on x and z.

$$P(D = 1|x, z) = \frac{p f_1(x, z)}{p f_1(x, z) + (1 - p) p f_0(x, z)} = \frac{p f_1(x, z)}{f(x, z)} = \rho(x, z) \tag{9}$$

We can write:

$$g(x|z) = \frac{\rho(x, z)}{[1 - \rho(x, z)]} \frac{(1 - p)}{p}$$

Substituting into 7 we have that:

$$g(x|z) = \frac{\rho(x, z)}{[1 - \rho(x, z)]} \frac{(1 - p)}{p} \frac{h_o(z)}{h_1(z)} \tag{10}$$

[13] The Vidgor index (Vidgor, 2008) is derived for a value of p=0.5 and does not explicity deal with differences between x and z variables.

Estimate a probit model for being an individual of group 1 conditional on z alone:

$$P(D=1|z) = \frac{ph_1(z)}{ph_1(z) + (1-p)ph_0(z)} = \varphi(z) \tag{11}$$

We can write:

$$g(x|z) = \frac{\varphi(z)}{[1-\varphi(z)]} \frac{(1-p)}{p}$$

Substituting into 10 we have that:

$$g(x|z) = \frac{\rho(x,z)}{[1-\rho(x,z)]} \frac{[1-\varphi(z)]}{\varphi(z)}$$

In short, the relative densities of x conditional on z can be estimated from the predicted probabilities of two probits for being an individual in group 1, one conditional on x and z and the other conditional on z alone.

Having $g(x|z)$ on hand, the average value of the transformation $\frac{1}{1+g(x|z)}$ across group 1 individuals, will then give the synthetic index (8).[14]

[14] Such an analysis has been used in the book *Cultural Integration in Europe* (2012) to study cultural and economic integration patterns of immigrants in Europe.

A.2 Adaptation to our setting

In our analysis we define D as a dummy taking 1 if the individual is female (disadvantaged group) and 0 otherwise. We consider four x variables, x_k, $k = 1, ...4$:

- x_1 : dummy taking value 1 if the individual is inactive, and 0 if active (participation rate);

- x_2 : dummy taking value 1 if the active individual is employed, and 0 if unemployed (unemployment rate);

- x_3 : dummy taking value 1 if the employed individual is temporary, and 0 if permanent;

- x_4 : dummy taking value 1 if the employed individual is part-time, and 0 if full-time:

We use as control variables z the individual education level, marital status, partner education, number of children and age.

We thus derive four synthetic indicators (activity index, employment index, type of contract index 1 and type of contract index 2, respectively) for each European country and each year between 1994-2000 (ECHP) and between 2004-2009 (EU-SILC) and we perform T-test statistics to assess significant difference between the begin and the end of the observed time window.

B APPENDIX 2

Synthetic indicator: complete list of results♠

Table A1 - Activity gap by country and year

	Year													
Country	1994	1995	1996	1997	1998	1999	2000	2004	2005	2006	2007	2008	2009	P-VALUE
AT		0.8742	0.9031	0.9068	0.8954	0.9139	0.9192	0.9161	0.9126	0.9176	0.9232	0.9260	0.9443	0.0000
BE	0.9427	0.9394	0.9384	0.9348	0.9550	0.9547	0.9555	0.9587	0.9676	0.9685	0.9749	0.9763	0.9754	0.0000
DE	0.9622	0.9622	0.9622	0.9622	0.9622	0.9622	0.9622		0.9622	0.9622	0.9622	0.9622	0.9622	0.5761
DK	0.9858	0.9844	0.9783	0.9829	0.9859	0.9897	0.9899	0.9834	0.9931	0.9905	0.9936	0.9907	0.9984	0.0000
ES	0.7959	0.7916	0.7958	0.8054	0.8152	0.8328	0.8408	0.8961	0.9021	0.9147	0.9285	0.9391	0.9454	0.0000
FI			0.9975	0.9972	0.9943	0.9933	0.9954	0.9872	0.9889	0.9884	0.9869	0.9856	0.9811	0.0000
FR	0.9521	0.9293	0.9234	0.9280	0.9349	0.9437	0.9444	0.9797	0.9824	0.9874	0.9888		0.9843	0.0000
GR	0.8104	0.8167	0.8089	0.8197	0.8266	0.8114	0.8405	0.8937	0.9000	0.9005	0.9073	0.9148	0.9201	0.0000
IE	0.7166	0.7383	0.7744	0.7903	0.8129	0.8430	0.8632	0.9094	0.9020	0.8871	0.9106	0.9048	0.9094	0.0000
IT	0.8110	0.8287	0.8269	0.8398	0.8477	0.8604	0.8499	0.9275	0.9191	0.9173	0.9213	0.9203	0.9287	0.0000
LU		0.7657	0.7573	0.7883	0.7929	0.7949	0.8084	0.8741	0.8829	0.8844	0.9146	0.9166	0.9128	0.0000
NL	0.9311	0.9608	0.9567	0.9623	0.9708	0.9706	0.9676		0.8974	0.9523	0.9596	0.9672	0.9747	0.0000
PT	0.8719	0.8894	0.9058	0.9132	0.9151	0.9278	0.9279	0.9537	0.9614	0.9649	0.9727	0.9638	0.9657	0.0000
SE				0.9962	0.9962	0.9962	0.9962	0.9962	0.9962	0.9962	0.9962	0.9962	0.9962	0.6140
UK	0.9521	0.9578	0.9572	0.9533	0.9583	0.9622	0.9621		0.9649	0.9545	0.9738	0.9686	0.9693	0.0008

♠ Missing values denotes missing information in the original sample. P-values contain significance values of mean-comparison tests between the synthetic indicators at the beginning and at the end of the time window.

Table A2 – Employment gap by country and year

	Year													
Country	1994	1995	1996	1997	1998	1999	2000	2004	2005	2006	2007	2008	2009	P-VALUE
AT		1,0000	0,9999	1,0000	0,9987	1,0000	1,0000	1,0000	0,9991	1,0000	1,0000	1,0000	1,0000	0.2003
BE	0,9887	0,9887	0,9887	0,9887	0,9887	0,9887	0,9887	0,9887	0,9887	0,9887	0,9887	0,9887	0,9887	0.1005
DE	0,9986	0,9978	0,9987	0,9999	0,9993	0,9989	0,9997		0,9978	1,0000	0,9993	0,9999	1,0000	0.0001
DK	0,9975	0,9872	0,9946	0,9925	0,9931	0,9961	0,9920	0,9999	0,9994	0,9982	0,9976	0,9992	1,0000	0.0129
ES	0,9951	0,9939	0,9943	0,9948	0,9945	0,9912	0,9868	0,9833	0,9844	0,9852	0,9848	0,9949	0,9987	0.0121
FI			1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	0.2797
FR	0,9964	0,9926	0,9949	0,9931	0,9902	0,9895	0,9904	0,9997	0,9982	0,9959	0,9958		0,9999	0.0008
GR	0,9788	0,9809	0,9830	0,9851	0,9865	0,9870	0,9922	0,9870	0,9866	0,9845	0,9872	0,9920	0,9932	0.0005
IE	0,9686	0,9722	0,9771	0,9688	0,9780	0,9901	0,9996	0,9924	0,9904	0,9925	0,9945	0,9860	0,9825	0.0011
IT	0,9948	0,9961	0,9953	0,9926	0,9948	0,9935	0,9954	0,9933	0,9921	0,9914	0,9920	0,9912	0,9920	0.0869
LU		1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	0.3528
NL	0,9765	0,9637	0,9718	0,9702	0,9735	0,9704	0,9801		0,9997	0,9997	1,0000	1,0000	0,9998	0.0000
PT	0,9944	0,9983	0,9939	0,9987	0,9968	0,9981	0,9988	0,9994	0,9954	0,9984	0,9992	0,9969	0,9997	0.0226
SE				1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	0.9503
UK	0,9865	0,9966	0,9926	0,9965	0,9955	0,9956	0,9996		0,9989	0,9954	0,9967	0,9967	0,9959	0.0000

Table A3– Part-time employment gap by country and year

	Year													
Country	1994	1995	1996	1997	1998	1999	2000	2004	2005	2006	2007	2008	2009	P-VALUE
AT		0,8877	0,8875	0,8749	0,8645	0,8493	0,8383	0,8190	0,7773	0,8259	0,7954	0,8041	0,8027	0.0000
BE		0,8650	0,8763	0,8797	0,8704	0,8593	0,8785	0,8197	0,8328	0,8281	0,8217	0,8249	0,8270	0.0197
DE		0,9128	0,8997	0,8938	0,9007	0,9153	0,8998		0,7167	0,7605	0,7412	0,7585	0,7726	0.0000
DK		0,9302	0,9302	0,9302	0,9302	0,9302	0,9302	0,9302	0,9302	0,9302	0,9302	0,9302	0,9302	0.3640
ES		0,9402	0,9402	0,9402	0,9402	0,9402	0,9402	0,9402	0,9402	0,9402	0,9402	0,9402	0,9402	0.1604
FI			0,9891	0,9842	0,9842	0,9902	0,9881	0,9749	0,9737	0,9694	0,9737	0,9715	0,9750	0.0004
FR		0,9307	0,9265	0,9234	0,9421	0,9412	0,9450	0,8870	0,8850	0,8764	0,8829		0,8862	0.0000
GR		0,9644	0,9544	0,9497	0,9495	0,9483	0,9421	0,9467	0,9304	0,9439	0,9441	0,9423	0,9477	0.0353
IE		0,8635	0,8635	0,8635	0,8635	0,8635	0,8635	0,8635	0,8635	0,8635	0,8635	0,8635	0,8635	0.2439
IT		0,9383	0,9379	0,9372	0,9325	0,9295	0,9303	0,9089	0,8939	0,9011	0,8953	0,8923	0,9038	0.0000
LU			0,9160	0,8690	0,9036	0,9077	0,9025	0,8747	0,8628	0,8467	0,8332	0,8449	0,8336	0.0001
NL		0,6658	0,6556	0,6811	0,6707	0,6614	0,6733		0,6299	0,6175	0,6240	0,6280	0,6292	0.0088
PT		0,9596	0,9598	0,9543	0,9591	0,9506	0,9654	0,9714	0,9771	0,9799	0,9721	0,9718	0,9736	0.0468
SE				0,9558	0,9413	0,9708	0,9647	0,8911	0,8770	0,8939	0,8871	0,8714	0,8638	0.0000
UK		0,8210	0,8300	0,8346	0,8405	0,8429	0,8310		0,8485	0,8317	0,8431		0,8531	0.0138

Table A4– Temporary employment gap by country and year

	Year													
Country	1994	1995	1996	1997	1998	1999	2000	2004	2005	2006	2007	2008	2009	P-VALUE
AT		1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	0,9626	0,9698	0,9708	0,9687	0,9710	0,9786	0.0000
BE		1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	0,9590	0,9531	0,9523	0,9634	0,9508	0,9548	0.0000
DE		1,0000	1,0000	1,0000	1,0000	1,0000	1,0000		0,9762	0,9760	0,9554	0,9853	0,9884	0.0000
DK		0,9812	0,9951	0,9856	0,9834	0,9716	0,9821	0,9357	0,9385	0,9290	0,9479	0,8848	0,8952	0.0000
ES		1,0000	0,9937	1,0000	0,9902	0,9957	0,9882	0,9696	0,9621	0,9594	0,9593	0,9625	0,9669	0.0000
FI			0,9690	0,9547	0,9627	0,9610	0,9572	0,8910	0,8878	0,8945	0,8919	0,8989	0,9168	0.0000
FR		0,9658	0,9528	0,9655	0,9561	0,9558	0,9561	0,9616	0,9561	0,9539	0,9449		0,9521	0.0000
GR		0,9865	0,9684	0,9852	0,9424	0,9435	0,9564	0,9393	0,9422	0,9452	0,9533	0,9464	0,9463	0.0000
IE		0,9407	0,9418	0,9479	0,9509	0,9575	0,9487	0,9238	0,9179	0,9210	0,8955	0,9104	0,9049	0.0000
IT		0,9430	0,9444	0,9363	0,9373	0,9433	0,9305	0,9256	0,9247	0,9226	0,9231	0,9298	0,9302	0.0000
LU			0,9794	1,0000	0,9874	0,9821	0,9783	0,9747	0,9830	0,9832	1,0000	0,9956	0,9995	0.0000
NL		1,0000	1,0000	1,0000	1,0000	1,0000	1,0000		0,9286	0,9201	0,9082	0,8950	0,9038	0.0000
PT		1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	0,9696	0,9668	0,9744	0,9711	0,9717	0,9811	0.0000
SE				0,9576	0,9668	0,9778	0,9712	0,9269	0,9003	0,9395	0,9357	0,9416	0,9483	0.0027
UK		0,9677	0,9677	0,9677	0,9677	0,9677	0,9677		0,9677	0,9677	0,9677		0,9677	0.1160

C APPENDIX 3

C.1 Multilevel analysis: the methodological framework

C.1.1 The Random Intercept Model

Let y_{ij}^{*} be the latent variable for individual i in region j. We obseve the dichotomous response variable y_{ij}, assuming value 1 if the individual individual i in country j is employed (or active) and 0 otherwise. Let $\mathbf{x}_{ij}$ be a $r \times 1$ vector of individual and household characteristics and $\mathbf{z}_{ij}$ be a $t \times 1$ vector of characteristics of the country of residence. u_{0j} is the random effect, or level-2 residual for region j, $u_{0j} \overset{iid}{\sim} N\left(0, \sigma_{u0}^{2}\right)$; $\epsilon_{ij} \overset{iid}{\sim} N\left(0, \sigma_{\epsilon}^{2}\right)$ is the level-1 residual. u_{0j} and ϵ_{ij} are independent.

The random intercept model is composed by a level-1 model (the individual level):

$$y_{ij} = \alpha_{0j} + \mathbf{x}_{ij}^{'}\boldsymbol{\alpha}_{j} + \epsilon_{ij} \tag{12}$$

and a level-2 model (the country-level):

$$\begin{aligned} \alpha_{0j} &= \beta_{0} + \mathbf{z}_{j}^{'}\boldsymbol{\beta} + u_{0j} \\ \boldsymbol{\alpha}_{j} &= \boldsymbol{\alpha} \end{aligned} \tag{13}$$

where β_0 is a constant and $\boldsymbol{\beta}$ is a $t \times 1$ vector of coefficients. Notice that, at this stage, $\boldsymbol{\alpha}_j$ is constant across countries. This notional complication will turn useful later on. Hence, the combined random-intercept model is given by:

$$y_{ij} = \beta_{0} + \mathbf{z}_{j}^{'}\boldsymbol{\beta} + \mathbf{x}_{ij}^{'}\boldsymbol{\alpha}_{j} + \epsilon_{ij} + u_{0j}$$

The probability of observing a positive response on the outcome variable is specified as:

$$\Pr\left(y_{ij} = 1\right) = \Phi\left(\beta_{0} + \mathbf{z}_{j}^{'}\boldsymbol{\beta} + \mathbf{x}_{ij}^{'}\boldsymbol{\alpha}_{j}\right) = \Phi\left(\Theta\right)$$

where $\Phi(\cdot)$ is the standard normal cumulative distribution function. The likelihood contribution of an individual i in region j, conditional to u_{0j}, is:

$$L_{ij}(\Theta|u_{0j}) = (\Phi(\Theta))^{y_{ij}} (1 - \Phi(\Theta))^{1-y_{ij}}$$

Integrating the random term u_{0j} out, the previous likelihood reads as:

$$L_{ij}(\Theta) = \int_{-\infty}^{+\infty} (\Phi(\Theta))^{y_{ij}} (1 - \Phi(\Theta))^{1-y_{ij}} \varphi(u_{0j}) du_{0j}$$

Hence, let Ω be the variance matrix of the regional random effects, the overall likelihood function is:

$$L_{ij}(\Theta, \Omega) = \prod_j \prod_i \int_{-\infty}^{+\infty} (\Phi(\Theta))^{y_{ij}} (1 - \Phi(\Theta))^{1-y_{ij}} \varphi(u_{0j}) du_{0j}$$

The likelihood function is approximated via a Gauss-Hermite quadrature.

C.1.2 The Random Coefficient Model

The random intercept model above is a simplified version of more complex multilevel models, where the relationships between the first level explanatory variables and the outcome of interest may differ across level-2 units. This possibility is modeled by introducing random slopes for level-1 explanatory variables.

The random-coefficient model is composed by the two levels described in the previous section (12,13), where the vector of regression coefficients on the level-1 explanatory variables is allowed to depend on a set of country-specific characteristics $\mathbf{z}_j$ and on a further stochastic component:

$$\boldsymbol{\alpha}_j = \gamma_0 + \mathbf{z}_j'\gamma + \mathbf{u}_j \tag{14}$$

Combining 12,13 and 14, the random-coefficient model is given by:

$$y_{ij} = \beta_0 + \mathbf{z}_{ij}'\boldsymbol{\beta} + \mathbf{x}_{ij}'(\gamma_0 + \mathbf{z}_j'\gamma + \mathbf{u}_j) + \epsilon_{ij} + u_{0j}$$

The model is then composed of $r + 1$ vector of random coefficients, u_{0j} and $\mathbf{u}_j$. The vector $(u_{0j}, u_{1j}, ..., u_{rj})$ has a multivariate normal distribution with zero mean and constant covariance matrix, which is independent on ϵ_{ij}.

The probability of observing a positive response on the outcome variable is specified as:

$$\Pr\left(y_{ij}=1\right)=\Phi\left(\beta_0+\mathbf{z}_{ij}^{'}\boldsymbol{\beta}+\mathbf{x}_{ij}^{'}\left(\gamma_0+\mathbf{z}_j^{'}\gamma\right)\right)=\Phi\left(\Theta\right)$$

The likelihood contribution of an individual i in region j, conditional to u_{0j} and $\mathbf{u}_j$, is:

$$L_{ij}\left(\Theta|u_{0j},\mathbf{u}_j\right)=\left(\Phi\left(\Theta\right)\right)^{y_{ij}}\left(1-\Phi\left(\Theta\right)\right)^{1-y_{ij}}$$

Integrating the random terms u_{0j} and $\left(\gamma_0+\mathbf{z}_j^{'}\gamma\right)$ out, the previous likelihood reads as:

$$L_{ij}\left(\Theta\right)=\int_{-\infty}^{+\infty}\left(\Phi\left(\Theta\right)\right)^{y_{ij}}\left(1-\Phi\left(\Theta\right)\right)^{1-y_{ij}}\varphi\left(u_{0j}\right)\varphi\left(\mathbf{u}_j\right)du_{0j}d\mathbf{u}_j$$

Hence, let Ω be the variance matrix of the regional random effects, the overall likelihood function is:

$$L_{ij}\left(\Theta,\Omega\right)=\prod_j\prod_i\int_{-\infty}^{+\infty}\left(\Phi\left(\Theta\right)\right)^{y_{ij}}\left(1-\Phi\left(\Theta\right)\right)^{1-y_{ij}}\varphi\left(u_{0j}\right)\varphi\left(\mathbf{u}_j\right)du_{0j}d\mathbf{u}_j$$

The likelihood function is approximated via a Gauss-Hermite quadrature.

Figure 1 OECD LABOUR LARKET INDICATORS

-MACRO DATA TRENDS IN EUROPE-

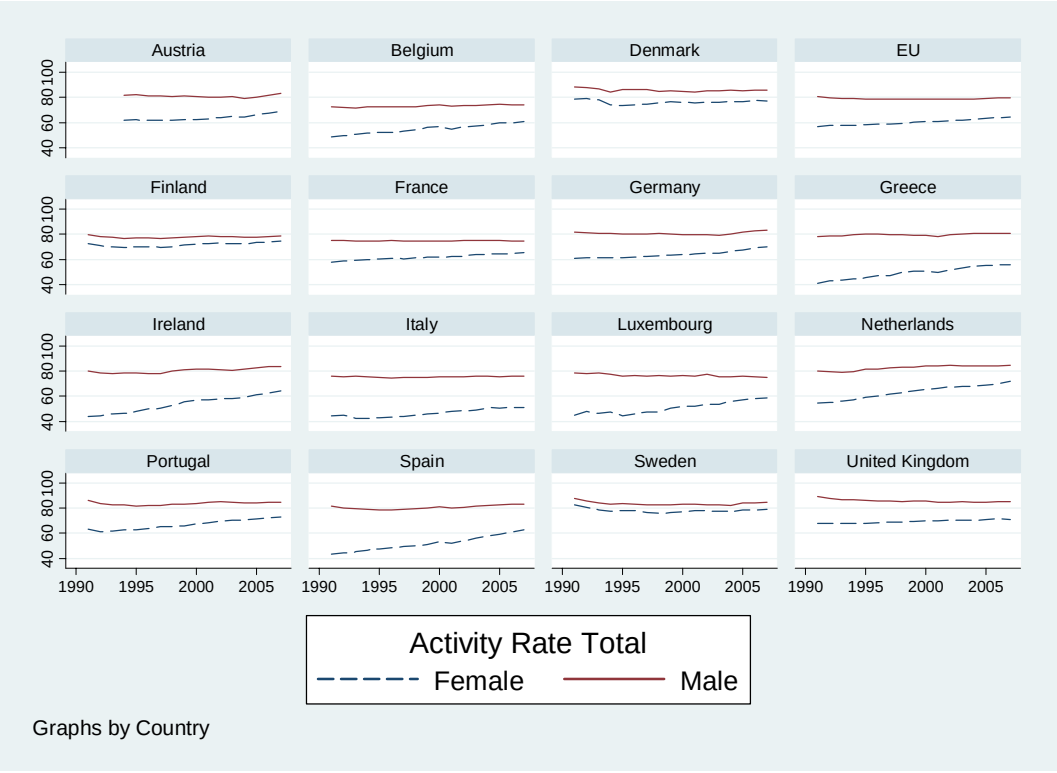


Figure 2 OECD LABOUR LARKET INDICATORS

- MACRO DATA TRENDS IN EUROPE-

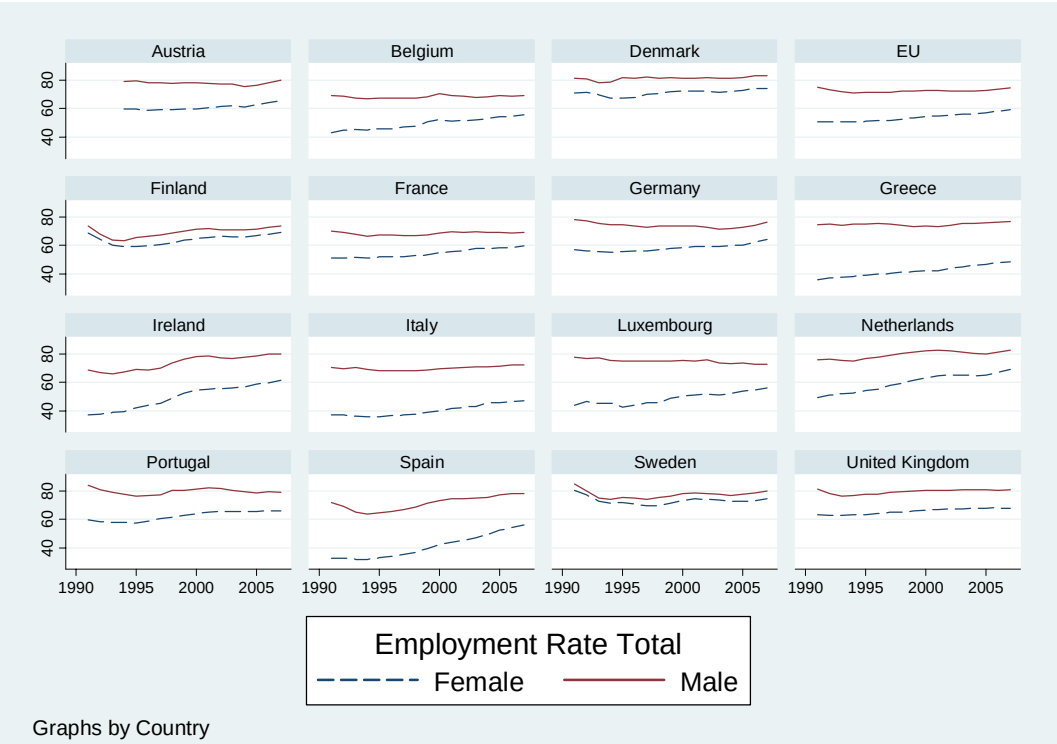


Figure 3 OECD LABOUR LARKET INDICATORS

- MACRO DATA TRENDS IN EUROPE-

Figure 4 OECD LABOUR LARKET INDICATORS

- MACRO DATA TRENDS IN EUROPE-

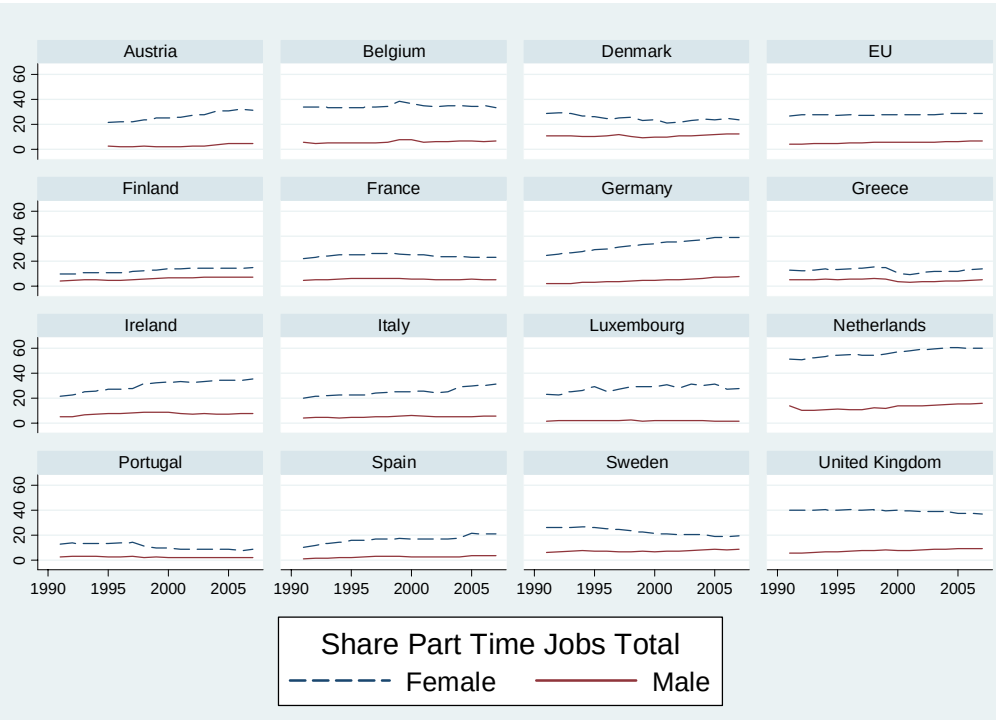


Figure 5 GENDER GAP IN THE LABOR MARKET IN EUROPE

- MICRO DATA CROSS CONTRY EVIDENCE-

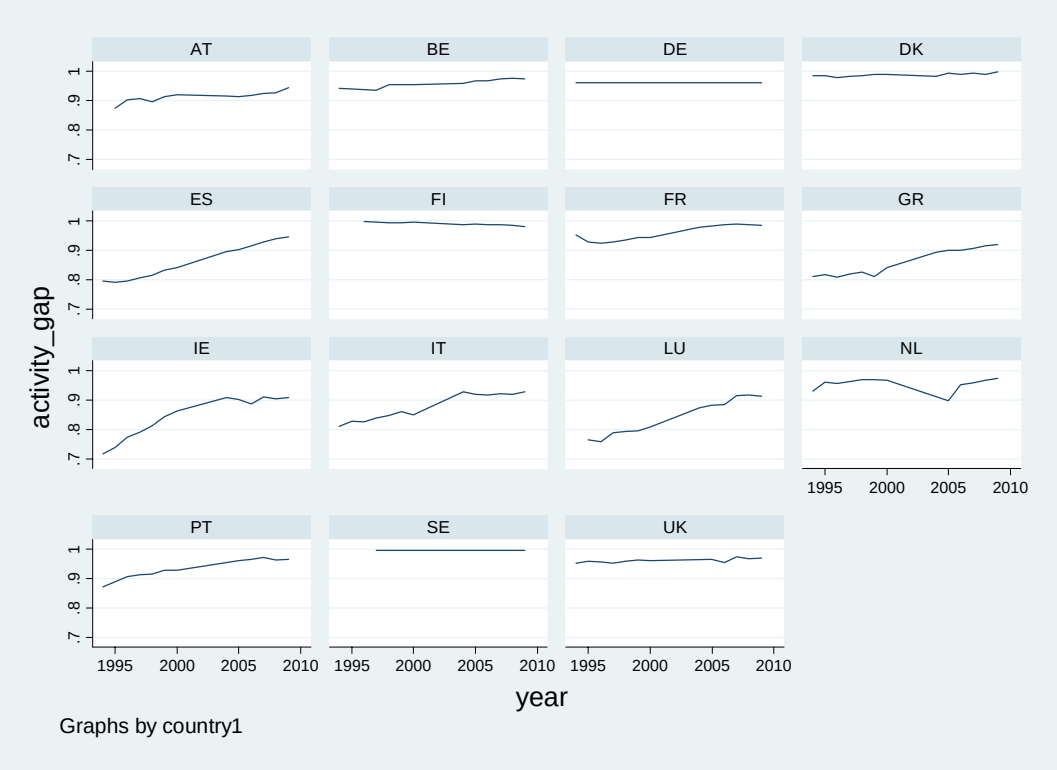


Figure 6 GENDER GAP IN THE LABOR MARKET IN EUROPE

- MICRO DATA CROSS CONTRY EVIDENCE -

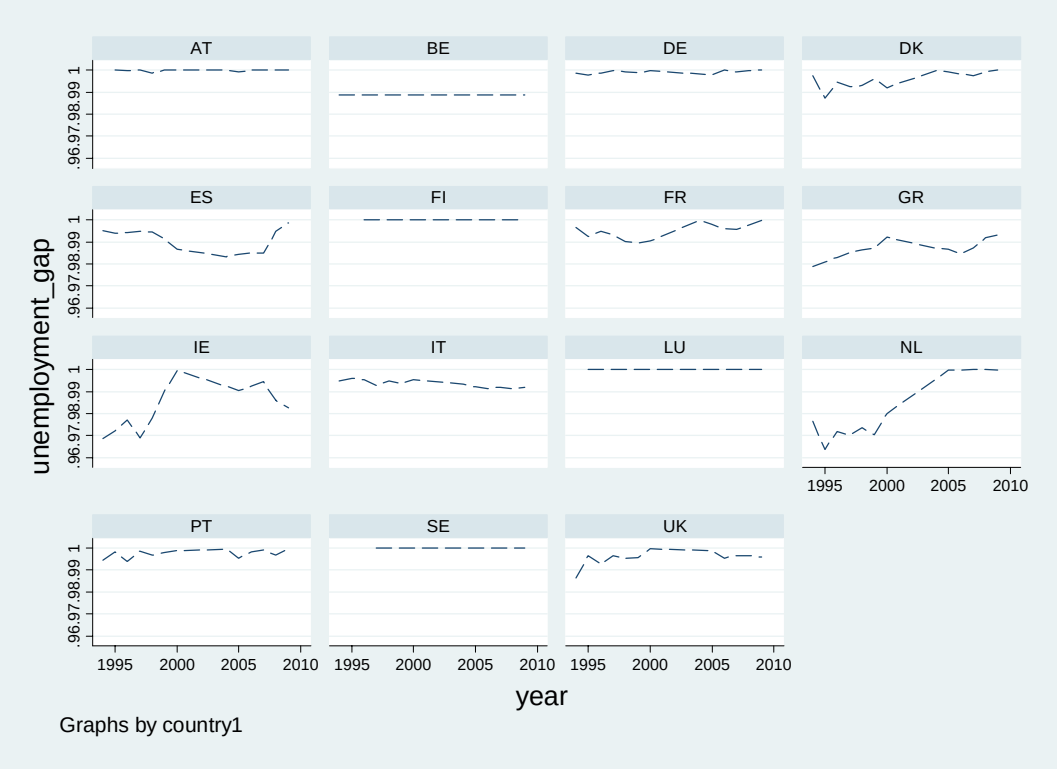


Figure 7 GENDER GAP IN THE LABOR MARKET IN EUROPE

- MICRO DATA CROSS CONTRY EVIDENCE -

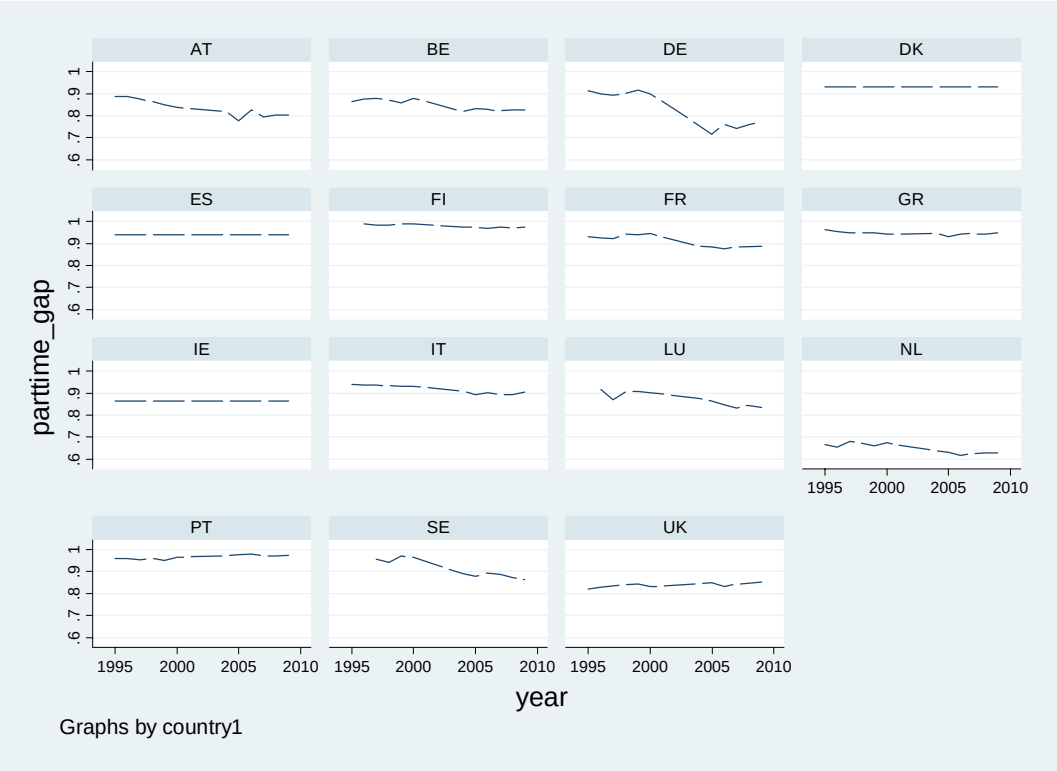


Figure 8 GENDER GAP IN THE LABOR MARKET IN EUROPE

- MICRO DATA CROSS CONTRY EVIDENCE -

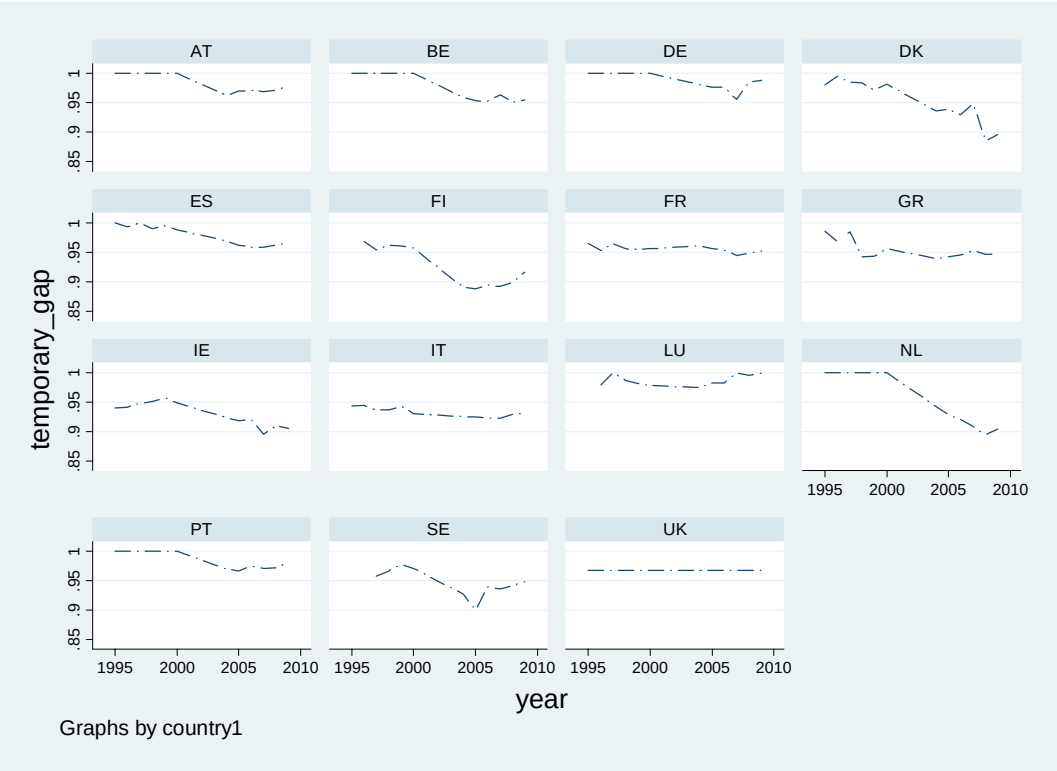
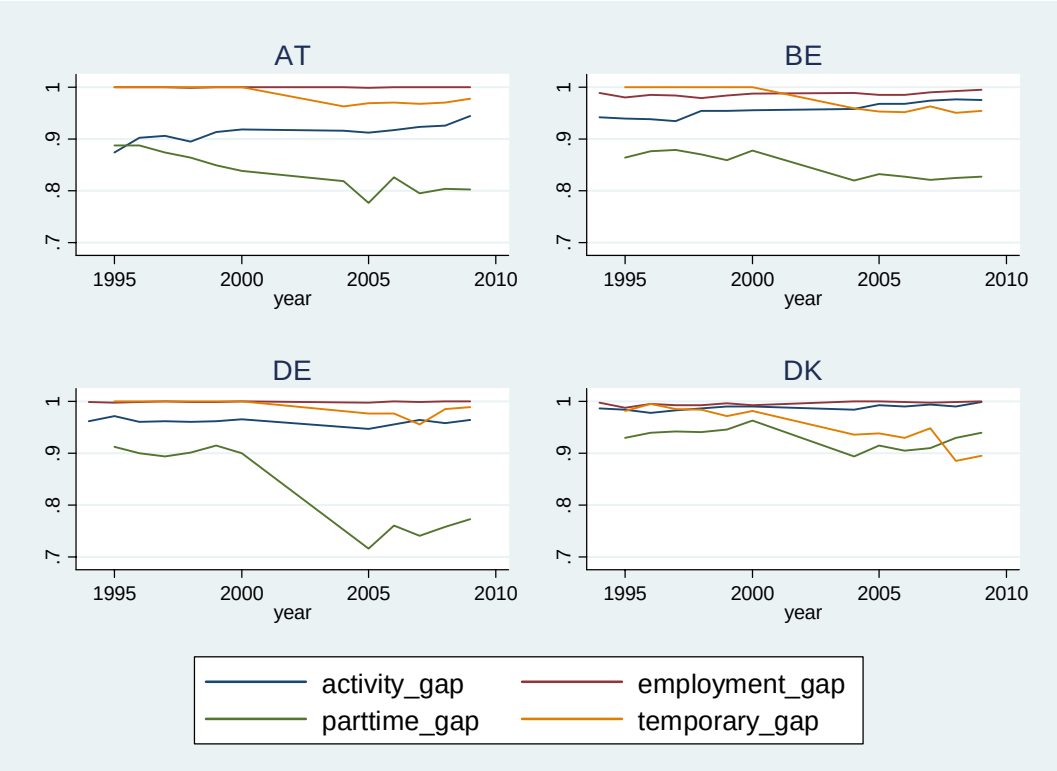
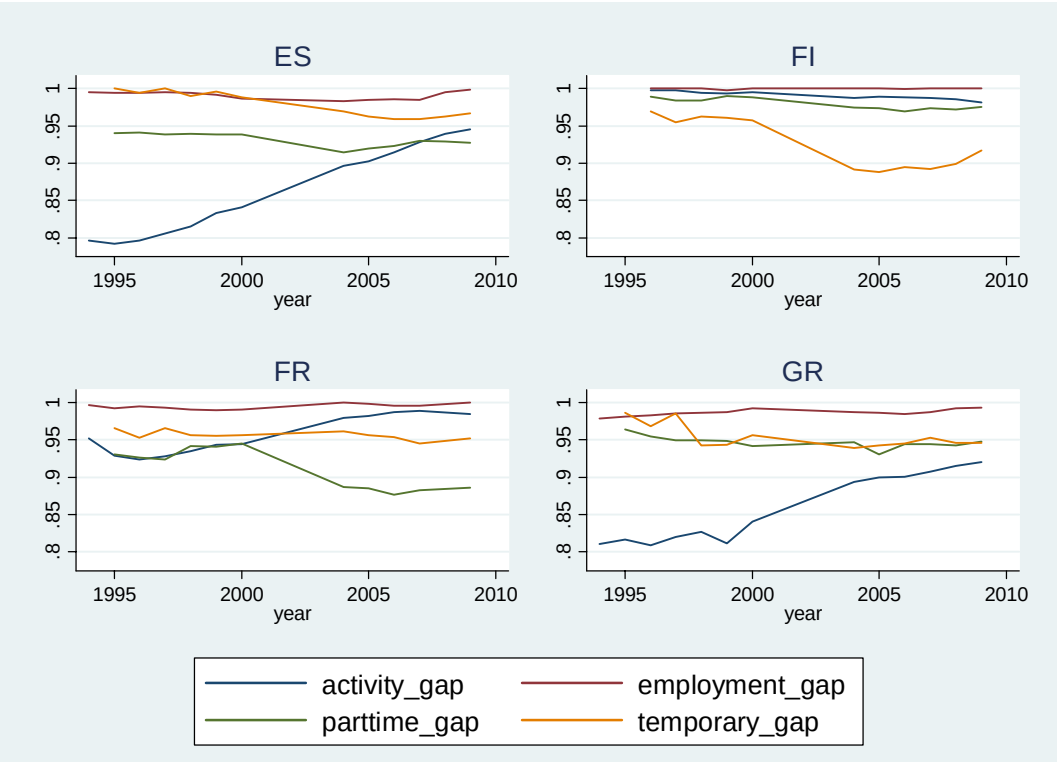
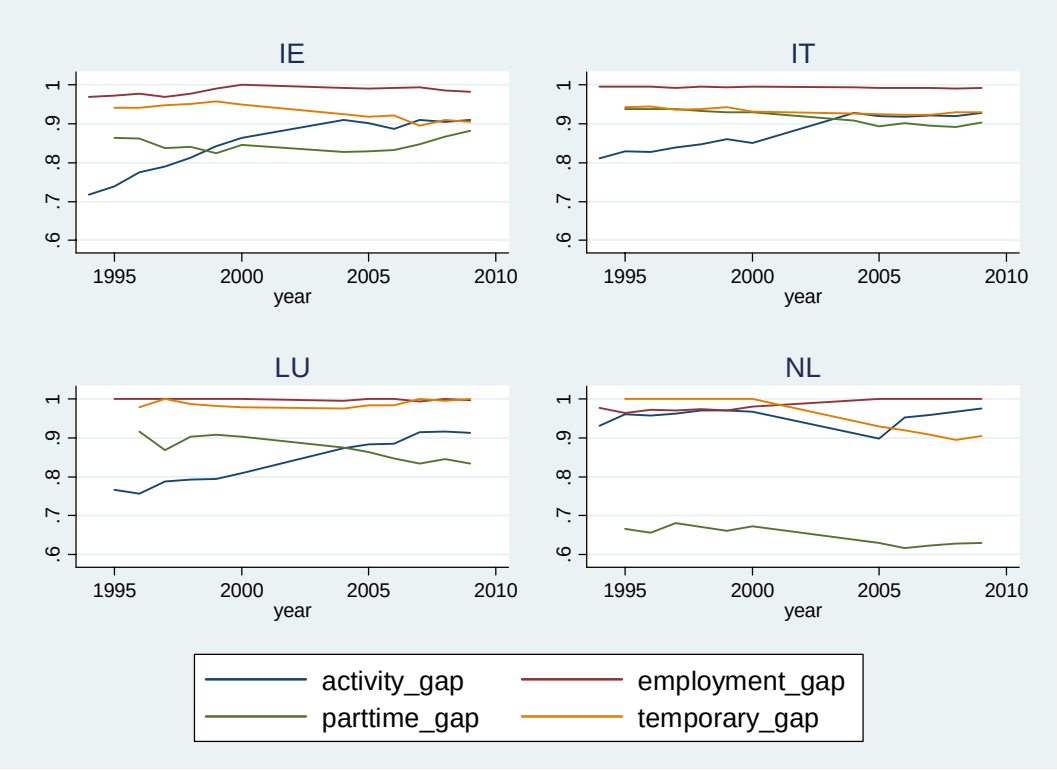


Figure 9 GENDER GAP IN THE LABOR MARKET IN EUROPE

- MICRO DATA WITHIN COUNTRY EVIDENCE-






IE
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1995
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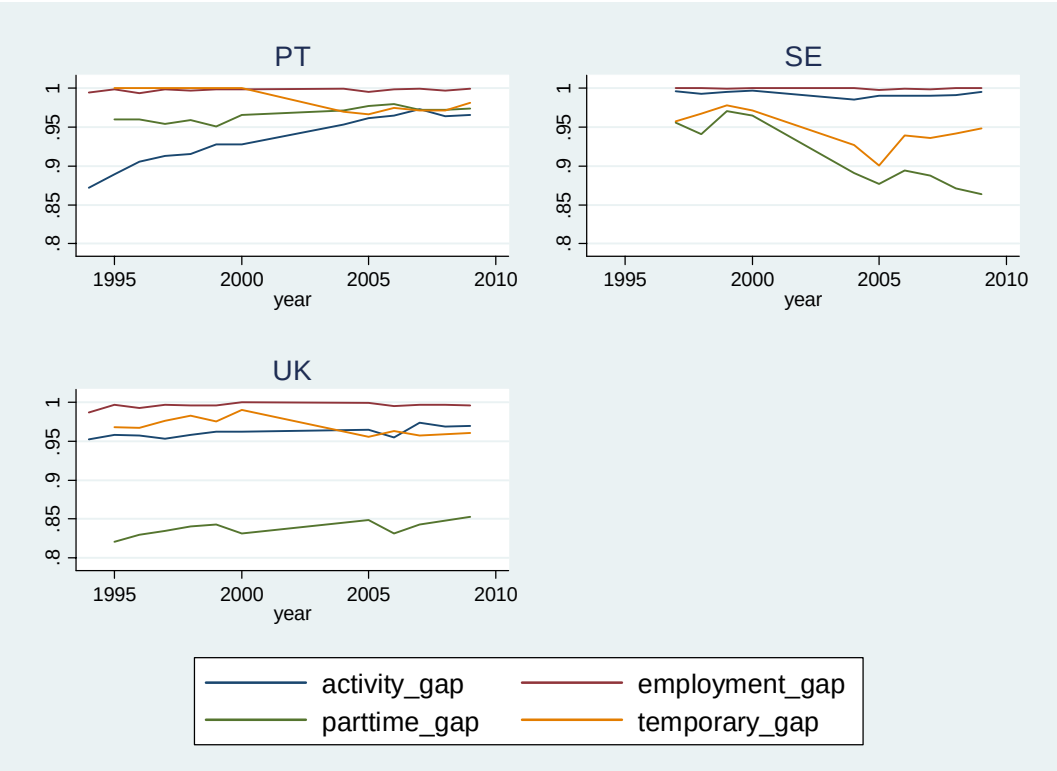
2005
2010
year
activity_gap
employment_gap
parttime_gap
temporary_gap


PT
SE
UK
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.95
1
1995
2000
2005
2010
year
activity_gap
employment_gap
parttime_gap
temporary_gap

Table 1. Summary statistics: female sample[♦]

	Variable	Obs	Mean	Std. Dev.	Min	Max
Individual Characteristics	employed	851010	0.594	0.491	0	1
	active	851010	0.656	0.475	0	1
	male	851010	0.000	0.000	0	0
	age	851010	44.269	11.078	25	64
	ISCED03	832447	0.382	0.486	0	1
	ISCED35	832447	0.344	0.475	0	1
	ISCED57	832447	0.274	0.446	0	1
	single	844864	0.189	0.392	0	1
	incouple	844864	0.687	0.464	0	1
	separated	844864	0.018	0.132	0	1
	divorced	844864	0.067	0.250	0	1
	widowed	844864	0.039	0.193	0	1
Household Characteritsics	children	851010	0.713	1.008	0	15
	child	851010	0.422	0.494	0	1
	child06	851010	0.179	0.383	0	1
	child03	851010	0.096	0.295	0	1
	child36	851010	0.113	0.317	0	1
	child614	851010	0.259	0.438	0	1
	old70	851010	0.060	0.238	0	1
	pISCED03	851010	0.276	0.447	0	1
	pISCED35	851010	0.258	0.438	0	1
	pISCED57	851010	0.198	0.398	0	1
Trend	year	851010	2003	4.983	1994	2009
	cycle	842730	0.006	1.958	-8.636	4.172
Country of residence	DK	851010	0.044	0.206	0	1
	NL	851010	0.070	0.255	0	1
	BE	851010	0.045	0.207	0	1
	FR	851010	0.074	0.262	0	1
	IE	851010	0.043	0.203	0	1
	IT	851010	0.156	0.362	0	1
	GR	851010	0.060	0.237	0	1
	ES	851010	0.111	0.314	0	1
	PT	851010	0.054	0.227	0	1
	AT	851010	0.043	0.204	0	1
	FI	851010	0.068	0.252	0	1
	SE	851010	0.048	0.213	0	1
	DE	851010	0.087	0.282	0	1
	LU	851010	0.035	0.183	0	1
	UK	851010	0.062	0.241	0	1

[♦] ISCED02 (pISCED02): lower secondary education of the woman (of her partner); ISCED35 (pISCED35): upper secondary education of the woman (of her partner); ISCED57 (pISCED57): tertiary education of the woman (of her partner).

Table 2. Summary statistics: male sample [♥]

	Variable	Obs	Mean	Std. Dev.	Min	Max
Individual Characteristics	employed	806357	0.797	0.402	0	1
	active	806357	0.857	0.350	0	1
	male	806357	1.000	0.000	1	1
	age	806357	44.229	11.137	25	64
	ISCED03	788367	0.360	0.480	0	1
	ISCED35	788367	0.368	0.482	0	1
	ISCED57	788367	0.273	0.445	0	1
	single	799834	0.257	0.437	0	1
	incouple	799834	0.675	0.468	0	1
	separated	799834	0.013	0.112	0	1
	divorced	799834	0.046	0.209	0	1
	widowed	799834	0.010	0.098	0	1
Household Characteritsics	children	806357	0.435	0.925	0	14
	child	806357	0.225	0.418	0	1
	child06	806357	0.180	0.384	0	1
	child03	806357	0.100	0.300	0	1
	child36	806357	0.112	0.315	0	1
	child614	806357	0.244	0.430	0	1
	old70	806357	0.061	0.239	0	1
	pISCED03	806357	0.278	0.448	0	1
	pISCED35	806357	0.261	0.439	0	1
	pISCED57	806357	0.198	0.398	0	1
Trend	year	806357	2003.000	4.985	1994	2009
	cycle	798435	0.012	1.959	-8.636	4.172
Country of residence	DK	806357	0.045	0.207	0	1
	NL	806357	0.068	0.253	0	1
	BE	806357	0.044	0.205	0	1
	FR	806357	0.073	0.261	0	1
	IE	806357	0.043	0.202	0	1
	IT	806357	0.159	0.366	0	1
	GR	806357	0.060	0.238	0	1
	ES	806357	0.111	0.314	0	1
	PT	806357	0.053	0.224	0	1
	AT	806357	0.043	0.203	0	1
	FI	806357	0.073	0.260	0	1
	SE	806357	0.049	0.216	0	1
	DE	806357	0.083	0.276	0	1
	LU	806357	0.036	0.187	0	1
	UK	806357	0.059	0.235	0	1

[♥] ISCED02 (pISCED02): lower secondary education of the man (of his partner); ISCED35 (pISCED35): upper secondary education of the man (of his partner); ISCED57 (pISCED57): tertiary education of the man (of his partner).

Table 3: Activity rate, temporary employment and part-time employment

VARIABLES	(1)	(2)	(3)
TOC_T	-0.2512		-0.1317
	(0.174)		(0.169)
TOC_T_2	0.1784		0.2115
	(0.185)		(0.196)
TOC_T_3	-1.8602***		-1.7324***
	(0.293)		(0.272)
TOC_T_4	0.2663		0.1240
	(0.177)		(0.173)
TOC_P		0.4442***	0.3899***
		(0.122)	(0.104)
TOC_P_2		-0.6954***	-0.6860***
		(0.154)	(0.166)
TOC_P_3		-2.4406***	-1.8006***
		(0.334)	(0.209)
TOC_P_4		-0.3919***	-0.3329***
		(0.124)	(0.109)
Constant	0.9780***	2.8675***	4.1492***
	(0.031)	(0.301)	(0.262)
Observations	171	171	171
R-squared	0.788	0.757	0.819

Notes: OLS results of model (1). Dep. Variable: Activity index. TOC_T denotes the type of contract index temporary versus permanent, TOC_P denotes the type of contract index full time versus part time. The subscript _2, _3, _4 indicates institutional regimes: _2 includes continental countries (Austria, Belgium, Luxembourg, Netherlands, Germany, Ireland and France), _3 Southern countries (Greece, Spain, Portugal and Italy), _3 Nordic countries (Denmark, Sweden and Finland) and the group of liberal countries (UK) is the reference category. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 4 Activity rate, temporary employment and part-time employment by age groups

	Prime age			Old			Young		
VARIABLES	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
TOC_T	-0.2110		-0.1973	0.0647		0.0942	-0.0135		-0.0876
	(0.201)		(0.200)	(0.097)		(0.072)	(0.068)		(0.247)
TOC_T_2	0.1059		0.3147	-0.0734		-0.1044	0.0362		0.0904
	(0.215)		(0.238)	(0.101)		(0.079)	(0.071)		(0.248)
TOC_T_3	-2.3508***		-2.0609***	-0.1906		-0.2097*	-0.0764		-0.0113
	(0.350)		(0.331)	(0.126)		(0.118)	(0.081)		(0.251)
TOC_T_4	0.2754		0.2354	-0.1681		-0.1855**	0.0312		0.1149
	(0.205)		(0.206)	(0.104)		(0.077)	(0.071)		(0.249)
TOC_P		0.4607***	0.4491***		0.0796	0.0859**		0.0105	0.0601
		(0.106)	(0.143)		(0.049)	(0.041)		(0.058)	(0.173)
TOC_P_2		-0.7658***	-0.8141***		-0.1454*	-0.1522**		0.0456	-0.0063
		(0.151)	(0.210)		(0.076)	(0.072)		(0.064)	(0.176)
TOC_P_3		-2.5758***	-1.8683***		-0.2696	-0.1428		-0.0136	-0.1060
		(0.366)	(0.292)		(0.169)	(0.184)		(0.092)	(0.187)
TOC_P_4		-0.3738***	-0.3809**		0.0221	-0.0065		-0.0284	-0.1017
		(0.111)	(0.149)		(0.084)	(0.069)		(0.071)	(0.181)
Constant	3.4631***	2.9840***	4.5391***	0.9945***	1.1227***	1.0373***	1.0655***	1.0123***	0.9352***
	(0.282)	(0.341)	(0.292)	(0.081)	(0.153)	(0.145)	(0.043)	(0.037)	(0.027)
Observations	171	171	171	171	171	171	171	171	171
R-squared	0.756	0.718	0.792	0.807	0.806	0.810	0.451	0.445	0.460

Notes: OLS results of model (1) by age groups. "Prime age" are individuals between 25-54, "Old" are individuals between 55-64, "Young" are individuals between 15-24. Dep. Variable: Activity index. TOC_T denotes the type of contract index temporary versus permanent, TOC_P denotes the type of contract index full time versus part time. The subscript _2, _3, _4 indicates institutional regimes: _2 includes continental countries (Austria, Belgium, Luxembourg, Netherlands, Germany, Ireland and France), _3 Southern countries (Greece, Spain, Portugal and Italy), _3 Nordic countries (Denmark, Sweden and Finland) and the group of liberal countries (UK) is the reference category. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5: Activity rate, temporary employment and part-time employment by education level

	Unskilled			Medium-skilled			Skilled		
VARIABLES	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
TOC_T	-0.0967		-0.0955	-0.0816*		0.0322	-0.1138		-0.0477
	(0.124)		(0.396)	(0.046)		(0.072)	(0.089)		(0.206)
TOC_T_2	0.1276		0.1908	0.0846		0.2161*	0.2550*		0.1941
	(0.158)		(0.417)	(0.072)		(0.121)	(0.135)		(0.229)
TOC_T_3	-0.7085***		-0.4538	-0.3161		-0.2608	-0.0672		-0.1354
	(0.265)		(0.450)	(0.196)		(0.171)	(0.180)		(0.259)
TOC_T_4	0.0604		0.0717	0.1259**		-0.0061	0.0992		0.0253
	(0.130)		(0.398)	(0.049)		(0.076)	(0.099)		(0.211)
TOC_P		0.1228	0.0018		-0.2452***	-0.2563***		0.1581	0.1296
		(0.205)	(0.582)		(0.079)	(0.097)		(0.245)	(0.358)
TOC_P_2		-0.1936	-0.1218		0.0852	-0.0138		-0.1902	-0.1666
		(0.214)	(0.589)		(0.093)	(0.122)		(0.249)	(0.360)
TOC_P_3		-1.7531***	-1.4816**		-0.5939***	-0.5410**		-0.2128	-0.1223
		(0.279)	(0.619)		(0.208)	(0.223)		(0.292)	(0.390)
TOC_P_4		0.0819	0.1995		0.3073***	0.2978***		-0.1480	-0.1089
		(0.210)	(0.584)		(0.082)	(0.101)		(0.247)	(0.359)
Constant	1.6223***	2.4596***	2.7338***	1.0444***	0.9269***	1.9951***	1.0842***	1.0515***	0.9037*
	(0.236)	(0.179)	(0.262)	(0.043)	(0.021)	(0.208)	(0.089)	(0.156)	(0.509)
Observations	171	171	171	171	171	171	171	171	171
R-squared	0.808	0.833	0.841	0.802	0.836	0.850	0.596	0.589	0.597

Notes: OLS results of model (1) by education levels. "Unskilled" are individuals with primary education only, "Medium-skilled" are individuals with secondary education only, "Skilled" are individuals with tertiary higher education**.** Dep. Variable: Activity index. TOC_T denotes the type of contract index temporary versus permanent, TOC_P denotes the type of contract index full time versus part time. The subscript _2, _3, _4 indicates institutional regimes: _2 includes continental countries (Austria, Belgium, Luxembourg, Netherlands, Germany, Ireland and France), _3 Southern countries (Greece, Spain, Portugal and Italy), _3 Nordic countries (Denmark, Sweden and Finland) and the group of liberal countries (UK) is the reference category. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 6: Female labour market participation and type of occupation

	active			employed			temporary			parttime		
	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.
Marital status												
Single												
incouple	-0,071	***	0,003	-0,044	***	0,003	-0,021	***	0,003	0,095	***	0,004
separated	0,057	***	0,007	0,055	***	0,007	-0,018	***	0,006	0,019	**	0,009
divorced	0,050	***	0,004	0,029	***	0,004	-0,014	***	0,004	-0,016	***	0,005
widowed	-0,067	***	0,006	-0,031	***	0,006	-0,012	**	0,005	0,066	***	0,008
Children												
No children												
children	-0,038	***	0,003	-0,031	***	0,003	0,013	***	0,003	0,019	***	0,004
child	0,043	***	0,005	0,043	***	0,005	-0,005		0,005	0,014	**	0,006
child03	-0,174	***	0,004	-0,162	***	0,003	-0,018	***	0,003	0,140	***	0,005
child36	-0,088	***	0,003	-0,088	***	0,003	0,007	**	0,003	0,142	***	0,004
child614	-0,067	***	0,003	-0,066	***	0,003	0,023	***	0,002	0,166	***	0,003
Co-habiting Elderly												
no_elderly												
old70-80	-0,068	***	0,005	-0,075	***	0,005	0,012	***	0,005	0,009		0,007
old80	-0,025	***	0,006	-0,015	**	0,006	-0,011	**	0,006	0,002		0,009
Education												
Low skilled												
ISCED35	0,122	***	0,002	0,145	***	0,002	-0,062	***	0,002	-0,044	***	0,003
ISCED57	0,214	***	0,003	0,253	***	0,003	-0,067	***	0,002	-0,104	***	0,003
pISCED03	-0,016	***	0,003	0,006	*	0,003	0,010	***	0,003	-0,016	***	0,004
pISCED35	0,039	***	0,003	0,064	***	0,003	-0,031	***	0,003	0,007	*	0,004
pISCED57	0,018	***	0,004	0,050	***	0,004	-0,037	***	0,003	0,011	***	0,004
Age												
Age_25-34												
age_35_44	0,052	***	0,003	0,067	***	0,003	-0,077	***	0,002	0,024	***	0,003
age_45_54	-0,013	***	0,003	0,013	***	0,003	-0,113	***	0,003	0,056	***	0,004
age_55_64	-0,295	***	0,004	-0,247	***	0,004	-0,128	***	0,002	0,132	***	0,005
Macro												
trend	0,012	***	0,001	0,014	***	0,001	0,002	***	0,001	0,003	***	0,001
cycle	0,003	***	0,001	0,005	***	0,001	0,001	***	0,001	0,005	***	0,001
UK												
DK	0,075	***	0,005	0,050	***	0,005	-0,171	***	0,002	-0,170	***	0,004
NL	-0,039	***	0,004	-0,038	***	0,004	0,169	***	0,009	0,311	***	0,005
BE	0,018	***	0,004	-0,058	***	0,004	0,166	***	0,008	0,047	***	0,005
FR	0,078	***	0,004	0,019	***	0,004	0,179	***	0,008	-0,085	***	0,004
IE	-0,046	***	0,005	-0,061	***	0,006	0,106	***	0,009	0,036	***	0,007
IT	-0,077	***	0,004	-0,116	***	0,004	0,197	***	0,007	-0,094	***	0,004
GR	-0,041	***	0,004	-0,100	***	0,005	0,353	***	0,009	-0,164	***	0,005
ES	0,012	***	0,004	-0,070	***	0,004	0,391	***	0,008	-0,160	***	0,004
PT	0,159	***	0,004	0,109	***	0,005	0,206	***	0,009	-0,282	***	0,004
AT	-0,053	***	0,004	-0,085	***	0,004	0,059	***	0,007	0,018	***	0,005
FI	0,072	***	0,004	0,019	***	0,004	0,264	***	0,009	-0,224	***	0,004
SE	0,100	***	0,004	0,076	***	0,004	0,203	***	0,009	-0,057	***	0,004
DE	0,005		0,004	-0,068	***	0,004	0,154	***	0,008	0,137	***	0,005
LU	-0,040	***	0,006	-0,053	***	0,006	0,038	***	0,009	-0,014	*	0,007
Observations	818168			818168			427128			492929		
Log likelihood	-432848,6			-473241,1			-179740,1			-285804,1		
pseudo - R2	0,148			0,128			0,113			0,128		

Table 7: Female labour market participation and type of occupation: welfare regimes

	active			employed			temporary			parttime		
	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.
Marital status												
Single												
incouple	-0,020	***	0,008	-0,011		0,008	-0,010		0,015	0,146	***	0,009
separated	0,046	***	0,007	0,038	***	0,007	-0,020	***	0,006	0,044	***	0,009
divorced	0,042	***	0,004	0,027	***	0,005	-0,018	***	0,004	-0,003		0,005
widowed	-0,073	***	0,005	-0,040	***	0,006	-0,016	***	0,005	0,092	***	0,008
married*dem	0,004		0,009	0,002		0,010	-0,036	***	0,014	-0,122	***	0,009
married*cont	-0,075	***	0,009	-0,045	***	0,010	-0,024		0,015	-0,032	***	0,010
married*south	-0,063	***	0,009	-0,048	***	0,010	-0,013		0,015	-0,119	***	0,010
Children												
No children												
children	-0,034	***	0,003	-0,029	***	0,003	0,016	***	0,003	0,020	***	0,004
child	0,074	***	0,008	0,071	***	0,008	-0,007		0,014	0,019	**	0,010
child*dem	0,009		0,009	0,011		0,009	-0,010		0,015	-0,057	***	0,009
child*cont	-0,018	**	0,008	-0,015	*	0,009	-0,010		0,014	0,009		0,009
child*south	-0,045	***	0,008	-0,049	***	0,009	0,016		0,015	-0,038	***	0,009
child03	-0,239	***	0,010	-0,228	***	0,010	-0,011		0,019	0,285	***	0,014
child03*dem	0,055	***	0,011	0,061	***	0,012	0,002		0,022	-0,161	***	0,011
child03*cont	0,020	*	0,011	0,031	***	0,012	-0,015		0,020	-0,139	***	0,011
child03*south	0,156	***	0,008	0,158	***	0,010	-0,002		0,020	-0,164	***	0,010
child36	-0,157	***	0,009	-0,157	***	0,009	0,003		0,017	0,246	***	0,013
child36*dem	0,136	***	0,009	0,135	***	0,010	0,000		0,019	-0,119	***	0,011
child36*cont	0,075	***	0,010	0,066	***	0,011	-0,006		0,018	-0,081	***	0,012
child36*south	0,098	***	0,009	0,110	***	0,010	0,015		0,019	-0,143	***	0,010
child614	-0,117	***	0,007	-0,114	***	0,007	0,040	***	0,014	0,234	***	0,009
child614*dem	0,134	***	0,008	0,135	***	0,009	-0,024	*	0,013	-0,120	***	0,008
child614*cont	0,055	***	0,008	0,052	***	0,009	-0,021	*	0,013	-0,036	***	0,009
child614*south	0,070	***	0,007	0,071	***	0,008	-0,010		0,013	-0,139	***	0,008
Co-habiting Elderly												
noelderly												
old7080	-0,166	***	0,019	-0,159	***	0,019	-0,002		0,042	-0,029		0,028
old7080*dem	0,017		0,022	0,019		0,024	0,013		0,052	0,058		0,038
old7080*con	0,027		0,021	0,031		0,022	0,019		0,047	0,013		0,034
old7080*south	0,122	***	0,016	0,105	***	0,018	0,013		0,044	0,027		0,031
old80	-0,075	***	0,028	-0,069	**	0,029	-0,041		0,060	-0,057	*	0,034
old80*dem	-0,049		0,039	-0,053		0,040	0,106		0,112	0,018		0,055
old80*cont	0,033		0,030	0,042		0,032	0,047		0,085	0,025		0,044
old80*south	0,069	***	0,025	0,061	**	0,028	0,050		0,082	0,065		0,041
Education												
Low skilled												
ISCED35	0,167	***	0,007	0,186	***	0,008	0,020		0,021	-0,051	***	0,011
ISCED35*dem	-0,058	***	0,010	-0,056	***	0,010	-0,007		0,021	0,072	***	0,014
ISCED35*cont	-0,073	***	0,009	-0,062	***	0,009	-0,062	***	0,018	0,010		0,013
ISCED35*south	-0,077	***	0,009	-0,067	***	0,009	-0,088	***	0,015	0,029	**	0,012
ISCED57	0,221	***	0,008	0,253	***	0,008	0,073	***	0,022	-0,111	***	0,011
ISCED57*dem	-0,052	***	0,011	-0,037	***	0,011	-0,050	***	0,018	0,045	***	0,014
ISCED57*cont	-0,039	***	0,010	-0,012		0,010	-0,110	***	0,015	-0,002		0,013
ISCED57*south	0,009		0,009	0,002		0,010	-0,112	***	0,013	0,067	***	0,013
pISCED03	0,030	***	0,010	0,039	***	0,011	-0,053	***	0,019	-0,055	***	0,013
pISCED03*dem	0,036	***	0,013	0,036	***	0,013	0,054	**	0,028	0,100	***	0,017
pISCED03*cont	-0,032	***	0,013	-0,006		0,013	0,057	**	0,027	0,050	***	0,017
pISCED03*south	-0,078	***	0,013	-0,067	***	0,013	0,080	***	0,027	0,093	***	0,016
pISCED35	0,074	***	0,008	0,091	***	0,009	-0,052	***	0,015	-0,043	***	0,010
pISCED35*dem	0,013		0,011	0,017		0,011	0,035	*	0,020	0,090	***	0,013
pISCED35*cont	-0,031	***	0,010	-0,016		0,011	0,027		0,019	0,075	***	0,013
pISCED35*south	-0,097	***	0,011	-0,085	***	0,011	0,030		0,019	0,096	***	0,013
pISCED57	0,039	***	0,009	0,046	***	0,009	-0,020		0,016	-0,051	***	0,010
pISCED57*dem	0,039	***	0,011	0,052	***	0,011	0,001		0,018	0,094	***	0,014
pISCED57*cont	-0,025	**	0,011	0,005		0,011	-0,002		0,017	0,130	***	0,013
pISCED57*south	-0,045	***	0,011	-0,021	**	0,011	-0,014		0,016	0,084	***	0,014
Age												
Age25-34												
35-44	0,042	***	0,009	0,047	***	0,009	-0,050	***	0,014	0,056	***	0,011
45-54	-0,045	***	0,010	-0,040	***	0,010	-0,054	***	0,015	0,119	***	0,011
55-64	-0,271	***	0,011	-0,252	***	0,010	-0,040	**	0,017	0,259	***	0,012
(35-44)*dem	0,043	***	0,010	0,040	***	0,011	-0,047	***	0,014	-0,041	***	0,012
(45-54)*dem	0,133	***	0,010	0,139	***	0,011	-0,057	***	0,015	-0,083	***	0,012
(55-64)*dem	0,140	***	0,010	0,154	***	0,011	-0,091	***	0,013	-0,098	***	0,012
(35-44)*cont	0,022	**	0,010	0,013		0,011	-0,046	***	0,014	-0,009		0,012

(45-54)*cont	0,059	***	0,011	0,054	***	0,012	-0,067	***	0,014	-0,031	***	0,012
(55-64)*cont	-0,016		0,012	-0,021	*	0,012	-0,091	***	0,014	-0,092	***	0,012
(35-44)*south	-0,018	*	0,010	0,015		0,010	-0,023		0,014	-0,036	***	0,011
(45-54)*south	0,001		0,011	0,059	***	0,011	-0,073	***	0,013	-0,097	***	0,011
(55-64)*south	-0,052	***	0,011	0,019	*	0,011	-0,112	***	0,012	-0,167	***	0,010
Macro												
trend	0,008	***	0,002	0,010	***	0,002	0,004		0,005	0,011	***	0,002
trend*dem	0,000		0,002	0,002		0,002	0,005		0,005	0,003		0,003
trend*cont	0,004	*	0,002	0,005	**	0,002	0,003		0,005	0,008	***	0,003
trend*south	0,002		0,002	0,001		0,002	-0,004		0,005	-0,007	***	0,003
cycle	0,003	***	0,001	0,005	***	0,001	0,003	***	0,001	0,008	***	0,001
Liberal												
Democratic	-0,038		0,031	-0,110	***	0,030	0,186	**	0,088	-0,067	*	0,035
Continental	0,040		0,029	-0,072	**	0,030	0,237	***	0,059	-0,020		0,035
Southern	0,038		0,027	-0,063	**	0,030	0,462	***	0,058	0,079	**	0,034
Observations	818168			818168			427128			492929		
Log likelihood	-432852,1			-473874,9			-184200,2			-293087,0		
pseudo - R2	0,148			0,127			0.091ù			0,105		

Table 8: Female labour market participation and type of occupation: trends

	active			employed			temporary			parttime		
	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.
Marital status												
Single												
incouple	-0,041	**	0,021	-0,021		0,022	-0,005		0,020	0,060	**	0,025
separated	0,056	***	0,007	0,055	***	0,007	-0,017	***	0,006	0,019	**	0,009
divorced	0,049	***	0,004	0,029	***	0,005	-0,014	***	0,004	-0,016	***	0,005
widowed	-0,067	***	0,006	-0,032	***	0,006	-0,011	**	0,005	0,066	***	0,008
Children												
No children												
children	-0,038	***	0,003	-0,032	***	0,003	0,013	***	0,003	0,020	***	0,004
child	0,052	***	0,016	0,046	***	0,017	0,000		0,017	-0,034		0,021
child03	-0,160	***	0,026	-0,120	***	0,026	-0,050	***	0,020	0,012		0,033
child36	-0,133	***	0,024	-0,126	***	0,024	0,003		0,022	0,066	**	0,029
child614	-0,046	***	0,018	-0,042	**	0,018	0,034	**	0,018	0,008		0,021
trend*child	-0,001		0,001	0,000		0,001	0,000		0,001	0,004	**	0,002
trend*child03	-0,001		0,002	-0,003		0,002	0,003		0,002	0,010	***	0,003
trend*child36	0,004	*	0,002	0,003		0,002	0,000		0,002	0,006	***	0,002
trend*child614	-0,002		0,001	-0,002		0,001	-0,001		0,001	0,012	***	0,002
Co-habiting Elderly												
no elderly												
old7080	0,063	**	0,032	0,031		0,035	0,035		0,035	-0,083	*	0,048
old80	-0,082	*	0,043	-0,062		0,044	0,121	**	0,052	-0,023		0,061
trend*old7080	-0,010	***	0,003	-0,008	***	0,003	-0,002		0,003	0,008	*	0,004
trend*old80	0,004		0,003	0,004		0,003	-0,009	***	0,003	0,002		0,005
Education												
Low skilled												
ISCED35	0,086	***	0,016	0,074	***	0,017	-0,079	***	0,016	-0,033		0,023
ISCED57	0,152	***	0,019	0,129	***	0,021	-0,053	***	0,017	0,003		0,025
trend*ISCED35	0,003	**	0,001	0,006	***	0,001	0,001		0,001	-0,001		0,002
trend*ISCED57	0,005	***	0,002	0,010	***	0,002	-0,001		0,001	-0,009	***	0,002
pISCED03	-0,056	**	0,025	-0,036		0,025	0,041	*	0,024	-0,063	**	0,030
pISCED35	-0,058	**	0,024	-0,043	*	0,024	-0,002		0,023	0,008		0,029
pISCED57	-0,064	***	0,026	-0,029		0,026	0,039		0,027	0,028		0,030
trend*pISCED03	0,003	*	0,002	0,003	*	0,002	-0,002		0,002	0,004		0,002
trend*pISCED35	0,008	***	0,002	0,009	***	0,002	-0,002		0,002	0,000		0,002
trend*pISCED57	0,006	***	0,002	0,006	***	0,002	-0,006	***	0,002	-0,001		0,002
Age												
25-34												
35-44	-0,042	**	0,021	0,006		0,022	-0,093	***	0,016	0,026		0,025
45-54	-0,157	***	0,023	-0,085	***	0,023	-0,170	***	0,015	-0,010		0,028
55-64	-0,455	***	0,020	-0,383	***	0,021	-0,128	***	0,016	0,087	***	0,033
trend*(35-44)	0,008	***	0,002	0,005	***	0,002	0,002		0,001	0,000		0,002
trend*(45-54)	0,012	***	0,002	0,008	***	0,002	0,006	***	0,002	0,005	**	0,002
trend*(55-64)	0,013	***	0,002	0,011	***	0,002	0,000		0,002	0,004		0,003
Macro												
trend	0,000		0,002	0,001		0,002	0,003	**	0,002	-0,004		0,002
cycle	0,003	***	0,001	0,005	***	0,001	0,002	***	0,001	0,005	***	0,001
Observations	818168			818168			427128			492929		
Log likelihood	-432641,4			-473009,52			-125878,3			-282816,9		
pseudo - R2	0,148			0,128			0,087			0,129		

Table 9: Female activity rate: trends and welfare regimes

Active	ALL			LIBERAL			CONTINENTAL			DEMOCRATIC			SOUTHERN		
	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.
Marital status															
Single															
incouple	-0,041	**	0,021	-0,034		0,073	-0,060	*	0,035	0,023		0,031	-0,029		0,032
separated	0,056	***	0,007	0,022		0,017	0,055	***	0,017	-0,003		0,023	0,088	***	0,009
divorced	0,049	***	0,004	0,036	***	0,013	0,033	***	0,007	-0,012	*	0,007	0,111	***	0,008
widowed	-0,067	***	0,006	0,016		0,013	-0,094	***	0,010	-0,021	*	0,012	-0,090	***	0,007
Children															
No children															
children	-0,038	***	0,003	-0,026	**	0,012	-0,036	***	0,005	-0,035	***	0,006	-0,032	***	0,004
child	0,052	***	0,016	0,047		0,067	0,133	***	0,027	0,122	***	0,026	0,002		0,022
child03	-0,160	***	0,026	-0,272	***	0,092	-0,263	***	0,044	-0,354	***	0,053	-0,064	*	0,034
child36	-0,133	***	0,024	-0,209	**	0,090	-0,201	***	0,042	0,027		0,037	-0,110	***	0,031
child614	-0,046	***	0,018	-0,118	*	0,069	-0,047		0,032	0,003		0,033	-0,069	***	0,023
trend*child	-0,001		0,001	0,001		0,005	-0,006	***	0,002	-0,004	*	0,002	0,002		0,002
trend*child03	-0,001		0,002	0,001		0,007	0,003		0,003	0,011	***	0,003	0,000		0,003
trend*child36	0,004	*	0,002	0,003		0,007	0,009	***	0,003	-0,002		0,003	0,005	*	0,002
trend*child614	-0,002		0,001	0,000		0,005	-0,001		0,003	0,002		0,003	0,001		0,002
Co-habiting Elderly															
no elderly															
old7080	0,063	**	0,032	-0,174		0,179	0,051		0,078	-0,151		0,110	0,059	*	0,035
old80	-0,082	*	0,043	-0,025		0,248	-0,166		0,119	-0,007		0,155	-0,064		0,046
trend*old7080	-0,010	***	0,003	0,000		0,013	-0,014	**	0,007	0,000		0,007	-0,007	**	0,003
trend*old80	0,004		0,003	-0,004		0,019	0,010		0,009	-0,007		0,012	0,004		0,004
Education															
Low skilled															
ISCED35	0,086	***	0,016	0,128	*	0,067	0,016		0,031	0,082	***	0,031	0,112	***	0,021
ISCED57	0,152	***	0,019	0,106		0,074	0,045		0,036	0,108	***	0,033	0,252	***	0,025
trend*ISCED35	0,003	**	0,001	0,004		0,006	0,006	***	0,002	0,001		0,003	0,001		0,002
trend*ISCED57	0,005	***	0,002	0,010	*	0,006	0,011	***	0,003	0,003		0,003	0,000		0,002
pISCED03	-0,056	**	0,025	-0,009		0,099	0,019		0,045	0,000		0,044	-0,073	**	0,033
pISCED35	-0,058	**	0,024	0,065		0,076	0,001		0,039	-0,015		0,039	-0,106	***	0,035
pISCED57	-0,064	***	0,026	0,028		0,080	-0,059		0,042	-0,026		0,043	-0,018		0,039
trend*pISCED03	0,003	*	0,002	0,003		0,008	-0,001		0,004	0,004		0,004	0,003		0,003
trend*pISCED35	0,008	***	0,002	0,001		0,006	0,003		0,003	0,007	**	0,003	0,010	***	0,003
trend*pISCED57	0,006	***	0,002	0,001		0,006	0,006	**	0,003	0,007	**	0,003	0,002		0,003
Age															
25-34															
35-44	-0,042	**	0,021	0,101		0,077	-0,107	***	0,039	0,093	***	0,035	-0,039		0,027
45-54	-0,157	***	0,023	-0,119		0,091	-0,239	***	0,037	0,107	***	0,038	-0,139	***	0,029
55-64	-0,455	***	0,020	-0,281	***	0,094	-0,585	***	0,025	0,005		0,040	-0,387	***	0,029
trend*(35-44)	0,008	***	0,002	-0,005		0,006	0,014	***	0,003	-0,002		0,003	0,006	***	0,002
trend*(45-54)	0,012	***	0,002	0,005		0,007	0,021	***	0,003	-0,002		0,003	0,008	***	0,002
trend*(55-64)	0,013	***	0,002	0,000		0,007	0,027	***	0,003	-0,006	*	0,003	0,005	**	0,002
Macro															
trend	0,000		0,002	0,000		0,008	-0,003		0,004	0,002		0,004	0,002		0,002
cycle	0,003	***	0,001	0,000		0,002	0,007	***	0,001	0,000		0,001	-0,001		0,001
Observations	818168			50464			328750			129536			309418		
Log likelihood	-432641,4			26576,7			-165905,6			-60043,2			-169651,0		
pseudo - R2	0,148			0,123			0,143			0,086			0,175		
Country dummies	yes			-			yes			yes			yes		

Table 10: Female activity rate: trends and welfare regimes

Employed	**ALL**			**LIBERAL**			**CONTINENTAL**			**DEMOCRATIC**			**SOUTHERN**		
	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.
Marital status															
Single															
incouple	-0,021		0,022	0,029		0,074	-0,065	*	0,035	0,033		0,034	0,008		0,033
separated	0,055	***	0,007	0,033	*	0,017	0,021		0,018	0,012		0,024	0,091	***	0,009
divorced	0,029	***	0,005	0,039	***	0,013	0,006		0,007	-0,020	***	0,007	0,114	***	0,008
widowed	-0,032	***	0,006	0,022	*	0,013	-0,049	***	0,010	-0,009		0,013	-0,045	***	0,008
Children															
No children															
children	-0,032	***	0,003	-0,019		0,012	-0,026	***	0,006	-0,038	***	0,006	-0,031	***	0,004
child	0,046	***	0,017	-0,001		0,068	0,085	***	0,030	0,146	***	0,028	0,026		0,023
child03	-0,120	***	0,026	-0,313	***	0,086	-0,186	***	0,044	-0,381	***	0,049	-0,038		0,034
child36	-0,126	***	0,024	-0,245	***	0,087	-0,181	***	0,041	0,001		0,042	-0,104	***	0,031
child614	-0,042	**	0,018	-0,121	*	0,068	-0,040		0,033	-0,017		0,036	-0,058	**	0,024
trend*child	0,000		0,001	0,004		0,005	-0,002		0,002	-0,005	**	0,002	0,000		0,002
trend*child03	-0,003		0,002	0,006		0,007	-0,002		0,004	0,015	***	0,003	-0,002		0,003
trend*child36	0,003		0,002	0,006		0,007	0,007	**	0,003	-0,001		0,003	0,005	*	0,003
trend*child614	-0,002		0,001	0,000		0,005	-0,002		0,003	0,003		0,003	0,000		0,002
Co-habiting Elderly															
no elderly															
old7080	0,031		0,035	-0,184		0,175	0,015		0,087	-0,100		0,111	0,028		0,039
old80	-0,062		0,044	-0,015		0,246	-0,083		0,119	-0,062		0,191	-0,067		0,046
trend*old7080	-0,008	***	0,003	0,002		0,013	-0,011		0,007	-0,003		0,008	-0,006	**	0,003
trend*old80	0,004		0,003	-0,004		0,019	0,005		0,009	-0,003		0,014	0,005		0,004
Education															
Low skilled															
ISCED35	0,074	***	0,017	0,171	***	0,065	-0,018		0,032	0,116	***	0,033	0,124	***	0,023
ISCED57	0,129	***	0,021	0,156	**	0,073	-0,002		0,038	0,154	***	0,036	0,223	***	0,027
trend*ISCED35	0,006	***	0,001	0,001		0,006	0,012	***	0,003	0,000		0,003	0,002		0,002
trend*ISCED57	0,010	***	0,002	0,007		0,006	0,019	***	0,003	0,002		0,003	0,004	**	0,002
pISCED03	-0,036		0,025	0,011		0,097	0,022		0,047	0,005		0,046	-0,065	*	0,035
pISCED35	-0,043	*	0,024	0,039		0,077	0,014		0,039	-0,010		0,041	-0,093	***	0,036
pISCED57	-0,029		0,026	0,031		0,080	-0,024		0,042	-0,020		0,045	0,004		0,041
trend*pISCED03	0,003	*	0,002	0,002		0,008	0,000		0,004	0,005		0,004	0,004	*	0,003
trend*pISCED35	0,009	***	0,002	0,004		0,006	0,004		0,003	0,008	***	0,003	0,011	***	0,003
trend*pISCED57	0,006	***	0,002	0,001		0,006	0,006	*	0,003	0,008	**	0,004	0,003		0,003
Age															
25-34															
35-44	0,006		0,022	0,084		0,079	-0,061		0,039	0,125	***	0,037	0,017		0,028
45-54	-0,085	***	0,023	-0,129		0,090	-0,177	***	0,039	0,125	***	0,041	-0,050	*	0,031
55-64	-0,383	***	0,021	-0,312	***	0,089	-0,529	***	0,025	0,010		0,043	-0,291	***	0,029
trend*(35-44)	0,005	***	0,002	-0,003		0,006	0,010	***	0,003	-0,004		0,003	0,004	*	0,002
trend*(45-54)	0,008	***	0,002	0,006		0,007	0,016	***	0,003	-0,002		0,004	0,005	**	0,002
trend*(55-64)	0,011	***	0,002	0,004		0,007	0,025	***	0,003	-0,006	*	0,003	0,005	*	0,003
Macro															
trend	0,001		0,002	0,000		0,007	-0,006		0,004	0,006		0,004	0,005	**	0,002
cycle	0,005	***	0,001	0,002		0,002	0,007	***	0,001	0,001	**	0,001	0,004	***	0,001
Observations	818168			50464			328750			129536			309418		
Log likelihood	-473009,5			-27444,5			-186695,4			-67324,4			-185333,1		
pseudo - R2	0,128			0,117			0,122			0,084			0,132		
Country dummies	yes			-			yes			yes			yes		

Table 11. Description of macro policy and institutional indicators

Final Variable	Original Varable	Description	Source
Institutions	Employment Protection Legislation	Synthetic index of employment protection which refers both to regulations concerning hiring (e.g. rules favouring disadvantaged groups, conditions for using temporary or fixed-term contracts, training requirements) and firing (e.g. redundancy procedures, mandated prenotification periods and severance payments, special requirements for collective dismissals and short-time work schemes).	OECD, various years
	Passive Labour Market Policies	Sum of national expenditures on active labour market policies (in percentage of national GDP), including: Out-of-work income maintenance and support, Early retirement.	OECD, various years
	Active Labour Market Policies	Sum of national expenditures on active labour market policies (in percentage of national GDP), including: Training, Job Rotation and Job Sharing, Employment incentives, Supported employment and rehabilitation, Direct job creation, Start-up incentives.	OECD, various years
Policies	Elderly Subsidies	Sum of national transfers to the elderly population (per head at constant prices (2000) and constant PPPs (2000), in US dollars), weighted by the percentage of old-age population (over 70 years old) within the country. This set of policies includes: Old age cash and in kind benefits, Residential care or Home-help services.	OECD, various years
	Family Susidies	Sum of national expenditures on allowances and other type of monthly transfers to the households (per family at constant prices (2000) and constant PPPs(2000), in US dollars). We consider a weighted sum of monthly family allowances for the first, second, and third child in national currency, with weights equal to the average number of children a woman would have if she lived to the end of her childbearing years (conventionally considered to be 15-44 but sometimes 15-49) and bore children at the prevailing rate for each age during that period. Value of tax and benefit transfers of one-earner-two-parent two-child families are considered. The value was calculated by subtracting the disposable income (after taxes and transfers) of a one-earner-two-parent-two-child family from that of a comparable childless single earner.	Anne H. Gauthier, 2011
	Paternal Leave	Synthetic indicator of national expenditures on maternity, parental, and child care leave schemes. It is a weighted sum of the total number of weeks of maternity, parental and child-care leave, with weights equal to the cash benefits paid during the leave as a percent of female wages in manufacturing.	Anne H. Gauthier, 2011

Table 12. Principal Component Analysis: rotated factor loadings

Variable	Factor1	Factor2	Uniqueness
Elderly Subsidies	0.2570		0.9339
Parental Leave	0.8251		0.3192
Family Subsidies	0.8399		0.2946
Employment Protection Legislation		-0.1499	0.9775
Passive Labour Market Policies		0.9119	0.1684
Active Labour Market Policies		0.9215	0.1509

Table 13: Two-Level probit regression: activity rate by age groups

Active	**ALL**			**25-34**			**34-45**			**44-55**		
	Coef		Std. Err	Coef		Std. Err	Coef		Std. Err	Coef		Std. Err
ISCED35	0,131	***	0,001	0,082	***	0,003	0,136	***	0,002	0,143	***	0,002
ISCED57	0,213	***	0,002	0,154	***	0,003	0,219	***	0,003	0,235	***	0,003
incouple	-0,045	***	0,002	-0,033	***	0,003	-0,069	***	0,003	-0,069	***	0,004
separated	0,059	***	0,004	0,070	***	0,008	0,034	***	0,006	0,038	***	0,007
divorced	0,044	***	0,003	0,071	***	0,006	0,010	***	0,004	0,007		0,004
widowed	-0,056	***	0,004	-0,038	**	0,018	-0,069	***	0,008	-0,079	***	0,006
children	-0,030	***	0,001	-0,064	***	0,002	-0,028	***	0,001	-0,017	***	0,001
child06	-0,118	***	0,001	-0,137	***	0,002	-0,104	***	0,002	-0,078	***	0,006
old70	-0,020	***	0,003	-0,011	*	0,007	-0,019	***	0,005	-0,027	***	0,005
pISCED03	-0,038	***	0,002	0,008	**	0,003	-0,046	***	0,003	-0,047	***	0,004
pISCED35	0,004	*	0,002	0,053	***	0,003	-0,013	***	0,003	-0,012	***	0,004
pISCED57	-0,008	***	0,002	0,042	***	0,003	-0,028	***	0,003	-0,025	***	0,004
cycle	0,001	**	0,000	-0,001		0,001	0,001		0,001	0,002	***	0,001
trend	-0,002		0,000	-0,009		0,000	-0,003		0,000	0,005		0,000
democratic	0,037		0,123	0,263		0,179	0,058		0,126	-0,129		0,092
continental	-0,041		0,115	0,251		0,169	-0,008		0,118	-0,264		0,085
southern	-0,056		0,119	0,267		0,174	0,005		0,122	-0,303		0,086
inst	-0,006		0,014	-0,061	*	0,037	0,008		0,015	0,024		0,015
pol	0,003		0,024	-0,009		0,045	0,013		0,026	0,006		0,020
inst*child06	0,015	***	0,001	0,040	***	0,002	0,002		0,002	0,008		0,006
pol*child06	0,000		0,001	0,006	***	0,002	0,003		0,002	0,008		0,006
inst*old70	-0,020	***	0,003	-0,013	**	0,006	-0,019	***	0,005	-0,023	***	0,005
pol*old70	-0,008	**	0,003	-0,008		0,007	0,004		0,006	-0,026	***	0,005
age35-44	0,020	***	0,020									
age45-54	-0,030	***	-0,030									
VPC_overall	0,056			0,199			0,063			0,042		
VPC_level 2	0,426			0,675			0,439			0,439		

Table 14: Two-Level probit regression: employment rate by age groups

Employment	**ALL**			**25-34**			**34-45**			**44-55**		
	Coef		Std. Err	Coef		Std. Err	Coef		Std. Err	Coef		Std. Err
ISCED35	0,152	***	0,002	0,120	***	0,003	0,159	***	0,003	0,157	***	61,500
ISCED57	0,256	***	0,002	0,213	***	0,003	0,264	***	0,003	0,272	***	93,690
incouple	-0,031	***	0,002	-0,016	***	0,003	-0,051	***	0,003	-0,050	***	-11,290
separated	0,049	***	0,004	0,044	***	0,009	0,023	***	0,007	0,028	***	3,730
divorced	0,030	***	0,003	0,037	***	0,007	-0,004		0,004	-0,003		-0,600
widowed	-0,023	***	0,004	-0,010		0,019	-0,053	***	0,008	-0,051	***	-8,430
children	-0,027	***	0,001	-0,058	***	0,002	-0,028	***	0,001	-0,013	***	-12,380
child06	-0,122	***	0,002	-0,144	***	0,003	-0,110	***	0,002	-0,088	***	-14,220
old70	-0,019	***	0,003	-0,017	**	0,007	-0,017	***	0,005	-0,026	***	-5,360
pISCED03	-0,002		0,002	0,053	***	0,004	-0,020	***	0,004	-0,030	***	-7,390
pISCED35	0,043	***	0,002	0,095	***	0,003	0,019	***	0,004	0,012	***	2,970
pISCED57	0,034	***	0,002	0,089	***	0,004	0,010	***	0,004	0,001		0,150
cycle	-0,028	*	0,016	-0,080	**	0,041	-0,019		0,014	0,008		0,510
trend	-0,001		0,028	-0,009		0,051	0,011		0,030	0,002		0,150
democratic	0,001	***	0,000	0,001		0,001	0,001		0,001	0,002	***	3,470
continental	0,050		0,147	0,255		0,213	0,127		0,152	-0,267		-2,690
southern	-0,039		0,139	0,236		0,200	0,080		0,143	-0,426		-4,490
inst	-0,063		0,143	0,186		0,206	0,065		0,147	-0,450		-4,620
pol	-0,002		0,000	-0,009		0,001	-0,003		0,000	0,006		12,320
inst*child06	0,005	***	0,001	0,016	***	0,002	0,000		0,002	0,004		0,530
pol*child06	0,001		0,001	-0,002		0,002	0,001		0,002	0,005		0,690
inst*old70	-0,014	***	0,003	0,009		0,007	-0,009	*	0,006	-0,027	***	-5,430
pol*old70	-0,001		0,004	0,016	**	0,008	0,013	**	0,006	-0,027	***	-4,900
age35-44	0,042	***	0,002									
age45-54	0,005	***	0,002									
VPC_overall	0,062			0,201			0,067			0,029		
VPC_level 2	0,472			0,653			0,457			0,393		

Table 15: Two-Level probit regression: activity rate by education groups

Active	ISCED_03			ISCED_35			ISCED_57		
variable	Coef		Std. Err	Coef		Std. Err	Coef		Std. Err
incouple	-0,078	***	0,004	-0,047	***	0,003	-0,038	***	0,002
separated	0,0565	***	0,007	0,0612	***	0,007	0,0186	***	0,007
divorced	0,0337	***	0,005	0,0446	***	0,004	0,0128	***	0,004
widowed	-0,085	***	0,007	-0,053	***	0,007	-0,034	***	0,008
children	-0,033	***	0,001	-0,03	***	0,001	-0,014	***	0,001
child06	-0,132	***	0,003	-0,121	***	0,002	-0,106	***	0,002
old70	-0,044	***	0,006	-0,019	***	0,006	-0,021	***	0,006
pISCED03	-0,05	***	0,004	-0,007	**	0,003	0,0013		0,004
pISCED35	-0,023	***	0,004	0,0101	***	0,003	0,0261	***	0,003
pISCED57	-0,031	***	0,006	-0,019	***	0,003	0,0137	***	0,003
age35-44	-0,028	***	0,003	0,0305	***	0,002	0,0411	***	0,002
age45-54	-0,11	***	0,003	-0,007	***	0,003	0,0242	***	0,002
inst	0,004		0,028	-0,017		0,013	-0,047	***	0,014
pol	-0,018		0,041	-0,005		0,024	-0,009		0,020
cycle	0,0018	**	0,001	0,0018	***	0,001	0,0012	**	0,001
democratic	0,0906		0,142	0,1633		0,142	0,1938		0,117
continental	-0,082		0,132	0,0537		0,135	0,1605		0,111
southern	-0,034		0,136	0,0244		0,138	0,1323		0,114
trend	-7E-04		0,001	-0,002		0,000	-0,004		0,000
inst*child06	0,0123	***	0,003	0,0138	***	0,002	0,0247	***	0,002
pol*child06	0,0013		0,002	0,0042	**	0,002	0,0107	***	0,002
inst*old70	-0,042	***	0,006	-0,023	***	0,006	-0,001		0,006
pol*old70	-0,021	***	0,006	-0,004		0,006	0,0016		0,006
VPC_overall	0,121			0,048			0,058		
VPC_level 2	0,572			0,419			0,453		

Table 16: Two-Level probit regression: employment rate by education groups

Active	ISCED_03			ISCED_35			ISCED_57		
variable	Coef		Std. Err	Coef		Std. Err	Coef		Std. Err
incouple	-0,043	***	0,004	-0,035	***	0,003	-0,032	***	0,003
separated	0,048	***	0,008	0,052	***	0,008	0,032	***	0,008
divorced	0,023	***	0,006	0,030	***	0,004	0,009	**	0,004
widowed	-0,027	***	0,007	-0,030	***	0,008	-0,015	*	0,009
children	-0,031	***	0,001	-0,028	***	0,001	-0,011	***	0,001
child06	-0,139	***	0,003	-0,129	***	0,003	-0,108	***	0,002
old70	-0,022	***	0,007	-0,021	***	0,006	-0,037	***	0,006
pISCED03	-0,013	***	0,004	0,023	***	0,004	0,022	***	0,004
pISCED35	0,027	***	0,005	0,049	***	0,003	0,055	***	0,003
pISCED57	0,022	***	0,006	0,027	***	0,004	0,048	***	0,003
age35-44	0,003		0,003	0,046	***	0,003	0,062	***	0,002
age45-54	-0,056	***	0,003	0,015	***	0,003	0,051	***	0,003
inst	-0,018		0,028	-0,044	**	0,018	-0,063	***	0,015
pol	-0,037		0,041	-0,005		0,030	-0,002		0,027
cycle	0,003	***	0,001	0,002	***	0,001	0,001	**	0,001
democratic	0,078		0,139	0,128		0,172	0,236		0,134
continental	-0,121		0,129	0,004		0,165	0,141		0,128
southern	-0,102		0,133	-0,076		0,169	0,095		0,132
trend	0,000		0,001	-0,001		0,000	-0,003		0,000
inst*child06	-0,009	**	0,004	0,001		0,003	0,017	***	0,003
pol*child06	0,002		0,003	0,007	***	0,002	0,011	***	0,002
inst*old70	-0,030	***	0,006	-0,009		0,007	0,002		0,007
pol*old70	-0,011	*	0,006	0,012	*	0,007	0,007		0,006
VPC_overall	0,114			0,067			0,073		
VPC_level 2	0,593			0,489			0,525		