

Bachmann, Ronald et al.

Research Report

Study on various aspects of labour market performance using micro data from the European Union Labour Force Survey

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Projektbericht

Rheinisch-Westfälisches Institut für Wirtschaftsforschung
Institut für Sozialforschung und Gesellschaftspolitik

Study on various aspects of labour market performance using micro data from the European Union Labour Force Survey

Contract No. VC/2009/0123
Final Report – October 2010

Research Project for the European Commission –
DG Employment, social affairs and equal opportunities



Imprint

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Report

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Executive Summary

This report provides an empirical overview of various aspects of labour market performance using micro data from the European Union Labour Force Survey (EU-LFS). In particular, our analysis is centred around the following six tasks, dealing with different aspects of European labour markets:

- Task 1: Labour market participation, full-time/part-time employment, and number of hours worked;
- Task 2: Duration of unemployment and the job search methods of the unemployed;
- Task 3: Labour market transitions;
- Task 4: Temporary employment;
- Task 5: Education and training;
- Task 6: Intra-EU mobility and migration.

For each of these aspects, we proceed in two analytical steps. The first step consists in the presentation of the descriptive evidence computed from the EU-LFS data base. For the variables under investigation, we thus present averages for the dataset as a whole, as well as for different worker groups (e.g. according to age or education), countries, and years. A particular emphasis is placed on the computation and presentation of pivot tables and Markov transition matrices (for labour market transitions). In a second step, we perform an econometric analysis. Here, different econometric tools are used in order to establish the statistical relationship between the variables of interest. The explanatory variables are made up of two distinct sets. The first set of variables consists of individual characteristics, such as age, gender and education, and household characteristics (e.g. the composition of the household) – a particular strength of the EU-LFS data set. In this case, the analysis takes place completely at the level of the individual worker. The second set of variables relates to indicators at the macro level with respect to either economic conditions (e.g. the growth rate of GDP, the level of unemployment), or to the institutional framework (e.g. the importance of firing costs, expenditure on active labour market policy measures, etc.). These indicators are related to the time-invariant, country-specific effects uncovered in the aforementioned econometric analysis. In order to take into account differences between countries, we also conduct our econometric analyses separately for different country groups. In the following, we summarize our most important results for each task.

In **Task 1**, labour market participation, hours worked, and the type of employment (full-time, part-time) are analysed. The evidence presented in this report shows quite large differences in labour supply between the Member States. While some countries experience low participation rates and on average a high number of hours worked, other countries experience higher participation rates and a wide-spread distribution of hours worked. In general, the extensive margin (i.e. participation) is more important in most New Member States, while it is the intensive margin in the former EU 15.

Besides these differences between the countries, differences between demographic groups emerge. The largest differences can be observed between men and women. Since most of all part-time employed are women, differences in the amount of hours worked are mostly driven by the share of part-time employment of women. Furthermore, women are less likely to work at all than men are. Therefore, there may be a potential to increase overall labour

supply by changes in female labour supply. The observed differences between countries are similar (or even more pronounced) for women. To increase labour supply, different policies are necessary in different countries: those to increase participation and those to increase the number of hours worked.

The number of hours worked can depend on the amount of hours worked and income gained of the partner. Our results indicate that there is a positive relationship between the hours worked of the spouse/partner for women without children. The number of small children goes together with lower labour supply of women in both dimensions: participation and working time. Furthermore, there is no association between the number of hours worked of the partner on women with children. Personal characteristics and household composition are more important. However, men with children adapt to some extent to the labour supply of their partner which can be due to income reasons on the one hand and share of child care on the other hand.

Additionally to these differences by gender, differences between age groups and skill groups can be observed. For all countries and both genders, individuals with a low skill level supply less labour than skilled and high skilled individuals. Furthermore, the participation rate of old workers is lower than that of medium aged workers. Therefore, there may also be options to further increase male labour supply.

The examination of the determinants of long-term unemployment in Europe is the topic of **Task 2**. Our results can be summarized as follows. More highly educated persons, younger persons, and individuals with favourable household characteristics are more likely to have shorter unemployment spells as opposed to older persons and lower educated ones. On the other hand, some household characteristics go together with longer unemployment duration. This is especially true for the number of elderly persons living in the household. If this is due to the difficulties of providing care for the elderly, a policy implication could be to improve access to care facilities or to implement labour market institutions which allow individuals to combine care provision and paid work, such as the possibility of part-time employment or tax breaks for workers who have to pay for care provision. Lowering unemployment should be the main focus of all labour market policies, as this would reduce long-term unemployment in the first place. Higher education is strongly correlated with shorter unemployment duration. Training and education programs therefore seem to be good ways to improve the chances of re-employment and to stifle long-term unemployment, with the additional benefit that higher education is generally associated with a much lower unemployment probability.

Task 2 is also concerned with the search behavior of the unemployed. In particular, we examine both, overall search intensity and the use of specific search methods. It is important to note that due to the data structure we cannot draw any conclusions about the effectiveness of different search strategies. Hence, the results do not allow us to give recommendations for an optimal search behaviour, either. However, assuming that individuals base their search choices on a cost-benefit rationale, we are still able to infer factors determining the relative costs and benefits of search strategies as perceived by job-seeking individuals. The main findings are the following. First, those individuals that, arguably, have better chances to find a job, i.e., that are more highly skilled and still fairly young, search more intensively and in particular, make more use of search methods other than contacting the public employment office. Second, long-term unemployed individuals search less intensively than medium-term unemployed, which again applies predominantly to methods such as direct applications or contacting a private employment agency. Third, household characteristics are important pre-

dictors of search intensity. In general, individuals living in households with more children and more elderly persons search less intensively. Moreover, having a non-working spouse in the household is also associated with less search efforts and with a stronger reliance on the public employment office. Fourth, holding all other characteristics constant, unemployed women search less intensively than men and, in particular, show a more negative correlation with the aforementioned household characteristics.

Looking at search methods, the fifth finding is that, in general, it stands out that the use of the public employment office is at best independent of, if not negatively related to, the other search methods. To a large extent this is likely to be driven by selection mechanisms. The public employment office seems to be approached predominantly in cases where alternative search channels are not available or unlikely to yield a positive outcome. Sixth, most of the correlations summarized in the previous lines are quite stable across country groups. However, some cross-country differences can be observed with respect to the role of unemployment duration and household characteristics. In particular, the latter is a more important predictor in the Mediterranean countries and a less important predictor in Continental Europe. Although the estimated correlations with the explanatory variables are quite stable, the level of search intensity, and the use of different search methods do differ considerably between countries.

In **Task 3**, we analyse transitions between different labour market states, as well as direct job-to-job transitions, in the EU member states. The descriptive evidence displayed confirms the well-known fact that worker characteristics play an important role in this context: Young workers, having accumulated little (specific) human capital, are more mobile than older workers; women are more likely to transit to and from “inactivity” than men, presumably because they often assume more family responsibilities; higher skills go together with a lower risk of becoming unemployed or inactive, and a higher probability to find a job.

The main findings of the econometric analysis are as follows. First, the presence of small children in the household goes together with increased transitions from employment to unemployment and inactivity, as well as with reduced job finding rates of the unemployed and increased transitions from unemployment to inactivity. This implies that the presence of small children in the household is generally associated with worse labour market prospects. Therefore, extending and improving child care facilities in the EU is likely to have beneficial labour market effects. Second, the labour market status of the spouse is a good predictor of individual labour market success. For example, having an unemployed spouse is associated with reduced job finding probabilities of the unemployed, while having an employed spouse goes together with increased employment security. However, it is not straightforward to give this result a causal interpretation as two effects may be at work: On the one hand, the labour market status of the spouse may exert a causal impact on the labour market transitions of an individual. This may happen because the incentives of an individual, for example to remain employed if the spouse is unemployed, are affected; or it could be the case that the employed spouse of an individual worker can provide information about labour market opportunities, which increases this individual’s labour market prospects. On the other hand, however, the regression results may pick up selection effects (“assortative mating”), i.e. individuals with a high probability of being employed may tend to marry each other. In this case, there would also be a strong link between the employment probability of an individual and the presence of having an employed spouse. Third, we find that women face worse labour mar-

ket prospects in terms of labour market transitions than men in the Mediterranean countries, while the opposite seems to be the case in the UK.

Our econometric exercise also yields estimates of country specificities with respect to labour market transitions. Using these country-specific indicators, we are thus able to identify “flexicurity-type” economies which feature low job stability and high levels of job-to-job transitions, but also relatively high employment security (not necessarily in the same job) and high job-finding rates of the unemployed. These countries include Denmark, Finland and the UK, but also the Baltic States and Spain. At the other side of the spectrum, with high job security but low exit rates from unemployment, we find for example Germany, Greece, and Italy.

Task 4 investigates the features of temporary employment in the European Union and its combination with part-time employment. Temporary employment has become more important during the observation period from 1998 to 2008. However, there are different time trends that can be observed in the Member States. Differences in the legal framework of the Member States are reflected in the amount of temporary employment, the duration of the contracts and the share of prolonged fixed-term contracts. Except for Poland and Slovenia, Member States from Central and Eastern Europe (CEE) are less affected by temporary employment than EU15 countries. In those countries, men are more likely to be temporarily employed than women. Spain, Poland and Portugal stand out from the other countries by their very high share of temporary employment. In the countries with high shares of temporary employment, women are more affected.

Besides differences between the countries, being young is the most decisive characteristic of temporarily employed workers. In all countries, young workers are the most affected by fixed-term contracts. However, the share of involuntary temporary workers is higher for middle aged workers. Overall, most temporarily employed workers state that they are in temporary employment because they did not find a permanent job. This finding suggests that temporary employment is judged as negative by employees. This can be an indication that there are no compensations, e.g. higher wages, for the reduced job security which goes together with a temporary contract.

In order to analyse whether temporary employment provides a stepping-stone function, we conduct a cohort-based analysis of young workers, and examine which labour market state temporarily employed workers were in during the preceding year. We find some evidence that there is a stepping stone function of temporary employment, which even seems to be increasing over time.

Besides temporary employment, other types of non-standard work arrangements such as part-time employment have become more important in the last decades. We therefore examine the combination of part-time employment and temporary employment. Both types of employment are more common in the EU-15 than in the New Member States. However, part-time employment is mainly voluntary while temporary employment is mainly involuntary. However, it can be seen that the risk of temporary employment is higher for part-time employed than for full-time employed workers. Therefore, workers who choose to work part-time may somehow be penalized by reduced employment security.

Task 5 investigates (i) take-up rates of formal as well as non-formal education and training and (ii) the intensity and level of learning activities as well as the probabilities of choosing different fields for the most recent learning activity using LFS-data for 2003-2008. With respect to the participation decision in formal education and non-formal training our empirical

results indicate pronounced country differences even after controlling for individual, household and job-related characteristics. Their quantitative magnitude is considerably smaller than without controlling for the differences in the structure of the working population across countries, but still non-negligible. We also find that the observable country differences in overall training activities are predominantly driven by non-formal training.

A rather clear-cut profile is observable for the level of completed education with significantly lower participation rates for lower levels of human capital endowments. This relationship is, however, completely driven by participation in non-formal training. Furthermore, we also find a u-shaped relationship with respect to time since completion of education for overall and formal training participation. This indicates that participation rates decrease directly after completion of education but tend to increase again a couple of years later. Moreover, non-married workers exhibit higher participation propensities than married employees, especially in formal education. By contrast, increasing household size and especially young children in the household are negatively associated with participation for all forms of training.

The estimation results for the level of training among workers who participate in formal education suggest that men choose significantly higher levels than women, whereas the youngest cohort and all older cohorts than individuals in their early 30s systematically exhibit lower level choices. Quite unsurprisingly, we also observe a straightforward profile for the level of completed education, which indicates that higher levels of human capital endowment are associated with the choice of higher levels for further training. The estimated occupation-profile is by and large the same as for participation, i.e. workers with jobs demanding relatively high skills are more often observed among participants of formal training courses at the highest possible level. Finally, part-time workers are more often found in courses at highest level than full-time working individuals.

The three most frequently chosen fields of non-formal training activities with participation rates of around 17-19% for the total population are “education and languages”, “sciences, engineering, computers, and agriculture” and “social sciences, business and law, with, for example, “education and languages” being dominated by females, while the opposite holds for “sciences, engineering, computers, and agriculture”. By contrast, participation rates in courses devoted to “social sciences, business and law” are equally distributed across gender.

In **Task 6**, the issues of international migration to and between Member States, within a single Member State as well as cross-border commuting is investigated. Unfortunately, the data situation with respect to short-term migrations flows is not sufficient to serve as a valid base for empirical applications. The data situation regarding stocks of migrants is better. Although data coverage for nationality and country of birth of individuals is anything but perfect and exhibits many completely missing country-year pairs, the variation across country and over time for each single indicator displays plausible results which are consistent with aggregate information on the country-level. The most credible indicator of international migration in the EU-LFS seems to be the information on years of residence. This variable reflects the complete set of country-specific migration policy, migration history, citizenship law as well as minority policies. However, even this variable exhibits one important shortcoming: it is right-censored at eleven years of residence. That is, for empirical applications it is not possible to distinguish individuals with eleven years of residence from those of, say, 25 years. For this reason it seems desirable and advisable to provide the years of residence variable uncen-

sored, if technically possible. For internal migration and cross-border commuting, the data situation is considerably more satisfying.

In general, our estimation results suggest that the country-specific indicators are extremely robust towards the inclusion of additional information. Hence, international as well as internal migration activities are to a very large extent determined by factors peculiar to the specific countries, which can by and large not be attributed to observable individual or country characteristics. We also find that the average foreigner in our sample is rather young, displays either a low or a very high level of education, is more often married than natives and has more young children. He/she exhibits no significant differences regarding employment probabilities, but displays a significantly higher unemployment propensity than natives.

With respect to years of residence, we observe that very recent and recent migrants are significantly younger than past immigrants (i.e. those with 11+ years of residence) and also better educated. However, despite these rather favourable characteristics of (very) recent immigrants, the employment probabilities among past migrants are significantly higher. Furthermore, the latter are more often found in high-skill occupations and less often hold a fixed-term contract than individuals who entered the country rather recently. These results are certainly no surprise given the findings of the existing literature which extensively documents that immigrants experience a disadvantage in labour prospects directly upon arrival due to the incomplete transferability of human capital acquired in the country of origin. With an increasing duration of residence which is typically accompanied by investments in destination country-specific human capital this initial disadvantage tends to be diminished.

Finally, the phenomenon of cross-border commuting, i.e. working in another country than the country of residence, is significantly more prevalent among males than females. Furthermore, cross-border commuters are, on average, mainly to be found in the prime age group (25-49 years of age). Individuals with the highest completed level of education exhibit significantly higher probabilities to work abroad than all other education groups.

Résumé

Ce rapport aborde divers aspects de l'évolution du marché du travail, en s'appuyant sur des microdonnées tirées de l'Enquête de l'Union Européenne sur les Forces de travail (EU-LFS). L'analyse s'intéresse particulièrement à six domaines du marché européen du travail, examinés de façon empirique :

- 1^{er} domaine : participation au marché du travail, activité à temps plein / à temps partiel et nombre d'heures travaillées ;
- 2^e domaine : durée du chômage et méthodes de recherche d'emploi de la population sans emploi ;
- 3^e domaine : transferts sur le marché du travail ;
- 4^e domaine : travail à durée déterminée ;
- 5^e domaine : formation et qualification ;
- 6^e domaine : mobilité et migration au sein de l'Union Européenne.

Pour chacun de ces aspects, nous appliquons un procédé d'analyse en deux étapes. Dans un premier temps, des statistiques descriptives sont présentées. Pour les variables à expliquer, des valeurs moyennes sont calculées aussi bien pour l'ensemble des données que pour différents groupes d'actifs (par ex. en fonction de l'âge ou de la formation), de pays et d'années. Nous nous appuyons notamment sur l'analyse de tableaux croisés dynamiques et de matrices de Markov de transfert (pour les transferts sur le marché du travail). Dans un second temps, nous effectuons une analyse économétrique à l'aide de diverses techniques visant à déterminer les rapports statistiques entre les variables en question. En principe, il existe deux sortes de variables explicatives. Premièrement, nous nous servons de caractéristiques individuelles, telles que l'âge, le sexe et la formation ou encore des indicateurs du foyer, dont la disponibilité représente un véritable point fort des données de l'EU-LFS. Dans ce cas, l'analyse se fait exclusivement au niveau de l'individu actif. Deuxièmement, nous utilisons des macro-indicateurs, se rapportant à des conditions économiques générales (par ex. les taux de croissance du PIB, le niveau de chômage) ou à des conditions institutionnelles générales (par ex. la signification des coûts de licenciement, les efforts financiers mis en œuvre dans le cadre de la politique active du marché du travail, etc.). Nous nous appuyons sur ces indicateurs pour expliquer des effets invariants dans le temps et spécifiques à certains pays, déterminés lors de l'analyse au niveau de l'individu actif. Afin de prendre en compte les différences entre les pays, l'analyse économétrique est effectuée également séparément pour divers groupes de pays. Voici ci-dessous un résumé des principaux résultats obtenus pour chaque domaine.

Dans le **1^{er} domaine** sont analysés la participation au marché du travail, les heures travaillées et le type d'activité (temps plein, temps partiel). Les résultats indiquent de nettes différences dans l'offre de main-d'œuvre entre les états membres. Tandis que certains pays affichent de faibles taux de participation et un nombre élevé d'heures travaillées, d'autres pays ont des taux de participation élevés et une très large répartition des heures travaillées. En principe, l'offre de travail extensive (participation au marché du travail) joue un rôle plus important dans les nouveaux états membres, tandis que l'offre de travail intensive (heures travaillées) est déterminante pour l'ensemble de l'offre de main-d'œuvre dans l'ancienne Europe des 15.

Par ailleurs, il existe des différences entre les groupes démographiques. On citera en premier lieu les différences entre hommes et femmes. D'une part, les femmes travaillent en moyenne moins d'heures. Ceci s'explique par le taux élevé de travail à temps partiel chez les femmes. D'autre part, les femmes travaillent plus rarement que les hommes. Pour cette raison, la hausse de l'offre de travail des femmes couvre un potentiel non utilisé. Les différences de base entre les pays concernant l'offre de travail extensive et intensive sont au moins aussi marquées pour les femmes que pour les hommes. Pour augmenter l'offre de travail, des mesures différentes selon les pays seront donc appropriées – soit en terme de participation, soit en terme d'heures de travail.

Le nombre d'heures travaillées peut dépendre de l'offre d'emploi choisie et du revenu du partenaire. Pour les femmes sans enfant, il existe un rapport positif entre leurs heures travaillées et celles du partenaire. Les femmes ayant des enfants en bas âge présentent une plus faible probabilité de participation et travaillent en moyenne moins d'heures. En outre, pour les femmes ayant des enfants, il n'existe aucun rapport entre le nombre d'heures travaillées et celles effectuées par le partenaire. Simultanément, les hommes avec des enfants s'adaptent jusqu'à une certaine mesure à l'offre d'emploi de leur partenaire, ce qui s'explique d'un côté par leur revenu et de l'autre par leur participation à l'éducation des enfants.

Par ailleurs, on observe des différences entre les groupes d'âges et de formation. Quels que soient le pays et le sexe, on constate que les individus ayant un niveau de formation moins élevé travaillent moins que ceux ayant étudié plus longtemps. En outre, le taux d'activité de la population active plus âgée est plus faible que celui des actifs d'âge moyen. C'est pourquoi il peut exister également des possibilités d'accroître l'offre de travail des hommes.

Le **domaine 2** examine les déterminants du chômage de longue durée en Europe. Les personnes ayant un niveau de formation élevé, les jeunes et les individus dont les caractéristiques du foyer sont favorables, sont en moyenne moins longtemps au chômage. Certains indicateurs du foyer vont de pair avec un chômage de longue durée, notamment le nombre de personnes âgées dans le foyer. Dans la mesure où ce rapport est dû aux difficultés d'accompagnement des personnes âgées, les mesures politiques améliorant l'accès aux prestations de soins ou les institutions du marché du travail permettant de combiner les soins et une activité professionnelle, sont judicieuses. On citera par exemple le travail à temps partiel ou des réductions d'impôts pour les salariés payant pour la prise en charge de personnes âgées. La politique économique devrait mettre l'accent sur la réduction du chômage, ce qui diminuerait simultanément le chômage de longue durée. Le niveau de formation élevé est fortement lié à une courte durée de chômage. Les programmes de formation et d'éducation semblent donc constituer des possibilités idéales pour améliorer les chances de retour à l'emploi et réduire le chômage de longue durée. En outre on constate que la formation de haut niveau est associée à une probabilité nettement moindre de connaître le chômage.

Le domaine 2 s'intéresse également au comportement adopté par les chômeurs dans leur recherche d'emploi, notamment à l'intensité de la recherche et au recours à des méthodes spécifiques de recherche. Malheureusement, la structure des données ne permet pas de tirer de conclusion quant à l'efficacité des différentes stratégies de recherche. C'est pourquoi il n'est pas possible d'émettre des recommandations, sur la base des résultats, concernant le comportement optimal de recherche. Néanmoins, en supposant que les individus effectuent leur recherche selon le principe du rapport coût-avantages, il demeure possible de faire res-

sortir des facteurs déterminant les coûts relatifs et les avantages des stratégies de recherche du point de vue du demandeur d'emploi. Premièrement, les personnes ayant de plus grandes chances de réussite, c'est-à-dire les jeunes actifs ayant un niveau de formation plus élevé, effectuent des recherches plus intensives et utilisent notamment d'autres méthodes de recherche que de contacter l'Agence pour l'emploi. Deuxièmement, les chômeurs de longue durée effectuent des recherches moins intensives par rapport aux autres demandeurs d'emploi. Cela concerne en premier lieu des méthodes telles que les candidatures spontanées ou la prise de contact avec des agences de travail privées. Troisièmement, les caractéristiques du foyer constituent des indicateurs importants de l'intensité de la recherche. Les individus dont les foyers comptent plusieurs enfants et plusieurs personnes âgées recherchent de manière moins intensive. Ce lien est vrai également dans le cas d'un partenaire sans emploi. En outre, les demandeurs d'emploi dans cette situation comptent particulièrement sur l'Agence pour l'emploi. Quatrièmement, les femmes sans emploi effectuent des recherches moins intensives que les hommes. Par ailleurs, le lien avec les caractéristiques du foyer mentionnées ci-dessus est particulièrement marqué pour les femmes.

Cinquièmement, le recours à l'Agence pour l'emploi est, au mieux, indépendant des autres méthodes de recherche, lorsqu'il n'entre pas même en conflit avec les autres méthodes. Ce résultat est vraisemblablement lié à un mécanisme de sélection. Il semblerait que l'Agence pour l'emploi soit utilisée principalement lorsqu'il n'y a pas d'autres possibilités de recherche à disposition ou uniquement avec une faible probabilité d'obtenir un résultat positif. Sixièmement, la plupart des rapports observés se répètent dans tous les groupes de pays. À une exception près : on constate des différences dans le rapport entre les caractéristiques du foyer et la durée du chômage. En principe, ce lien semble avoir une plus forte influence dans les pays méditerranéens qu'en Europe continentale. Bien que les relations évaluées avec les variables explicatives varient peu, le niveau d'intensité des recherches et le recours à diverses méthodes de recherche diffèrent fortement d'un pays à un autre.

Dans le **domaine 3** sont analysés les passages entre différents états sur le marché de l'emploi, ainsi que les transferts directs d'un emploi à un autre. L'évidence descriptive confirme la signification connue des caractéristiques des actifs dans ce contexte : les jeunes salariés avec peu d'expérience professionnelle sont plus mobiles que les salariés plus âgés ; les femmes passent plus souvent que les hommes en « inactivité » ou, inversement, en activité, probablement parce qu'elles prennent souvent davantage de responsabilités familiales ; un haut niveau de qualification va de pair avec un plus faible risque de se trouver au chômage ou inactif et accroît la probabilité de trouver un emploi.

Les principaux résultats de l'analyse économétrique sont les suivants: premièrement, la présence d'enfants en bas âge dans un foyer est liée à un plus grand nombre de passages entre l'activité et le chômage ou l'inactivité, ainsi qu'à une plus faible probabilité pour les demandeurs d'emploi de trouver du travail, et à un nombre plus élevé de passages du chômage à l'inactivité. Par conséquent, il est probable que l'extension et l'amélioration des institutions d'accueil des enfants dans l'Union Européenne présente des avantages pour le marché du travail. Deuxièmement, l'état du partenaire sur le marché de l'emploi permet fortement de prédire les chances de réussite individuelles sur le marché du travail. Ainsi, il existe un rapport négatif entre un partenaire sans emploi et la probabilité pour un demandeur d'emploi de trouver un travail, en revanche, un partenaire qui travaille va de pair avec une plus grande assurance de travailler. Il demeure néanmoins très difficile de savoir si ce rapport peut être interprété de manière causale ou non. D'une part, l'état du partenaire sur le

marché du travail peut exercer une influence directe sur les passages d'un individu sur le marché du travail. Un partenaire sans travail peut par exemple modifier la motivation à trouver une activité de longue durée. Simultanément, un partenaire en activité peut accroître, par des informations et des contacts, les chances d'un individu sur le marché du travail. D'un autre côté, les résultats de régression peuvent toutefois refléter uniquement des effets de sélection (« assortative mating »). Dans ce cas, le rapport entre l'état du partenaire sur le marché du travail et la réussite de l'individu dans sa recherche d'emploi ne peut être interprétée de manière causale, mais être exclusivement favorisé par le fait que les individus ayant des chances identiques sur le marché du travail se marient. Finalement, les résultats indiquent que les femmes ont de moins bonnes perspectives sur le marché du travail que les hommes dans les pays méditerranéens, ce qui semble être le contraire en Angleterre.

L'analyse économétrique permet également de constater des particularités propres à certains pays. L'utilisation d'indicateurs propres à certains pays permet d'identifier des économies nationales tendant vers la « flexicurité ». Ce terme désigne une faible stabilité des emplois, avec de nombreux transferts et une sécurité relativement élevée de l'activité (pas nécessairement dans le même emploi), ainsi qu'une haute probabilité de retour à l'emploi. Ces pays sont le Danemark, la Finlande et l'Angleterre, les pays baltes et l'Espagne. À l'opposé, on trouve par exemple l'Allemagne, la Grèce et l'Italie, avec une haute sécurité des emplois, mais de faibles taux de retour à l'emploi en période de chômage.

Le **domaine 4** examine le travail à durée déterminée et le rapport avec le travail à temps partiel. Les emplois à durée déterminée ont pris de plus en plus d'ampleur pendant la période observée de 1998 à 2008, cependant ils ont évolué différemment dans les états membres. Les différences dans la législation se reflètent dans le taux d'emplois à durée déterminée, la durée des contrats et la part des contrats à durée déterminée renouvelée. À l'exception de la Pologne et de la Slovaquie, les états membres d'Europe Centrale et de l'Est (ECE) sont moins touchés par le travail à durée déterminée que les pays de l'Europe des 15. Dans ces pays, les hommes sont davantage susceptibles d'obtenir un contrat à durée déterminée que les femmes. L'Espagne, la Pologne et le Portugal se distinguent nettement des autres pays, par leur taux très élevé d'emplois à durée déterminée. Dans les pays ayant une part élevée de contrats de travail à durée déterminée, les femmes sont davantage touchées.

Sur le plan individuel, le facteur déterminant pour un emploi à durée déterminée est l'âge. Dans tous les pays, les jeunes actifs sont le plus souvent concernés par les contrats de travail à durée déterminée. Néanmoins, la part de salariés employés à durée déterminée contre leur gré est plus importante chez les actifs d'âge moyen. D'une manière générale, la plupart des actifs employés pour une durée déterminée déclarent qu'ils n'ont pas réussi à trouver un emploi à durée indéterminée. Ce résultat suggère que les salariés voient de manière négative le travail à durée déterminée. Ceci pourrait s'expliquer par le fait que la précarité de l'emploi liée au travail à durée déterminée n'est pas accompagnée de compensations, comme par ex. des salaires plus élevés.

Pour analyser si le travail à durée déterminée peut jouer un rôle de tremplin, nous réalisons une analyse par cohorte pour les jeunes salariés et vérifions l'état qu'avaient les salariés à durée déterminée sur le marché du travail au cours de l'année précédente. Nous trouvons des preuves indiquant que l'emploi à durée déterminée joue un rôle de tremplin, et ce phénomène a pris de plus en plus d'ampleur avec le temps.

Outre le travail à durée déterminée, le travail à temps partiel a également augmenté au cours des dernières décennies. C'est pourquoi nous examinons les cas de travail à temps partiel combiné à une activité à durée déterminée. Les deux formes d'activité sont plus courantes dans l'Europe des 15 que dans les nouveaux états membres. Contrairement au travail à durée déterminée, le travail à temps partiel est le plus souvent exercé volontairement. Il demeure toutefois clair que le risque d'obtenir un contrat à durée déterminée est plus élevé chez les salariés à temps partiel que chez ceux à temps plein. Ainsi, les personnes ayant choisi un emploi à temps partiel peuvent être défavorisées en raison de la plus grande insécurité de garder son emploi.

Dans le **domaine 5**, nous examinons, pour la période 2003-2008 (i) les taux de participants aux formations formelles et informelles et (ii) l'intensité et le niveau des formations, ainsi que les probabilités du choix de différents domaines pour l'activité de formation. En ce qui concerne la décision de participation à des formations formelles et informelles, les résultats empiriques démontrent des différences très marquées d'un pays à l'autre, même après avoir contrôlé les caractéristiques individuelles, professionnelles et du foyer. Les effets quantitatifs sont nettement moindres lorsque l'on contrôle les différences entre les pays en terme de structure de la population active, sans toutefois être négligeables. En outre, les différences observées entre les pays en matière de mesures générales mises en oeuvre pour la formation s'expliquent principalement par la formation informelle.

On obtient une image représentative assez claire concernant le niveau de la formation suivie, cependant on observe des taux de participation considérablement plus faibles pour des effectifs de capital humain inférieurs. Ce rapport est néanmoins confirmé exclusivement par la formation informelle. En outre, il existe un rapport en U concernant le temps écoulé depuis la dernière formation suivie et la participation à de nouvelles formations. Cela signifie qu'immédiatement après une formation, le taux de participation diminue, pour augmenter de nouveau quelques années plus tard. Par ailleurs, les salariés non mariés ont davantage tendance à participer à des formations que les salariés mariés, notamment en ce qui concerne la formation formelle. Lorsque la taille du foyer augmente et notamment lorsque le foyer compte des enfants en bas âge, le rapport entretenu avec la participation à toute forme de formation est négatif.

En ce qui concerne le niveau de formation visé, les hommes choisissent dans les formations formelles un niveau nettement plus élevé que les femmes. En revanche, les plus jeunes cohortes et toutes les cohortes plus âgées choisissent un niveau plus faible que les individus en début de trentaine. On distingue par ailleurs, sans surprise, un profil clair concernant le niveau de formation atteint, selon lequel le niveau des effectifs de capital humain entretient un rapport positif avec le choix de niveaux de formation plus élevés. Le profil professionnel suivi est grosso modo identique à celui de la participation, ainsi par ex. les salariés ayant des activités exigeantes participent plus souvent à des formations formelles au niveau le plus élevé possible. Les salariés à temps partiel participent plus souvent que les salariés à temps plein à des formations de niveau aussi élevé que possible.

Les trois domaines choisis le plus souvent en formation informelle, avec des taux de participation de 17 à 19 %, sont « Formation et langues », « Sciences, technique, informatique et agriculture » et « Sciences sociales, économie d'entreprise et droit ». Le domaine « Formation et langues » est davantage prisé par les femmes, tandis que les hommes préfèrent « Sciences, technique, informatique et agriculture ». En revanche, les taux de participation

au domaine « Sciences sociales, économie d'entreprise et droit » sont pratiquement identiques pour les hommes et les femmes.

Dans le **domaine 6**, sont examinées les questions de la migration internationale à l'intérieur et entre les états membres, ainsi que les flux de banlieusards au sein d'un seul état membre et ceux des frontaliers. Malheureusement, les données disponibles sont insuffisantes concernant les flux de migration à court terme, pour réaliser des recherches empiriques valides. Il est donc préférable de s'appuyer sur les données concernant le nombre existant de migrants. Bien que la disponibilité des données concernant la nationalité et le pays d'origine des individus présente des imperfections, surtout au sujet des pays et des années, l'évolution de l'ensemble du pays et dans le temps, pour chacun des indicateurs, indique des résultats plausibles et cohérents avec les informations au niveau des pays. Parmi les données de l'EU-LFS, celles concernant les années de séjour constituent l'indicateur le plus fiable pour la migration internationale. Cette variable reflète, pour chaque pays, à la fois la politique de migration, l'histoire de la migration, le droit de naturalisation, ainsi que la politique menée vis-à-vis des minorités. Malheureusement, cette variable est soumise à une censure pour 11 années de séjour. C'est pourquoi il est impossible de différencier, à des fins de recherches empiriques, les individus séjournant 11 ans dans un pays de ceux y vivant par ex. 25 ans. Pour cette raison, il est souhaitable et conseillé de tenir à disposition sans restriction les variables concernant le nombre exact d'années de séjour, dans la mesure où cela est possible d'un point de vue technique. En ce qui concerne les migrations intérieures et les flux des frontaliers, les données disponibles sont largement plus satisfaisantes.

D'une manière générale, les résultats indiquent que les indicateurs spécifiques aux pays sont très stables par rapport à d'autres informations. Par conséquent, les migrations internationales et les migrations intérieures sont largement déterminées par des facteurs propres aux pays et que l'on ne peut pas observer. En outre, le migrant moyen est, selon les données, encore très jeune, il est doté soit d'un niveau de formation très bas, soit très haut, il est plus souvent marié que les autochtones et a plus souvent des enfants en bas âge. Il/elle bénéficie généralement de la même probabilité d'activité, mais a de plus grandes chances de se retrouver sans emploi que les autochtones.

En ce qui concerne les années de séjour, on peut démontrer que les migrants arrivés récemment sont considérablement plus jeunes et mieux formés. Malgré ces caractéristiques favorables des (tout) derniers migrants, la probabilité de trouver un emploi est considérablement plus élevée chez les migrants plus anciens. Par ailleurs, les plus anciens migrants occupent plus souvent des emplois de qualification plus élevée et moins souvent dans le cadre de contrats à durée déterminée. Ces résultats confirment la documentation écrite disponible, selon laquelle les migrants ont, immédiatement après leur arrivée, de moins bonnes chances sur le marché du travail. Ceci s'explique par le fait qu'un transfert complet du capital humain acquis dans le pays d'origine, est impossible. Lorsque la durée du séjour augmente, s'accompagnant normalement d'investissements du pays d'accueil dans le capital humain spécifique au pays, le désavantage initial semble s'estomper.

Les personnes traversant une frontière pour se rendre sur leur lieu de travail sont le plus souvent des hommes âgés de 25 à 49 ans. Par ailleurs, les individus dont le niveau de formation est très élevé présentent une probabilité de travailler à l'étranger considérablement plus grande que dans les autres groupes de formation.

Zusammenfassung

Dieser Bericht beschäftigt sich mit verschiedenen Aspekten der Arbeitsmarktentwicklung unter Verwendung von Mikrodaten aus der Arbeitskräfteerhebung der Europäischen Union (EU-LFS). Die Analyse konzentriert sich auf sechs Themengebiete des europäischen Arbeitsmarkts, die empirisch untersucht werden:

1. Aufgabenfeld: Beteiligung am Arbeitsmarkt, Vollzeit- /Teilzeitbeschäftigung und Anzahl der Arbeitsstunden;
2. Aufgabenfeld: Dauer der Arbeitslosigkeit und Methoden der Arbeitssuche der Erwerbslosen;
3. Aufgabenfeld: Übergänge auf dem Arbeitsmarkt;
4. Aufgabenfeld : befristete Beschäftigung;
5. Aufgabenfeld : Bildung und Qualifizierung;
6. Aufgabenfeld : Mobilität und Migration innerhalb der EU.

Für jeden dieser Aspekte wenden wir ein zweistufiges Analyseverfahren an. In einem ersten Schritt werden deskriptive Statistiken vorgestellt. Für die zu erklärenden Variablen werden sowohl Durchschnittswerte für den gesamten Datensatz, als auch für verschiedene Gruppen von Arbeitnehmern (z.B. in Bezug auf Alter oder Ausbildung), Ländern und Jahren berechnet. Ein Schwerpunkt liegt dabei in der Analyse von Pivot-Tabellen und Markov-Übergangsmatrizen (für Arbeitsmarktübergänge). Im zweiten Schritt führen wir eine ökonomische Analyse durch, wobei verschiedene Techniken benutzt werden, um den statistischen Zusammenhang zwischen den relevanten Variablen zu bestimmen. Grundsätzlich existieren zwei Arten von erklärenden Variablen. Erstens, werden individuelle Charakteristika, wie Alter, Geschlecht und Ausbildung sowie Haushaltsindikatoren verwendet, deren Verfügbarkeit eine besondere Stärke des EU-LFS Datensatzes darstellt. In diesem Fall findet die Analyse ausschließlich auf der Ebene des einzelnen Arbeitnehmers statt. Zweitens, werden Makroindikatoren verwendet, die sich auf die ökonomischen Rahmenbedingungen (z.B. der Wachstumsrate des BIP, der Höhe der Arbeitslosigkeit) oder die institutionellen Rahmenbedingungen (z.B. die Bedeutung von Kündigungskosten, Ausgaben für Maßnahmen der aktiven Arbeitsmarktpolitik etc.) beziehen. Diese Indikatoren werden zur Erklärung von zeitinvarianten, länderspezifischen Effekten herangezogen, welche in der Analyse auf Ebene des einzelnen Arbeitnehmers bestimmt werden. Um Unterschiede zwischen den verschiedenen Ländern zu berücksichtigen, wird die ökonomische Analyse auch getrennt für verschiedene Ländergruppen durchgeführt. Im Folgenden werden die wichtigsten Ergebnisse für jedes Aufgabenfeld zusammengefasst.

Im **1. Aufgabenfeld** werden die Beteiligung am Arbeitsmarkt, die Arbeitsstunden und die Art der Beschäftigung (Vollzeit, Teilzeit) analysiert. Die Ergebnisse zeigen deutliche Unterschiede im Arbeitskräfteangebot zwischen den Mitgliedsstaaten. Während einige Länder geringe Partizipationsquoten und eine hohe Anzahl von Arbeitsstunden aufweisen, haben andere Länder hohe Partizipationsquoten und eine sehr breite Verteilung der Arbeitsstunden. Grundsätzlich spielt das extensive Arbeitsangebot (Arbeitsmarktpartizipation) in den neuen Mitgliedsländern eine wichtigere Rolle, während das intensive Arbeitsangebot (Arbeitsstunden) in der ehemaligen EU-15 bestimmend für das gesamte Arbeitskräfteangebot ist.

Des Weiteren bestehen Unterschiede zwischen demographischen Gruppen. Hier sind in erster Linie Unterschiede zwischen Frauen und Männern zu nennen. Einerseits arbeiten Frauen durchschnittlich weniger Stunden. Dies ist auf die hohe Teilzeitquote bei Frauen zurückzuführen. Andererseits arbeiten Frauen seltener als Männer. Aus diesem Grund birgt die Erhöhung des Arbeitsangebots von Frauen ungenutztes Potenzial. Die grundsätzlichen Unterschiede zwischen Ländern bezüglich des extensiven und intensiven Arbeitsangebots sind für Frauen mindestens genauso ausgeprägt wie für Männer. Um das Arbeitsangebot zu steigern erscheinen deswegen je nach Land unterschiedliche Maßnahmen sinnvoll, entweder bezüglich der Partizipation oder bezüglich der Arbeitsstunden.

Die Anzahl der Arbeitsstunden kann von dem gewählten Arbeitsangebot und Einkommen des Partners abhängen. Für Frauen ohne Kinder besteht ein positiver Zusammenhang zwischen ihren geleisteten Stunden und denen des Partners. Frauen mit kleineren Kindern zeigen eine geringere Partizipationswahrscheinlichkeit und arbeiten durchschnittlich weniger Stunden. Weiterhin besteht für Frauen mit Kindern kein Zusammenhang zwischen ihrer Anzahl der Arbeitsstunden und der des Partners. Gleichzeitig passen sich Männer mit Kindern bis zu einem gewissen Umfang dem Arbeitsangebot ihres Partners an, was sich einerseits auf ihr Einkommen andererseits auf ihre Beteiligung an der Kinderbetreuung zurückführen lässt.

Des Weiteren können Unterschiede zwischen Alters- und Bildungsgruppen beobachtet werden. Für alle Länder und beide Geschlechter gilt, dass Individuen mit geringer Bildung weniger arbeiten als Individuen mit hoher Bildung. Zudem ist die Erwerbsquote von älteren Arbeitnehmern geringer als die von Arbeitnehmern im mittleren Alter. Daher gibt es potenziell auch Möglichkeiten, das Arbeitsangebot von Männern zu erhöhen.

Die Untersuchung der Determinanten von Langzeitarbeitslosigkeit in Europa ist der Schwerpunkt des **Aufgabenfeldes 2**. Personen mit höherer Bildung, junge Personen und Individuen mit günstigen Haushaltscharakteristika sind im Durchschnitt kürzer arbeitslos. Einige Haushaltsindikatoren gehen mit längerer Arbeitslosigkeit einher, insbesondere die Anzahl der älteren Personen im Haushalt. Insofern dieser Zusammenhang durch Betreuungseingänge von älteren Personen entsteht, sind politische Maßnahmen, die den Zugang zu Pflegeleistungen verbessern oder Arbeitsmarktinstitutionen, welche die Kombination von Pflege und Erwerbstätigkeit erlauben, sinnvoll. Hier sind beispielsweise Teilzeitarbeit oder Steuervergünstigungen für Arbeitnehmer, die für Pflegemaßnahmen bezahlen, zu nennen. Ein Abbau der Arbeitslosigkeit sollte ein Schwerpunkt der Wirtschaftspolitik sein, da so gleichzeitig die Langzeitarbeitslosigkeit reduziert wird. Ein höheres Bildungsniveau korreliert stark mit einer kurzen Arbeitslosigkeitsdauer. Ausbildungs- und Schulungsprogramme scheinen daher gute Möglichkeiten zu sein, Wiedereinstellungschancen zu verbessern und Langzeitarbeitslosigkeit zu reduzieren. Zusätzlich gilt, dass ein höheres Bildungsniveau grundsätzlich mit einer deutlich geringeren Wahrscheinlichkeit der Arbeitslosigkeit assoziiert ist.

Das Aufgabenfeld 2 beschäftigt sich zudem mit dem Suchverhalten Arbeitsloser, insbesondere der Suchintensität und der Verwendung spezifischer Suchmethoden. Leider lassen sich aufgrund der Datenstruktur keine Rückschlüsse auf die Effektivität der verschiedenen Suchstrategien ziehen. Deshalb ist es nicht möglich auf Basis der Ergebnisse Empfehlungen hinsichtlich eines optimalen Suchverhaltens auszusprechen. Allerdings ist es unter der Annahme, dass Individuen ihre Suche nach dem Kosten-Nutzen-Prinzip gestalten, dennoch möglich, Faktoren abzuleiten, die die relativen Kosten und den Nutzen der Suchstrategien aus der Sicht von arbeitssuchenden Individuen bestimmen. Erstens, Personen mit größeren Er-

folgschancen, also z.B. junge Arbeitnehmer mit einem höheren Bildungsabschluss, suchen intensiver und machen insbesondere von anderen Suchmethoden Gebrauch, als das Arbeitsamt zu kontaktieren. Zweitens, Langzeitarbeitslose suchen weniger intensiv im Vergleich zu anderen Arbeitslosen. Dies betrifft in erster Linie Methoden wie direkte Bewerbungen oder das Kontaktieren einer privaten Arbeitsagentur. Drittens, Haushaltseigenschaften sind wichtige Indikatoren für die Suchintensität. Individuen, die in Haushalten mit mehreren Kindern und mehreren älteren Personen leben, suchen weniger intensiv. Diese Korrelation besteht ebenfalls für einen erwerbslosen Partner. Zusätzlich verlassen sich arbeitslose Personen in dieser Situation besonders stark auf das Arbeitsamt. Viertens, arbeitslose Frauen suchen weniger intensiv als Männer. Zudem ist die Korrelation mit den oben genannten Haushaltscharakteristiken für Frauen besonders stark ausgeprägt.

Fünftens, die Inanspruchnahme des Arbeitsamtes ist bestenfalls unabhängig von den anderen Suchmethoden, wenn sie nicht sogar im negativen Zusammenhang mit diesen steht. Dieses Ergebnis ist vermutlich durch einen Selektionsmechanismus bedingt. Das Arbeitsamt scheint vorwiegend in Anspruch genommen zu werden, wenn alternative Suchmöglichkeiten nicht zur Verfügung stehen oder nur mit geringer Wahrscheinlichkeit zu einem positiven Resultat führen. Sechstens, die meisten der beobachteten Korrelationen sind über die Ländergruppen hinweg stabil. Eine Ausnahme besteht in der unterschiedlichen Bedeutung der Haushaltseigenschaften für die Dauer der Arbeitslosigkeit. Grundsätzlich scheinen diese in den Mittelmeerländern einen stärkeren Einfluss zu haben als in Kontinentaleuropa. Obwohl die geschätzten Korrelationen mit den erklärenden Variablen recht stabil sind, unterscheiden sich die Höhe der Suchintensität und der Gebrauch verschiedener Suchmethoden erheblich zwischen den Ländern.

Im **Aufgabenfeld 3** werden Übergänge zwischen verschiedenen Arbeitsmarktzuständen sowie direkte Job-zu-Job Übergänge analysiert. Die deskriptive Evidenz bestätigt die bekannte Bedeutung von Arbeitnehmercharakteristika in diesem Kontext: Junge Arbeitnehmer mit wenig Berufserfahrung sind mobiler als ältere Arbeitnehmer; Frauen wechseln häufiger aus der und in die „Inaktivität“ als Männer, vermutlich weil sie oft mehr familiäre Verantwortung übernehmen; höhere Qualifikationen gehen einher mit einem geringeren Risiko, arbeitslos oder inaktiv zu werden und einer höheren Wahrscheinlichkeit, einen Job zu finden.

Die wichtigsten Ergebnisse der ökonometrischen Analyse lauten wie folgt: Erstens korreliert die Anwesenheit von kleinen Kindern in einem Haushalt mit einer höheren Anzahl von Übergängen aus der Beschäftigung in die Arbeitslosigkeit oder Inaktivität sowie mit einer geringeren Wahrscheinlichkeit der Arbeitslosen einen Job zu finden und einer höheren Anzahl von Übergängen aus der Arbeitslosigkeit in die Inaktivität. Folglich haben ausgeweitete und verbesserte Kinderbetreuungseinrichtungen in der EU voraussichtlich vorteilhafte Arbeitmarkteffekte. Zweitens hat der Arbeitsmarktstatus des Partners eine hohe Vorhersagekraft für den individuellen Arbeitmarkterfolg. So besteht ein negativer Zusammenhang zwischen einem erwerbslosen Partner und der Wahrscheinlichkeit, dass ein Arbeitsloser einen Job findet, wohingegen ein erwerbstätiger Partner mit erhöhter Beschäftigungssicherheit einhergeht. Es ist jedoch völlig unklar, ob dieser Zusammenhang kausal interpretierbar ist. Einerseits kann der Arbeitsmarktstatus des Partners einen direkten Einfluss auf die Arbeitsmarktübergänge eines Individuums ausüben. Ein erwerbsloser Partner kann beispielsweise den Anreiz einer andauernden Beschäftigung verändern. Gleichzeitig kann ein erwerbstätiger Partner durch Informationen und Kontakte die individuellen Arbeitsmarktchancen erhöhen. Andererseits können die Regressionsergebnisse jedoch lediglich Selektionseffekte widerspiegeln

(“assortative mating”). In diesem Fall kann der Zusammenhang zwischen dem Arbeitsmarktstatus des Partners und dem individuellen Arbeitsmarkterfolg nicht kausal interpretiert werden, sondern wird ausschließlich durch die Tatsache getrieben, dass Individuen mit vergleichbaren Arbeitsmarktchancen einander heiraten. Drittens zeigen die Ergebnisse, dass Frauen in Mittelmeerländern schlechtere Arbeitsmarktperspektiven haben als Männer, wobei das Gegenteil auf England zuzutreffen scheint.

Aus der ökonometrischen Analyse resultieren auch Erkenntnisse über Länderbesonderheiten. Durch die Verwendung von länderspezifischen Indikatoren können Volkswirtschaften mit einer „Flexicurity“-Ausrichtung identifiziert werden. „Flexicurity“ ist definiert als das gemeinsame Auftreten von geringer Job-Stabilität sowie vielen Übergängen und einer relativ hohen Beschäftigungssicherheit (nicht notwendigerweise im gleichen Job) sowie einer hohen Wiederbeschäftigungswahrscheinlichkeit. Hierzu zählen Dänemark, Finnland und England, die baltischen Staaten und Spanien. Auf der anderen Seite des Spektrums befinden sich beispielsweise Deutschland, Griechenland und Italien mit hoher Arbeitsplatzsicherheit aber geringen Austrittsraten aus der Arbeitslosigkeit.

Im **Aufgabenfeld 4** wird die befristete Beschäftigung sowie der Zusammenhang mit Teilzeitbeschäftigung untersucht. Befristete Beschäftigungsverhältnisse haben während des Beobachtungszeitraums von 1998 bis 2008 immer mehr an Bedeutung gewonnen, wobei es in den Mitgliedsstaaten verschiedene Entwicklungen gibt. Unterschiede in den gesetzlichen Rahmenbedingungen spiegeln sich in der Höhe der befristeten Beschäftigung, der Vertragsdauer und des Anteils der erneuerten befristeten Arbeitsverträge wieder. Mit Ausnahme von Polen und Slowenien sind die Mitgliedsstaaten aus Mittel- und Osteuropa (CEE) weniger von befristeter Beschäftigung betroffen als die EU-15 Länder. In diesen Ländern haben Männer eine höhere Wahrscheinlichkeit einen befristeten Arbeitsvertrag zu erhalten als Frauen. Spanien, Polen und Portugal heben sich durch ihren sehr hohen Anteil an befristeter Beschäftigung von den anderen Ländern ab. In den Ländern mit einem hohen Anteil von befristeter Beschäftigung sind Frauen häufiger betroffen.

Auf individueller Ebene ist der entscheidende Bestimmungsfaktor für eine befristete Beschäftigung das Alter. In allen Ländern sind junge Arbeitnehmer am häufigsten von befristeten Arbeitsverträgen betroffen. Der Anteil von Arbeitnehmern, die unfreiwillig befristet beschäftigt sind, ist jedoch für Arbeitnehmer mittleren Alters größer. Allgemein wird von den meisten befristet Beschäftigten angegeben, dass sie keine dauerhafte Beschäftigung finden konnten. Dieses Ergebnis legt nahe, dass befristete Beschäftigung von Arbeitnehmern negativ bewertet wird. Dies könnte ein Hinweis dafür sein, dass keine Kompensationen, wie z.B. höhere Löhne, mit der geringen Arbeitsplatzsicherheit befristeter Beschäftigung einhergehen.

Um zu analysieren, ob befristete Beschäftigung eine Sprungbrettfunktion einnimmt, führen wir eine Kohorten-basierte Analyse für junge Arbeitnehmer durch und prüfen, welchen Arbeitsmarktstatus die befristet Beschäftigten während des vergangenen Jahres hatten. Wir finden Evidenz dafür, dass befristete Beschäftigung eine Sprungbrettfunktion einnimmt, die mit der Zeit an Bedeutung gewonnen hat.

Neben der befristeten Beschäftigung ist Teilzeitbeschäftigung in den letzten Jahrzehnten immer wichtiger geworden. Deswegen untersuchen wir die Kombination aus Teilzeitbeschäftigung und befristeter Beschäftigung. Beide Beschäftigungsformen sind in der EU-15 üblicher als in den neuen Mitgliedsstaaten. Im Gegensatz zur befristeten Beschäftigung wird Teilzeitbeschäftigung meistens freiwillig ausgeübt. Es wird jedoch deutlich, dass das Risiko von Be-

fristung für Teilzeitbeschäftigte höher ist als für Vollzeitbeschäftigte. Somit sind Personen, die eine Teilzeitbeschäftigung gewählt haben, aufgrund der geringeren Arbeitsplatzsicherheit möglicherweise benachteiligt.

In **Aufgabenfeld 5** untersuchen wir für den Zeitraum 2003-2008 (i) Teilnahmeraten an formeller sowie informeller Aus- und Weiterbildung und (ii) die Intensität und das Niveau der Bildungsmaßnahmen sowie die Wahrscheinlichkeiten der Auswahl verschiedener Gebiete für Bildungsaktivität. Hinsichtlich der Beteiligungsentscheidung an formeller Ausbildung und informeller Weiterbildung zeigen die empirischen Ergebnisse ausgeprägte Länderunterschiede, auch nachdem für individuelle, berufsbezogene und Haushaltscharakteristika kontrolliert wurde. Die quantitativen Effekte sind deutlich geringer, wenn für Unterschiede hinsichtlich der Struktur der Erwerbstätigen zwischen den Ländern kontrolliert wird, aber trotzdem nicht vernachlässigbar. Zudem sind die beobachteten Länderunterschiede bezüglich allgemeiner Weiterbildungsmaßnahmen hauptsächlich auf die informelle Weiterbildung zurückzuführen.

Ein relativ klares Bild ergibt sich für das Niveau der abgeschlossenen Ausbildung, wobei signifikant niedrigere Teilnahmequoten bei einer niedrigeren Humankapitalausstattung zu beobachten sind. Dieses Verhältnis wird jedoch ausschließlich durch informelle Weiterbildung bestimmt. Des Weiteren existiert ein U-förmiger Zusammenhang hinsichtlich der Zeit seit dem letzten Ausbildungsabschluss und der Teilnahme an Weiterbildungsmaßnahmen. Dies bedeutet, dass sich die Teilnahmequote direkt nach dem Abschluss der Ausbildung verringert, einige Jahre später aber wieder ansteigt. Darüber hinaus weisen nicht verheiratete Arbeitnehmer eine höhere Neigung zur Teilnahme auf als verheiratete Arbeitnehmer, vor allem bezüglich formeller Ausbildung. Eine zunehmende Haushaltgröße und besonders kleine Kinder im Haushalt stehen hingegen in negativem Zusammenhang mit einer Teilnahme an jeglicher Form der Ausbildung.

Hinsichtlich des angestrebten Ausbildungsniveaus bei formeller Ausbildung wählen Männer ein signifikant höheres Niveau als Frauen. Im Gegensatz dazu wählt die jüngste Kohorte und alle älteren Kohorten ein niedrigeres Niveau als die Individuen Anfang 30. Wir stellen außerdem wenig überraschend ein eindeutiges Profil für das Niveau der abgeschlossenen Ausbildung fest, nämlich dass das Niveau der Humankapitalausstattung mit der Wahl von höheren Weiterbildungsniveaus in einem positiven Zusammenhang steht. Das geschätzte Berufsprofil ist im Großen und Ganzen identisch mit dem der Teilnahme, so sind z.B. Arbeitnehmer mit anspruchsvollen Tätigkeiten häufiger Teilnehmer an formellen Weiterbildungskursen auf dem höchstmöglichen Niveau. Teilzeitbeschäftigte nehmen öfter an Weiterbildungsmaßnahmen auf dem höchstmöglichen Niveau teil als Vollzeitbeschäftigte.

Die drei am häufigsten ausgewählten Gebiete informeller Weiterbildungsmaßnahmen mit Teilnahmequoten von 17-19% sind "Bildung und Sprachen", "Wissenschaft, Technik, Computer und Landwirtschaft" und "Sozialwissenschaft, Betriebswirtschaft und Recht". Hierbei wird das Feld "Bildung und Sprachen" von Frauen bevorzugt, während "Wissenschaft, Technik, Computer und Landwirtschaft" von Männern präferiert wird. Hingegen sind die Teilnahmequoten in dem Gebiet "Sozialwissenschaft, Betriebswirtschaft und Recht" von Frauen und Männern nahezu gleich.

Im **Aufgabenfeld 6** werden die Themen der internationalen Migration innerhalb und zwischen den Mitgliedsstaaten sowie Pendlerströme innerhalb eines einzelner Mitgliederstaates und grenzüberschreitende Pendlerströme untersucht. Leider ist die Datenlage hinsichtlich kurzfristiger Migrationsströme nicht ausreichend, um valide empirische Untersuchungen

durchzuführen. Aus diesem Grund sind die Daten bezüglich der existierenden Anzahl von Migranten vorzuziehen. Obgleich die Datenverfügbarkeit für Nationalität und Geburtsland der Individuen nicht perfekt ist und einige Datenpaare bezüglich Ländern und Jahren nicht vorhanden sind, zeigt die Variation im Länderquerschnitt und über die Zeit für jeden einzelnen Indikator plausible Ergebnisse, die konsistent mit den Informationen auf Länderebene sind. Die Information bezüglich der Aufenthaltsjahre ist der zuverlässigste Indikator für internationale Migration im EU-LFS-Datensatz. Diese Variable spiegelt die Kombination der länderspezifischen Migrationspolitik, der Migrationsgeschichte, des Einbürgerungsrechtes sowie die Minderheitenpolitik wider. Leider ist diese Variable bei 11 Aufenthaltsjahren rechtszensiert. Daher ist es für empirische Untersuchungen nicht möglich, zwischen Individuen zu unterscheiden, die sich 11 Jahre oder z.B. 25 Jahre in einem Land aufhalten. Aus diesem Grund ist es wünschenswert und ratsam, die Variable für die exakte Anzahl von Jahren des Aufenthalts uneingeschränkt zur Verfügung zu stellen, soweit dies technisch möglich ist. Für Binnenwanderungen und grenzüberschreitende Pendlerbewegungen ist die Datenlage wesentlich zufriedenstellender.

Grundsätzlich zeigen die Ergebnisse, dass länderspezifische Indikatoren sehr stabil gegenüber weiteren Informationen sind. Folglich ist internationale Migration wie auch Binnenmigration zu einem großen Teil durch länderspezifische Faktoren determiniert, die nicht beobachtbar sind. Des Weiteren ist der durchschnittliche Ausländer im Datensatz noch recht jung, weist entweder ein niedriges oder ein sehr hohes Ausbildungsniveau auf, ist häufiger verheiratet als Einheimische und hat häufiger kleine Kinder. Er/Sie weist keinen signifikanten Unterschied bezüglich der Beschäftigungswahrscheinlichkeit, jedoch eine signifikant höhere Arbeitslosigkeitswahrscheinlichkeit als Einheimische auf.

Bezüglich der Aufenthaltsjahre kann gezeigt werden, dass kürzlich eingewanderte Migranten signifikant jünger und besser ausgebildet sind. Trotz dieser günstigen Eigenschaften von (sehr) neuen Einwanderern ist die Wahrscheinlichkeit eine Beschäftigung zu finden für die früheren Migranten signifikant höher. Weiterhin finden sich die früheren Migranten häufiger in Berufen mit hoher Qualifikation und weniger oft in befristeten Arbeitsverträgen. Diese Ergebnisse bestätigen die vorhandene Literatur, die ausführlich dokumentiert, dass Einwanderer direkt nach ihrer Ankunft schlechtere Arbeitsmarktchancen haben. Dies lässt sich darauf zurückführen, dass ein vollständiger Transfer des Humankapitals, das im Herkunftsland erworben wurde, nicht möglich ist. Mit zunehmender Aufenthaltsdauer, die normalerweise von Investitionen in landesspezifisches Humankapital des Ziellandes begleitet wird, scheint sich der anfängliche Nachteil zu verringern.

Personen, die über Ländergrenzen hinweg pendeln, sind zumeist männlich und in der Altersgruppe 25-49 Jahre zu finden. Zudem weisen Individuen mit dem höchsten Ausbildungsniveau eine signifikant höhere Wahrscheinlichkeit auf im Ausland zu arbeiten als alle anderen Bildungsgruppen.

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1. Introduction

With this study, we, the consortium of RWI (Rheinisch-Westfälisches Institut für Wirtschaftsforschung, Essen) and ISG (Institut für Sozialforschung und Gesellschaftspolitik, Köln), submit the Final Report of the „Study on Various Aspects of Labour Market performance using micro data from the European Union Labour Force Survey (EU-LFS)”. The study aims at fully exploiting the richness of the EU-LFS micro data to examine in detail the current situation and past developments of the labour markets in the EU. The following research topics are investigated in detail:

- Task 1: Labour market participation, full-time/part-time employment, and number of hours worked;
- Task 2: Duration of unemployment and the job search methods of the unemployed;
- Task 3: Labour market transitions;
- Task 4: Temporary employment;
- Task 5: Education and training;
- Task 6: Intra-EU mobility and migration.

In this endeavour, all EU Member States will be covered and a specific focus will lie on similarities and differences between Member States, as well as developments at the level of the European Union. The target population consists of individuals aged older than 15 years which will also be investigated at a sufficiently disaggregated level by taking the skill-, gender-, and age-dimension of the research topics into account.

The LFS data for the years 1998-2008 forms the basis of the empirical analysis, which explicitly considers the gender perspective throughout all working steps. In general, these steps proceed as follows.

In the introduction to each task, we discuss the importance of the topic under investigation, as well as the most important academic literature.

The first step of the technical analysis contains the descriptive evidence computed from the EU-LFS data base. For the variables under investigation, we thus present averages for the dataset as a whole, as well as for different worker groups (e.g. according to age or education), countries, and years. A particular emphasis is placed on the computation and presentation of pivot tables and Markov transition matrices (for labour market transitions). Where we present graphs in the document, the corresponding pivot tables are contained in the appendix.

For all the tasks, the econometric analysis is conducted in a second step. Here, different econometric tools are used in order to establish the statistical relationship between the variables of interest. The explanatory variables are made up of two distinct sets. The first set of variables consists of individual and household characteristics, a particular strength of the EU-LFS data base. In this case, the analysis takes place completely at the level of the individual worker. The second set of variables relates to indicators at the macro level with respect to either economic conditions (e.g. the growth rate of GDP, the level of unemployment), or to the institutional framework (e.g. the importance of firing costs, expenditure on active labour

market policy measures, etc.). However, it should be pointed out that the results using the second set of macro variables should be interpreted carefully. This is so because, despite the fact that we are using a large data set on individual workers, the analysis using the indicators at the macro level only captures cross-country variation and thus relies on a very restricted number of observations.

For each task, we summarize the most important results in the concluding section of every chapter.

Finally, the study includes a chapter on practical issues concerning the use of the EU-LFS data. In particular, we discuss issues of data quality (especially with respect to household variables), data access, and the coding of variables.

2. Task 1: Labour Market Participation, Full-time/Part-time Employment, and Number of Hours Worked

2.1 Background

The demographic challenge due to population ageing will exert downward pressure on labour supply in the European Union in the foreseeable future. Therefore, an increase in hours worked in the economy (along with productivity growth) seems paramount for the long-term sustainability of the European Union economy. In March 2010 the European Commission proposed a strategy, referred to as Europe 2020, spanning the next decade to revive economic growth by focusing on “smart, sustainable, and inclusive growth” (European Commission 2010). One core objective of Europe 2020 is to increase the employment rate of the population aged 20-64 years from currently 69 per cent to at least 75 per cent until 2020. Against this background, Task 1 of this report will indicate which major factors are likely to affect hours worked in the different EU Member States. Understanding differences and similarities of the potential determinants of labour supply within the European Union constitutes a crucial first step in order to spot opportunities to increase the labour supply in each individual country.

The terms labour supply and hours worked are used interchangeably in this chapter. This means that we are only able to analyze *realized* labour supply in the sense that total labour supply is defined as the average number of hours worked and the share of the working age population that is employed (employment rate). In contrast, *potential* labour supply might be defined as the number of average hours worked and the share of working age population willing to supply labour (participation rate). Unfortunately, potential labour supply is only a theoretical concept because we are unable to know how many hours an unemployed individual would work if he was employed. Therefore, we will focus our econometric analysis on the concept of realized labour supply and estimate the determinants of hours worked as well as the employment rate. Still, the participation rate is an important concept insofar as we are interested in how individuals can be activated and motivated to offer their labour. Because the focus is on labour supply and not unemployment, we are less interested in determining how unemployed individuals can be supported in re-entering employment. Thus, we will deal with the participation rate in the descriptive analysis and focus on the employment rate in the econometric section. In Chapter 4 of this report, we will deal more explicitly with transitions to and from unemployment.

Independently of the concept used, labour supply is determined by two factors: the participation of workers in the labour market (particularly relevant for women and for older workers), and the hours supplied by those working (cf. Heckman 1993). The participation rate of workers is referred to as the extensive margin (units of input), while the number of hours supplied of these workers is called the intensive margin (how intensive are the units of input used). Specific determinants of labour supply might influence both margins in a different manner. It is of crucial importance to address both concepts explicitly in order to avoid misspecification.

Section 2.2 gives a brief overview of the empirical strategy which is implemented to investigate labour supply. Descriptive results are presented in section 2.3. In section 2.4, we present the econometric results on the employment rate, part-time employment and hours worked. Finally, Section 2.5 summarizes the main findings.

2.2 Empirical Strategy

The choice of the dependent variables is motivated by the two-step decision of being employed and number of hours worked in cases of positive labour supply. More specifically, the analysis of the determinants of the employment rate focuses on the first step (extensive margin). The analysis of part-time employment can be interpreted as a first hint at which factors determine the number of hours worked given that an individual is employed (intensive margin). Finally, the third dependent variable, hours usually worked, includes inactive, unemployed (zero hours worked) as well as employed individuals (positive number of hours worked). Therefore the models used to analyse hours worked estimate the determinants of employment and number of hours worked simultaneously.

In order to explain differences in labour supply between the European Union Member States individual characteristics, information on household composition, as well as indicators for economic conditions and the institutional framework are used. First, individual characteristics include sex, age, and education. Large differences exist concerning the level and the development of labour supply of women and men. Since female supply is lower in basically all Member States, it is often proposed that measures aimed at increasing labour supply should be targeted at women (Antecol 2000). The following analysis will therefore always be carried out separately for men and women. The same line of argument is true for older workers (aged 55-64 years). As their employment rate is relatively low, this group of workers appears to offer untouched potential in order to increase labour supply (Genre, Salvador and Lamo 2005).

Second, the information on household composition includes the number of adults (aged 15-64), the number of small children (aged 0-4), the number of school children (aged 5-14), and the number of elderly (aged 65 and above) living in the household. Additionally, the European Labour Force Survey permits the identification of spouses in a household. Therefore, indicators on whether a spouse lives in the household and the spouse's labour market status are included. The influence on household composition on labour supply is especially interesting, because policy measures might be more easily implemented in this context compared to individual characteristics. For example, assuming that women with small children supply little labour, policies aiming increasing the availability of childcare facilities might be promising. At the same time, it is important to analyse which existing institutions (e.g. child benefits or maternal leave provisions) have a positive or negative influence on the labour supply of this specific group (Thévenon 2007).

Third, we control for country-specific economic conditions and institutional features. The personal characteristics and the information on household compositions are determinants of labour supply at the individual level. Generally, these factors should influence labour supply equally in all Member States. At the same time, obvious differences in e.g. female labour supply exist between countries. These differences are most likely the results of different institutions or the interaction of institutions with specific individual or household characteristics. Therefore, we examine the relationship between differences in labour supply and institutional settings of the different countries. Further, it is necessary to control for economic conditions as these can generally accelerate or depress labour supply. The controls for economic conditions include the growth rate of real GDP, the unemployment rate, the population growth rate, and the fertility rate. The institutional features will be controlled for by using indicators on taxes, income inequality, employment protection, mean retirement age, spending on pen-

sions, availability of child care facilities, spending on child benefits, income replacement at birth and parental leave expenditures.

Last, but not least, we distinguish between six different country groups. In contrast to the classification used in the other tasks, we split the group of Central and Eastern Europe (CEE) into two groups since we observe differences in the distribution of hours worked. Furthermore, we assign Ireland to Continental Europe. Therefore we end up with the following groups:

1. CEE I: Bulgaria, Estonia, Hungary, Lithuania, Latvia, Romania and Slovenia.
2. CEE II: Czech Republic, Poland, and Slovak Republic.
3. Continental Countries: Austria, Belgium, France, Germany, Ireland, Netherlands and Luxembourg.
4. Mediterranean Countries: Cyprus, Greece, Italy, Portugal and Spain.
5. Scandinavian Countries: Denmark, Finland and Sweden.¹
6. United Kingdom.

The descriptive analysis first provides an overview of participation rates, the share of part-time employment and hours worked in the different Member States and over time, as well as for several demographic groups according to several characteristics such as gender, age and education. Thus, the descriptive analysis is mainly concerned with potential labour supply and the true participation rate. This will shed some light on the question which worker groups already display relatively high participation rates, and which groups of workers could potentially increase their labour supply, given appropriate incentives.

2.3 Descriptive Overview

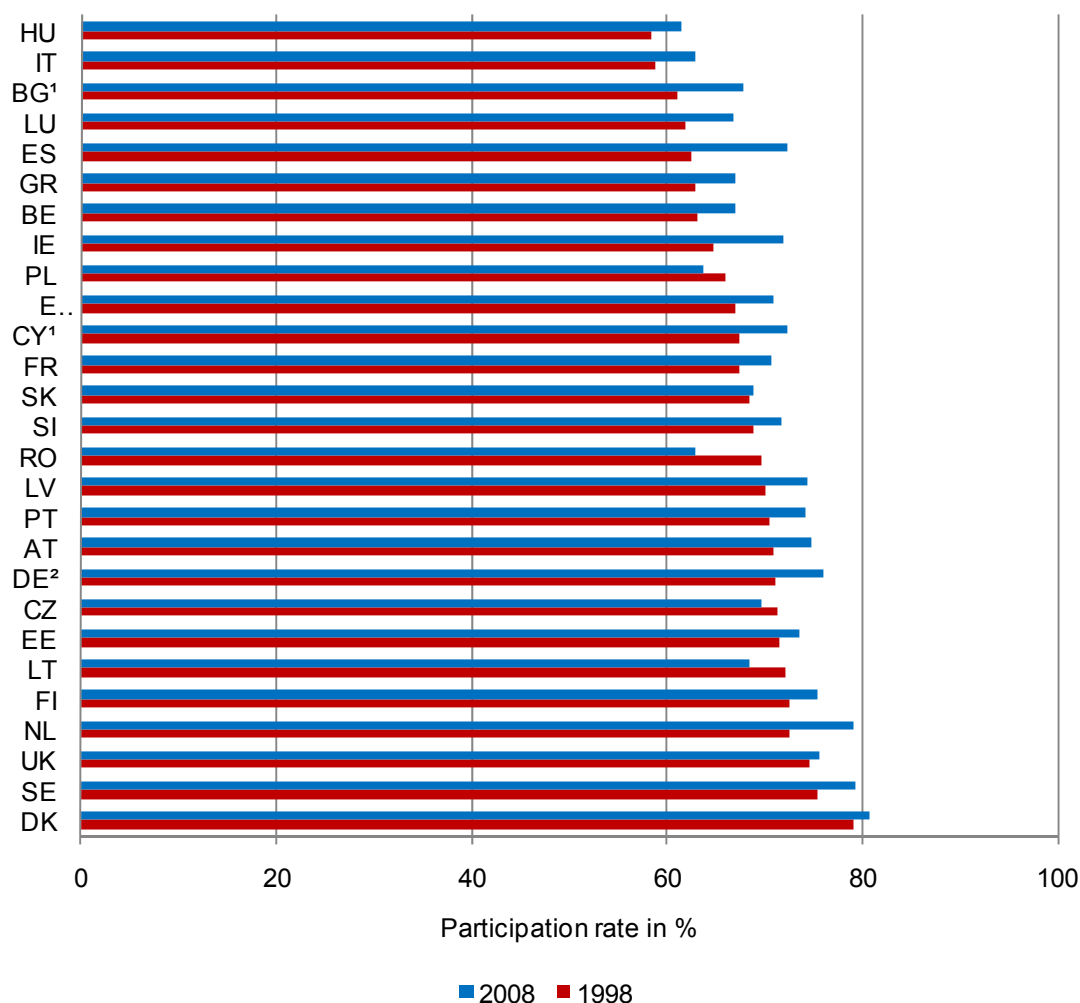
The participation rate in each of the countries observed in the EU-LFS rose from 67.1 per cent to 70.9 per cent between 1998 and 2008² (see Figure 2.1 and Table A.2.1 in the appendix). This trend can be observed for most countries. However, labour market participation declined in some CEE countries (Czech Republic, Poland, Romania and Lithuania) while Spain experienced the largest increase in participation (9.8 percentage points). Ireland, Bulgaria and the Netherlands also experienced large increases in labour market participation. In 2008, labour market participation is the highest in Denmark, Sweden and the Netherlands. The lowest participation rates can be observed for Hungary, Romania, Italy and Poland.

In 2008, 17.5 per cent of all employees were in part-time employment. Compared to 1998, this is an increase of 2.8 percentage points. There is a large variation between the different Member States (see Figure 2.2 and Table A.2.5 in the appendix). While only 2.2 per cent of the Slovakian employees work part-time, this is true for 46.1 per cent of the employees in the

¹ Household characteristics cannot be derived for Denmark, Sweden, and Finland (in the majority of years). Therefore these countries will not be included in the econometric analysis. They will, however, be covered during the descriptive analysis.

² When using only observations from those countries where data are available for 1998 (i.e. without Bulgaria, Germany and Cyprus), the participation rate rises from 67.1 per cent to 69.8 per cent.

Figure 2.1
Labour force participation
 1998 and 2008

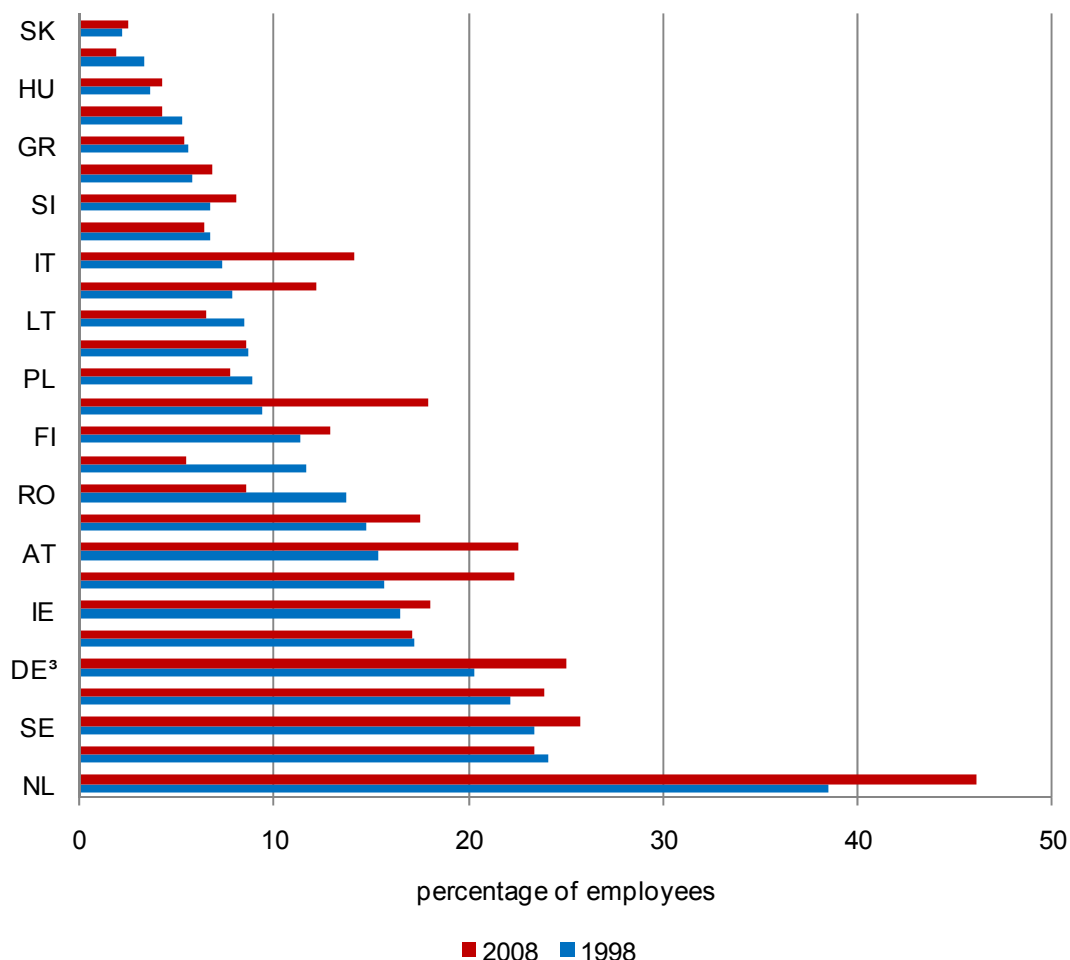


Source: EU-LFS, own calculation. – ¹data refer to 2000 instead of 1998. – ²data refer to 2002 instead of 1998.

Netherlands. The Netherlands have a much higher rate of part-time employment than any other country. Faggio and Nickell (2007) attribute this high proportion of part-time employment to increasing support through the trade unions, which increasingly included the right to work part-time in collective agreements during the 90's. This development cumulated in a law stipulating that firms may not oppose part-time work unless for 'compelling business reasons' that was passed in 2000. In 2008, the share of part-time employees of all CEE countries is below the average, while all EU15 members (except for Greece and Portugal) have higher rates than the EU-LFS average.

Summed up, most countries with a high participation rate (DK, SE, UK, NL and DE) have also a high share of part-time employed while those countries with a low participation rate such as Hungary, Italy, Bulgaria and Greece have a low share of part-time employed. This finding suggests that different dimensions of labour supply are decisive in different countries.

Figure 2.2
Share of part-time employment in total employment
 1998 and 2008



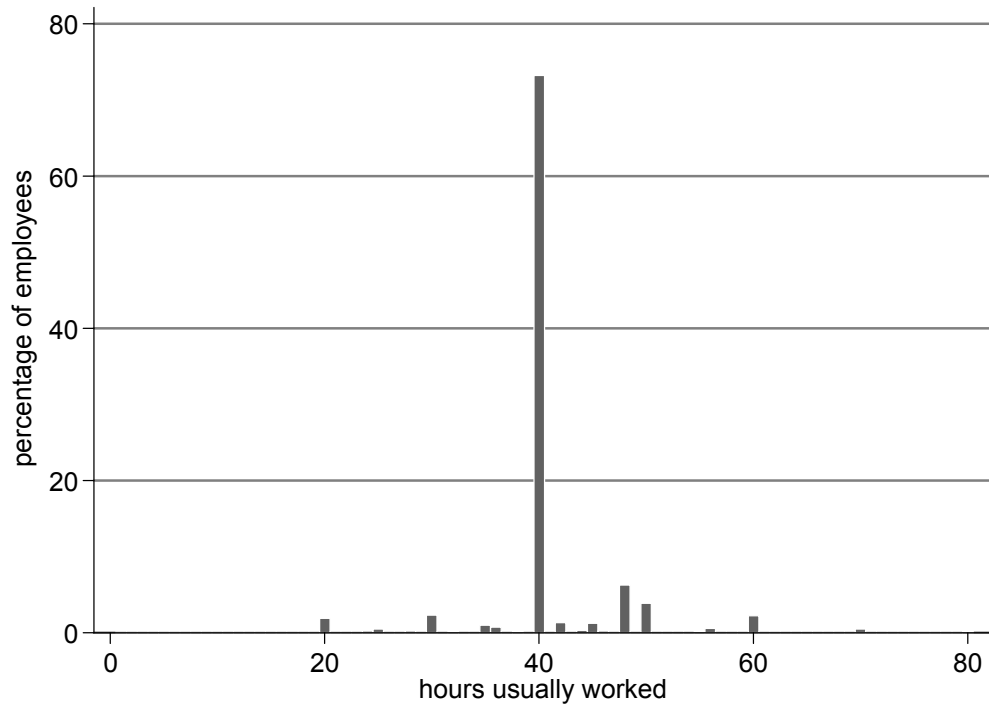
Source: EU-LFS, own calculation. – ¹2002 instead of 1998.

While some countries have potential for an increasing labour supply in the participation rate, some other countries have the potential in the amount of labour supplied. However, there are also countries like Belgium and Ireland with relatively low participation rates and a relatively high part-time share.

Besides these cross-national differences in the extent of part-time employment, differences in the development of part-time employment over time can also be observed. The overall trend of increasing part-time employment is mainly driven by Austria, Belgium, Germany, Italy, Luxembourg, the Netherlands and Spain. These countries experienced sharp increases in part-time employment during the observation period. In contrast, part-time employment in CEE countries such as Bulgaria, the Czech Republic, Latvia, Lithuania, Poland and Romania decreased.

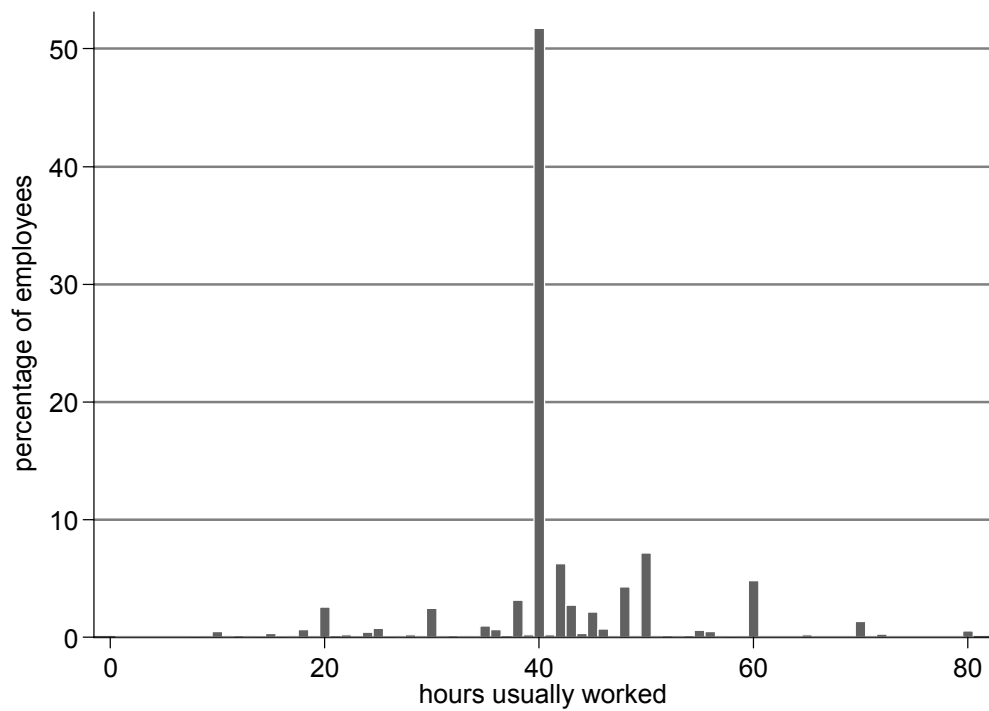
The differences between the countries in the amount of part-time employment are reflected in the respective distributions of hours worked. We observe similar patterns of the distribution of hours worked in the different country groups. In the first group of CEE countries (CEE I, Figure 2.3), more than 70 per cent of workers work 40 hours per week, and only a very small

Figure 2.3
Distribution of hours usually worked in CEE I



Source: EU-LFS, own calculations. – Notes: Definition of country groups as on page 21.

Figure 2.4
Distribution of hours usually worked in CEE II



Source: EU-LFS, own calculations. – Notes: Definition of country groups as on page 21.

share of workers works less than 40 hours. When constraining the distribution of hours worked to fulltime employees (defined as 35 hours/week or more), only two very small additional peaks can be detected at 48 and 50 hours. However, both peaks remain well below 10 per cent of all full-time employees (Figure A.2.1)³. This low proportion of workers with less than 40 hours is comparable to the second group of CEE countries (CEE II, Figure 2.4). However in this country group, workers are more likely to work more than 40 hours and therefore about half of the workers work at least 40 hours per week. This impression is confirmed by Figure A.2.2, which again constrains the distribution of hours to full-time employees. Additional peaks of more than 5 per cent emerge at 42, 48, 50 and 60 hours. In most of the New Member States, the official working week is 40 hours and collective agreements do not deviate from the legal regulation (EIRO 2010).

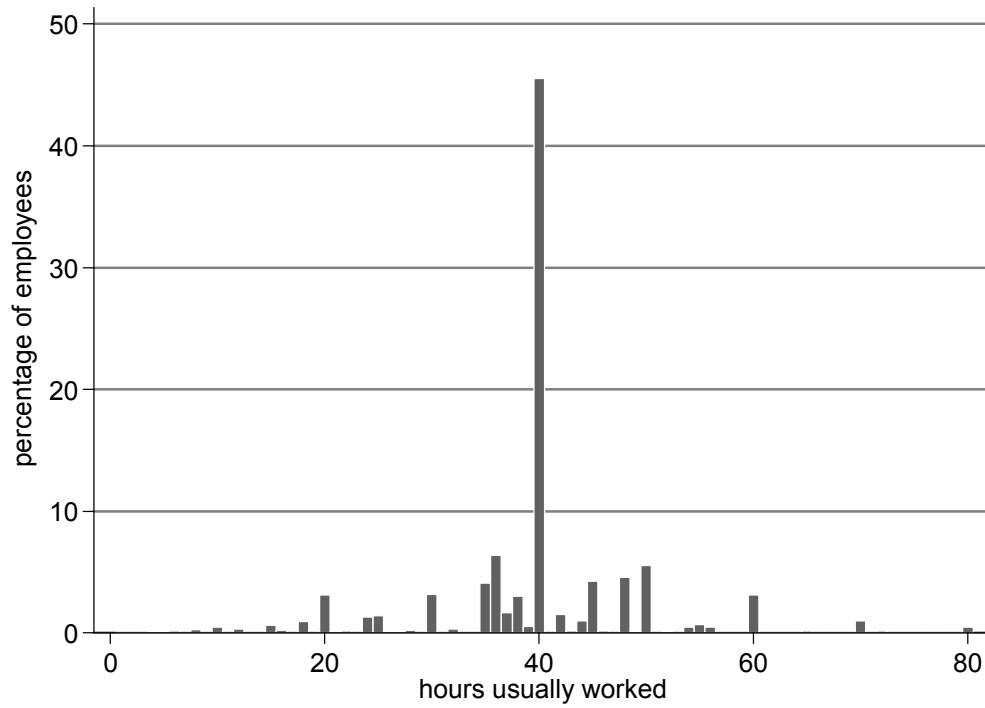
Compared to these countries, the amount of workers with exactly 40 hours is somewhat lower in the Mediterranean countries. (Figure 2.5) However, the main difference is that deviations occur upwards and downwards to the same extent. In contrast to the above-described country groups, the share of workers working 40 hours per week is much smaller in Continental Europe, Scandinavia and the UK. More than 35 per cent of workers in Continental Europe and Ireland work between 35 and 39 hours per week. This pattern may be driven by France and Germany. First, the so-called “Aubry laws” in France introduced in 2000 and 2002, respectively, reduced the statutory working week to 35 hours. Second, collectively agreed working time in Germany is below 40 hours in most industries. Indeed, when limiting the distribution of hours worked to full-time employees (Figure A.2.4), a clear peak at 35 hours (probably due to France) and 38 and 39 hours (Germany) can be observed. Among the full-time employees, more than 45 per cent work between 35 and 39 hours per week in the Continental European countries. The Scandinavian countries have a similar pattern as the Continental countries with more than 80 per cent of all workers working up to 40 hours. However, the peak at 40 hours is smaller in Continental Europe than in Scandinavia (see Figures 2.6 and 2.7). Figure A.2.5 suggests that the main reason for this difference is a lower density between 35 and 39 hours in Scandinavia as well as smaller peaks at 50 and 60 hours compared to Continental Europe.

The United Kingdom cannot be compared to the other countries with respect to working hours. Since the coverage of collective agreements is very low in the UK, working time seems to be more flexible than in all other countries. Only 12 per cent of all workers work exactly 40 hours and 37 per cent work more than 40 hours (see Figure 2.8). In addition, working hours above 40 are not limited to certain “round lots” such as 45 or 50 hours. Instead the distribution of hours worked is much more smooth compared to the other country groups (Figure A.2.6).

Although there are differences between the countries of up to 19 percentage points, the differences in participation, part-time employment and hours worked between the sexes are even larger. 77 per cent of men aged between 15 and 64 participate in the labour market, while only 61 per cent of their female counterparts do so (see Figure 2.9 and Table A.2.2). This difference between male and female labour market participation is the highest in Greece and Italy where the participation rate of men is more than 25 percentage points higher than

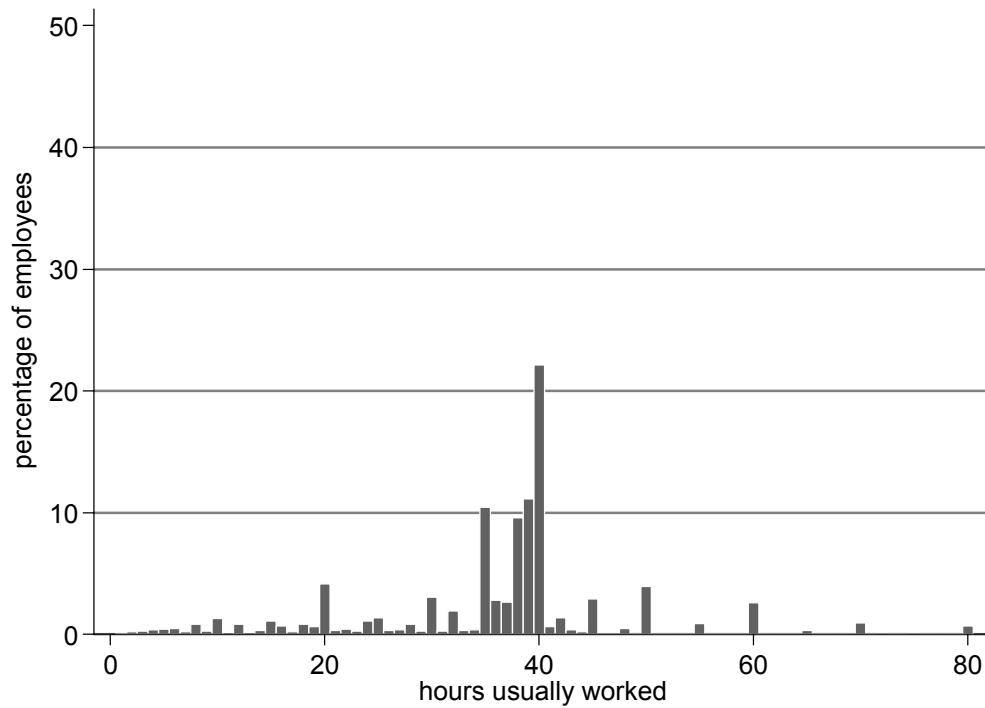
³ Note that the scales of the y-axes do vary for the different country groups, depending on the size of the peak at 40 hours per week.

Figure 2.5
Distribution of hours usually worked in the Mediterranean Countries



Source: EU-LFS, own calculations.

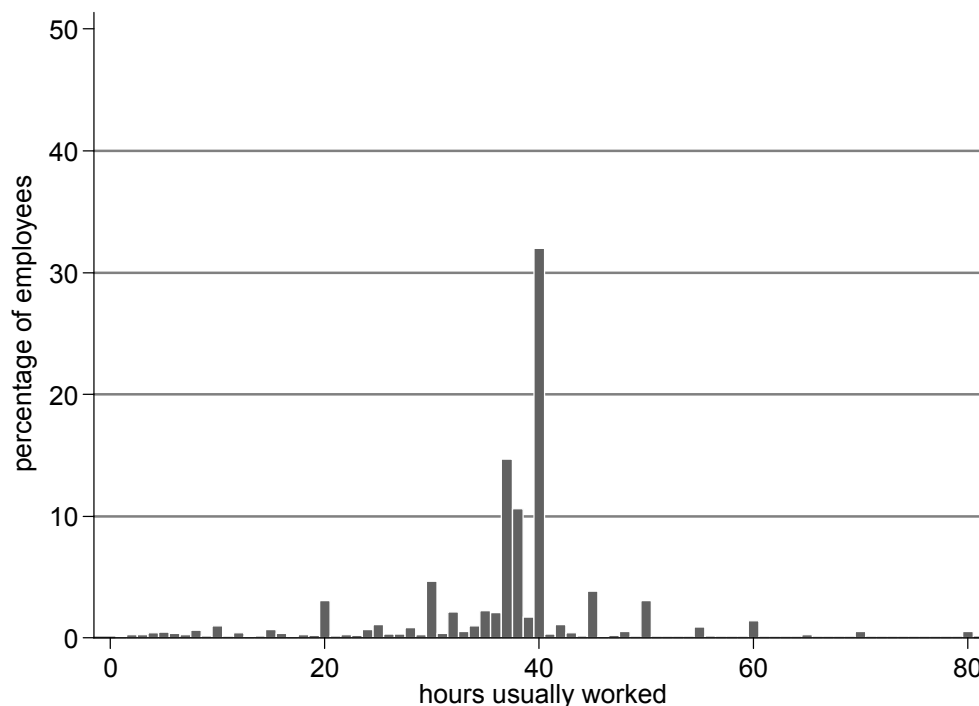
Figure 2.6
Distribution of hours usually worked in Continental Europe and Ireland



Source: EU-LFS, own calculations.

Figure 2.7

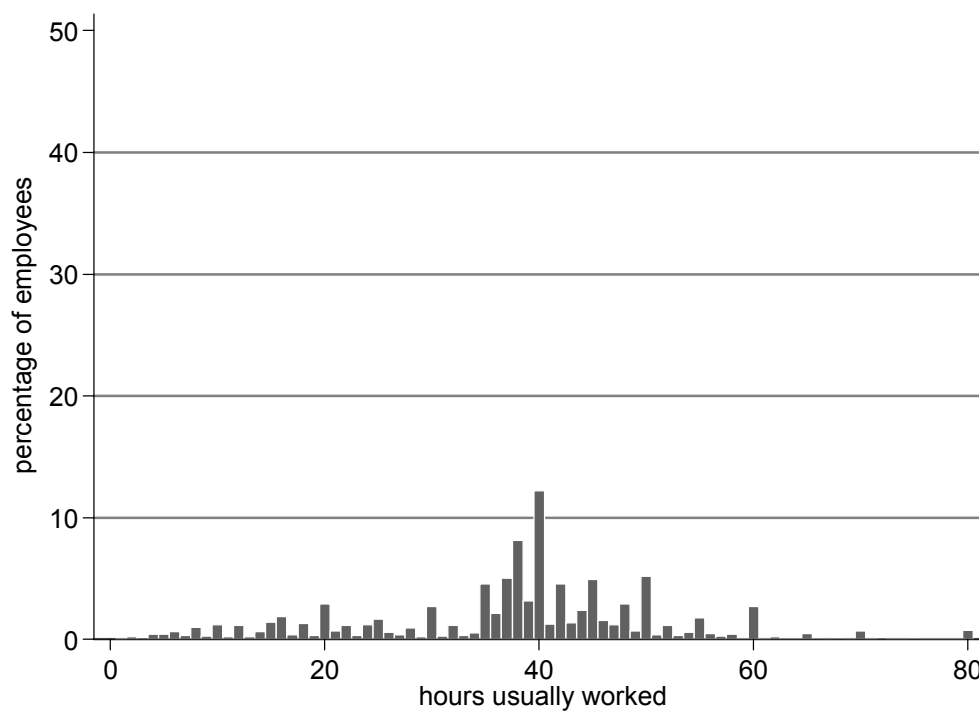
Distribution of hours usually worked in the Scandinavian Countries



Source: EU-LFS, own calculations.

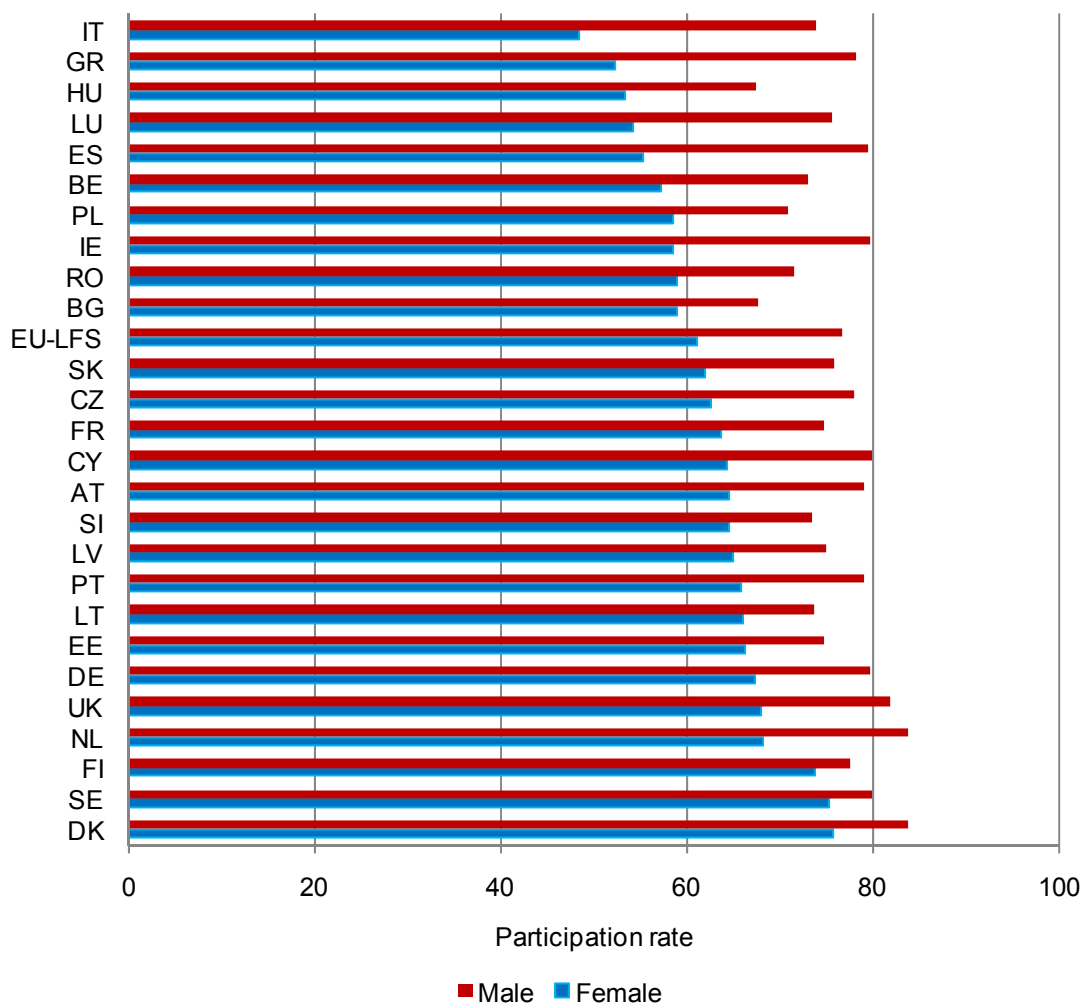
Figure 2.8

Distribution of hours usually worked in the UK



Source: EU-LFS, own calculations.

Figure 2.9
Labour force participation by gender
 1998 to 2008

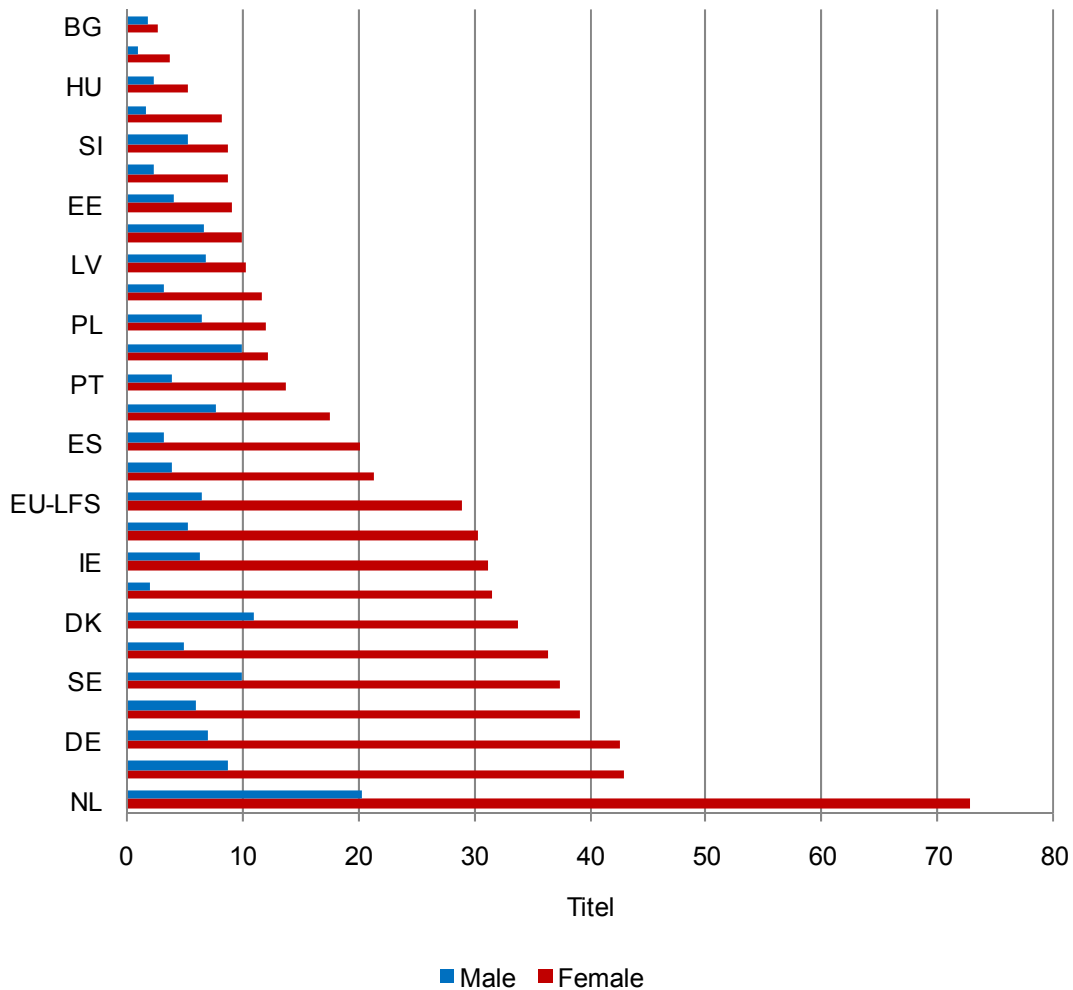


Source: EU-LFS, own calculations.

that of women. The smallest differences can be observed for Finland and Sweden. This is due to the fact that female labour force participation is the highest in the Scandinavian countries (between 73.4 per cent and 75.9 per cent). By contrast less than half of the women aged between 15 and 64 years in Italy participate in the labour market.

A separate analysis of part-time employment by gender (Figure 2.10 and Table A.2.6) reveals that most part-time employees are women. 29 per cent of all women work part-time while only 6.5 per cent of males do so. All observed countries have in common that women are more likely to work part-time than men. However, the differential between male and female part-time rates differs between the countries. Although the male part-time rate is the highest in the Netherlands (20.3 per cent), it is very low compared to that of female Dutch employees (72.7 per cent). It is remarkable that those countries with high shares of part-time employment – mostly the former EU 15 – have also large differences between men and women. In these countries the labour supply of women is most decisive for changes in labour supply.

Figure 2.10
Part-time employment by gender
 1998 to 2008

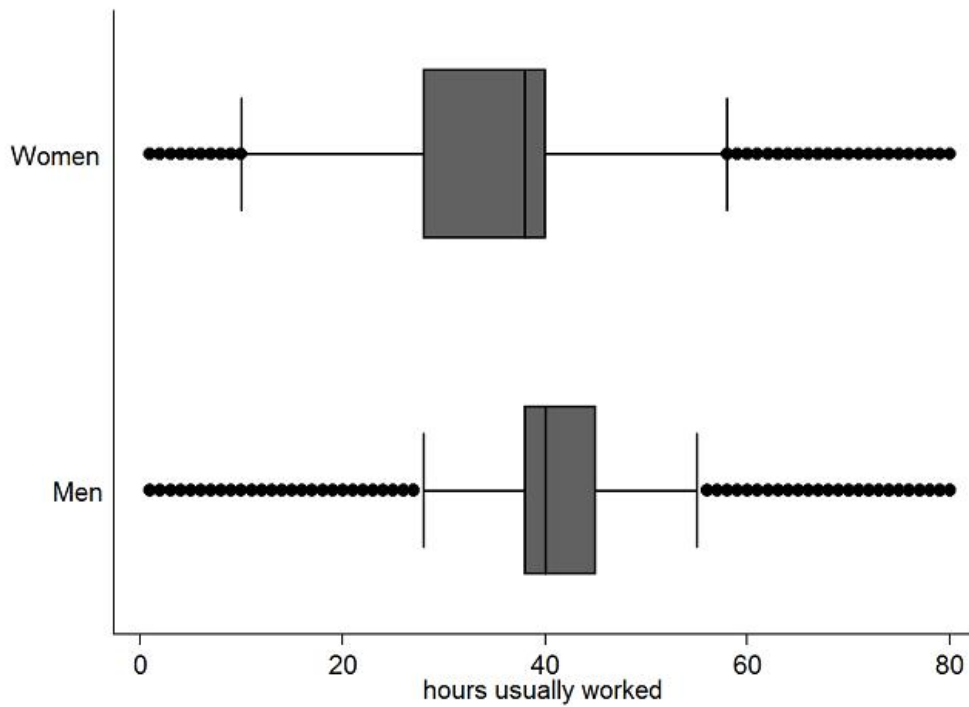


Source: EU-LFS, own calculations.

The box plot in Figure 2.11 highlights the differences of hours worked between men and women (see Box 2.1 for a definition of box plots). As can be seen, the median is 40 hours for men and 38 hours for women and, even more importantly the distribution of hours worked of men is much narrower than that of women.

Besides differences between countries and gender there are also differences in labour supply by age group and skill level. Labour force participation increases with the skill level (see Table A.2.4 in the appendix). Large differences between low skilled and high skilled workers can especially be observed in the new Member States. Labour market participation is the highest for workers aged between 25 and 55 years (see Table A.2.3 in the appendix). 83 per cent of individuals in this age group participate in the labour market. The participation rate of youths (43.9 per cent) is similar to that of old workers (43.2 per cent). The differences between the age groups are comparable for all country groups. A similar result can be found for the amount of labour supplied. Young workers (younger than 25 years) are most likely to work part-time (Table A.2.7 in the appendix). The share of employees aged between 25 and

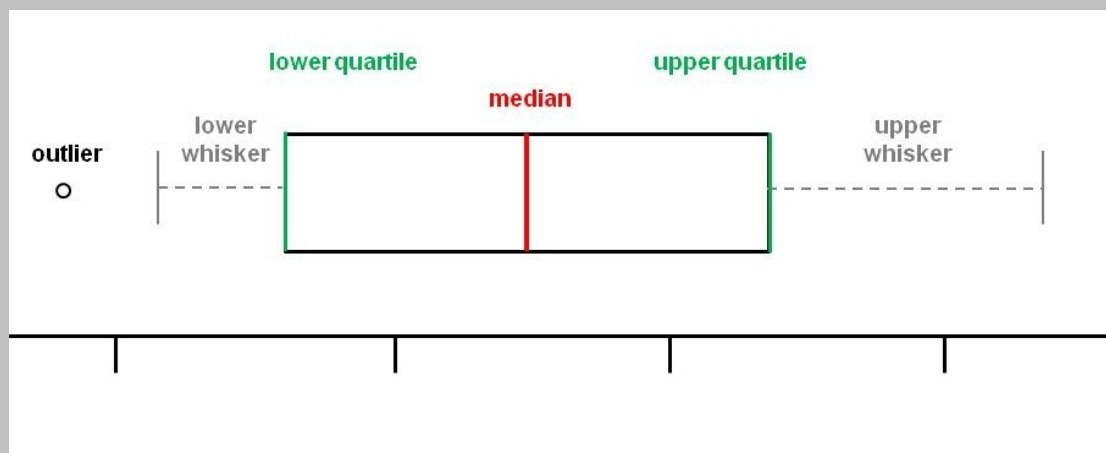
Figure 2.11
Distribution of hours usually worked by gender



Source: EU-LFS, own calculations.

Box 2.1 Box Plots

Box plots are a graphical tool to present different parameters of a statistical distribution of a variable, with the median and the spread of a variable being of particular interest. The box itself (see figure) contains the middle 50 per cent of the distribution. The right side of the box therefore indicates the 75th percentile while the left side indicates the 25th percentile. The vertical line inside the box indicates the median of the distribution. The ends of the horizontal lines (“whiskers”) indicate the minimum and the maximum of the distribution, respectively, apart from outliers. If outliers exist, they are displayed as points outside the box.



54 who work part-time is only 14.6 per cent. In most European countries, part-time employment in this age group is lower than in the group of young or older employees. Indeed, one would expect most of those employees who work part-time because of child-rearing to be in this age group. However, this age group is by far the largest with the highest participation rates. Therefore, young and old individuals supply less labour than middle aged individuals in both dimensions: in terms of participation rates and the amount of hours worked. However, in some of the continental European countries (Austria, Belgium, Luxembourg and Germany) the probability of part-time employment increases with age.

The descriptives presented above do not indicate whether working in a part-time job was a voluntary decision by the worker (for example because she was getting training at the same time), or whether it was involuntary, and the job was taken because no full-time job was available. Table A.2.9 in the appendix presents the reasons for part-time employment in the different country groups. The data are restricted to the years 2005 to 2008 since not all response categories were available in the older questionnaires. 21 per cent of all female part-time workers and 28 per cent of all male part-time workers are involuntarily working part-time and could not find a full-time job. The fraction of part-time workers due to child rearing is much higher for women (28.6 per cent) than for men (3.5 per cent). There are large differences between the different country groups. While the share of involuntary part-time workers is about 7 per cent (women) and 17 per cent (men), respectively in the UK, 30 per cent and 50 per cent, respectively are involuntary part-timers in the first CEE group. This share is also high in the Mediterranean Countries. Looking after children and other family and personal reasons are the main reasons for working part time for more than half of the women in the UK and in Continental Europe.

2.4 Econometric Evidence

The descriptive overview provides some hints on correlations between labour supply and characteristics of the workers. However, we cannot control for different influencing factors at the same time. This problem can be solved with the help of regression analysis. To give an example, regression analysis allows estimating the labour supply of a young, male worker living in one household with his spouse. More determinants of labour supply could be added to this example easily. In contrast, descriptive analysis only permits the analysis of at most three factors at the same time. In addition, regression analysis allows controlling for composition effects when comparing different countries with each other. Suppose that young workers generally supply less hours. If a country is characterized by an especially young population, one would conclude that average hours worked are low in this country. In reality, however, this effect is caused by the composition of the workforce. It is not possible to draw such conclusions from a descriptive analysis.

We estimate a 'probit model' to analyse which factors are related with the individual worker's probability of employment and his probability of part-time employment (see Box 2.2 for details of the probit model). While these two probabilities sound quite similar, they should

Box 2.2

The Logit and Probit Models

The logit and probit models are obvious choices in the case of binary outcomes, i.e. outcomes that can only take on two values, 0 and 1. This is true for, e.g., the participation decision (participation: 1, nonparticipation: 0), the distinction between full-time and part-time employment, and between temporary and permanent employment. The outcome is defined as a latent variable y^* such that

$$y_i^* = x_i' \beta + \epsilon_i.$$

The outcome is dependent on a vector of observable characteristics X_i (e.g. socio-demographics) and a random error term ϵ_i .

We do not observe y_i^* , but rather y_i , which can be interpreted as an indicator for whether the latent variable is positive:

$$y_i = \begin{cases} 1 & \text{if } y_i^* > 0 \\ 0 & \text{otherwise.} \end{cases}$$

The estimated probability should be between 0 and 1. The assumption is fulfilled by cumulative distribution functions. Therefore the model can be rewritten as: $P(y_i = 1 | x_i) = F(x_i' \beta)$, where F is the logistic cumulative distribution function in the case of the logit model, and the standard normal cumulative distribution function in the case of the probit model.

The marginal effect can be derived by differentiation of F with respect to a particular variable x_1 :

$$\frac{\delta E\left(\frac{y_i}{x_i}\right)}{\delta x_{i1}} = f(x_i' \beta) \beta_1.$$

f is the density function of the appropriate distribution. The marginal effect is therefore not constant but varies with x_i . We present the marginal effects derived at the means of all variables.

In applications, the logit model and the probit model usually yield very similar results.

The reported marginal effects mf_{x_1} can be interpreted in the following way: an increase in variable x_1 by one unit leads to an increase of the output variable by mf_{x_1} units. Is x_1 a dummy/ indicator variable, it means that if x_1 changes from 0 to 1, this leads to an increase of mf_{x_1} units of the outcome variable.

not be confused. First, the probability of employment contrasts those individuals that are inactive or unemployed with those that are employed.⁴ Second, when estimating the probability of part-time employment, the analysis is limited on those persons that have a job. Thus, the probability of employment can be interpreted as the extensive margin (work or no work), while the probability of part-time employment is concerned with the intensive margin (how much work).

Further, a 'Tobit model' is used to estimate the relation between the explanatory variables and the number of hours worked (see Box 2.3 for details of the Tobit model). This model takes the employment decision and the decision how many hours to supply if employed simultaneously into account. This implies that the number of hours worked in this section do not necessarily correspond with the number of hours worked observed in the raw data and

⁴ Note that we are concerned with the employment rate during the following econometric analysis, which is defined as the share of working age population that has a job. In contrast, the descriptive analysis focused on the participation rate, which is defined as the share of employed and unemployed workers of the working age population.

Box 2.3

The Tobit Model

The Tobit model is an econometric model which can be used to analyse the relationship between a non-negative variable and a set of explanatory variables. An example of such a variable is the number of hours worked in the economy, which takes on positive values for someone working, but is zero for someone who is not working.

The Tobit-model can be described by a latent variable:

$$y_i^* = x_i \beta + \varepsilon_i,$$

where $\varepsilon_i \sim N(0, \sigma^2)$.

This model is also called a censored regression model, because it is not possible to observe y_i^* if it is below zero. Therefore, only the variable y can be observed:

$$y_i = \begin{cases} y_i^* & \text{if } y_i^* > 0 \\ 0 & \text{if } y_i^* \leq 0 \end{cases}.$$

The Tobit model takes into account the special structure of the variable under investigation.

The reported coefficient β_1 can be interpreted in the following way: an increase of input variable x_1 leads to an increase in the outcome variable by β_1 units. In the case of hours that are included as log variables, the coefficients can be interpreted that an increase of variable x_1 by one unit leads to an increase in the outcome variable by β_1 per cent. Is x_1 a dummy/ indicator variable, it means that if x_1 changes from 0 to 1 that leads to an increase of β_1 units/per cent of the outcome variable.

discussed during the descriptive analysis. Suppose, for example, medium-skilled women were more likely to participate than low-skilled women, but would not work more hours once they are employed. During the descriptive analysis above, we would conclude that education has no effect on hours worked for women, because we can only compare employed women with different skill levels. The Tobit model, in contrast, would suggest that education has a positive effect on the number of hours worked for women, because the differences in employment rates are taken into account as well as observed differences in hours worked. Stated differently, the Tobit model estimates the effect on the intensive and the extensive margin simultaneously. For this reason, the estimates of the Tobit model are also referred to as 'composite effect'.

2.4.1 Individual characteristics

The differences between men and women in employment observed during the descriptive analysis remain in the multivariate analysis. Men are more likely to participate in the labour market compared to women. Their probability of employment is 15 percentage points higher. Young individuals up to the age of 24 years have a 35 percentage points lower probability of employment than persons between 25 and 54 years. The probability of employment for older women (aged 55-64 years) is equally low, while older men are even 41 percentage points less likely to participate compared to prime aged men (Table A.2.10 in the appendix).

Among the employed individuals, male workers are 18 percentage points less likely to work part-time than female workers are. This finding suggests given that if a woman is employed, she is more likely to choose part-time work. Therefore, the gender differences in labour supply are driven by the employment decision and the amount of hours worked among those that are employed. However, young women are not more likely to work part-time compared to prime aged women, while older women have a considerably increased probability of part-

time work of 14 percentage points. The effect for men is symmetric for the two age groups, with young and old workers both experiencing an increased probability of part-time work compared to prime aged males (Table A.2.11 in the appendix).

When estimating the decision to participate (extensive margin) and the decision how many hours to supply (intensive margin) simultaneously, the results indicate that men work 12.5 hours more than women do and old as well as young workers work 22 and 24 hours less, respectively, than middle-aged workers (Table A.2.12 in the appendix). These results show that the rather large difference in hours supplied to the labour market between the age groups is due to the employment decision to a large extent. Stated differently, while young and old individuals are considerably less likely to participate, they only supply few hours less compared to the prime age group if they are employed. This effect is quantified in Tables A.2.13 (women) and A.2.14 (men) in the appendix: Among those women that participate, young women supply only 1.7 hours and old women 3.3 hours less than prime aged women. Young men work almost 4 hours less, while there is no difference between prime aged and old men.

Given the low employment rates of young and older workers, these age groups appear to offer potential to increase overall labour supply. Younger workers often do not participate in the labour market, because they increase their educational level beyond compulsory schooling. Therefore, we will focus on the older age group. Gielen (2008) suggests that older workers are more likely to stay engaged in the labour market if they are able to adjust their hours downwards. This in turn requires labour market flexibility concerning the distribution of hours worked. Thus, based on our descriptive analysis, we would expect that the labour supply of older workers is higher in countries such as the UK or the Netherlands and lower in the CEE countries. Indeed, the relation between age and the employment rate is especially small in the UK and especially large in the CEE countries (see also Section 2.4.4). Similarly, women experience a higher probability of part-time employment, while their probability of employment does not decrease as much as that of men with increasing age. Stated differently, older working women supply fewer hours than prime-aged women, while no difference can be observed for men. In contrast, older men are much more likely to leave the labour force compared to prime aged men, while this effect is smaller for women. Therefore, the results suggest that increasing flexibility concerning the number of hours worked is associated with higher employment rates.

The employment rate is positively correlated with the skill level. The differences in employment between the skill groups are more pronounced for women than for men. Highly educated women are 31.5 percentage points more likely to participate in the labour market compared to women with a low education, while this difference amounts to only 20 percentage points for men (Table A.2.10 in the appendix). Furthermore, the probability of part-time employment for women is negatively related with the skill level, implying that high skilled women are 14 percentage points less probable to work part-time compared to low skilled women. This relation does not exist for men (Table A.2.11 in the appendix) which can be due to the reason that part-time work is less frequently observed for men.

Not surprisingly, the composite effect of the skill level on hours worked is also positive and larger in magnitude for women. High-skilled women work 20 hours more than low-skilled women, while this difference only amounts to 12 hours for men (Table A.2.12 in the appendix). Interestingly, this observation is mostly driven by the employment decision. This could be due to the fact that many women seem have a strong preference for shorter and more

flexible working hours, even though this could imply lower wages and a lower future earnings potential (cf. OECD 2010, Chapter 4). For men we cannot observe any relationship between education and hours worked given that an individual participates in the labour market (Table A.2.14 in the appendix). For employed women, the relation between hours worked and the skill level is positive, but not statistically significant (Table A.2.13 in the appendix). Therefore, while the decision how many hours to supply once employed might contribute to the composite labour supply, the relation between skill level and the employment decision appears to be more important.

2.4.2 Household composition

Most of part-time employment is voluntarily chosen and due to family needs as the descriptive discussion in the previous sections shows. Therefore, the composition of the household should be correlated with labour supply especially of women. In our analysis we investigate the relationship between children as well as elderly and the labour supply of household members of working age. More specifically, we estimate the relation between the number of children and the number of elderly living in the household separately for the three main age groups (young, prime aged, old). The underlying reason is that different age groups might potentially react differently to the household composition.

The number of small children (up to the age of 4) is negatively correlated with the employment probability of women, but not of men (Table A.2.10 in the appendix). At the same time, the number of children aged 5-14 years is not related to the employment rate of women, but positively to that of men (Table A.2.15 in the appendix). Further, the employment probability of workers aged 15-24 years is associated with a decrease of more than 5 percentage points with each additional child aged 5-14 years living in the household. An obvious interpretation is that this relation is not between parents and children, but siblings. Consequently, these young workers are still living at home, which might increase their probability to undergo further education. This could explain their lower probability of employment.

In addition to the employment rate, the probability of part-time employment is also related to the number of children in the household. The age of the child does not affect the magnitude of this correlation: Each additional child, independent of its age, is associated with an increase in the probability of part-time employment of 8 percentage points. The labour supply of women is therefore negatively related to the number of children in both dimensions: the employment rate and the amount of supplied labour. While this correlation can be observed for all age groups, it is largest in magnitude for prime-aged women (Table A.2.15 in the appendix). This relationship also exists for men, although it is much smaller in magnitude (Table A.2.11 in the appendix) and differs considerably among the included age groups (Table A.2.15 in the appendix). First, young men experience a decrease in the probability of part-time employment with each additional small child, while the opposite is true for prime aged and older men. Second, the positive relation between the probability of part-time work and the number of children aged 5-14 years living in the household is driven by young men. Following the same line of argument as above, this is probably a relationship between siblings. Prime-aged and older men do not show a higher probability of part-time employment in the presence of school children. In conclusion, the findings suggest that each additional child up to the age of 14 years is associated with an increase in the probability of part-time em-

ployment for women. In contrast, men's probability of part-time employment is only related to pre-school children and depends additionally on his age.

When combining the observations on participation probability and number of hours worked, a negative correlation between the labour supply of women and the number of children in the household persists. All else equal, each additional small child is associated with a decrease of 7 hours, while each additional child aged 5-14 years is associated with a decrease of 2.5 hours. This difference in magnitude is caused by the fact that women are less likely to participate and supply fewer hours if they participate when small children are living in the household. However, once children enter elementary education, women are not less likely to participate, but still work less hours (Table A.2.13 in the appendix). In contrast, men do not adjust their labour supply in the presence of small children, but it appears as if they tend to slightly reduce their hours worked with each school child living in the household (Table A.2.12 in the appendix). However, this result is driven by the lower employment and higher part-time probability of young men. The effects for the other age groups are either neutral or take the opposite sign (Table A.2.15 in the appendix). Consequently, men rather increase than decrease their labour supply in the presence of school children.

Elderly persons living in the household can influence the labour supply of workers in both directions. First, they can do some of the housework, look after children etc. and therefore give the opportunity to an increased labour supply. However, they can also be in need of care and therefore there is a negative relationship between labour supply and elderly household members.

The number of household members aged 65 years or more is generally not related to the labour supply of other household members. A notable exception is the employment decision of prime aged women (Table A.2.15 in the appendix). Each elderly person living in the household is associated with an increase in the employment probability of this group by 3 percentage points. An explanation is that the elderly household members engage in child-care activities. Additionally, the number of elderly household members is negatively correlated with the hours worked of women aged 55-64 years. Here, we might observe a couple with one retired spouse and the employed spouse adjusting her hours worked accordingly. This observation is in line with Blau and Riphahn (1998) who find that older workers (aged 55-64 years) are more likely to exit the labour force if their spouse is not active.

The employment rate is higher for individuals with an employed spouse in the household than for those without any spouse. While women with an inactive or unemployed spouse have a lower employment rate than single women, the presence of a spouse in the household is generally associated with a higher employment probability for men (Table A.2.10 in the appendix). In addition, women living with a spouse are generally more likely to work part-time, while men are considerably less likely to do so in the same situation (Table A.2.11 in the appendix). The size of this correlation does not depend on the labour market status of the spouse (inactive or unemployed vs. employed) for both genders. However, the hours worked by women living with an inactive spouse are significantly lower than hours worked by single women. The opposite is true for men. Finally, women and men living with an employed spouse tend to supply more hours than singles (Table A.2.12 in the appendix). This correlation is mainly caused by a considerably higher employment probability of women living with an employed spouse compared with single women (Table A.2.13 in the appendix). In conclusion, these results offer a first indication that men are more likely to increase their labour

supply when living together with a partner, while women's labour supply is largely determined by their spouses' labour market status.

Up to this point, the labour supply of the individual has been estimated assuming that the spouse's labour supply is fixed. In reality, it is more likely that spouses determine simultaneously how many hours to supply taking into account their own and their partner's characteristics (which will determine the wage rate). One strain of literature on this topic (cf. Blundell, 1999) suggests that spouses will decrease their labour supply with increasing wage prospects of their spouse. The underlying idea is that spouses pool their income as well as their consumption. However, Lundberg (1988) or Fortin and Lacroix (1997) notice that this assumption is more likely to be true for couples with (small) children. Consequently, couples without children are expected to choose their labour supply based on their own characteristics and their spouses fixed labour supply.

In order to analyse this issue in more depth, a simultaneous model is estimated for the labour supply of spouses. The available sample for this estimation is considerably reduced. Obviously, such a model can only be estimated for couples. Thus, all individuals not sharing a household with their spouse are excluded. In addition, the analysis is carried out in two steps along the dimensions of the extensive and intensive margin of labour supply. First, the connection of the spouse's labour force status (inactive or unemployed vs. employed) and the employment probability is estimated. Second, constraining the sample to those couples consisting of two working spouses, the relationship between the spouse's working hours and the number of hours worked is analysed.

For men, the results are in line with the literature. In the absence of any children men do not adjust to their partner's labour supply. In contrast, for couples with children men adjust their labour supply downwards with an increasing potential of their partners labour supply. This effect is somewhat larger for couples with preschool children compared to couples with children up to the age of 14 years (Table A.2.16 in the appendix). The results for women suggest an opposite effect: women without children increase their labour supply with an increasing labour potential of their partner, while women with children aged between 0 and 4 years do not react at all.

These findings suggest that there is no simultaneous household decision on labour supply for couples without children. Rather, couples' behaviour appears to be asymmetric in this context: While men do not react to their partner, women appear to raise their labour supply with the labour supply of their partner. This positive correlation is most likely due to assortative mating. Since the 1960's, the schooling levels of husbands and wives are becoming more similar to each other (Pencavel, 1998), which implies that high productivity men cohabit with high productivity women. While we do control for the highest degree of education of both spouses, other unobserved factors may exist that influence both, the individual's labour market potential as well as the kind of spouse which is chosen. These unobserved determinants may lead to the impression that women increase their labour supply proportionally to the number of hours worked by their spouses, while in fact women with a higher labour market potential are simply more likely to cohabit with men supplying relatively many hours.

In the presence of (small) children, women supply labour which only depends on their own characteristics. Taking this labour supply as given, men react such that they work less (and possibly have more time for child care) if their partner works more, or they work more if the woman works less (possibly to compensate the income loss of the wife/partner). In order to

interpret this result, it is important to note that the sample used for this specific analysis consists only of two-earner couples with small children. Obviously, this is a very selective sample in the sense that one could expect a strong correlation between determinants of hours worked and the decision to continue to have two earners in the household, despite the presence of at least one pre-school child. Jacobsen and Rayack (1996) note that husbands in two-earner households receive a wage penalty compared to one-earner, male breadwinner husbands. They propose several explanations for this observation, one of which is that two-earner husbands may be characterized by lower labour productivity, because they devote more time to household production or the wife supplies fewer services to the husband's job. In a similar vein, Álvarez and Miles (2006) report estimates for Spain according to which a woman's decision to participate in the labour market increases her spouse's housework time. In contrast, Bredtmann (2010) suggests that in Germany, men's time allocated to household production is unaffected by the women's investment in market work. Additionally, it is unclear to what extent changes in the amount of hours allocated to household production translate into changes in the amount of hours supplied to the market.

To conclude, in the absence of small children, both spouses determine their labour supply individually. In contrast, in the case of two-earner couples with pre-school children, men appear to adjust their working hours to the decision made by their spouses. In order to determine the underlying reason, more research using European data is necessary, but a possible explanation is that men increase their time devoted to household production if women increase their hours supplied to the market.

2.4.3 Differences between countries

Up to this point we have used individual and household characteristics to explain observed differences in labour supply. While such variables are without doubt important determinants of labour supply, certain factors at the country level also affect the individual's decision to participate and how many hours to supply. Examples include institutions, such as labour taxes or unemployment benefits, and general economic conditions (e.g. GDP growth, unemployment rate). The composite effect of these institutional variables at the macro level is part of the 'country dummies'. That is, otherwise equal individuals in terms of age, education, sex, and household composition will be more likely to supply labour in one country than in another due to country-specific determinants of labour supply. In a first step it is simply interesting to note in which countries the employment probability is generally higher or lower. In a second step, these differences will be explained with macro variables on institutions and general economic conditions.

Overall, Portugal and the Netherlands have the highest country-specific employment rate.⁵ They are followed by a group of countries (Cyprus, Austria, United Kingdom, and Ireland) that have similar country-specific effects. The lowest employment rates are found for some CEE Countries (Poland, Hungary and Bulgaria) and Mediterranean Countries (Italy, Greece). The Continental Countries are a rather diverse group with differences in the country-specific employment rate of 15 percentage points between Belgium and the Netherlands. Separate regressions for men and women yield quite similar results. However, large differences be-

⁵ In this section, country-specific effects on employment, part-time employment and hours worked are discussed. More precisely, these are the effects on e.g. the probability of employment of an individual living in country A caused by the fact that this individual lives in country A and not in country B.

tween men and women can be observed for Cyprus, Greece, Italy, Spain and Ireland that have relatively high employment rates of men but relatively low employment rates of women (Table A.2.10 in the appendix).

Countries of Continental Europe and Britain have the highest shares of part-time employment. The Netherlands have a significantly higher probability of part-time employment than every other country. In contrast, Bulgaria and Slovakia have the smallest part-time rates. The probability of part-time employment is somewhat higher in Hungary which is followed by the Czech Republic. These findings suggest that part-time employment is a phenomenon of the former EU15 countries (with the exception of Greece) whereas CEE States have significantly lower probabilities of part-time employment. The differences are similar for the separate analysis of men and women (Table A.2.11 in the appendix).

Concerning hours worked, a difference of more than 13 hours can be observed between Portugal, which is characterized by the highest country dummy, and Poland on the other end of the distribution. Generally, no clear pattern can be determined along the lines of the country groups. After controlling for individual and household characteristics, hours worked are lowest in Poland, Belgium, Bulgaria, and Hungary. In contrast, each worker supplies considerably more hours in Portugal, Cyprus, and the Czech Republic (Table A.2.12 in the appendix). The fact that apparently quite different Member States have similar country dummies is due to the simultaneous estimation of the employment and the hours decision. Stated differently, a high average number of hours worked can be achieved through either a high employment rate (extensive margin) or a high number of average hours (intensive margin) supplied per worker (or both).

Indeed, Portugal is the only country with a high employment rate for women and a relatively high number of hours worked among these employed women. Thus, the labour supply of women in Portugal is highest in the European Union. Portugal is followed by a group of Central and Eastern European Countries (Czech Republic, Estonia, Latvia, Slovenia) characterized by low to medium employment rates and a high number of hours worked (if employed). In total, women supply the fewest labour in countries characterized by a very low employment rate and a medium to high number of hours worked (Poland, Greece). Generally, countries with a rather high employment rate of women have higher female labour supply compared to countries with a high number of hours worked but low employment rates. For example, employed women in the well-performing CEE Countries work three to five hours more than women in Austria. However, the employment rate is only slightly below that in Austria (3 to 5 percentage points), leading to a higher female labour supply. In contrast, women in Poland and Greece also work 3.5 and 4.5 hours more than Austrian women, if employed. However, the female employment rate is considerably lower (15 and 17 percentage points respectively) thereby reducing composite female labour supply drastically (Table A.2.13 in the appendix).

These cross-country differences imply that increasing the participation rate of women is likely to be more effective than increasing the number of hours supplied by working women, assuming the aim is to increase overall female labour supply. The policies most often mentioned in this context are part-time employment and childcare. Using data from the European Community Household Panel (ECHP), Del Boca, Pasqua and Pronzato (2009) show that not only the availability of part-time employment and childcare matters, but also the quality of the former (in terms of earnings, job protection and social benefits) and the price of the latter. In addition, these policies appear to have a different effect depending on the woman's level of

education. Women with lower education appear to be more affected, because their cost of participation given their potential wage is higher. Thus, based on our results concerning the robust and strong connection between education and the employment rate of women, policies directed at increasing the participation rate of low-skilled women could be especially useful. Concerning the employment rate and average hours supplied of men, a similar pattern emerges. One important difference is that the average number of hours worked of the employed shows considerably less variation compared to women. Men in the Netherlands work 9 hours less than men in Greece. In comparison, women in the Netherlands work 15 hours less than women in Bulgaria. This explains why a high employment rate appears to lead to high overall labour supply (Cyprus, Ireland, Portugal, UK), while the opposite is true for low employment rates (Poland, Slovakia) (Table A.2.14 in the appendix).

These differences between the countries in employment, part-time employment and hours worked for workers with the same individual and household characteristics are explained with the help of macro variables. More specifically, the correlations between the country effects described above and institutional indicators and variables on macroeconomic conditions are calculated. The differences in labour supply between the countries are related to differences in the macroeconomic conditions and institutional settings.

The set of variables on macroeconomic conditions includes GDP growth, population growth, unemployment rate and fertility rate. First, GDP growth is negatively correlated with the employment probability of men and the share of part-time employed women (see Table A.2.17 in the appendix). Thus, men in countries experiencing a comparatively high growth rate of GDP are less likely to be employed while women are less likely to work part-time. This finding can be due to the fact that countries with lower GDP levels, such as the new Member States, have a higher GDP growth and relatively low male employment rates.

Second, the fertility rate is positively related with the employment probability of men and women. However, there is a positive relationship between fertility and the share of part-time employed women which is expected because there can be a relationship in both directions. More women work part-time because they have to care for their children but it can also be that more children are born because it is possible to work part-time.

Third, a higher unemployment rate decreases the probability of employment for both genders. This effect is less surprising and can be explained along two lines of argument. First, by definition a higher unemployment rate means a larger number of unemployed workers, who are characterized as non-participating in the study at hand. Second, a high unemployment rate might discourage workers (e.g. young individuals, women) to enter the labour market in the first place.

Several institutional settings are included in the estimations. Here, only the most interesting results will be discussed. First, there is no correlation between employment protection, inequality and the tax system with one of the labour supply indicators

Second, the proportion of children aged 0-3 years in childcare is positively correlated to the employment probability of men and increases the probability of part-time employment. These results can intuitively be explained. A higher share of small children in childcare allows parents to participate in the labour market but work mostly part-time. Fourth, a higher amount of spending on parental leave expenditures as percentages of GDP are associated with lower probabilities of male employment and female part-time employment. These results are interesting, because many studies show a positive relation between maternal and parental leave

opportunities and employment rates of parents (ECB, 2008). However, if the duration of maternal and parental leave exceeds 10 months, Genre et al. (2005) report a negative correlation with employment. Thus, insofar high parental leave expenditures are associated with long maternal and parental leave duration, the results presented here are in line with these previous findings.

2.4.4 Separate estimations for country groups

A separate estimation for each of the defined country groups does not change the results significantly (the results are presented in Tables A.2.18-A.2.22 in the appendix). First, the sign of the relation between age and labour supply is the same in all country groups. However, the correlation is especially large in magnitude for the CEE countries and relatively small in the UK. Similarly, the relation between education and labour supply is rather large in magnitude for the CEE countries and very small for men in the Mediterranean countries. Interestingly, highly educated men in the Mediterranean countries have a higher probability of part-time employment than men with a low or medium skill level.

Second, the number of adults living in the household (aged 15-64) did not have any significant connection with labour supply in the estimations including all countries. In the CEE countries, the number of adults is associated with an increase in the probability of employment thereby increasing labour supply in terms of hours worked. In contrast, the relation is negative for women in the Continental Countries and the UK, while it is positive for men in the same countries. Third, analogous to the joint estimations, women supply less labour in the presence of small children. In addition, the relation between the number of small children in the household and men's labour supply is positive in the CEE and Mediterranean Countries. Concerning the number of school children living in the household the joint estimations did not show any relation with female labour supply. The separate estimations show that this relation is negative for women in the Continental Countries and the UK.

Fourth, the correlation between labour supply and the number of elderly persons living in the household has opposite signs for different country groups. The sign is positive in the CEE countries and for women in the UK, while it is negative for women in the Continental countries. Last, but not least, the separate estimations for the country groups show some interesting time trends, which are not visible in the joint estimations. Employment rates appear to have decreased during the observation period in the CEE I countries, even though they remain rather stable since 2003. In contrast, female employment rates have been increasing in the Continental and Mediterranean Countries. In addition, the probability of part-time employment for women has been increasing in the Mediterranean Countries as well. The simultaneous increase of employment and part-time employment can be interpreted as an indicator that full-time employment is not substituted by part-time employment in these countries. Instead, part-time employment may increase overall labour supply by activating more workers.

2.5 Conclusion

Labour supply is an important subject in the European Union since the demographic challenge will lead to a decrease in labour supply. This decrease can be compensated by an increase in labour force participation and the number of hours worked. Therefore, it is impor-

tant to detect the most important factors for both, labour market participation and hours worked. Furthermore, it is important to discover whether the potential for an increase in labour supply is in the hours worked or in the participation rate.

The overview on labour market participation in this section shows quite large differences in labour supply between the Member States. While some countries experience low participation rates and on average a high number of hours worked other countries experience higher participation rates and a wide-spread distribution of hours worked. Therefore, the extensive margin is more important in most New Member States to increase labour supply while it is the intensive margin in the former EU 15.

Besides these differences between the countries differences between demographic groups emerge. The largest differences can be observed between men and women. Since most of all part-time employed are women differences in the amount of hours worked is mostly driven by the share of part-time employment of women. Furthermore, women are less likely to work at all than men are. Therefore, labour supply can be strongly increased by changes in female labour supply. The observed differences between countries are similar (or even more pronounced) for women. To increase labour supply different policies are necessary in different countries: those to increase participation and those to increase the number of hours worked.

The number of hours worked can depend on the amount of hours worked and income gained of the partner. Our results indicate that there is a positive relationship between the hours worked of the spouse/partner for women without children. The number of small children has some negative influence on the labour supply of women in both dimensions: participation and working time. Furthermore, there is no impact of the number of hours worked of the partner on women with children. Personal characteristics and household composition are more important. However, men with children adapt to some extent to the labour supply of their partner which can be due to income reasons on the one hand and share of child care on the other hand.

Additionally to these differences by gender, differences between age groups and skill groups can be observed. For all countries and both genders, individuals with a low skill level supply less labour than skilled and high skilled individuals. Furthermore, the participation rate of old workers is lower than that of medium aged workers. Therefore, there are also options to further increase male labour supply.

Summed up, an increase in labour supply can be derived mainly through the labour supply of women which can be increased by higher participation rates (especially in new Member States) and by longer working hours (in the EU-15). The focus should be on women with children.

3. Task 2: Duration of Unemployment and the Job Search Methods of the Unemployed

3.1 Introduction and Overview

Many European countries are plagued not only by a high level of unemployment, but also by high rates of long-term unemployment (LTU). A high proportion of long-term unemployment is generally seen as a very problematic condition as it leads to more persistence of unemployment at the macro-economic level. At the individual level, LTU reduces the probability of exiting unemployment with increasing duration. This is generally attributed to the loss of human capital during unemployment, but also to selection effects, i.e. the fact that those staying in unemployment longer also possess unfavourable labour-market characteristics (both observable and unobservable). Increasing unemployment duration also has detrimental effects on social inclusion, thereby decreasing the chances of participation not only in the labour market, but also in more general social activities (for an overview see Machin, Manning 1999).

The obvious policy recommendation therefore must be to stifle the duration of unemployment, and to assist the unemployed in finding new jobs. Thus, the aim of this task is to find out about the determinants of the duration of unemployment, as well as about the search behaviour of the unemployed. Key questions to be answered are the following: Which workers are most affected by long-term unemployment? Which role do individual and household characteristics play in this context? How strong is the influence of the business cycle?

If the EU Member States do want to reduce (long-term) unemployment, an efficient job search process is indispensable. But how do unemployed individuals in the EU actually look for a job? In the EU-LFS, respondents can list up to thirteen different job search methods that they have been using during the four weeks prior to the interview. Unfortunately, since individuals are not followed over time, we do not know which of them will eventually lead to a new job. Nevertheless, an exploration of the number and types of search channels used, and of how they vary with individual characteristics and unemployment duration, promises to yield important insights into the search process. In particular, in this section we aim to answer the following three questions with respect to job search. First, what are the determinants of an individual's overall job search intensity? Second, how are different search methods related to each other, can we detect certain search patterns? Third, what are the determinants of using specific search methods?

In order to answer these questions with respect to the duration of unemployment and the search behavior of the unemployed, the chapter is structured as follows: We first analyse the determinants of the duration of unemployment. This is done by providing both descriptive information and an econometric analysis. Second, we examine the search behavior of the unemployed. This includes an investigation of the search intensity of the unemployed, as well as of the importance of different search methods. In doing so, we scrutinize the use of both individual search methods and of combinations ("bundles") of different search methods.

The descriptive analysis of the duration of unemployment, as well as of the search behaviour of the unemployed, provides an overview of the variables of interest for the different Member States, over time, as well as for different demographic groups (men and women, different age classes, different education classes).

To gain further insight, we estimate multivariate econometric models where we can simultaneously control for different factors which might relate to the duration of unemployment. As argued before, long-term unemployment may be mainly a human-capital problem, but it could also well be that different population groups are affected differently for other reasons. Examples might be discrimination against older workers or the lack of care facilities, forcing individuals to stay at home in order to provide support for children or elderly people. To get a more detailed view of the problem of long-term unemployment, we add two different sets of explanatory variables.

First, we include variables at the individual level, such as age, gender and education. These are the main factors used in basically all existing research on individual labour supply. Including them gives in the regression yields a baseline how the persistence of unemployment affects specific groups in the population. As the EU-LFS allows us to add household variables to our data, we construct a second set of control variables, which provides some insight into the correlations between household-specific variation and unemployment duration. This set of controls comprises information on the number of small children (0-4 years), number of older children (5-14 years) and the number of elderly persons (65 and above) living in the household. Furthermore, we control for the size of the household by adding the number of persons aged between 15 and 64 living in the household to our set of control variables. Finally, we also add information on the labour market status of the spouse – if present in the household. The information derived from these household models might have highly-relevant policy implications, as they may point to flaws and shortcomings in existing institutions which hamper the transition from unemployment to employment.

All these models are estimated jointly and separated by gender, as it may well be the case that different forces are at work in determining unemployment duration. Especially with regard to the number of children living in the household, we expect that their influence varies by gender. Traditional role models suggest that women will stay at home to raise children or provide care and support to elderly persons, more often than men. In these models, the man takes the role of the “bread-winner” who has to provide support for the family and the woman takes care of the household. Depending on the existing unemployment insurance system, this could lead to incentives to stay in unemployment for a longer time or simply lead to such a long absence from the labour market that the affected person only possesses outdated skills and only marginal work experience, thus prohibiting the re-entry into the labour market (see e.g. Lynch 1989, Hildreth et al. 1998). In an additional step, we measure how the association between unemployment duration and household composition varies between age groups, e.g. if unemployment duration is related in a different way to the number of elderly persons living in the household than it is to the number of younger individuals living in the household. Unfortunately, no household information is available for Denmark, Finland and Sweden, so we had to exclude these countries from this part of the analysis. We always include information on the country of residence and on the year to control for country-specific labour market institutions and policies and the business cycle.

In general, we would expect that unemployment duration is longer among older workers, as re-entry into labour markets is traditionally harder at a higher age. This may partly be due to discrimination, or could also be explained by outdated skills which were sufficient in the past but are outdated in more modern workplaces (see Machin, Manning 1999). Regarding education, we would expect that higher education leads to a significantly lower probability of long-term unemployment. Higher education is often less specific and thus allows for easier

retraining which allows individuals to work in different jobs and sectors and broadens their possibilities of finding a new job. Education also works as a signal of underlying capabilities, making highly educated workers visible to potential employers.

In the first two sets of models, we implicitly assume that the differences between countries can be adequately captured by the country fixed effects included in the regressions. We therefore only take level differences between countries into account, and assume that, apart from this level difference, the behavioural responses are the same for the individuals in the different countries. Obviously, this is a very strong assumption. Using a third set of models, we therefore repeat the analysis of the baseline model, both with and without household variables, but separately for different country groups. In doing so, we assume that the behavioural responses within each country group are the same, but we are able to allow for differences in behavioural responses between the different country groups. For example, it might be the case that traditional role models are more prevalent in particular countries, or on a more positive note, that some countries successfully implemented efficient labour market institutions, which lead to lower long-term unemployment in general. The most prominent example which comes to mind is the flexicurity system implemented in many Northern European states, or the higher flexibility of labour markets in the UK and Ireland.

We distinguish between five country groups. These country groups read as follows:

1. CEE: Bulgaria, Estonia, Hungary, Lithuania, Latvia, Romania, Slovenia, Czech Republic, Poland, and Slovak Republic.
2. Continental European Countries: Austria, Belgium, France, Germany, Netherlands and Luxembourg.
3. Mediterranean Countries: Cyprus, Greece, Italy, Portugal and Spain.
4. Scandinavian Countries: Denmark, Finland and Sweden.
5. Ireland and the United Kingdom.

Fourth, for the duration of unemployment, we estimate the baseline model without household variables, adding variables at the macro-economic and country level as further explanatory variables. Long-term unemployment is also affected by the demand side of the labour market and by the general economic conditions at any given time. High rates of unemployment are an indicator of unfavourable economic conditions and generally lead to longer unemployment duration, as the stock of individuals in unemployment is often persistent and tends to lead to lower job finding rates of the unemployed. On the other hand, persistent long-term unemployment is often linked to inflexible labour markets. Labour market institutions such as minimum wages and strong employment protection are often suspected of leading to an “insider-outsider” division of the labour market. While effectively protecting employed workers from losing their jobs, it incurs the cost of raising barriers on the entry or re-entry into the labour force. The supply side might be affected by high replacement rates and generous unemployment benefits which could reduce the incentive to seek employment. To control for these factors, we include information on GDP growth per capita, the unemployment rate, the OECD employment protection index, an indicator of the minimum wage, which is defined as the mean of minimum relative to average wages of full-time workers and the average replacement rate from the OECD. We further explore the connection between country-specific outcomes, information on the macroeconomic level and country-specific institu-

tions by looking at the correlations between country effects, expenditures on active labour market policies (ALMP) overall, expenditures on ALMPs for measures, GDP growth and the unemployment rate.

In order to answer the questions raised at the beginning of this chapter, we construct the following set of indicators that are used as outcome variables in our econometric analyses:

1. The duration of unemployment: We use the three duration classes of unemployment (0-5 months, 6-11 months, 12 months and more), which are provided in the anonymised version of the EU-LFS.
2. Search intensity: This is computed as the number of search methods used by an unemployed individual.
3. Specific search methods: We separately analyse four different search methods that turn out to be important in the preceding analysis.

In addition to the econometric analyses related to these variables, we use factor analysis in the examination of search methods. Factor analysis helps us in this context to find out whether certain search methods are usually used together, thus forming “bundles” of search methods, and how the use of such bundles differs between different country groups.

All regression results are presented in the Technical Appendix.

3.2 The Duration of Unemployment

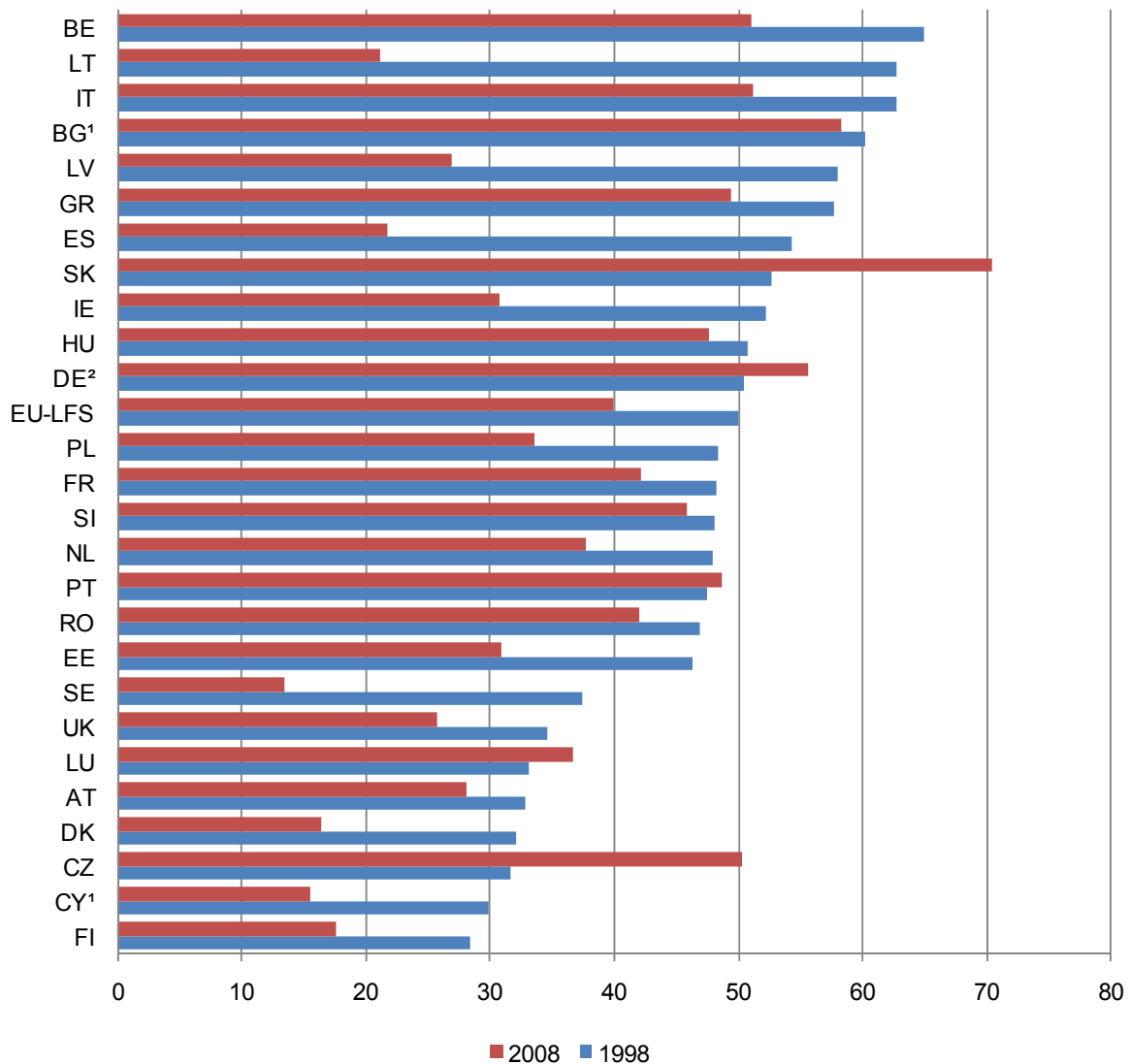
3.2.1 Descriptive analysis

In the following, we briefly describe the distribution of long-term unemployment across different worker groups and countries. The anonymised version of the EU-LFS only contains information on three unemployment duration classes: 0-5 months, 6-11 months, and 12 months and more of unemployment. It is therefore not possible to compute the exact average of the duration of unemployment. Hence, and in order to keep the descriptive analysis tractable, here we focus on the importance of long-term unemployment by computing the share of long-term unemployment in total unemployment. In doing so, we define long-term unemployment, as is usually done, by unemployment lasting 12 months or more.

Figure 3.1 (and Table A.3.1 in the appendix) displays the importance of long-term unemployment in the countries covered by the EU-LFS for 1998 and 2008. In 2008, long-term unemployment was most prevalent in Belgium, followed by Latvia and Italy. The countries with the lowest unemployment rates were mainly from Scandinavia (Finland and Denmark), and from Central/Continental Europe (the Czech Republic and Austria). This picture changed strongly in 2008, probably as a result of the economic crisis. In some countries, the relative importance of long-term unemployment was greatly reduced (e.g. Belgium and Latvia), while it rose in other countries (e.g. the Czech Republic and Slovakia). However, it is important to realize that this reduction in the share of LTU in total unemployment came about not because a reduction of the number of the long-term unemployed, but rather because of an increase in overall unemployment. This phenomenon is therefore likely to be transitory in nature.

The prevalence of LTU also differs between men and women, which can be seen in Figure 3.2 (and Table A.3.2 in the appendix). For example, women feature much higher rates of LTU in Greece, Poland and Spain, while this is the case for men in the Baltic States, Ireland, and the UK. In the EU-LFS overall, the gender difference in LTU is relatively small.

Figure 3.1
Share of long-term unemployment in total unemployment
 1998 and 2008



Source: EU-LFS, own calculations. – ¹data refer to 2000 instead of 1998. – ²data refer to 2002 instead of 1998.

The share of LTU in total unemployment for workers of different age and education is as expected: Older workers face a higher risk of long-term unemployment, as do workers with lower levels of education (cf. Figures 3.3 and 3.4, respectively, as well as Tables A.3.3 and A.3.4 in the appendix).

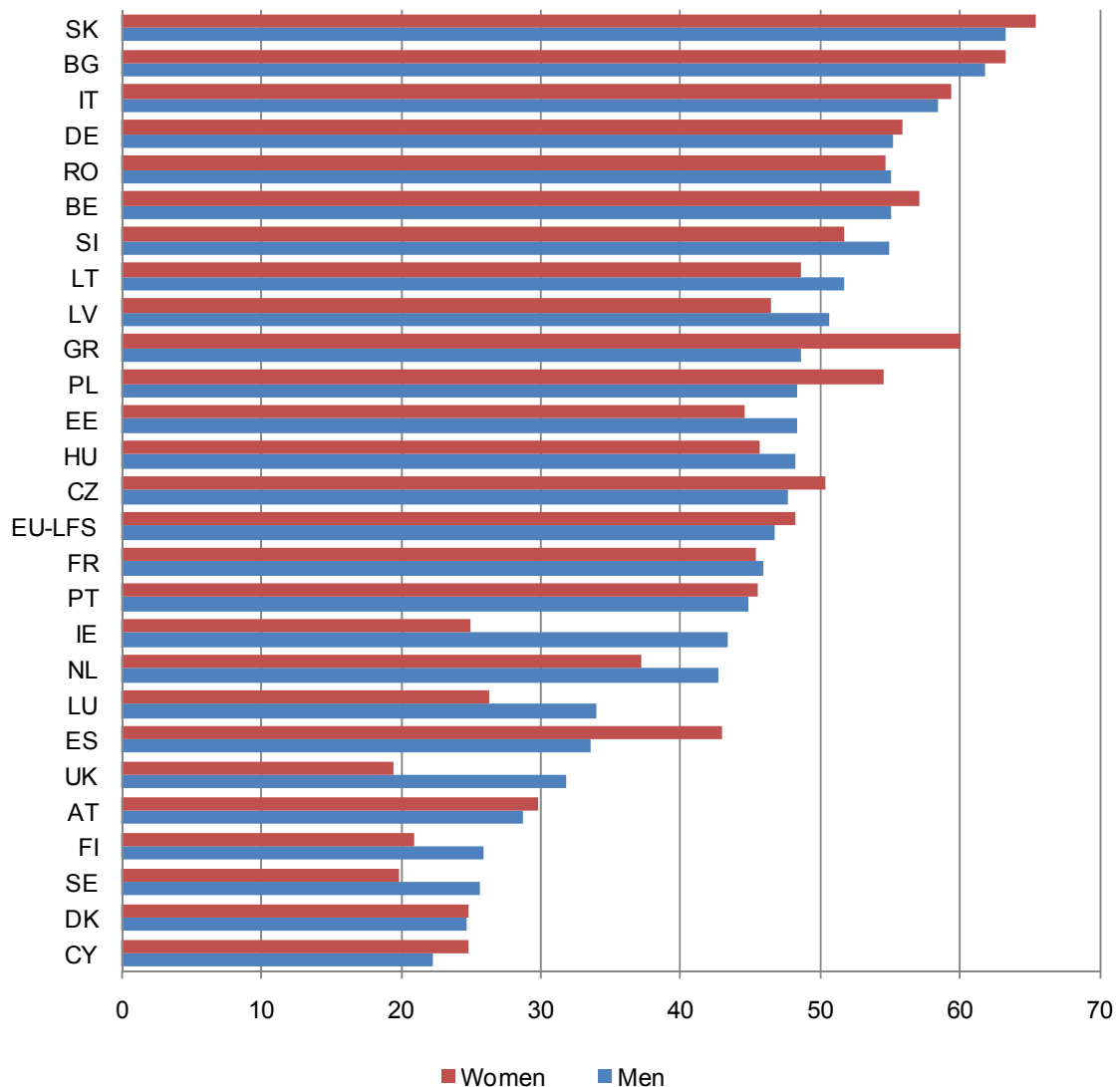
3.2.2 Econometric analysis

Model and Results

In order to analyse the determinants of the duration of unemployment econometrically in a broader framework, we now estimate the variables which are related to the probability of belonging to one of the three unemployment duration classes provided by the EU-LFS data set. This approach gives us multivariate descriptive evidence on the joint correlation between individual, regional and household characteristics on the one hand, and the duration of

Figure 3.2

Share of long-term unemployment in total unemployment by gender

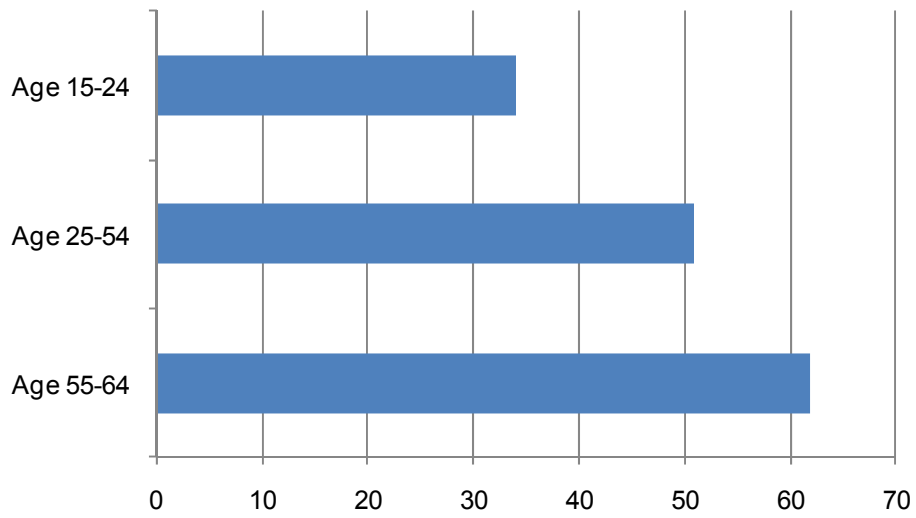


Source: EU-LFS, own calculations.

unemployment on the other hand. Holding other factors constant, we can interpret the effect of specific characteristics on observed unemployment duration. In other words, we estimate the probability (or hazard rate) of staying unemployed and moving into a higher unemployment class and how it is influenced by individual and household characteristics, as well as macro-economic factors.

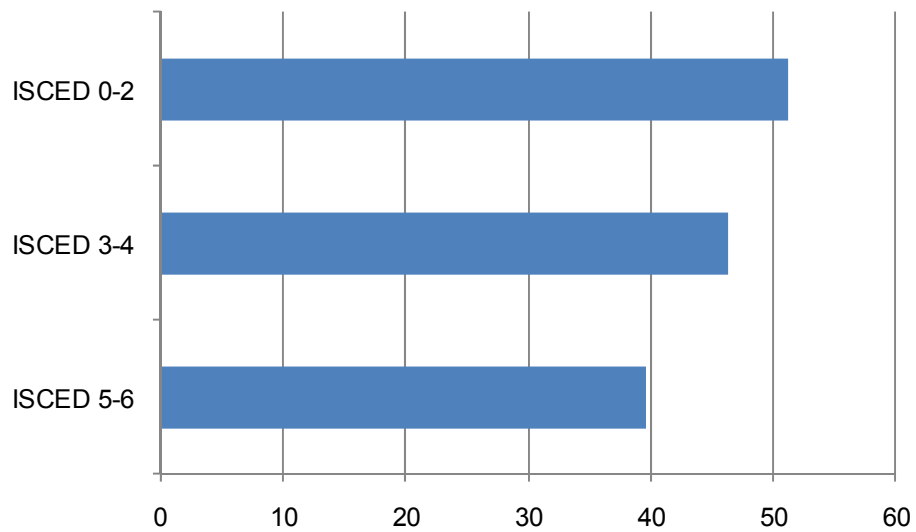
We estimate ordered regression models which allow us the interpretation of found coefficients as marginal effects on the odds ratio. An overview how these models are estimated and how the coefficients can be interpreted is given in Box 3.1.

Figure 3.3
Share of long-term unemployment in total unemployment by age



Source: EU-LFS, own calculations.

Figure 3.4
Share of long-term unemployment in total unemployment by education



Source: EU-LFS, own calculations.

Box 3.1

Ordered Regression Models

The ordered regression model (ORM) is an appropriate econometric tool for the case of ordinal outcomes (cf. Han, Hausman 1990; Long 1997). Such outcomes can be ordered, but the distances between the outcomes are not necessarily meaningful, arbitrary or changing. This is for example the case for the anonymized variable for unemployment duration (DURUNE) in the EU LFS. Intuitively, an ORM measures the baseline hazard (in the example of unemployment duration, the probability of belonging to a certain duration class) as a series of dummies with no prior assumptions about the distribution and parametric form of the underlying hazard function. A recent application of ORM to unemployment duration data can be found in Borra et al. (2009).

The ORM can be seen as a generalization of the binary regression model which has the special case that the outcome has only two categories. The outcome is defined as a latent (i.e. unobserved) variable ranging from $-\infty$ to ∞ .

The underlying structural model is:

$$y_i^* = x_i' \beta + \varepsilon_i,$$

where the outcome is dependent on a vector of observable characteristics and a random error term.

Applied to our data, the measurement model divides y^* into three categories (unemployment duration less than six months, between six and eleven months and more than eleven months):

$$y_i = m \text{ if } \tau_{m-1} \leq y_i^* < \tau_m \text{ for } m = 1 \text{ to } 3.$$

τ_0, \dots, τ_3 are the associated threshold values, also called cut points:

$$y_i = \begin{cases} 1 & \text{if } \tau_0 = -\infty < y_i^* < \tau_1 \\ 2 & \text{if } \tau_1 \leq y_i^* < \tau_2 \\ 3 & \text{if } \tau_2 \leq y_i^* < \tau_3 = \infty \end{cases}$$

Note that all but the two exterior cut points need to be estimated together with the coefficients.

The standard formula for the probability of belonging to a particular category in the ORM is:

$$\Pr(y = m | x) = F(\tau_m - x' \beta) - F(\tau_{m-1} - x' \beta)$$

with F as the cumulative distribution function of ε . The shape of this distribution function depends on the estimated model. In an ordered probit model, the distribution function is the standard normal one. In an ordered logit model,

F is the logistic cumulative distribution function with a variance of $\pi^2/3$. Both methods are known to produce mostly similar results (Han, Hausman 1990). The ordered logit specification has the advantage that it allows us to interpret the coefficients in terms of the odds ratio. As the ORM is a non-linear model by nature, interpretation is not straightforward (as it would be the case for linear regression models). We can interpret the coefficient, while holding the other variables constant (usually at their means). The two most common ways of interpretation are:

1. The coefficient β denotes the effect of a standard deviation increase or decrease in a variable on the standardized change in the latent variable
2. The exponentiated coefficient e^{β} denotes the effect of a unit increase or decrease in a variable on the odds ratio. Say, for example, that the exponentiated coefficient of a particular variable is 1.20. Then, holding everything else constant, a unit increase in this variable increases the odds of observing an outcome in a category greater than m versus less than or equal to m by 20 per cent. Accordingly, exponentiated coefficients lower than one mean that an increase in the respective variable is associated with a reduction in the odds ratio. Using this interpretation we can gain insight into which factors are important in the determination of unemployment duration and how they compare to each other sizewise. Therefore, we will display exponentiated coefficients in our regression tables.

Table A.3.5 in the appendix contains the first set of results of the ordered logit estimation of unemployment duration. The first specification in the table is estimated without the household variables, while these variables are included in the second specification. For every explanatory variable, the effect on the odds ratio and the t-value are displayed. The former tells us how the odds of being in a higher unemployment duration class, i.e. being unemployed for a

longer time period, change with respect to changes in the associated variable. The change is expressed as a multiple of the previous odds ratio. The t-value indicates the significance of the results, with values larger than 1.96 (2.58) in absolute terms being significant at the 5 (1) per cent level of significance.

Men display a negative relationship with long unemployment duration. Once we include household level characteristics, this result becomes significant. This can be interpreted as men facing a lower risk of long unemployment spells than women. However, the results for gender are not consistent across the two specifications, as there is no significant relationship between unemployment duration and sex in the first specification, while a negative relationship, meaning a lower probability of being unemployed for longer durations, can be detected in the second specification. Looking at the age categories, it becomes evident that older workers tend to suffer from longer unemployment spells than younger workers. We find stable and robust correlations for the variables controlling for education. Having finished an education equivalent to ISCED levels 3 and 4 lowers your relative odds of experiencing longer-term unemployment by 12 per cent. Having a university degree or higher tertiary education (ISCED 5 and 6) lowers the odds ratio even more, namely by 23 per cent. These effects become even more pronounced, once we take household variables into account.

Turning to the household variables, the number of persons aged between 15 and 64 living in the household is associated with significantly higher unemployment duration. In contrast to this, the number of young children (below age 4) in the household goes together with a lower risk of long unemployment spells, i.e. with shorter unemployment. The number of older children in the household, on the other hand, does have a significant positive correlation with longer unemployment duration. In absolute terms, the odds rise by 2%. The number of older persons living in a household is significantly positively correlated with unemployment duration and shows a 15% higher odds ratio of staying unemployed. The presence of more dependent persons in the household seems to go together with a higher risk of being long-term unemployed. This could be due to rising demands of providing care for these persons, especially in the case of elderly people. Children, on the other hand might pose a mobility constraint, thus forcing (at least) one of its parents to stay at home and risk detachment from the labour market. For our full sample (except for Denmark, Sweden and Finland), an inactive or unemployed spouse living in the household does not seem to significantly correlated with unemployment duration. However, an employed spouse living in the household goes together with lower relative odds of longer-term unemployment by more than 20 per cent. The latter result can be interpreted in different ways. On the one hand, it is conceivable that an employed spouse increases the motivation to find a job, and that he/she also provides help in finding a job. In this case, there would be a causal mechanism at work. On the other hand, unemployed workers with an employed spouse may feature different (unobserved) characteristics, which help them in finding a job, than unemployed workers without an employed spouse. Then, our analysis would merely pick up a correlation, which cannot be given a causal interpretation.

The year fixed effects included in the regression are decreasing over time. This is an indication for a falling risk of long-term unemployment for the time period under consideration.

An analysis of the country fixed effects shows that we have significant differences between the countries, which mainly confirm the descriptive analysis provided in Figure 3.1: Belgium and Italy, for example, display a high country fixed effect, i.e. these countries can be shown to suffer strongly from long-term unemployment even when controlling for other composition

effects in the econometric analysis. On the other side of the spectrum, with low country fixed effects and therefore low long-term unemployment, the same is true for Denmark, Finland and Sweden.

Given that the country fixed effects are strongly significant, and hence country-specific characteristics seem to play an important role in the determination of the duration of unemployment, we now want to conduct the investigation using the country groups described in the first section of this chapter. Unfortunately, we could not include estimates for the Scandinavian countries, due to the data limitations described above. The grouping was done in a way to minimize the differences between countries with respect to labour market characteristics and social welfare traditions. We assume that these traditions lead to a relatively similar functioning of the labour market within the identified country groups. On the other hand, we expect differences between the groups. The aim of the following investigation is to find out about the existence and magnitude of such differences.

The results of the estimations by country groups are displayed in Table A.3.6 in the appendix. In general, the results by country groups are in line with the picture we obtain from using the full sample. However, some differences between countries emerge. First of all, male workers tend to have a lower probability of long unemployment durations in Continental Europe, the Mediterranean and the CEE countries. In the UK and Ireland, by contrast, men display significantly higher odds of long unemployment spells. This difference is also quantitatively large. Turning to the different age groups, for middle-aged workers, the effects are relatively similar across the different country groups. Older workers are worse off in all country groups, but much more so in Continental Europe. Differences between skill groups are small, with one exception: in the Mediterranean countries, medium-skilled and high-skilled workers do not face lower odds of long unemployment durations than low-skilled workers. This stands at odds with the results for the other country groups, where education generally has a positive effect.

When looking at household characteristics for all workers, further differences between the country groups emerge. While the number of persons living in the same household is positively correlated with unemployment duration in the Mediterranean and the CEE countries, the opposite is the case for Ireland and the UK. For Continental Europe, the number of persons aged between 15 and 64 years living in the household displays no significant correlation with unemployment. The same is true in the different country groups for the number of children under age 4. The presence of younger children in the household is associated with a shorter duration of unemployment. The size of the correlation is about the same for all country groups. Older children (5-14 years), however, are associated with longer unemployment durations in Continental Europe, Ireland and the UK, while there is no significant correlation in the CEE countries and the Mediterranean. An inactive or unemployed spouse in the household is associated with lower unemployment durations in the Mediterranean countries, but has not significantly associated in the other country groups. This picture is reversed when looking at whether there is an employed spouse in the household: The correlation with unemployment duration is insignificant in the Mediterranean countries, in all other country groups, however, it is associated with lower unemployment durations. The highest effect can be found for UK and Ireland, where the presence of an employed spouse in the household results in the risk of longer unemployment being reduced by nearly 54%.

The differences between country groups may well be gender-specific, i.e. men may be affected differently than women in the different country groups. In order to analyse whether this

is indeed the case, we conduct the analysis for country groups separately for women and men. The results are in Tables A.3.7 and A.3.8 in the appendix, respectively. The results show that, with respect to age and education classes, the differences between men and women are small. Surprisingly, the same is the case for the household variables, with one exception: the effect on unemployment duration of an inactive or unemployed spouse living in the same household seems to be different for women and men. For men, an inactive or unemployed spouse in the household is significantly negatively correlated with long unemployment spells in all country groups (bar the CEE countries, where the effect is also negative, but not significant). For women, however, this relationship is insignificant (UK, Ireland; Mediterranean) or even positive (Continental Europe and CEE). This means that, generally, an inactive or unemployed spouse in the household is associated with shorter unemployment spells for men, but is no significantly, or even positively, correlated with longer unemployment spells for women. This result is in line with the “traditional” role of men being the breadwinners in the household – if the spouse is not working, the husband has to try harder to find a job quickly, which reduces unemployment duration. It is also in line with Jacob and Kleinert (2010) who find important gender differences in the correlation between unemployment duration and the spouse’s financial resources.⁶

For a further exploration of the effect of household variables and household composition on unemployment duration, we set the model up in a way which allows us to see if different age groups are affected differently by the presence of children or elderly people in the household. The results of these estimations can be found in Table A.3.9 in the appendix. The model was estimated jointly and separately for each gender to allow varying effects. The significance of age, education and the employment status of the spouse virtually remain unchanged. Children younger than four years are associated with longer unemployment duration for young men, aged 15 to 24. This correlation cannot be found for the older age-groups (25-54 and 55 to 65). Older children, aged 5-14 are correlated with a higher risk of long-term unemployment for those who are between 25 and 54 years old. This result is solely driven by females and again in line with more traditional household models, where child-raising is mostly seen as a female domain. The presence of elderly people in the household is associated with a higher risk of long-term unemployment for all age groups, except for the oldest one.

Finally for the issue of the duration of unemployment, we estimate the baseline specification of the econometric model, including the indicators at the macro level described in section 3.1. The results of this analysis are contained in Table A.3.10 in the appendix. As one can see in Table A.3.10 in the appendix, the level of unemployment is positively associated with longer unemployment durations. This means that the higher the unemployment rate, the higher the risk of individual workers to stay in unemployment for a long time. This is an intuitive result, as the mechanisms at work in generating long-term unemployment (e.g. the loss of human capital) can be expected to be more severe with higher unemployment. GDP growth per capita, on the other hand, is, at first sight counter-intuitively, also positively related with longer unemployment durations. This could be an issue of timing, as unemployment duration might take a long time to react to cyclical upswings or could point to a more profound underlying problem. With ongoing unemployment, human capital decreases and once acquired skills become obsolete. The ones who benefit most from a growing economy might be those who only recently lost their jobs and are therefore less costly to integrate into the workforce. This

⁶ Given that income is not included in the EU-LFS data set, we cannot analyse this issue explicitly. However, it seems realistic to assume that a spouse’s financial resources are correlated with his/her labour market status.

adverse selection effect exacerbates the problem of long-term unemployment, as the long-term unemployed stay in their status, regardless of the state of the overall economy. To control for the role of labour market institutions we added the average replacement rate and the level of employment protection, as collected by the OECD, to our set of control variables. Both have no effect on the length of unemployment. Finally, the level of the minimum wage is not significant either. To shed some further light on the role of macro-economic indicators in determining long-term unemployment we took the country specific fixed effects from our most basic model (Table A.3.5 in the appendix) and explored pairwise correlations with macro-economic indicators and labour-market institutions. The results are displayed in Table A.3.10 in the appendix. The effect of a country's employment rate is always stable and significant. The percentage change of GDP has no significant effect in these regressions. Expenditures for active labour market policies as a percentage of GDP and expenditures for measures are correlated with shorter unemployment duration, which is consistent with many empirical studies such as Ashenfelter, Ashmore, Deschênes (2005). Contrary to some findings in the literature (e.g. Devine, Kiefer 1991, Cullen, Gruber 2000), we do not find a link between the replacement rate of the unemployment insurance system and unemployment duration. We must stress the limits of our method here, as these simple correlations do not allow for causal interpretations and can only show patterns in the data.

Our findings, especially of the unemployment rate being the main predictor for long-term unemployment are consistent with existing findings in the literature (e.g. Blanchard, Wolfers 2000, Blanchard 2006, and OECD 2002, Chapter 4).

3.2.3 Summary

The examination of the determinants of long-term unemployment in Europe using the LFS generally confirmed the results usually found in the literature. More highly educated persons, younger persons, and individuals with favourable household characteristics are more likely to have shorter unemployment spells as opposed to older persons and lower educated ones. With regard to the key questions raised in the introduction we can conclude the following points: Our results tentatively suggest that business cycle effects with regard to unemployment and output changes are also present, but these results should be regarded cautiously. Lowering unemployment should be the main focus of all macro-economic policies, as this would reduce long-term unemployment in the first place. Higher education is strongly correlated with shorter unemployment duration. Training and education programs therefore seem to be good ways to improve the chances of re-employment and to stifle long-term unemployment, with the additional benefit that higher education is generally associated with a much lower unemployment probability.

The main finding we can draw from this part of the analysis is that the correlations of household characteristics and unemployment duration seems not to be very different between country groups within the EU. Especially the number of elderly people living in the household is correlated with longer unemployment duration. If this is due to the difficulties of providing care for the elderly, a policy implication could be to improve access to care facilities or to implement labour market institutions which allow individuals to combine care provision and paid work, such as the possibility of part-time employment or tax breaks for workers who have to pay for care provision.

All interpretations should be used with caution, as the LFS data do not allow us to track individuals over time or see exits out of unemployment which would greatly enhance the explanatory power of our analysis. We are still fairly confident, though, that the estimated models give a robust and meaningful insight into the factors contributing to the duration of unemployment. However, clear-cut causal interpretations cannot be given.

3.3 Job Search of the Unemployed

3.3.1 Introduction

In recent decades theories of unemployment have paid particular attention to the process of how unemployed, job-seeking individuals are matched with open vacancies (e.g., Pissarides 2000). Equilibrium unemployment rates crucially depend on the efficiency of this matching process. Individuals can influence the efficiency of the process by deciding on how much effort to devote to job search and on which search methods to employ, taking into account associated costs and expected benefits (e.g., Holzer 1988). Benefits accrue in the form of job offers, which may vary in their quantity and quality, and thus determine the probability of being employed and the income earned in the next period. Costs may be of pecuniary nature or relate to time and effort aspects. It is important to note that these costs and benefits may (and certainly will) vary across individuals. For example, individuals whose qualifications are in high demand in the labour market can expect high returns to their search effort, and hence should search more intensively than job-seekers with less favourable job market prospects. Likewise, job search should be less costly for individuals who, for example, have many employed friends and relatives, and therefore can simply call them up to ask about vacancies, than for those unemployed who do not have a helpful social network but have to invest a lot of time and effort to obtain the same information. Empirically and also from a policy perspective, the exact factors determining the relative productivities and costs of specific search methods and overall search intensity are of major interest. After all, a clear understanding of actual search behaviour is a prerequisite for targeted support.

In this section we aim to answer the following three questions. First, what are the determinants of an individual's overall job search intensity? Second, how are different search methods related to each other, can we detect certain search patterns? Third, what are the determinants of using specific search methods? Our investigation relates to several other studies on the search behaviour of the unemployed (e.g., Barron and Mellow 1979, Holzer 1988, Osberg 1993, Clark 2001, Addison and Portugal 2002, Weber and Mahringer 2008) and contributes to this literature in two main respects. First, we provide detailed cross-country evidence for the European Union, based on a harmonized survey. This can be seen as an update to Clark (2001) who partly used the same data set but focused on the years prior to 1999 when comparability of the data across time and countries was more difficult and the EU consisted of 15 countries only. Second, we put special emphasis on the role of household characteristics in determining search behaviour. Detailed household information is rarely available in comparable data sets but should be of major importance assuming that labour supply is, in general, a household decision. A limitation of our analysis is that the data set does not allow us to relate search behaviour to subsequent outcomes since we cannot follow individuals over time.

For reasons of data quality and comparability, we have to restrict our analysis of search behaviour to the years 2006 to 2008. Among the thirteen search methods originally included in

the data set, we discard passive search methods – only individuals using active search methods are classified as unemployed according to the ILO definition – methods relating to self-employment and the residual category “Other search methods”, which strongly fluctuates over time and countries.

Having imposed these restrictions, we are left with seven active and comparable search methods used by individuals seeking a job in dependent employment. These are “Contacting the public employment office to find work”, “Contacting a private employment agency to find work”, “Direct applications to employers”, “Asking friends, relatives, and trade unions, etc.”, “Answering or inserting advertisements in newspapers or journals”, “Studying advertisements in newspapers or journals”, and “Taking a test, interview or examination”.⁷

The remainder of this section is structured as follows. First, we provide a brief descriptive overview of the search intensity in the countries covered by the EU-LFS. This is followed by an econometric investigation of the same topic. We then apply factor analysis in order to find out which search methods are usually used together, and how the use of such “bundles” of search methods differs between different country groups. Finally, we analyse the determinants of different search methods both in a descriptive way and econometrically.

3.3.2 Search intensity

Descriptive analysis

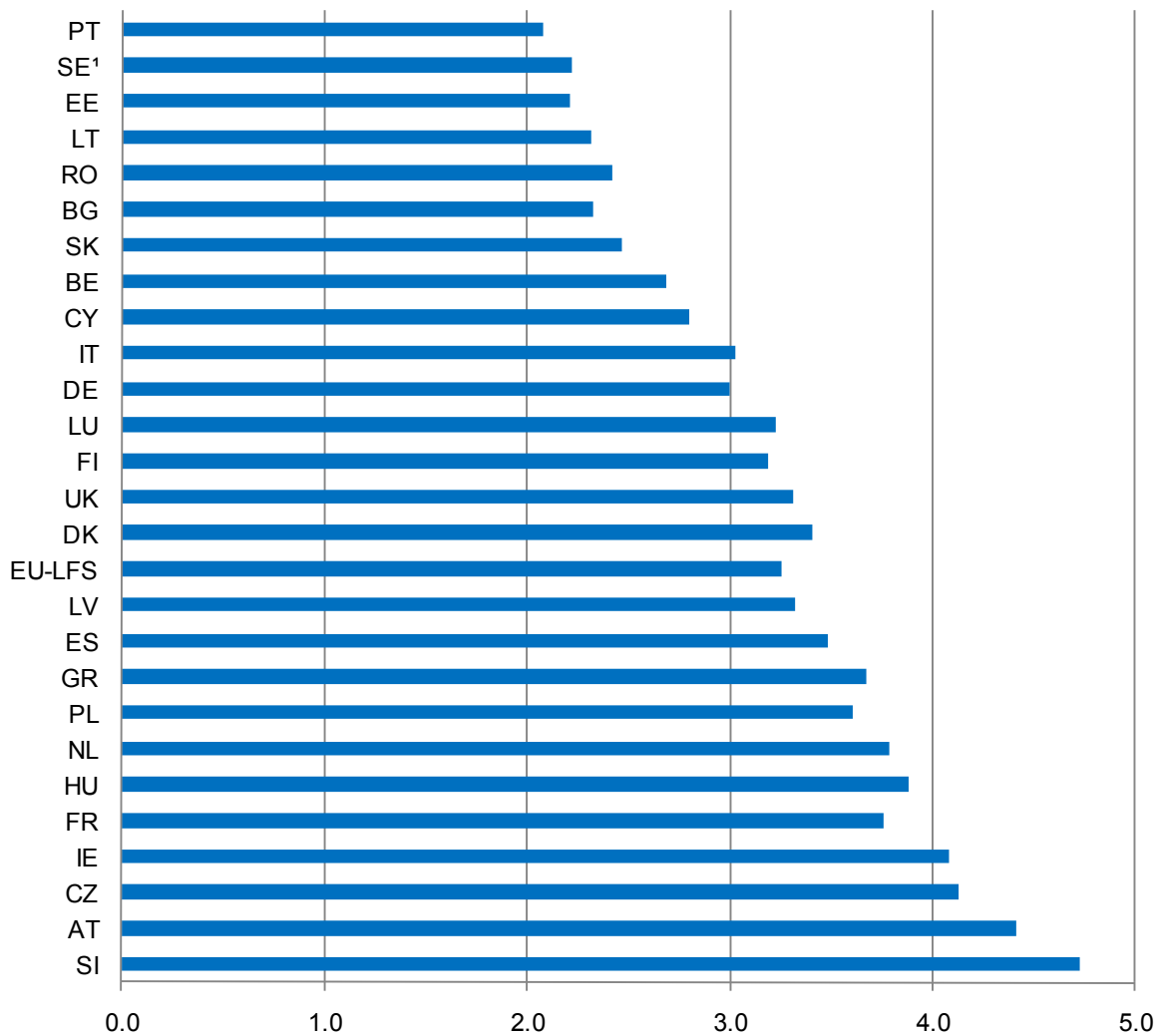
The following section provides a brief descriptive overview of the search intensity in the EU Member States, as well as for specific socio-demographic groups. Following Holzer (1988) as well as Weber and Mahringer (2008), we measure search intensity by the number of search methods used. Other authors have proposed to use the time spent for job search as a proxy for search effort (e.g., Barron and Mellow 1979) but this information is not available in the EU-LFS data set.

Most unemployed individuals state that they have been using several different search methods during the previous four weeks in order to find work (cf. Figure 3.5) The average number of methods used – among the seven we selected for our analysis – is 3.3, with search intensity being highest in Slovenia and Austria (4.7 and 4.4 methods, respectively) and lowest in Portugal, Sweden and Estonia (2.1 the former, 2.2 the latter two).

Consistent with Weber and Mahringer (2008), we find that search intensity increases with the skill level of unemployed job seekers (cf. Figure 3.6 and Table A.3.11 in the appendix), which is in line with theoretical predictions. First, search is likely to be less costly for high-skilled individuals who may be more aware of the different search channels and in a better position to use them. Second, the expected benefits are higher for the high-skilled than for the low-skilled since the former have a higher probability of receiving a job offer and, in general, face a larger wedge between potential wage income and unemployment benefits.

⁷ Only the method “Taking a test, interview or examination” is not strictly comparable across all countries because it is not surveyed in the UK.

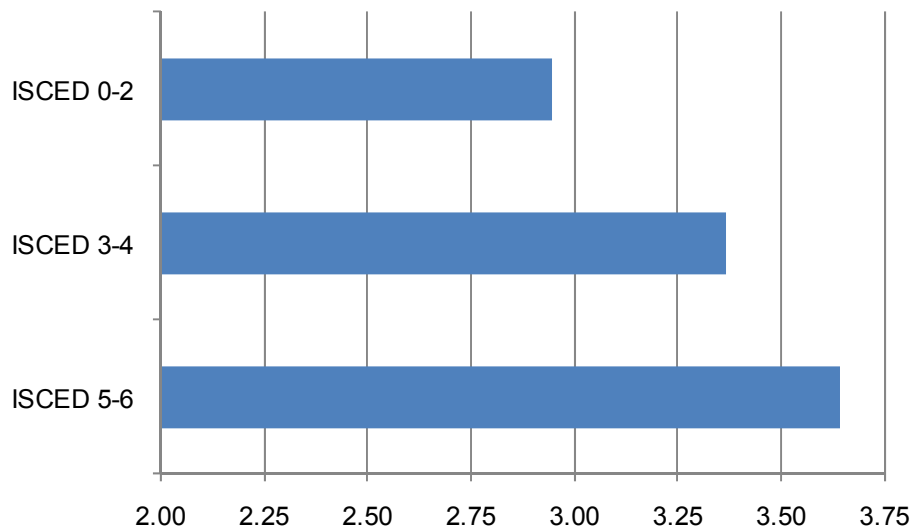
Figure 3.5
Search intensity of unemployed job seekers
 2006 to 2008



Source: EU-LFS, own calculations. – ¹data refer to period 2007 to 2008 instead of 2006 to 2008

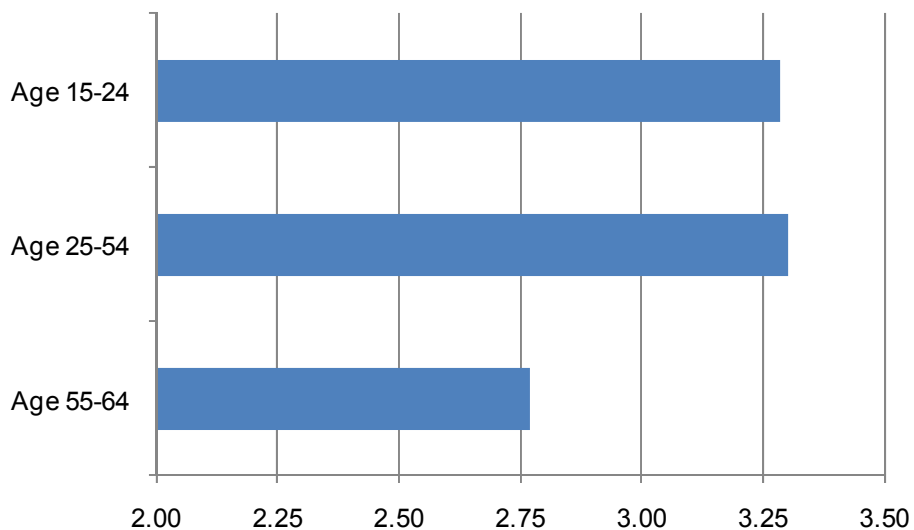
The number of search methods used also differs by age groups (cf. Figure 3.7 and Table A.3.12 in the appendix), which again is in line with the existing literature (Weber and Mahringer 2008). Whereas there is a tiny and statistically insignificant difference between individuals aged 15 to 24 and the ones aged 25 to 54, older unemployed individuals search significantly less intensively. This can reflect the latter's higher costs in accessing non-standard search channels, which would be a cause for worry. On the other hand, individuals of different age groups may have different perceptions regarding the expected benefits of job search activities, and older individuals, being more experienced, may simply have better knowledge of the effectiveness of different search methods.

Figure 3.6
Search intensity by education
 2006 to 2008



Source: EU-LFS, own calculations.

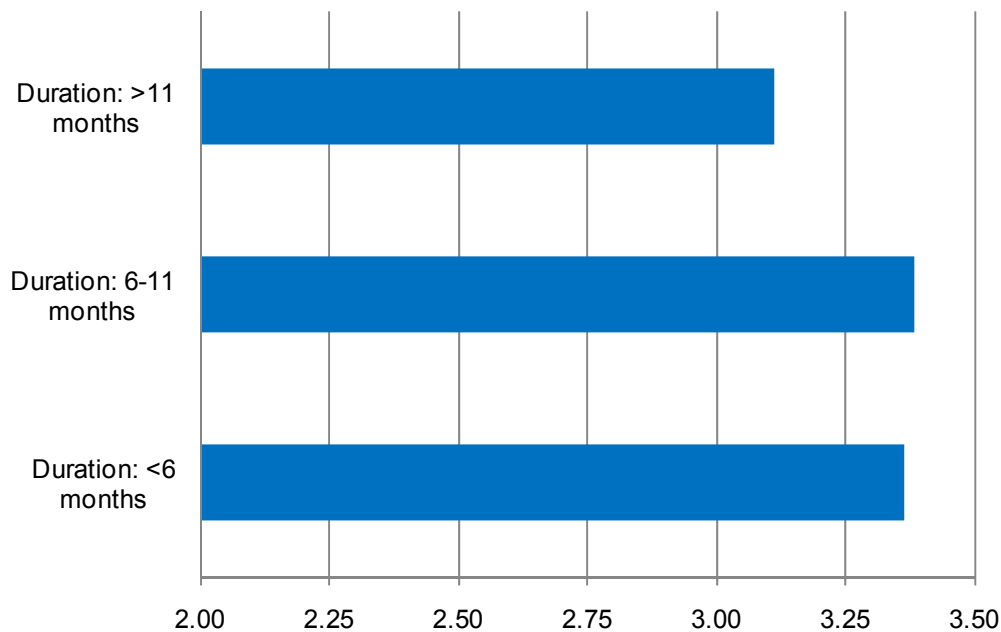
Figure 3.7
Search intensity by age
 2006 to 2008



Source: EU-LFS, own calculations.

Finally, we also compare search intensity for the three different unemployment duration classes available in the data set (cf. Figure 3.8 and Table A.3.13 in the appendix). Similarly to our distinction by age, the effect is non-monotonic. Individuals that have been in unemployment for less than six months and the ones that have been unemployed between six and twelve months do not differ in a significant way with respect to their search intensity. The long-term unemployed, however, make use of significantly less search methods. Again, several explanations for this pattern may be at work. First, long-term unemployed individuals

Figure 3.8
Search intensity by unemployment duration
 2006 to 2008



Source: EU-LFS, own calculations.

may become discouraged and therefore search less intensively. Second, other observable or unobservable characteristics that drive both, the speed of leaving unemployment as well as the search intensity – such as a strong intrinsic work motivation – may be responsible for this correlation. Third, there may be reverse causality if those unemployed individuals that search more intensively are also more likely to leave unemployment quickly. In the latter two scenarios differences between duration classes emerge even without any change in individual behaviour. In fact, all three mechanisms may well be at work but it is important to note that we are unable to discriminate between them since the data do not allow us to follow individuals over time. In light of the previous discussion we would expect to see a difference in search intensity between the short-term (<6 months) and the medium-term (6 to 11 months) unemployed, too. It is possible that the mentioned factors contributing to a negative correlation between unemployment duration and search intensity are counteracted by an incentive effect, which goes in the opposite direction. In general, unemployment benefits are only paid for a limited period of time so that the pressure to find a new job increases the closer the date of benefit exhaustion comes. In fact, this end-of-benefits spike is found in many empirical studies on unemployment duration (e.g., Meyer 1990). Given these opposing forces, it is not surprising that existing empirical results on the correlation between unemployment duration and search intensity are ambiguous. Holzer (1988) finds a positive relationship between the two variables whereas Barron and Mellow (1979) find a negative one.

Econometric analysis

The descriptive analysis does allow us to have a look at a few pairwise and unconditional correlations but not to disentangle several competing forces. For the latter purpose, we run a series of ordered logit regressions with our measure of search intensity as the dependent

variable. In doing so, we start with a baseline specification which mainly includes individual characteristics, and then add more variables, e.g. on household characteristics, to obtain extended specifications.

Table A.3.14 in the appendix displays the results of our two baseline specifications. The first specification includes variables from the descriptive analysis (skill level, age, unemployment duration), and, in addition, a gender dummy as well as full sets of country and year dummies. The second specification adds to this list some selected household information, namely the number of prime-age adult persons (15 to 64 years) living in the household, the number of children aged 0 to 4 and aged 5 to 14, respectively, the number of elderly individuals (aged 65 years and over) as well as two dummy variables capturing the labour market status of the spouse. Note that in the second specification we lose all the observations of Denmark, Finland and Sweden because there is, at least for our period of analysis, no household information available for these countries. The table displays the marginal effects of the explanatory variables on the odds ratio and the associated t-values. The former denotes the effect of a unit increase in the explanatory variable of interest on the odds of observing a search intensity greater than m versus less than or equal to m , holding all other variables constant. m may be any search intensity. This effect is expressed as a multiple of the former odds ratio so that values greater than one denote a positive and values smaller than one a negative correlation with the outcome (see Box 3.1 for the details).

The regression results are the following. First, they confirm the findings from the descriptive analysis. Search intensity increases in the level of educational attainment and is significantly lower for the highest age group. The (exponentiated) coefficient of 0.57 of the latter variable tells us that the odds of observing a search intensity greater than m versus less than or equal to m is 43 per cent lower for the age group 55 to 64 years than for the baseline category, that is, unemployed job seekers aged 15 to 24. Our two unemployment duration dummies are individually insignificant but jointly significant. Moreover, individuals having been in unemployment for more than eleven months search significantly less than individuals that have been in unemployment between six and eleven months. We also find that men search more intensively than women, holding all other characteristics constant.

Adding household variables to the regression does not alter the previous conclusions on individual characteristics in a qualitative sense. As far as the former are concerned, search intensity decreases with the number of children and the number of elderly individuals living in the household, where, interestingly, the number of children aged 5 to 14 matters more than the number of children aged 0 to 4. The negative correlation with the number of children could be due to the time resources that have to be spent on them and hence, cannot be used to search for work. Likewise, to the extent that the elderly persons in the household need to be taken care of, they might also absorb some of the time that could otherwise be used for job search. In theoretical terms, both components of the household structure seem to make job search more costly for the unemployed. An alternative but complementary interpretation is that the expected benefits of job search are also negatively affected if small children and elderly individuals are present in the household. On the one hand, this may be due to a low availability of job offers that allow for a high enough flexibility to assume family and care responsibilities. On the other hand, it may reflect that any realisable wage income has potentially to be weighed against care costs. This implies that even a relatively high expected income may not be sufficient to induce women to work if expected child care costs are high, too.

Surprisingly, while there is no statistically significant difference in the search intensity between individuals having an employed spouse living in the household and the ones without a spouse in the same household, having a non-working spouse living in the household is associated with a significantly lower search effort. Thinking in terms of financial need, we would expect the latter to be positively correlated with search intensity. Again, there are several potential explanations for this finding. First, due to assortative mating (i.e. the tendency of individuals with similar inclinations to marry each other) or common shocks (e.g. to household wealth), couples might share some characteristics not accounted for by the other variables that limit the opportunity or the readiness to search for work. In this case there would be no causal relationship but a correlation driven by factors that are unobservable to the researcher. Second, and more worrying from a policy perspective, the availability of certain search channels may be reduced if the spouse is not working. For example, “Asking friends, relatives, and trade unions, etc.” may be less of an option if the social network does not have useful information on the matter, simply because most of its members are not in employment, either. Similarly, “Direct applications to employers” may also be more difficult if relevant inside information is missing. Indeed, the importance of social networks in determining labour market outcomes has been highlighted theoretically by, e.g., Calvó-Armengol and Jackson (2004) and empirically by, e.g., Rees (1966) or Loury (2006). We will examine these issues in more detail in the following subsections.

The relationship described above may hide important differences between the sexes. To explore this question, we run separate regressions for women and men. In contrast to the above regressions, this allows us to analyse not only aggregate level differences between men and women, but also behavioural differences with respect to different factors. Regression results are displayed in Table A.3.15 in the appendix. Indeed, whereas there is no noteworthy difference between the sexes with respect to the effects of the socio-demographic characteristics and unemployment duration, the correlations of search intensity with the household variables differ considerably. In short, all household characteristics matter much more for women than for men. To start with, the number of small children (0 to 4 years) in the household is negatively correlated with search intensity of women but does not affect men’s search effort. The same goes for the number of adults living in the household. Regarding the number of older children (5 to 14 years) and the number of elderly individuals living in the household, both are associated with significantly less search effort for both sexes but again to a much stronger extent for females. The correlation with the labour market status of the spouse differs, too. For women, as before, having a non-working spouse living in the household is negatively related to search intensity compared to the base category – not having a spouse living in the household. However, having an employed spouse living in the household is also associated with a lower search intensity, although this correlation is less pronounced. This gives some indication that the traditional family model with a dominant male breadwinner and a female partner who takes care of the children and does not search very intensively for own paid work is still present in the EU. Note that our sample only consists of individuals that actually look for a job. Inactive women are not even included. For men, in contrast, there is no statistically significant difference between the ones that have an inactive or unemployed spouse living in the household and the ones that do not live together with a partner. Strikingly, however, men with an employed spouse living in the household search more intensively than the two other groups. This may again reflect a selection effect but also hint at a potential role of household-internal support or even pressure to find a job.

In an extension to this set of regressions, we have also fully interacted all our household variables (except for the number of adults aged 15 to 64) with our three age categories, thereby allowing for age-specific correlations between household characteristics of women and men and their search intensity. Table A.3.16 in the appendix displays the results. Indeed, we do find some differences between age groups. The negative and significant association between search intensity and household characteristics is particularly pronounced for medium-aged (25 to 54 years) women who can be expected to bear most of the family responsibilities. Indeed, their search effort decreases with the number of children and the number of elderly individuals. The difference between women living without a partner and the ones living together with a partner is also most pronounced for this age group. In contrast, search intensity of young females (15 to 24 years) is negatively related to the number of small children in the household but does not exhibit any significant correlation with the number of elderly individuals, whereas the opposite is true for women in the age bracket 55 to 64 years. Moreover, for these two other age groups, there is no significant difference in search intensity between the ones having an employed spouse in the household and the ones not having a spouse living in the household. For males, the following age-specific correlations stand out. Interestingly, a higher number of older children (5 to 14 years) is associated with lower search intensity of young men (15 to 24 years). A cautious interpretation could be that the latter are involved in taking care of their younger siblings since only in a few cases they might have own children older than five. On the other hand, only medium-aged men search less if their spouse is also non-working and if the number of elderly individuals living in the household increases.

Next, we explore regional differences in more detail and conduct separate analyses for four country groups. These are the Continental European countries, the Mediterranean countries, the Anglo-Saxon countries UK and Ireland as well as the Central and Eastern European countries. The Scandinavian countries are not included due to the data limitations specified above. We again run separate regressions for women and men. Results are displayed in Tables A.3.17 and A.3.18 in the appendix. Focussing on a few selected results, we can highlight the following. First, the gap in search intensity between older unemployed individuals (55 to 64 years) and other age groups is largest in Continental Europe. Second, the pattern of duration dependence is not homogeneous. In all the country groups, the long-term unemployed (more than 11 months) search less intensively than the medium-term unemployed (6 to 11 months). However, the relative position of the short-term unemployed differs. For example, among unemployed men in Continental Europe, the short-term unemployed are the ones that search with highest intensity. In contrast, in the UK and Ireland, as well as in Central and Eastern Europe, their search intensity is lowest, for both men and women.

With respect to the household variables, we can see that across all country groups women are more affected than men by the number of children in the household. UK and Ireland is the only region where search intensity of men even increases significantly in the number of young children. This may point to a pronounced need of finding work to secure or improve the family finances. The negative correlation between the number of elderly household members and search intensity is mainly found in Continental Europe. One possible explanation is that in these countries elderly individuals absorb more (care) time of their children, for example due to too little state support. A different and more likely explanation is that the selection effect is much stronger in Continental Europe. That is, it may well be that in other regions it is more common to have different generations living together in one household any-

way, saying nothing about the health status and the need for home care. If this is not the case in Continental Europe and, in contrast, mostly those parents in the need of care move to the place of their children, this would also be consistent with the strongly negative coefficients. Indeed, we find that households in Continental Europe have, on average, the lowest number of elderly individuals, being in line with the second hypothesis. Unfortunately however, we have no information on the health status or even care level of household members so that we cannot investigate this issue further.

The employment status of the spouse matters the least in Continental Europe. That is, there is no significant difference between individuals not living together with a partner and the ones having an employed spouse living in the household. This applies to both men and women. However, for women the correlation between search intensity and the dummy variable indicating that a non-working spouse is living in the household, is negative. Following up on this point, we find the biggest relative difference between women living together with a partner – no matter whether employed or not – and the ones not having a spouse in the household, for the Mediterranean countries. On the other hand, UK and Ireland is the only country group where both men and women search less intensively if the partner is non-working as compared to if no partner is living in the same household.

After analyzing in detail cross-country differences, a natural question to ask is whether macroeconomic variables are important predictors of search intensity. We consider two different types of macroeconomic indicators and analyze them separately in turn. First, there might be business cycle effects, as suggested by Osberg (1993). In times of an economic downturn more unemployed individuals compete for less available vacancies, which could have an effect on their search behaviour. Importantly, this may lead to a variation in search intensity over time within countries. Therefore, we include two variables capturing general economic conditions – the GDP growth rate and the unemployment rate – in our baseline specification including country fixed effects. Results need to be interpreted carefully since we have only three years of data and hence, observe far less than a full cycle. We present results for the full sample as well as for women and men separately (cf. Table A.3.19 in the appendix). Our results suggest that macroeconomic conditions do not have a significant impact on female search intensity. However, a higher unemployment rate is associated with a more intensive search of men. Hence, they try harder to find a job if labour market conditions are more adverse and competition for jobs is more intense. Our finding that women and men adjust their search behaviour differently to business cycle conditions is in line with Osberg (1993). While the current state of the economy does seem to play a role, albeit a limited one, it does not explain more permanent differences between countries. Apart from cultural differences, labour market institutions might be responsible for these country-specific search patterns. Since institutional indicators do not display sufficient variation over the time period 2006 to 2008, we cannot include them in the regression including country fixed effects. We therefore adopt an alternative procedure and correlate the estimated country fixed effects with a few selected institutional indicators, namely the expenditures on active labour market policy as a percentage of GDP, the mean of the minimum wage relative to the average wage, the OECD employment protection index, and the average net replacement rate of the unemployed. Since not all indicators are available for all countries, we show pairwise correlations only so that we do not lose too many observations. Results are displayed in Table A.3.20 in the appendix. We do not find any significant correlation between the country-specific baseline search intensity and the institutional indicators under consideration. However, our analysis is

severely limited by the low number of observations. A more thorough examination, preferably based on longer time series of data and a focus on institutional discontinuities induced by policy reforms, is therefore clearly called for.

3.3.3 Search patterns

After an extensive examination of the determinants of overall search effort, we now turn to an analysis of the specific search methods. In a first step we are interested in the question which search methods tend to be used together and which ones are used independently from each other. With this knowledge we may be able to assign the methods to different groups and, subsequently, to interpret them. For this purpose, one possibility would be to analyze all the bundles actually used by the unemployed individuals, but with seven different methods the number of bundles would be far too large. Therefore, we explore in more detail the correlation matrix of the search methods and conduct a factor analysis instead. Factor analysis is a statistical tool frequently used to structure the correlation matrix and to reduce the dimensionality of the data. The aim is to describe the covariance relationships among many observed variables in terms of a few underlying, but unobservable factors (see Box 3.2). One advantage of this analysis is that we remain agnostic about the data and do not impose a certain structure ourselves. Nevertheless, we should be cautious in our interpretations. First, since there is no unique way of doing the analysis, the results are not unique, either. We have conducted a few robustness checks yielding similar results but the former are not at all exhaustive. Second, the analysis does not tell us which mechanisms lead to the observed correlation patterns. In this sense, our factor analysis is exploratory as opposed to confirmatory in nature.

Tables 3.1 and 3.2 display the results of the factor analysis for the entire sample. We see that our three extracted factors explain 67 per cent of the total variance of our original variables, that is, the seven specific search methods. Among the different methods “Taking a test, interview or examination” and “Contacting the public employment office to find work” display the highest degree of idiosyncrasy, i.e., the largest share of the variance not accounted for by the common factors (cf. the column headed “Uniqueness”). The so-called factor loadings, that is, the pairwise correlations between the factors and the original variables, help us to structure the data matrix and to interpret the factors. Following common practice, we only interpret factor loadings that exceed 0.5 in absolute value.

The first factor is mainly correlated with the two methods relating to the use of advertisements. Thus, these two are highly correlated with each other but not clearly related to any of the other methods. It is therefore suggestive to simply call this factor “Ads”. The second factor is positively related to the methods “Direct applications to employers” and “Asking friends, relatives, and trade unions, etc.” and negatively correlated with the method “Contacting the public employment office to find work”. Hence, we might call this factor “Informal vs formal search channels”. This is an interesting pattern because it seems to illustrate the opposing roles of taking one’s own initiative on the one hand and relying on the state on the other hand. Thus, in general, these two strategies do not go hand in hand. To the extent that the public employment office aims to serve as a catalyst for the use of other search methods, this cannot be satisfactory. On the other hand, it may well be efficient because under these circumstances the public employment office is able to direct all its resources to those individuals that do not have access to alternative search channels or where the latter are unlikely

Box 3.2

Factor Analysis

Factor analysis is a statistical tool generally used for data reduction and goes back to the work of Spearman (1904). For a good introduction on the topic we refer to, e.g., Johnson/Wichern (2008, ch. 9), and for a more extensive treatment to, e.g., Gorsuch (1983). The aim of factor analysis is to describe the covariance relationships among many observed variables in terms of a few underlying, but unobservable factors. For this procedure to be useful, it is essential that correlations – at least among certain subgroups of the variables – are high. Ideally, each of the factors found represents a distinct subset of the original variables, this way helping to structure the data matrix.

In the analysis of search methods in this chapter, we are interested in whether certain search methods are highly correlated, i.e. whether they are usually used at the same time by an unemployed worker. If this is the case, factor analysis can help us to identify specific “bundles” of search methods.

Technically, the procedure works as follows. Say, we have p observed variables X_1, \dots, X_p . Through factor analysis, we now aim to find q common factors F_1, \dots, F_q (with $q < p$) that linearly reconstruct the p original variables:

$$X_j = F_1\alpha_{1j} + F_2\alpha_{2j} + \dots + F_q\alpha_{qj} + e_j,$$

Where X_j denotes the j -th variable, F_k the k -th common factor, and α_{kj} the set of linear coefficients called factor loadings. Finally, e_j is the error term, also known as unique or specific factor. Accordingly, the term uniqueness refers to that part of the variance of the original variable that is not accounted for by the common factors. Common and specific factors are assumed to be uncorrelated, and in most applications, the common factors are also assumed to be uncorrelated with each other. Recall that in contrast to a regression model, the F_k are unobserved and need to be estimated alongside the factor loadings. Thus, in principle there are infinitely many solutions and certain constraints are necessary to make the model identifiable. At the end of the procedure, the predicted correlation matrix – where each variable is described only in terms of the common factors – should be reasonably close to the original correlation matrix.

It is important to note that there is not a unique way of doing the analysis. To start with, there are related, but not identical possibilities to extract the common factors. We choose the principal-component factor method, which minimizes the variance accounted for by the specific factors summed across all variables. In this case, the resulting factor-loadings matrix is made up of the scaled eigenvectors corresponding to the q largest eigenvalues of the sample correlation matrix. The next question concerns the number of factors to extract. On the one hand, a larger number of factors yields a better fit between the predicted and the original correlation matrix, but on the other hand, dimension reduction is the explicit aim of the analysis. Unless the true number of factors can be determined based on a-priori considerations, the usual recommendation is to keep all the factors corresponding to eigenvalues greater than one. However, when applying this criterion to our analysis, we are left with just two factors that account for only 55 per cent of the overall sample variance and do not allow for a reasonable interpretation. We therefore keep the third common factor as well (the corresponding eigenvalue is 0.85), so that the proportion of the variance explained by the common factor rises to 67 per cent.

Once the factors and their loadings have been estimated, we can try to interpret them. We do so by analyzing the factor loadings. They tell us which variables are highly correlated with each of the factors, and consequently, can be grouped together, thus forming “bundles”. The interpretation is eased by factor rotation, a (usually orthogonal) transformation of the factor loadings. We apply the standard Varimax rotation which tends to produce the simplest (that is, easiest-to-interpret) structure of the factor-loadings matrix. One final remark is in order. Since we have a series of binary yes-no variables for the different search methods, the standard product-moment correlation matrix is not appropriate because the latter requires interval-scaled variables. We therefore follow the recommendation of Knol/Berger (1991) and apply the factor analysis to the matrix of tetrachoric correlations. The latter are specifically defined for binary variables.

to be successful. Finally, the third factor is positively correlated with the two methods “Contacting a private employment agency to find work” and “Taking a test, interview or examination”. These are the two least used methods among the seven selected ones and it is interesting that they seem to be correlated with each other. If this correlation is not driven by other variables, it might be that individuals are asked to take the interview or examination with the agency itself or that the agencies are able to arrange them with external companies. A candidate for a name of this last factor could be “Specialised search channels.

Table 3.1

Factor analysis of search methods: Proportion of total sample variance after Varimax rotation
2006 to 2008

	Factor 1	Factor 2	Factor 3
Proportion of variance	0.2426	0.2375	0.1933
Cumulative	0.2426	0.4801	0.6734

Table 3.2

Factor analysis of search methods: Factor loadings after Varimax rotation
2006 to 2008

	Factor 1	Factor 2	Factor 3	Uniqueness
Public employment office	0.3295	-0.6557	0.2176	0.4142
Private employment agency	0.1342	-0.0397	0.8358	0.2818
Direct applications to employers	0.2136	0.6803	0.3857	0.3428
Asking friends, relatives, and trade unions, etc.	0.2623	0.7476	0.0547	0.3693
Inserting or answering advertisements	0.8277	-0.0893	0.2408	0.2489
Studying advertisements	0.8578	0.2539	0.0460	0.1975
Taking a test, interview or examination	0.1906	0.3700	0.6284	0.4319

Source: EU-LFS, own calculation. – Notes: Figures in bold denote factor loadings larger than 0.5 in absolute value. See Box 3.2 for detailed explanations.

We also conducted separate factor analyses for our five different country groups in order to uncover regional differences in the search patterns. Results are displayed in Tables A.3.21 to A.3.25 in the appendix. For the sake of space we only highlight some of the findings. Although we can always identify three different search factors, it is indeed the case that the factor structure differs between country groups. In fact, there are no two groups with the same structure. Nevertheless, we can detect several similarities.

First, the two methods relating to the use of advertisements are in general highly correlated with one and the same factor, which does not come as a big surprise. Only for Central and Eastern Europe this is not the case. There, the more active method “Answering or inserting advertisements in newspapers or journals” is more strongly correlated with the other two active methods “Direct applications to employers” and “Asking friends, relatives, and trade unions, etc.” whereas the more passive method “Studying advertisements in newspapers or journals” is more closely linked to the use of private employment agencies and to the method “Taking a test, interview or examination”.

Second, in most country groups the use of the public employment office is fairly independent of or even negatively related to the other methods. In fact, in three country groups (Continental Europe, UK and Ireland as well as Central and Eastern Europe) it is the only method that is highly correlated with a separate factor which is not related to any of the other methods. In Scandinavia it is negatively related to direct applications and in the Mediterranean countries negatively related to the search through friends, relatives and trade unions. In none of the country groups are the use of the public employment office and the use of private em-

ployment agencies correlated with the same factor. Thus, these two methods do not seem to be related to each other, neither positively nor negatively.

Third, mirroring the findings described above, the two more active methods “Direct applications to employers” and “Asking friends, relatives, and trade unions, etc.” load highly on the same factor in the three country groups Continental Europe, UK and Ireland as well as Central and Eastern Europe. In Scandinavia, direct applications are negatively related to the use of the public employment office whereas the search through one’s social network loads highly on a separate one-variable factor. In contrast, in the Mediterranean countries direct applications load highly on the same factor as the methods “Contacting a private employment agency to find work” and “Taking a test, interview or examination” whereas “Asking friends, relatives, and trade unions, etc.” is negatively related to the use of the public employment office.

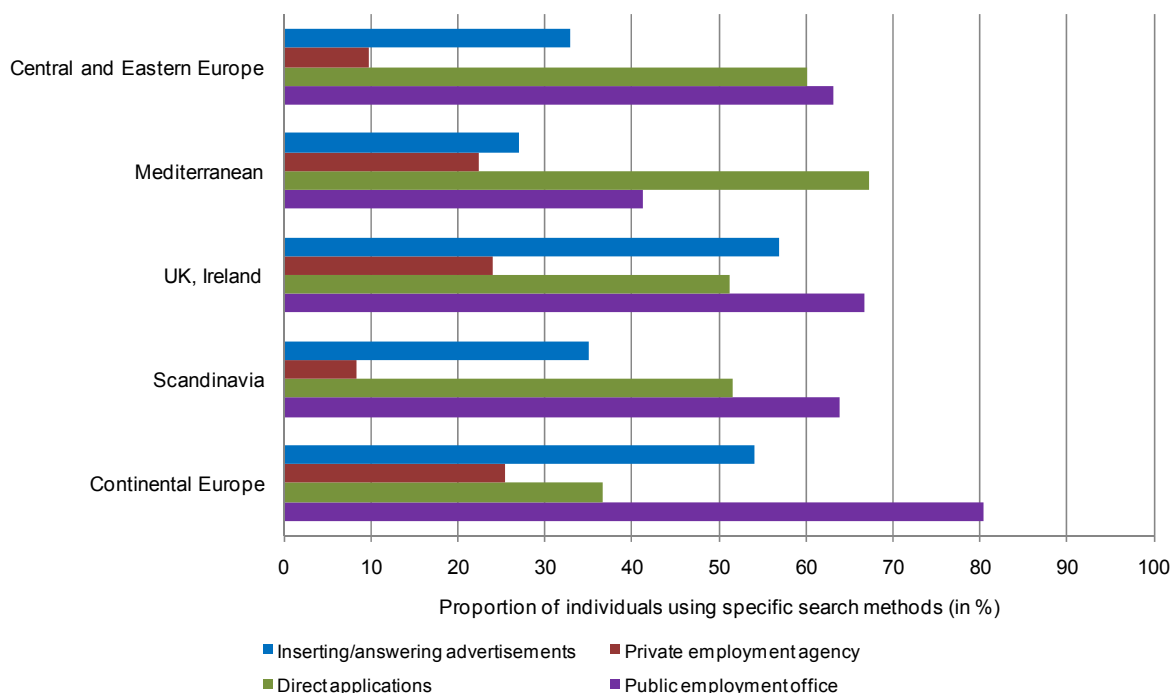
3.3.4 Search methods

The importance of specific search methods

In this subsection we provide a brief descriptive overview of the importance of different search methods in our five country groups. To enhance the clarity of the exposition, we restrict attention to four methods (“Contacting the public employment office to find work”, “Direct applications to employers”, “Contacting a private employment agency to find work.”, and “Answering or inserting advertisements in newspapers or journals”). Note that these four methods cover the three factors identified in the factor analysis on the entire sample where the first two methods are highly correlated with one and the same factor but with opposing signs. Figure 3.9 (also cf. Table A.3.31 in the appendix) displays the results which are largely consistent with the findings of Clark (2001). It turns out that search habits vary considerably. Contacting the public employment office is the most frequently used search method in all country groups except for the Mediterranean countries where it comes second after the direct applications.

A natural question to ask is whether the relatively low use of the public employment services in the Mediterranean countries potentially reflects a lower (perceived) quality of these services, i.e., a lower productivity in generating acceptable job offers as compared to the rest of Europe. We are not aware of any evidence suggesting that this may indeed be the case and with the data at hand we are not able to explore this possibility further. Instead, it might be that the lower use of the public employment office is simply the other side of the coin of a better access to informal search channels. Indeed, search through friends and relatives as well as direct applications are more frequent than in all other regions. Stronger and more extended family ties could be the reason for this pattern. For example, research by Bentolila and Ichino (2008) shows that households hit by unemployment in Italy and Spain receive more often financial support from members of their (extended) family than their counterparts in Britain. The authors also suggest that in the Mediterranean countries, family members are more likely to live in the same geographical area. It is therefore conceivable that the help of family members also extends to job search, thereby reducing the importance of the public employment agencies. This does not need to be a cause for worry since existing research suggests that informal search channels are among the most effective ones in leading to a new job (e.g., Rees 1966, Holzer 1988). On the other hand, it could be the case that a rela-

Figure 3.9
Use of specific search methods by country groups
 2006 to 2008



Source: EU-LFS, own calculations.

tively low use of public employment services is accompanied by a low level of job search requirements and monitoring of the unemployed. If this was true, this would be a cause for concern because the latter instruments have been shown to be important in reducing unemployment duration (cf. e.g. Borland, Tseng 2007, as well as the discussion in OECD 2005, Chapter 4 and OECD 2007, Chapter 5).

Search habits are quite different in Continental Europe, which has the highest share of unemployed individuals using the public employment office and the lowest share of individuals applying directly to employers. Thus, using our suggestive interpretation from the factor analysis above, in these countries the reliance on the state clearly outweighs search via personal, informal channels. Apart from the Mediterranean countries, direct applications are most frequently used in Central and Eastern Europe. As far as the active use of advertisements is concerned, it is most popular among unemployed job seekers in the Anglo-Saxon countries UK and Ireland. Finally, the share of individuals using private employment agencies is fairly modest in all country groups and lowest in Scandinavia and in Central and Eastern Europe.

Determinants of specific search methods

We skip a purely descriptive analysis of the correlation between the use of specific search methods and some selected socio-demographic characteristics. Instead, we immediately jump to the econometric analysis. In particular, in this subsection we investigate the predictors of using each of the four search methods specified in the descriptive analysis. For this purpose, we estimate separate probit regressions for each method. Consistent with the regressions on the search intensity, we control for the gender of the individual, age, the level of educational attainment, unemployment duration, the household characteristics detailed

above, as well as for the country of residence and the year of the survey. Note that due to the use of household characteristics, we again lose the observations of the Scandinavian countries. Table A.3.32 in the appendix displays the marginal effects and associated *t*-values. With respect to gender, men make a significantly higher use of direct applications and of private employment agencies. In particular, their probability of contacting a private employment agency is 3.45 percentage points higher than the one of women. In contrast, there is no significant difference with respect to the use of the public employment office and of advertisements. We can also detect some interesting age patterns. Older unemployed individuals (55 to 64 years) are less likely than medium-aged individuals (25 to 54 years) to use any of the four methods. However, there are differences for young job seekers (15 to 24 years). They have the lowest likelihood of contacting the public employment office – although the difference between them and the oldest age group is not statistically significant – but the highest probability of applying directly to employers.

A similar picture emerges when looking at the skill differences. The probability of using all non-standard search methods is monotonically increasing in the level of educational attainment. In contrast, the highly skilled are less likely to contact the public employment office. Thus, a clear pattern of selection becomes apparent, where the public employment office is contacted, above all, by those individuals that, arguably, have the least favourable characteristics to find a job. This is a common finding in the literature (e.g., Weber and Mahringer 2008). It goes hand in hand with the empirical observation that jobs obtained through the public employment office pay, on average, lower wages and/or are shorter-lived (e.g., Osberg 1993, Addison and Portugal 2002, Weber and Mahringer 2008). This is not (necessarily) informative about the quality of the public employment services but rather reflects the fact that employers tend to post their higher-level jobs at other search outlets. Thus, according to Osberg (1993, p. 352) “[...] a choice of job-search strategy by a jobless worker is simultaneously a choice of wage-offer distributions”. Individuals aiming at better-paying jobs will therefore search via those other channels in the first place. It remains unclear, however, whether the negative selection of job seekers into the public employment services is caused by the negative selection of jobs offered by employers or vice versa, or if both are due to third factors such as potentially the inefficiency or low quality of the service. The selection of different kinds of job seekers into different search methods is to some extent underscored by the estimated coefficients of the dummy variables capturing unemployment duration. There is no duration dependence for the use of the public employment office and for inserting or answering advertisements, but negative duration dependence for direct applications and for private employment agencies. However, we recall our previous discussion from the analysis of search intensity. That is, this apparent duration dependence constitutes a mere correlation and does not necessarily reflect discouragement or the like. It may just be a selection effect or even be driven by reverse causality.

We now turn to the household variables. One striking result is that the number of children and elderly individuals in the household is negatively correlated with inserting or answering advertisements in the first place. This is surprising as we would not expect this method to be particularly costly. Instead, it may be the case that jobs suiting the needs of unemployed individuals with a lot of family responsibilities – e.g., part-time jobs – are rarely advertised. Regarding the labour market status of the spouse – if present in the household – it again becomes evident that the factors explaining the use of the public employment office are in general quite different from the ones predicting the use of the other methods. In particular, hav-

ing an inactive or unemployed spouse in the household is associated with an increase in the probability of contacting the public employment office compared to the two other categories, namely not having a spouse at all in the same household and having an employed spouse. In contrast, it is negatively related to the probability of using the three other methods. Again acknowledging the potential role of selection and common shocks, this finding lends more support to the hypothesis that individuals without or at least with less immediate contact to the working population might be less aware of or have less access to alternative search channels. This is worrying because we can expect these households to have the highest financial need of finding paid work.

Finally, we also investigate whether macroeconomic conditions have an impact on the choice of search methods. For this purpose we estimate probit regressions including the GDP growth rate and the unemployment rate among the regressors. Furthermore, the regressions include country fixed effects so that we focus on variation over time within countries. Table A.3.33 in the appendix shows the results for the variables of interest, separately estimated for women and men as well as for the full sample. As our regressions on overall search intensity already suggested, we do not find any evidence for changing search patterns of women. Men, however, make more use of the public employment office and of direct applications to employers if the unemployment rate increases. One reading of these results is that unemployed men contact the public employment office if alternative channels such as asking friends or relatives are not successful because vacancies are rare. Osberg (1993) also highlights the role of public employment offices as “safety nets” in times of a recession.

3.3.5 Discussion

In this section we have investigated the job search behaviour of unemployed individuals in the EU. In particular, we have examined both, overall search intensity and the use of specific search methods. It is important to note that due to the data structure we cannot draw any conclusions about the effectiveness of different search strategies. Hence, the results do not allow us to give recommendations for an optimal search behaviour, either. However, assuming that individuals base their search choices on a cost-benefit rationale, we are still able to infer factors determining the relative costs and benefits of search strategies as perceived by job-seeking individuals.

The main findings are the following. First, those individuals that, arguably, have better chances to find a job, i.e., that are more highly skilled and still fairly young, search more intensively and in particular, make more use of search methods other than contacting the public employment office. Second, long-term unemployed individuals search less intensively than medium-term unemployed, which again applies predominantly to methods such as direct applications or contacting a private employment agency. Third, household characteristics are important predictors of search intensity. In general, individuals living in households with more children and more elderly persons search less intensively. Moreover, having a non-working spouse in the household is also associated with less search efforts and with a stronger reliance on the public employment office. Fourth, holding all other characteristics constant, unemployed women search less intensively than men and, in particular, show a more negative correlation with the aforementioned household characteristics. Fifth, in general it stands out that the use of the public employment office is at best independent of, if not negatively related to, the other search methods. To a large extent this is likely to be driven by

selection mechanisms. The public employment office seems to be approached predominantly in cases where alternative search channels are not available or unlikely to yield a positive outcome. Sixth, most of the correlations summarized in the previous lines are quite stable across country groups. However, some cross-country differences can be observed with respect to the role of unemployment duration and household characteristics. In particular, the latter is a more important predictor in the Mediterranean countries and a less important predictor in Continental Europe. Although the estimated correlations with the explanatory variables are quite stable, the level of search intensity, and the use of different search methods do differ considerably between countries. We do not find evidence for institutional determinants of these cross-country differences but acknowledge that our analysis on the matter is severely limited by the low number of country observations and the little variation of institutions over the period under investigation.

Reiterating that we do not know whether search choices are optimal or not, the results suggest a role for policy makers in targeted support for specific groups among the unemployed. For example, efforts should be made such that search becomes less costly and more worthwhile for women, particularly if they have many family responsibilities. Non-working couples seem to constitute another risk group. The results indicate that they are in a worse position to make use of search methods other than the public employment office which may be due to the fact that they have already become alienated from the labour market. This is a cause for worry because under these circumstances, labour-market segregation along family lines may emerge, and unemployment may become more persistent. Finally, although it may to some extent be efficient that different groups among the unemployed make use of different search methods, it should nevertheless be ensured that all unemployed job seekers are aware of all available search channels and in a good position to use them.

4 Task 3: Labour Market Transitions

4.1 Background and Objectives

Despite the perceived inflexibility of labour markets in many European countries, transitions between the different labour market states (employment, unemployment and inactivity) are a pervasive phenomenon (see Burda and Wyplosz 1994, for a seminal contribution). This means that, even with relatively sluggish employment, unemployment and inactivity rates, large numbers of workers move between the labour market states. These transitions play an important and beneficial role because they allow workers' labour supply to accommodate firms' labour demand in the economy. Discrepancies between labour supply and demand may arise for several reasons:

- (i) business cycle conditions vary (see Petrongolo and Pissarides 2010 for an analysis of some European countries);
- (ii) the composition of the workforce may change, as workers enter and leave the labour force (cf. Shimer 2001);
- (iii) the labour demand of firms may change because of technological progress and structural change (see Bachmann and Burda 2010, for an analysis using German micro data);
- (iv) labour market institutions and policies, such as employment protection, taxes, and trade unions, affect both workers' incentives to take up a job and firms' incentives to hire workers.

The first factor, business cycle conditions, is relatively short-run in nature, while the latter three factors are more important in the long run.

It is important to realize that worker flows have both positive and negative effects on workers and firms, and on the economy as a whole. On the one hand, they help workers in finding the jobs where they earn most, and firms in finding the workers which add most value to production. Thus, mismatch in the economy is decreased, and productivity and welfare rise with higher worker flows. On the other hand, these transitions also impose costs on firms and workers. Search costs occur for firms which have unfilled vacancies, and for workers who are looking for a job. Furthermore, opportunity costs arise for firms in the form of foregone production, and for workers in the form of foregone wages in the case of unemployment. Also, workers may lose some of their (firm-specific) human capital when they leave a job, because the skills they acquired on the old job may not be relevant any more for the new job. Therefore, worker transitions between the labour market states, while being important in some respects, are not good *per se* and in all circumstances. Rather, the effects on the economy as a whole and on the welfare of individuals depend on aggregate factors (such as the business cycle) and on the characteristics of the individuals who are affected. As a consequence, the transition patterns between labour market states differ strongly between individuals.

Various individual and household characteristics play an important role in determining transition patterns in the labour market. First, there is a strong age effect, with young workers, for example, being more mobile than older workers (cf. Neal 1999). Second, the level of education is known to be a determinant of worker flows, with highly educated workers changing jobs less frequently than workers with lower levels of education. Third, women generally display higher rates of mobility (cf. Royalty 1998). For them, family-related factors are generally more important than for men, which means that their inflows into and outflows from "inactiv-

ity” (i.e. not being active on the labour market) are higher. Therefore, household characteristics are also a potential determinant of labour market transitions.

Early research on labour market dynamics focussed on the transitions between the states of employment, unemployment and inactivity. More recently, direct job-to-job transitions (i.e. workers changing jobs without an intervening spell of unemployment or inactivity) have received more attention, for three main reasons (cf. e.g. Shimer 2005): First, these transitions are important in quantitative terms, especially when compared with the other transitions in the labour market. Second, direct job-to-job flows display a very strong cyclicality and are therefore of paramount importance for the cyclical dynamics of the labour market. Third, it has been argued that job-to-job flows can act as a substitute for other labour market transitions (e.g. between employment and unemployment) if the latter are restricted (cf. Boeri 1999). For example, if employment protection is strong, one would expect fewer firings and therefore lower inflows from employment to unemployment and vice-versa. In this case, labour market adjustment may instead occur through more direct job-to-job flows.

More generally, labour market institutions and policies can be expected to play an important role for the patterns of labour market transitions (cf. Mortensen and Pissarides 1999). This is for example the case for unemployment benefits, employment protection legislation, the importance of trade unions in the economy, the tax system, as well as active labour market policies. These factors all have the potential of affecting, directly or indirectly, the incentives of workers to remain in a specific labour market state or to transit to another one.

Task 3 complements the analysis performed in Task 2. While Task 2 is concerned with unemployment duration (and therefore the exit rate out of unemployment, independently of the destination), Task 3 comprises the analysis of the transitions between all labour market states.

4.2 Empirical Strategy

In order to investigate the issues discussed in Section 4.1 in detail, we conduct an empirical investigation which proceeds in four steps, and which can be summarized as follows:

1. The first step computes descriptive statistics for the transitions between the different labour market states.
2. The aim of the second step of the analysis is to analyse econometrically the association between worker and household characteristics on the one hand, and labour market transitions on the other hand, as well as the role of country specificities and developments over time with respect to labour market dynamics. In order to do so, we estimate two specifications of multinomial logit models (see Box 4.1 for technical details) for the various labour market transitions. The first (baseline) specification contains mainly personal characteristics. The focus is therefore on the role of worker heterogeneity for labour market dynamics. The worker characteristics we take into account are gender, age, education, marital status.

An extended specification of the multinomial logit models additionally includes household variables as explanatory variables, one of the particular strengths of the EU-LFS.

Box 4.1

The Multinomial Logit Model

Outcomes which follow no natural order are called nominal. The outcomes in Task 3: Employment, Unemployment and Inactive do not follow a specific order and are therefore nominal outcomes. To model transitions between these outcomes econometrically, we can refer to the multinomial logit model (MNL). Essentially, the MNL estimates a separate binary logit model for each pair of outcome categories, but takes into account the fact that the realizations of the outcomes are interrelated.

Comparing the estimation results from separate regressions of the transitions from employment to unemployment, from employment to employment and from employment to inactive with estimation results from a MNL, the estimated coefficients are usually (roughly) the same. However, the MNL is more efficient, even though it imposes common constraints between the coefficients.

Our three states m are unemployment (U), employment (E) and inactive (I). Given a vector of individual characteristics x , the MNL can be written as:

$$\ln \Omega_{m|b}(x) = \ln \left\{ \frac{\Pr(y = m | x)}{\Pr(y = b | x)} \right\} = x\beta_{m|b} \quad \text{with } m = 1, \dots, J$$

Where b is the base category or comparison group and $\ln \Omega_{m|b}(x)$ are the log-odds of being in state m , compared to stage b . For the base outcome compared with itself:

$$\ln \Omega_{b|b}(x) = \ln 1 = 0$$

it must hold, that $\beta_{b|b} = 0$. The log-odds of an outcome compared with itself are always zero, the same must hold true for the effects of any independent variable. All other outcomes are calculated relative to this chosen base outcome.

The predicted probabilities which can be derived from the model are:

$$\Pr(y = m | x) = \frac{\exp(x\beta_{m|b})}{\sum_{j=1}^J \exp(x\beta_{j|b})}$$

The choice of the comparison group – the so-called parameterization of the model – does not influence the marginal effects (predicted probabilities) of the model, although the estimated parameters $x\beta_{m|b}$ change, depending which base outcome is chosen to calculate the log-odds of the model.

The marginal effects from the multinomial logit model can be interpreted as predicted probabilities. If the marginal effect for being male is, for example, 0.0119 (taken from Table A.4.4, Column EE), this means, that the probability of a transition from employment to employment goes up by 1.19%, compared to being female. Being highly educated (ISCED 5-6), means that the probability of an EE transition goes up by 3.22% (coefficient of 0.0322), compared with the reference group – low education

The household variables used are the number of small children (4 years and younger) in the household; the number of older children (5-14 years) in the household, the number of older adults in the household; the presence of an employed spouse in the household; and the presence of an unemployed or inactive spouse in the household. Both specifications also take into account time-invariant differences between countries, i.e. country fixed effects, as well as developments over time.

3. The third step of the analysis investigates the time-invariant differences between countries, which were identified in the previous step, in more detail. We examine these country fixed effects by investigating their relationship with indicators of labour market institutions and policies.

4. In order to find out more about the cyclical sensitivity of labour-market flows, we apply a group-specific regression approach. The latter is particularly well suited to examine whether specific groups (according to gender, age, and education) are affected differently by the business cycle (cf. Schmidt 2000). On the one hand, this complements the analysis using individual-level data. On the other hand, it helps to gain additional insights into the vulnerability of certain „problem groups” of the labour market (e.g. women, the unskilled, young and old workers), for example to exogenous shocks such as changes in business cycle conditions.

One particular focus of our analysis is to find out whether important differences between worker and country groups exist with respect to labour market dynamics. The four analytical steps described above are therefore often carried out separately for men and women, and for different country groups. Performing the analysis using separate regressions has the advantage that it allows to take into account differences in behavioural responses to different factors, e.g. age, between worker groups. As an example, women might respond differently to an increased number of children in the household than men. Thus, this strategy is more informative than merely including a control variable for, e.g., gender in a regression. The latter approach only captures overall level differences, but not differences in behavioural responses, and does not yield any information about the source of such level differences.

The same rationale applies for performing separate regressions for different country groups. For example, in doing so we can examine whether the labour market state of an employed spouse living in the household has the same implications for labour market transitions in the Mediterranean countries as it does in Central and Eastern Europe. We use the following grouping:

- Central and Eastern Europe (CEE): Bulgaria, Estonia, Hungary, Lithuania, Latvia, Romania, Slovenia, Czech Republic, Poland, and Slovak Republic;
- Continental European Countries: Austria, Belgium, France, Germany, Netherlands and Luxembourg;
- Mediterranean Countries: Cyprus, Greece, Italy, Portugal and Spain;
- Scandinavian Countries: Denmark, Finland and Sweden;
- The United Kingdom.⁸

These groups were chosen taking into account their geographic proximity as well as their (relative) similarities with respect to labour market institutions.

The econometric analyses in steps 1 and 2 also include changes in the national unemployment rate for every country as explanatory variable. We choose to include the latter variable because it is known to be of great importance for labour market flows. Ideally, we would also like to control for the duration of the previous labour market state and to include this as an explanatory in the regression. Unfortunately, this information is not available in the anonymised data set. Similarly to the problem encountered in task 2, this means that duration dependence in transition rates cannot be controlled for.

⁸ Note that for reasons of data availability, Ireland cannot be included in the analysis.

4.3 Empirical Results

4.3.1 Descriptive overview

We start by giving a descriptive overview of the transitions between the labour market states employment, unemployment and inactivity. The transition probabilities between these labour market states are given in Table 4.1 for all countries covered by the EU-LFS (except for Ireland) for the time period 1998-2008. It becomes apparent that for the total sample, the probability of remaining in the same labour market state from one year to the next is relatively high for employment (93.6 per cent) and inactivity (90.11 per cent), less so for unemployment (60.16 per cent). The transition probabilities from employment to unemployment and to inactivity are comparable in magnitude (around 3 per cent). On the other hand, the probability of transiting from unemployment to employment is nearly three times higher than the probability of transiting from unemployment to inactivity. Finally for the entire sample, an inactive individual is about twice as likely to become employed than to be in the state of unemployment in the following year.

The evolution of different transition probabilities for the entire EU-LFS is displayed in Tables A.4.1 – A.4.3 in the appendix. Table A.4.1 displays the probability of being employed, unemployed or inactive in one year, and of being in the same labour market state in the next year. It becomes apparent that these probabilities are relatively constant for the states of employment and inactivity. The probability of remaining unemployed, on the other hand, seems to be rising over time, with a peak in the years 2005 and 2006. The transition rates into unemployment are depicted in Table A.4.2. Here, some cyclical variability as well as a downward trend over time is visible. Finally, Table A.4.3 displays worker inflows into employment over time. Both the job finding rates of the unemployed (UE) and of the inactive (IE) seem to feature some cyclical variability. The former also shows a downward trend over time.

When looking at the descriptive evidence with respect to gender-specific transition rates in Table 4.1, the main difference between men and women is that the latter are much more likely to become inactive than men. This is true for both the transition probability from employment to inactivity (4.85 per cent and 2.52 per cent for women and men, respectively) and the transition probability from unemployment to inactivity (12.36 per cent compared to 8.46 per cent). This is in all likelihood due to the fact that women are more likely to interrupt their labour market career for family reasons, in particular bringing up children and providing care for elder relatives living in the household – these issues will be examined in more detail in the econometrics analysis. The descriptive evidence also shows that the transition rate from inactivity to employment is lower for women (6.37 per cent) than for men (7.46 per cent), presumably for the same reasons. However, the difference in the job finding rate out of inactivity is smaller than for the inflow rates to inactivity.

Table 4.1
Labour market transitions, total sample and by gender

ORIGIN	DESTINATION		
	Employment	Unemployment	Inactivity
All			
Employment	93.6 (7.15)	2.85	3.55
Unemployment	29.42	60.16	10.41
Inactivity	6.76	3.13	90.11
Total	60.25	6.89	32.86
Women			
Employment	92.17 (6.85)	2.98	4.85
Unemployment	27.28	60.36	12.36
Inactivity	6.37	3.09	90.55
Total	51.93	6.89	41.17
Men			
Employment	94.73 (7.38)	2.75	2.52
Unemployment	31.57	59.97	8.46
Inactivity	7.46	3.21	89.33
Total	68.93	6.89	24.19

Source: EU-LFS, own calculation. – Notes: Job-to-job transitions in parentheses.

As pointed out in Section 4.1, labour market transitions differ greatly between age groups. Table 4.2 confirms this observation. Several observations are in order. First, middle-aged workers display much more employment persistency (95.28 per cent) than young and older workers (86.04 and 87.87 per cent, respectively). Several factors are at work here. On the one hand, older workers tend to have acquired more human capital during their labour market career, which increases employment stability. On the other hand, corresponding life-cycle events such as the decisions to acquire more education (young workers) and to retire (older workers) play an important role. This is also born out by the fact that the transition rates from employment to inactivity are considerably higher for young workers (7.6 per cent) and older workers (10.25 per cent) than for middle-aged workers (2.04 per cent). Finally, the escape rate from unemployment to employment is relatively high for young workers (35.47 per cent), slightly lower for middle-aged workers (30.05 per cent), and very low for older workers (13.4 per cent). This result for the latter age group may be due to the fact that these

Table 4.2
Labour market transitions by age groups

	DESTINATION		
	Employment	Unemployment	Inactivity
ORIGIN			
Age 15-24			
Employment	86.04 (18.32)	6.36	7.60
Unemployment	35.47	55.37	9.16
Inactivity	8.54	3.91	87.56
Total	29.76	8.36	61.87
Age 25-54			
Employment	95.28 (6.82)	2.68	2.04
Unemployment	30.05	61.43	8.52
Inactivity	9.61	4.67	85.72
Total	75.73	7.51	16.77
Age 55-64			
Employment	87.87 (2.70)	1.87	10.25
Unemployment	13.40	60.85	25.75
Inactivity	1.60	0.58	97.82
Total	38.28	3.39	58.34

Source: EU-LFS, own calculation. – Notes: Job-to-job transitions in parentheses.

workers choose to retire voluntarily – as can be seen in Table 4.2, their transition rates into inactivity from both employment and unemployment are very high. However, it is also likely that the demand for older workers is low in many EU member states, which puts them into a problematic situation once they become unemployed.

The association between the level of education and labour market transitions is displayed in Table 4.3. It becomes apparent that employment stability is rising with the skill level. Furthermore, the transition rates to unemployment and inactivity are much lower for high-skilled workers (1.58 and 2.52 per cent, respectively) than for medium-skilled (2.86 and 3.37 per cent, respectively) and low low-skilled workers (3.84 and 4.71 per cent, respectively). Conversely, the exit rate from unemployment to employment rises with the skill level. Therefore, low education can be seen as a risk factor for both becoming and for staying unemployed. Exactly the same is true for the flows to and from inactivity.

Table 4.3
Labour market transitions by skill groups

ORIGIN	DESTINATION		
	Employment	Unemployment	Inactivity
Low skill			
Employment	91.45 (7.14)	3.84	4.71
Unemployment	24.37	64.58	11.05
Inactivity	3.54	2.05	94.41
Total	43.56	7.76	48.69
Medium skill			
Employment	93.77 (7.23)	2.86	3.37
Unemployment	31.43	58.55	10.02
Inactivity	8.59	3.84	87.57
Total	66.11	6.99	26.91
High skill			
Employment	95.90 (6.98)	1.58	2.52
Unemployment	40.79	49.63	9.57
Inactivity	20.01	7.22	72.77
Total	81.40	4.62	13.98

Source: EU-LFS, own calculation. – Notes: Job-to-job transitions in parentheses.

Given the differences in the composition of the population, cultural differences, and diverging labour market institutions and policies, we also expect cross-country differences in labour market transitions. We therefore compute the transition rates for the three labour market states under investigation for the five country groups defined in Section 4.2. The results in Table 4.4 show that employment security is highest in the UK and the Mediterranean countries (95.1 and 94.46 per cent, respectively), followed by Eastern and Continental Europe (93.30 and 93.07 per cent, respectively) and Scandinavia (91.32 per cent). Furthermore, job-to-job transitions are very frequent in Scandinavia and the UK, but rare in the CEE countries. The probability of transiting from employment to unemployment is very similar at roughly 2.9 per cent in four of the five country groups, the UK being the only exception with a much lower transition rate of 1.93 per cent. When interpreting these results, it is important to note that the EU-LFS provides data at a yearly frequency only, which may mask transitions which take place during the year.

Table 4.4
Labour market transitions by country groups

	DESTINATION		
	Employment	Unemployment	Inactivity
ORIGIN			
Continental Europe			
Employment	93.07 (7.36)	2.94	3.99
Unemployment	27.91	55.02	17.07
Inactivity	9.18	2.80	88.02
Total	63.67	6.02	30.32
CEE			
Employment	93.30 (6.18)	2.94	3.77
Unemployment	27.90	62.27	9.83
Inactivity	5.80	2.63	91.57
Total	57.16	7.00	35.84
Scandinavia			
Employment	91.32 (10.20)	2.85	5.83
Unemployment	36.41	46.60	16.99
Inactivity	16.47	4.99	78.54
Total	71.78	5.75	22.47
United Kingdom			
Employment	95.21 (11.73)	1.93	2.87
Unemployment	45.52	36.70	17.78
Inactivity	18.76	5.27	75.96
Total	74.44	3.79	21.77
Mediterranean countries			
Employment	94.46 (6.44)	2.86	2.67
Unemployment	29.72	63.64	6.63
Inactivity	4.19	3.37	92.44
Total	57.00	7.94	35.06

Source: EU-LFS, own calculation. – Notes: Job-to-job transitions in parentheses.

When looking at the probability of transiting from unemployment to employment, Continental and Eastern Europe as well as the Mediterranean countries feature relatively low figures which are below 30 per cent. The corresponding transition rates are much higher for Scandinavia (36.41 per cent) and the UK (45.52 per cent). The transition rates from inactivity to employment display qualitatively very similar features, with Scandinavia and the UK featuring much higher figures than the other three country groups. Thus, while Scandinavia has the lowest employment stability, it also has the highest transition rates from inactivity and unemployment to employment. This may be seen as a sign of the “flexicurity” concept operated in these countries, with existing employment being relatively insecure, but (re-)employment probabilities being high.

4.3.2 Econometric analysis

As described in Section 4.2, the second step of the empirical analysis consists in the econometric analysis of labour market transitions. This will allow us to more explicitly take into account observable person and household characteristics, as well as unobservable factors that are related to labour market transitions across countries and over time. We first estimate a baseline specification of a multinomial logit model containing mainly person characteristics. This baseline specification is estimated separately for the three different states of origin employment, unemployment and inactivity.

Transitions from employment

The results for the transitions from employment (cf. Table A.4.4 in the appendix) generally confirm the descriptive evidence from Section 4.4.1. First, men are significantly more likely to remain employed and significantly less likely to become inactive than women. This is due to the fact that men are both more likely to stay in their old job, and more likely to move from one job to a new one from one year to the next, than women. Second, compared to young workers, middle-aged workers are more likely to stay in employment, and less likely to transit to a new job, to unemployment, or to inactivity, which is in line with the evidence presented in OECD (2009, Chapter 2). The same is true for older workers, although their probability of transiting to inactivity is not significantly different from the one of young workers. Presumably, the transitions to education of young workers are similar in magnitude to the transitions to retirement of older workers. Third, higher levels of education go together with a higher likelihood of staying in employment, and lower probabilities of becoming unemployed and inactive. This confirms the well-known fact that low levels of education are an important risk factor in the labour market.

In addition to confirming the descriptive picture, the regressions also reveal that married workers are more likely to remain employed, but less likely to transit to a new job or to become unemployed, than singles. This may be due to the fact that married workers are more risk averse and therefore change jobs less frequently. Furthermore, an increase in the national unemployment rate is associated with a reduction of the probability of changing job from one year to the next, which confirms the procyclicality of job-to-job transitions (cf. Shimer 2005), and with an increase of the likelihoods both of becoming unemployed and of becoming inactive. Looking at the year dummies, one can see that neither of the transition probabilities seems to display a clear trend over time.

In order to analyse the importance of household characteristics for labour market transitions, we estimate another multinomial logit model, this time including household variables as well (cf. Table A.4.5 in the appendix). The results with respect to household composition show that the number of persons aged 15-64 who live in the household does generally not play an important role for labour market transitions. By contrast, the number of small children in the household plays a significant role in this context. In particular, employment security falls and the probability of transiting either to a new job, to unemployment or to inactivity rises as the number of small children in the household increases. Increased transitions to unemployment and inactivity can probably be explained by the fact that children require the time of their parents, who may therefore not be able to work in a job for some time. This may also be the mechanism behind the increase in job-to-job transitions: Parents may have to give up their old job, take care of their child for some time, and then take up a new job. By contrast, the number of older children is not significantly associated with any of the transitions from employment, with the exception of direct job-to-job transitions. The latter increase with the number of older children in the household. This may be due to a similar mechanism which was described in the previous paragraph. Finally for the composition of households, the number of elderly persons living in the household goes together with higher employment security, but lower transitions to a new job, to unemployment, and to inactivity.

These results on household composition are likely to be different for men and women, and may also depend on the age of the individual worker. We therefore investigate these issues in more detail. Looking at men only (cf. Table A.4.6 in the appendix) reveals that the number of individuals aged 15-64 in the household is not significantly related to labour market transitions, which is also true for children aged 5-14 in the household. There is, however, a significant association between the likelihood of making certain labour market transitions on the one hand, and the number of small children and of elderly persons in the households on the other hand, for men. In particular, more small children in the household go together with reduced employment security and higher inflows into unemployment. With respect to elderly persons in the household, the opposite is true: Employment security rises and inflows into unemployment fall with the number of elderly persons. This could be due to the fact that elderly persons in the household may require financial assistance, which increases the incentives to remain employed for the individuals under investigation here.

For women, surprisingly, the number of small children in the household is not significantly associated with the probability of making a specific labour market transition (cf. Table A.4.7 in the appendix). For them, however, the number of children aged 5-14 goes together with increased employment security, as well as reduced transitions into unemployment and inactivity. A potential explanation for these results is that children in this age bracket require less time from their mother than very small children, but increase the need to pursue gainful employment for financial reasons. As for the number of elderly persons in the household, the results for women are very similar to those for men described in the previous paragraph.

When examining the role of household composition for workers belonging to different age groups, it becomes apparent that heterogeneity is relatively small in this respect (cf. Table A.4.8 in the appendix). In particular, the results for workers aged 15-24 and workers aged 25-54 are virtually identical.

Apart from the composition of the household, it is also of interest to investigate the relationship between the labour market status of persons in the household and labour market transitions. In particular, we focus on the association between the labour market status of the

spouse and individual transition probabilities. Two mechanisms are likely to drive our results in this context. On the one hand, the labour market status of the spouse may exert a causal impact on the labour market transitions of an individual. This may happen because the incentives of an individual, for example to remain employed if the spouse is unemployed, are affected; or it could be the case that the employed spouse of an individual worker can provide information about labour market opportunities, which increases this individual's labour market prospects. On the other hand, however, the regression results may pick up selection effects ("assortative mating"), i.e. individuals with a high probability of being employed may tend to marry each other. In this case, there would also be a strong link between the employment probability of an individual and the presence of having an employed spouse. Unfortunately, our analysis does not allow us to distinguish between these two types of explanation. Rather, they can provide some evidence on whether the labour market status of the spouse plays a role at all.

Investigating this issue we find that, compared to workers without a spouse in the household, the presence of an unemployed or inactive spouse in the household goes together with an increase in employment security (cf. Table A.4.5 in the appendix). By contrast, transitions to a new job and to inactivity are much less frequent for workers with an inactive or unemployed spouse in the household. This could be a sign that workers whose spouse does not earn money are more careful in their labour market career, trying to stay in their old job in order to avoid the risk of becoming unemployed or inactive. Interestingly, workers with an employed spouse in the household also display a higher stability of employment than workers without a spouse in the household – here, it is likely that selection effects (assortative mating) are at play. This result could however also be explained by the "added worker effect", which states that spouses of unemployed workers increase their labour supply (cf. Lundberg 1985). However, evidence for this effect in Europe is scarce (cf. Prieto-Rodriguez, Rodriguez-Gutierrez 2003). Furthermore, the likelihood that these workers transit from employment to a new job or to unemployment is significantly lower. In contrast to this result, transitions to inactivity are more frequent for workers with an employed spouse. This could be due to voluntary moves to inactivity, for example in order to take care of children at home, which are made possible by the fact that the partner earns money in a job.

Finally, we examine for the transitions from employment whether differences between country groups can be observed. In order to do so, we conduct the analysis separately for the four country groups Continental Europe, CEE, Mediterranean, and the UK (cf. Tables A.4.9-A.4.12 in the appendix).⁹ Overall, the results are remarkably similar. However, a few noteworthy differences emerge. First, gender is not significantly associated with transitions from employment to unemployment in Continental Europe and CEE; in the UK, by contrast, employed men are more likely to become unemployed than women, while the opposite is true in the Mediterranean countries. Second, a medium or high level of education is associated with lower job stability in the UK, but with higher job stability in the Mediterranean countries, compared to low-skilled workers. In contrast to this, high-skilled workers are more likely to make direct job-to-job transitions in the UK, while they are less likely to do so in the Mediterranean countries. Therefore, higher levels of education are associated with higher job mobility in the UK, but with lower job mobility in the Mediterranean countries. Looking at overall employ-

⁹ Note again that for reasons of data availability, we cannot include Ireland and the Scandinavian countries in this step of the analysis. The latter country group has to be excluded because household variables are not available. However, taking into account these countries in a regression without household variables, does not change our results significantly. We therefore only report one set of results without the Scandinavian countries.

ment stability, it becomes apparent that there are no differences with respect to job mobility and education between those two country groups (cf. Table A.4.13 in the appendix).

Transitions from unemployment

We now examine more closely transitions from unemployment to other labour market states. Again, we scrutinize the link between individual characteristics and labour market transitions first. We find that unemployed men are more likely than women to find a job from one year to the next (cf. Table A.4.14 in the appendix). Furthermore, their transition probability from unemployment to inactivity is significantly lower. Similarly to the transitions from employment, this could be related to family responsibilities. Looking at different age groups, we find that if middle-aged individuals are unemployed, they have a lower job-finding probability than young individuals. The same is true for the older unemployed. On the other hand, the likelihood to stay unemployed from one year to the next is higher for middle-aged and older workers. Finally for the age effects, older workers are also more likely to transit from unemployment to inactivity.

When looking at different levels of education, one can see that the probability of transiting from unemployment to employment rises with the level of education. The reverse is true for the probability of staying unemployed and for the transitions from unemployment to inactivity, i.e. these transitions are lower for workers with higher education. As for the growth rate of the unemployment rate, it is negatively related to the job-finding rate of the unemployed, but positively associated with the transition rate to inactivity.

The coefficients on the year dummies indicate changes over time which are common across the EU-LFS countries. From these results, it becomes apparent that the job finding rate of the unemployed, as well as their transition rate to inactivity, is at least as high in every year as the base year 1998. The opposite is true for the likelihood of remaining unemployed from one year to the next.

For the transitions from unemployment, household composition may be of relevance, too. The results indicate that the labour market transitions of an unemployed individual are not significantly correlated with the number of persons aged 15-64 living in the household. However, the likelihood of an unemployed individual finding a job is inversely related to the number of small children in the household. The probability of staying unemployed also falls with the number of small children. By contrast, the likelihood to transit to inactivity increases when more small children are present in the household. This may indicate that many unemployed parents abandon their job search efforts in order to take care of their children, and thus become inactive. The number of older children in the household is significantly associated with one transition only: The exit rate from unemployment to employment increases with the number of older children in the household. This could be due to the fact that older children require less time from their parents, who are therefore able to take up a job.

Similarly to the transitions from employment, the results on household composition for the results from unemployment are likely to be different for men and women, and may also depend on the age of the individual worker. This is indeed the case for some variables with respect to household composition (cf. Tables A.4.24 and A.4.15 in the appendix). In particular, for unemployed men the number of small children in the household is not related to the job finding probability, but inversely related to the probability of remaining in unemployment. For women the correlation with the job finding probability is positive, which may be a sign of the fact that unemployed women have strong incentives to find a job (also note that we only take

into account women who are actively looking for a job, but not women who are inactive). Contrary to that, the number of older children and the number of elderly persons in the household is generally not significantly related to the labour market transitions of neither unemployed men nor unemployed women.

An analysis for different age groups reveals that the above results are driven by different age groups (cf. Table A.4.16 in the appendix). In particular, the lower job finding probabilities which go together with the number of small children in the household seem to be driven by very young unemployed individuals. Because of the lacking information in the data set, it is however difficult to tell whether this applies to young parents, or to young individuals with small siblings. On the other hand, the positive association between the number of older children and the job finding probability of unemployed individuals is mainly due to individuals aged 25-54.

The labour market status of the spouse is strongly related to the likelihood of making specific labour market transitions (cf. Table A.4.14 in the appendix). Relative to no spouse in the household, the presence of an unemployed or inactive spouse in the household goes together with a reduction of the job finding probability when unemployed, and with an increased likelihood of becoming inactive. Furthermore, the probability of staying unemployed rises, too. By contrast, the presence of an employed spouse in the household displays the opposite associations: If an employed spouse lives in the household, an unemployed individual is more likely to find a job, but less likely to remain unemployed or to become inactive, than if no spouse is present in the household at all. In the context of transitions from unemployment, the same mechanisms that were discussed for the transitions from employment may be at work: On the one hand, the labour market status of the spouse may have a direct effect on individual labour market transitions, either because of network effects or because it alters incentives; on the other hand, selection effects (assortative mating) may play a role, too.

Finally, we also examine country specificities regarding transitions from unemployment by conducting the above analysis for the four country groups we used when looking at transitions from employment. The similarities between the country groups are remarkable (cf. Tables A.4.13, and A.4.17 to A.4.19 in the appendix). One of the few differences between country groups is the relative position of men and women in the labour market. Mirroring the results we obtained for the transitions from employment, unemployed men in the UK are less likely to find a job, but more likely to remain in unemployment, than women. The opposite is true for the Mediterranean countries, where unemployed men have a higher job finding probability and a lower probability of remaining unemployed from one year to the next, than women.

Transitions from inactivity

Given the demographic challenge faced by many countries in the EU, (re-) entry into the labour market is of crucial importance for the future of European labour markets. In this section, we therefore examine the transitions starting in inactivity in detail. With respect to individual characteristics, several results of our analysis are noteworthy (cf. Table A.4.20 in the appendix). First, men who are inactive in one year are more likely than women to be employed in the following year, and they are less likely to stay inactive. Second, workers in the oldest age category have a lower probability of finding a job or of becoming unemployed than younger workers, but a higher probability of remaining inactive. Third, higher levels of educa-

tion go together with a higher probability of leaving inactivity to employment, a higher probability of transiting to unemployment, and a lower probability of remaining inactive from one year to the next. Finally, the transition rates from inactivity to employment and to unemployment are not significantly associated with the growth rate of the unemployment rate.

Given the importance of household characteristics for transitions from inactivity, we now investigate this issue in more detail (see Table A.4.20 in the appendix). One can see that the number of persons aged between 15 and 64 is not significantly associated with the transition probabilities out of inactivity. However, the number of small children is positively associated with the transition rate from inactivity to unemployment, and negatively associated with the probability of remaining inactive from one year to the next. This may be the result of parents briefly interrupting their labour market career but returning relatively quickly to the labour market in order to look for a job, even when their children are still relatively young. This could also explain the fact that the number of older children in the household is positively associated with the transition rate from inactivity to unemployment, too.

The results with respect to household composition could be due to different age groups behaving differently. Our corresponding regression results (cf. Table A.4.21 in the appendix) indicate that this is indeed the case. In particular, the result that the number of small children is positively associated with the transition rate from inactivity to unemployment is driven by the two younger age groups (15-24 and 25-54). This may well be due to the fact that these age groups play a more important role in providing income to their families and, especially, their small children.

Household composition may also be different for men and women. Examining this issue, we find that the number of persons aged between 15 and 64 living in the household is positively associated with transitions from inactivity to employment and unemployment for men. For women, this is only true for the transition rate from inactivity to unemployment (cf. Tables A.4.22 and A.4.23 in the appendix). This result is consistent with a traditional family model where men play a more important role as breadwinners of the family than women.

We now turn to the importance of the labour market status of the spouse. If an inactive or unemployed spouse is present in the household, the transition rates from inactivity to employment and to unemployment is lower, and the probability to remain inactive is higher, than if no spouse is present in the household (see Table A.4.20 in the appendix). As pointed out above, it is difficult to give a causal interpretation for these results. On the one hand, they could be due to incentives for looking for a job. On the other hand, selection effects may be at work.

In order to investigate whether the statistical relationships uncovered in the preceding analysis differ across the EU, we conduct the preceding analysis for four country groups separately. Generally, the results are remarkably similar, i.e. the associations between the transitions and the variables under investigation are very homogeneous across countries and in line with the results for the entire EU-LFS sample (cf. Tables A.4.13 and A.4.17 to A.4.19 in the appendix). In particular, higher education levels consistently go together with higher exit rates from inactivity to employment and to unemployment (i.e. looking for a job). Furthermore, the presence of an inactive or unemployed spouse generally goes together with lower transitions to employment or to unemployment, and a higher probability of remaining inactive. For example, we do not find strong cross-country differences in the importance of the labour market status of the spouse. It is possible that our aggregated analysis masks

differences between individual countries. For example, the results in McGinnity (2002) suggest that there are differences in the importance of the “added worker effect” between Great Britain and West Germany. However, there are also some important differences that show up in our analysis, which is based on country groups. These exceptions are discussed in turn.

Medium-aged individuals (25-54 years) are generally more likely to start looking for a job, and thus to transit to the state of unemployment, than younger individuals. The only exception to this is the UK, where they are less likely to do so than younger individuals. One potential explanation for this is that the pool of inactive individuals differs between the UK and the other countries covered in the EU-LFS, i.e. different people may transit into inactivity in the first place, which then determines the exit rates from inactivity. Unfortunately, given that it is not possible to follow people over time with the EU-LFS data base, it is difficult to pursue this hypothesis further.

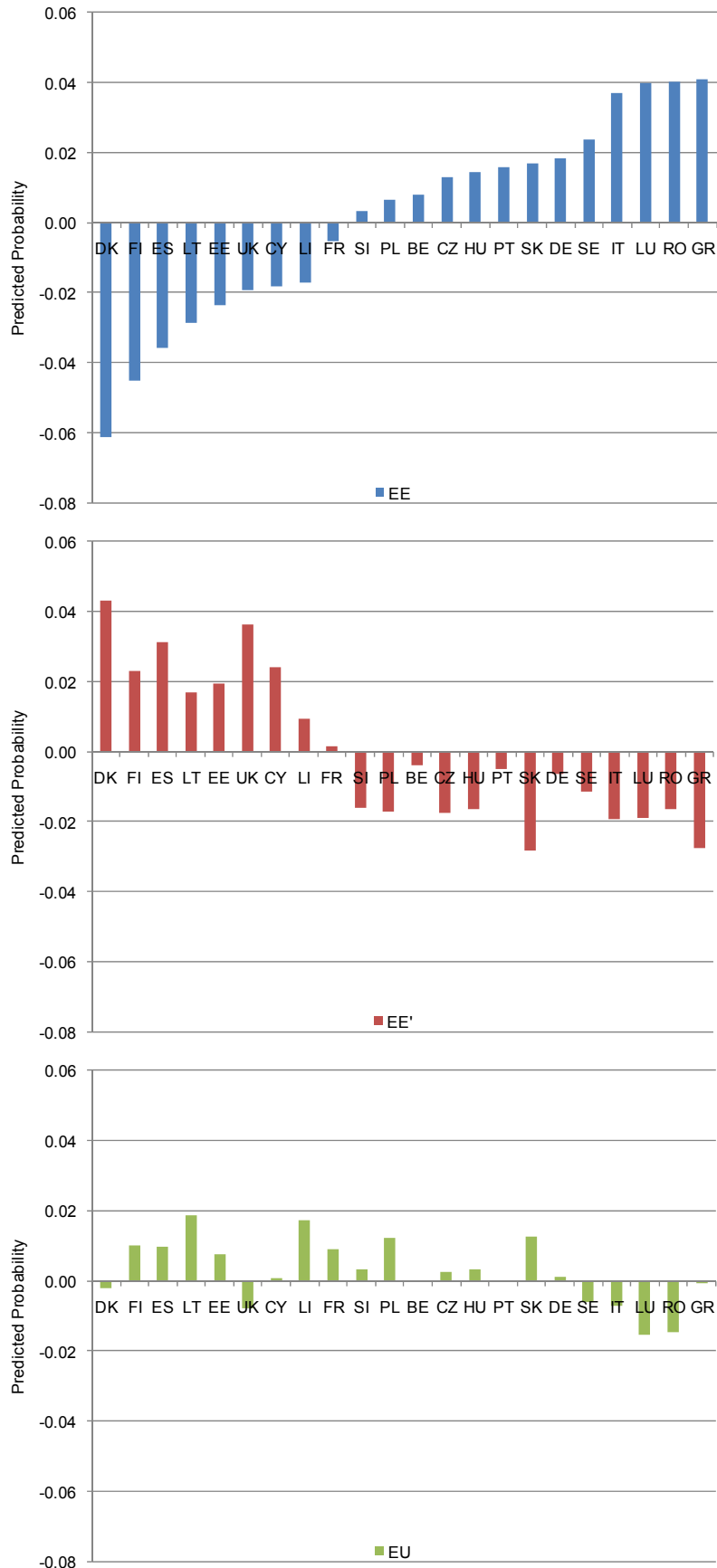
Finally, the number of small children in the household is positively associated with the likelihoods of transiting from inactivity to employment and to unemployment in the Continental European, the Mediterranean, and the Central European countries. By contrast, this household characteristic goes together with a lower probability of finding a job in the year after inactivity in the UK. More older children in the household go together with a lower probability of transiting from inactivity to employment in Continental Europe. This probability is higher in the case of the CEE and the Mediterranean countries.

4.3.3 Cross-country differences: A closer look

We now want to examine the differences between the countries in the EU-LFS in more detail. In order to do so, we use the country fixed effects obtained in the first stage of the econometric analysis. The country fixed effects for the transitions from employment to employment (either the same job or a different one) and from employment to unemployment are depicted in Figure 4.1. It becomes apparent that there seems to be an inverse relationship between the probability of remaining in the old job (EE) on the one hand, and the job-to-job (EE') transitions on the other hand. Among the countries that feature low job stability (i.e. a low EE probability) and a high probability of transiting to a new job are the typical “flexicurity countries” Denmark and Finland, but also Spain, the UK, and the Baltic States. It is worth noting that Denmark and the UK are the only countries that additionally feature inflows into unemployment which lie below the average, all the other aforementioned-countries feature relative high unemployment inflows. In the middle of the spectrum, France is the only country where relatively low job stability and relatively high inflows into unemployment can be observed. At the higher end of the spectrum, one can find the countries with high job stability, i.e. a high probability of remaining in the same job from one year to the next, and a relatively low probability of becoming unemployed. Among these countries feature Greece, Italy, Germany, Portugal, but also, perhaps surprisingly, Sweden. Many of these more inflexible countries also have relatively low inflows into unemployment.

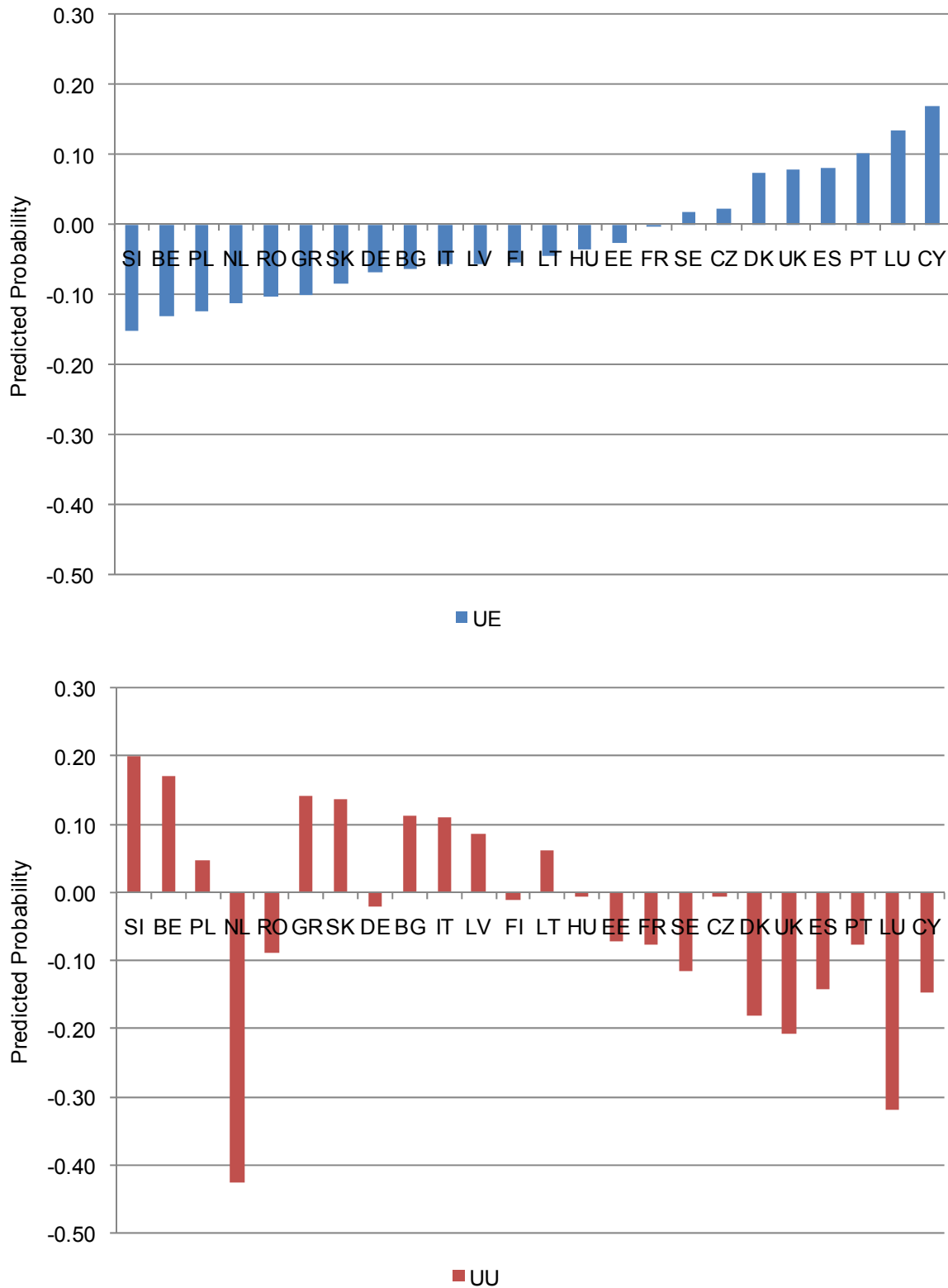
In a related vein, Figure 4.2 displays the country fixed effects for the transitions from unemployment (to employment, and to unemployment, i.e. the probability of staying unemployed). In this figure, one can observe a negative association between the two probabilities. For most of the “flexicurity-type” countries identified above, e.g. Denmark, the UK, and Spain,

Figure 4.1
Full Transition Model: Country Fixed Effects



Source: EU-LFS, own calculations. – Notes: UE and IE indicate the probabilities of transiting from unemployment/inactivity to employment.

Figure 4.2
Unemployment Model (Basic): Country Fixed Effects



Source: EU-LFS, own calculations. – Notes: UE and UU indicate the probabilities of transiting from unemployment to employment and of remaining unemployed, respectively.

one can see that the probability of remaining in unemployment is comparatively low, while the probability of transiting from unemployment to employment is relatively high. By contrast, countries such as Greece and Italy display low unemployment outflows to employment, and high probabilities of remaining unemployed from one year to the next.

In a next step, we investigate the link between these time-invariant, country-specific effects and institutional indicators of labour market policy and institutions at the national level provided by the OECD and Eurostat. The latter indicators included in the analysis read as follows:

- Expenditure on active labour market policies as a percentage of GDP;
- Expenditure on unemployment cash benefits as a percentage of GDP;
- The level of the minimum wage relative to average wages;
- The Gini coefficient;
- The tax wedge;
- The implicit tax rate;
- Unemployment benefits (mobility benefits, job search assistance, social protection);
- The OECD indicator of employment protection;
- Union density.

Most of these indicators turned out not to be significantly correlated with the country fixed effects. Three exceptions are displayed in Table 4.5. First, for the transitions from inactivity to employment (“IE model”), active labour market policies seem to have a positive effect. The same is true for unemployment benefits with respect to job search. The latter finding could be explained by the fact that also individuals declaring themselves as inactive may take advantage of these benefits. It also has to be pointed out that the latter effect is very small quantitatively. However, it is in line with the evidence presented in OECD (2010, Chapter 3).

Table 4.5
Correlations between Country Fixed Effects and Labour Markets Institutions/Policies

	Marg. effect	t-value
IE Model		
Active Labour Market Policies (%)	0.0881723	2.12
Unemployment Benefits Jobsearch	0.0000766	3.96
Unemployment (Cash)	3.039615	1.33
Adj R ²	0.782	
Observations	24	
UE Model		
Implicit Tax	-0.0064996	-2.13
Adj R ²	0.1336	
Number of obs.	24	

Source: EU-LFS, own calculations. – Notes: Country fixed effects are taken from the multinomial logit specifications in Tables A.4.14 and A.4.20. – t-values greater than 2.064 (2.797) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Second, countries where individuals have a high probability of transiting from unemployment to employment also display low implicit taxes. Thus, countries of this type may be able to provide unemployed individuals with the right incentives to take up a job. However, it should be pointed out that causal interpretations should be made with some care because the uncovered correlations may well be driven by unobservable factors unrelated to the causal link under investigation.

4.3.4 Group-based analysis

This section presents a group-based regression approach analyzing transition rates following Kluge, Schaffner, Schmidt (2008). This approach focuses on the cyclical sensitivity of transition rates. The underlying model investigates whether transition rates differ between gender-age-education cells and over time, and whether the cyclical sensitivity varies across observable demographic groups. We distinguish 16 different worker groups by sex, three skill groups and three age groups. Furthermore, we exclude the cells of young (age 15-24) and high-skilled men and women due to small sample sizes. The analysis also excludes Bulgaria and France because only one and two years, respectively, of transitions are available. Thus, we end up with 3472 cell-year observations for all countries.

The cyclical sensitivity is measured by including year dummies. This approach is more flexible than including indicators such as GDP growth because there could be some time lag between these indicators and the reactions on the labour market. Furthermore, we interact these year dummies with so-called loading factors for women, low skilled, high skilled, young (aged between 15 and 24) and old (aged 55 and older) workers. Positive loading factors indicate that the respective group is more sensitive to the economic cycle while negative loading factors indicate that the group is less sensitive. A loading factor of -1 would even imply that the respective group is completely detached from the cycle. A more detailed description of the regression model can be found in Box 4.2.

Box 4.2

Heterogeneous Cyclical Sensitivity – Empirical Strategy

The estimating equation for the transition rate from employment status x to employment status y f^{xy} in demographic group i ($i = 1, \dots, 16$ for “young-low-skilled men”, “young-medium-skilled men”, “medium-aged-low-skilled men”, ..., “old-high-skilled women”), gender g (male, female), country c and period t ($t = 1, \dots, 11$) is

$$f_{igct}^{xy} = \alpha + \sum_{i \neq 4} \beta_i \cdot 1_i + \sum_{c \neq 1} \gamma_c \cdot 1_c + \sum_{t \neq 6} \tau_t (1 + d_f \cdot 1_f + d_l \cdot 1_{ls} + d_h \cdot 1_{hs} + d_y \cdot 1_y + d_o \cdot 1_o) \cdot 1_t + \varepsilon_{igct}$$

where ε_{igct} is the corresponding error term. Coefficient α captures the average transition rate of the core group: male, 25-54 year-old, medium-skilled workers in the baseline country Austria and the baseline year 2003. The deviation from the core group of the different demographic cells (i) is captured by the coefficients β_i .

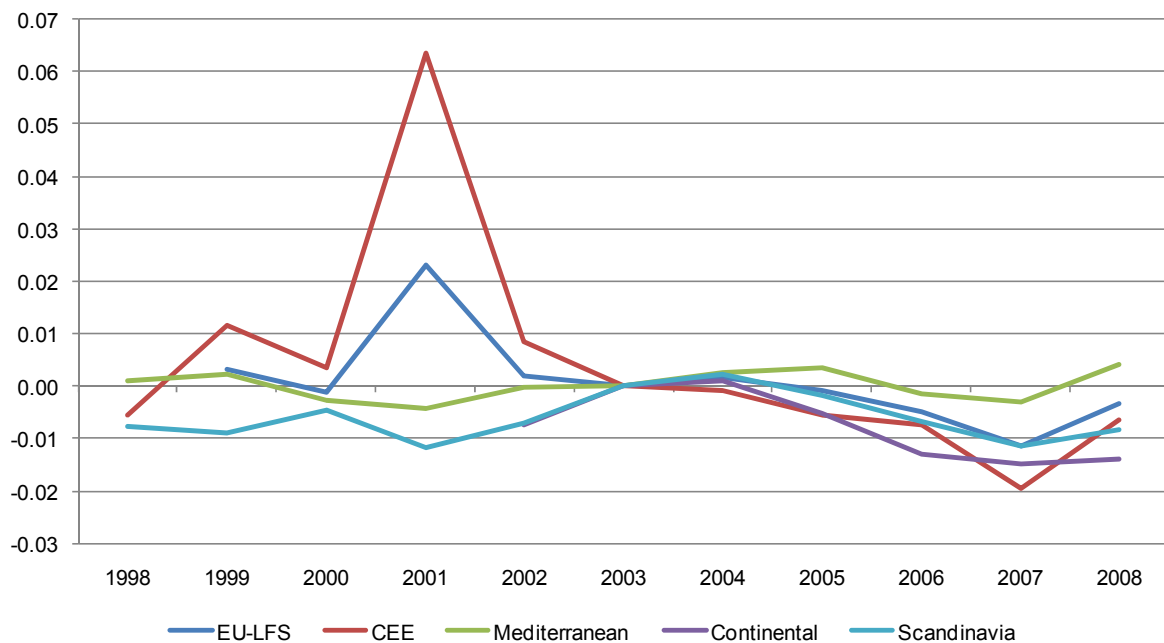
The major emphasis in this analysis is on the differential cyclical experience of what are generally referred to as problem groups. In the regression, interaction terms capture how the evolution of their performance compares formally to the cyclical experience of the average worker. Specifically, in addition to their direct impact, the average coefficients τ_t are interacted with five loading factors, d_f for women, d_l for low-skilled workers, d_h for high-skilled workers, d_y for young and d_o for old workers, respectively. The indicator variables $1_f, 1_{ls}, 1_{hs}, 1_y$ and 1_o are defined accordingly. A positive interaction coefficient, for instance a positive d_l , would indicate that for the corresponding group, here low-skilled workers, the cyclical swings captured by τ_t are enforced, whereas a negative value would indicate that this group experiences more moderate cyclical swings than the average worker.

In the following, we only show the results for cyclical sensitivity since the previous sections already showed the influence of demographic characteristics on the respective transition probabilities. The cyclical sensitivity of the job loss rate, the transition from employment to unemployment, is presented in Figure 4.3. This figure displays the estimated coefficients for the year dummies of the regressions for the whole sample and different country groups. The year 2003 is the reference period and therefore the value is set to zero. Most of the estimated coefficients are not significantly different from zero. However, the job loss rate in 2001 was significantly higher in the whole sample and in Central and Eastern Europe than in the reference year. This finding could be associated with the dot-com bubble in 2000. In 2007 the job-loss rate is significantly lower than in the reference year, with the Mediterranean countries being an exception.

The so-called loading factors are presented in Table 4.6. For each of the five groups a loading factor was estimated which indicates if the respective group is more or less sensitive to the cycle than the core group. As can be seen, none of the loading factors is significantly different from zero. Therefore, the results suggest that the cyclical sensitivity is the same for all demographic groups. However, as displayed in Figure 4.3, there is almost no cyclical sensitivity in the core group at all.

Figure 4.3

Cyclical Sensitivity of Employment to Unemployment Transitions – Estimated Coefficients for Year Dummies



Source: EU-LFS, own calculations. – Notes: 2003 is the reference year in the regressions. The estimated coefficients display the difference to 2003.

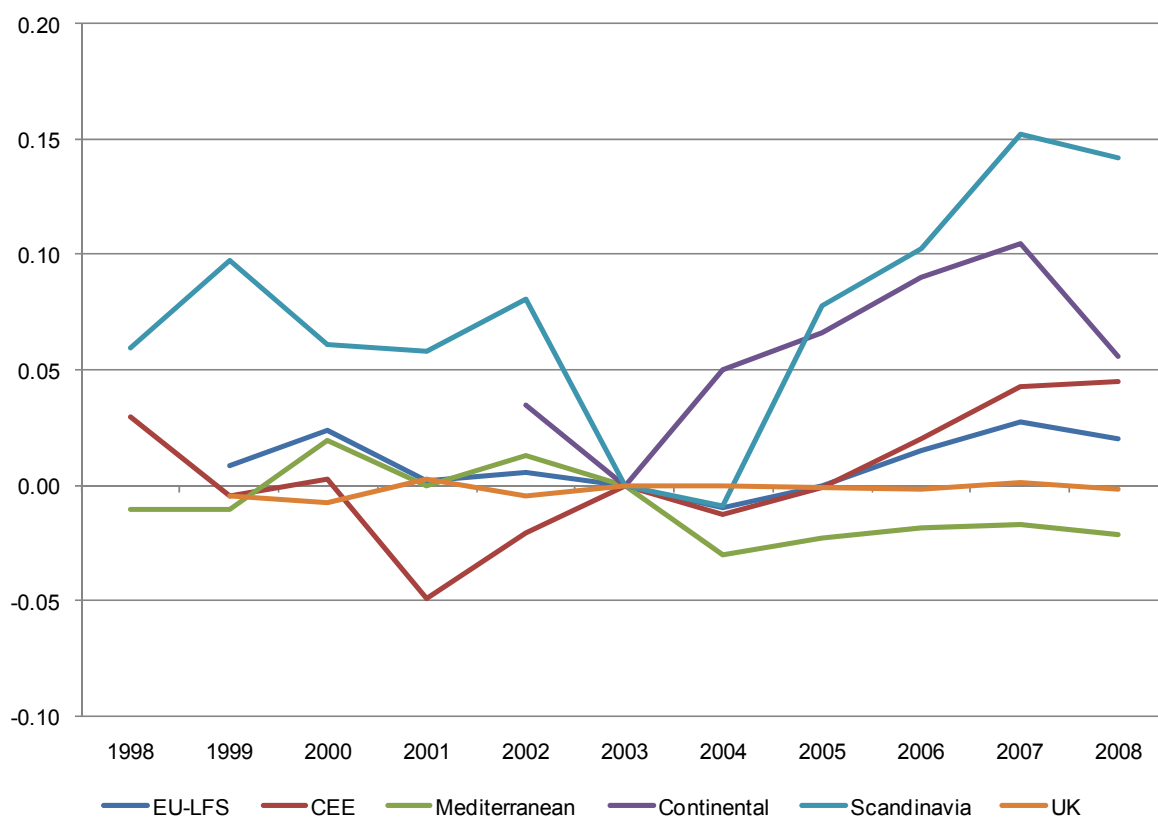
Table 4.6
Heterogeneity in the Cyclical Sensitivity of Employment to Unemployment Transitions- Loading Factors

	EU-LFS		CEE		Mediterranean		Continental		Scandinavia	
	Coef.	t-value	Coef.	t-value	Coef.	t-value	Coef.	t-value	Coef.	t-value
Female	-0.148	-1.00	-0.192	-1.43	-0.228	-0.69	-0.352	-0.90	-0.170	-0.62
Lowskilled	-0.131	-0.76	-0.036	-0.22	0.250	0.52	0.254	0.44	0.060	0.17
Highskilled	-0.124	-0.65	-0.057	-0.32	-0.409	-0.96	-0.811	-1.63	-0.532	-1.62
Young	0.041	0.20	-0.019	-0.11	0.961	1.22	0.384	0.59	-0.153	-0.43
Old	-0.284	-1.70	-0.347	-2.29	-0.702	-1.86	0.132	0.24	0.232	0.60

Source: EU-LFS, own calculations. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

The described analyses assume that the cyclical influence is the same in all countries captured in the respective regression. However, one can argue that this may not be true. Therefore, we estimated a similar approach for all countries separately. Because of the smaller number of observations, we estimate the cyclical sensitivity with time period dummies covering three years instead of dummies for individual years. Similar to the findings for the whole sample, the cyclical impact on the transitions rates from employment to unemployment is relatively low. However, some heterogeneity in cyclical sensitivity can be observed. In Germany, Greece, Poland and Romania, low-skilled workers are less sensitive to the cycle regarding their job loss rate than the core group.

Figure 4.4
Cyclical Sensitivity of Unemployment to Employment Transitions – Estimated Coefficients for Year Dummies



Source: EU-LFS, own calculations. – Notes: 2003 is the reference year in the regressions. The estimated coefficients display the difference to 2003.

The estimated cyclical influence on the job finding rate, i.e. the transition rate from unemployment to employment, is presented in Figure 4.4. Differences between the different country groups can be observed. While the cyclical sensitivity for the entire sample is relatively small, the job finding rate in Central and Eastern Europe rises between 2001 and 2008. The transition rate in the Mediterranean countries is slightly smaller between 2004 and 2008 than in the first years of the observation period. The job finding rate in Scandinavia is the lowest in 2003 and 2004 and sharply increases between 2005 and 2008. Despite these strong differences over time in Scandinavia, all loading factors are not significantly different from zero (e.g. Table 4.7). This is also true in the separate analyses for the three countries. The results suggest that all demographic groups recently experienced the same increase in job-finding rates. The only significant loading factor can be found for Central and Eastern Europe which suggests that low skilled workers experience an even smaller increase in the job finding rate than the core group.

Table 4.7

Heterogeneity in the Cyclical Sensitivity of Unemployment to Employment Transitions-Loading Factors

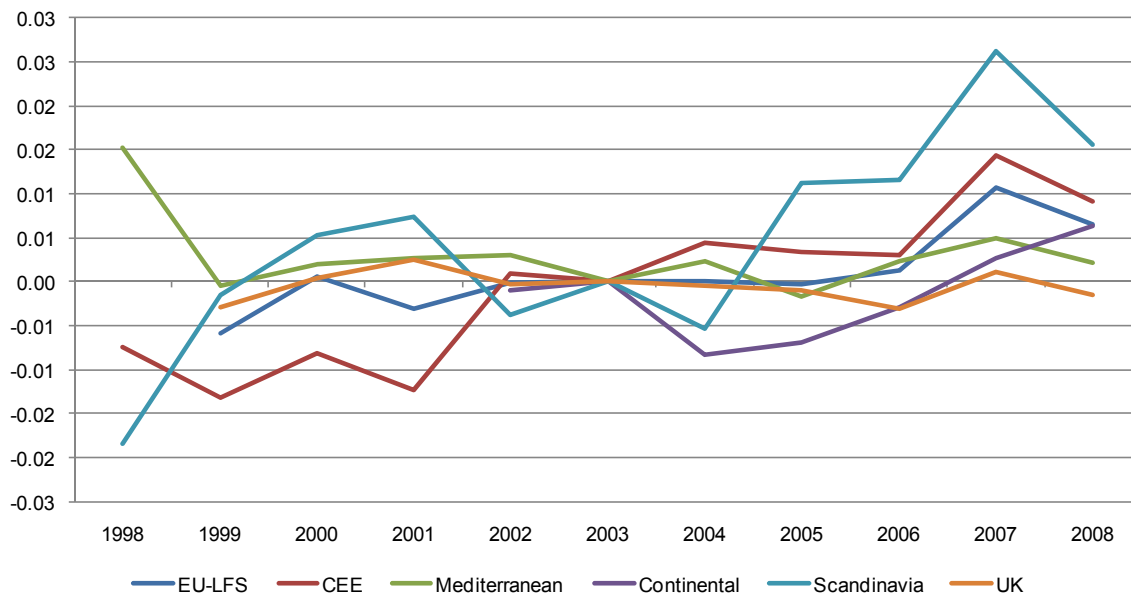
	EU-LFS		CEE		Mediterranean	
	Coef.	t-value	Coef.	t-value	Coef.	t-value
Female	0.958	1.27	0.189	0.61	-0.027	-0.04
Lowskilled	-0.770	-1.72	-0.569	-2.03	-0.207	-0.28
Highskilled	0.049	0.08	0.125	0.31	1.807	0.84
Young	0.784	0.94	0.610	1.20	0.081	0.08
Old	0.377	0.63	-0.010	-0.03	2.810	1.00

	Continental		Scandinavia		UK	
	Coef.	t-value	Coef.	t-value	Coef.	t-value
Female	0.035	0.18	-0.052	-0.29	6.630	0.21
Lowskilled	-0.307	-1.58	-0.258	-1.34	-4.819	-0.24
Highskilled	0.106	0.41	-0.105	-0.44	11.147	0.21
Young	-0.043	-0.18	-0.253	-1.12	3.341	0.18
Old	-0.048	-0.23	-0.063	-0.31	14.568	0.21

Source: EU-LFS, own calculations. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

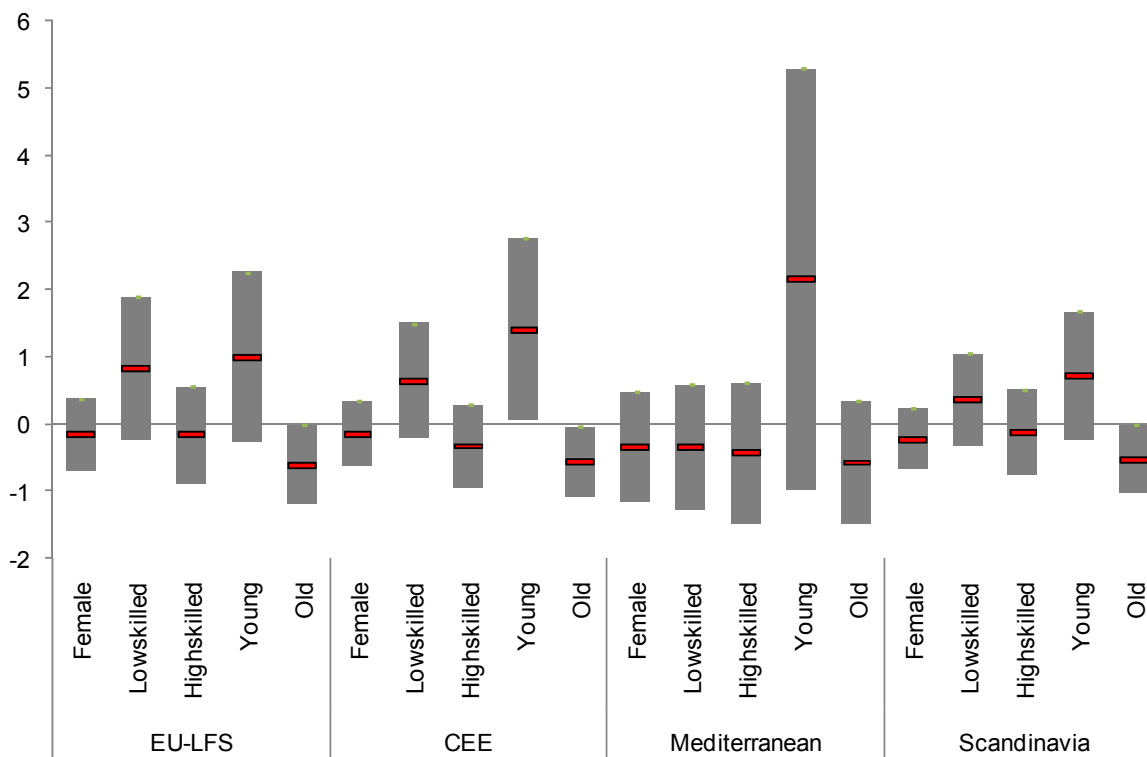
As described above, it is possible to identify job-to-job transitions. We also examined these transitions in the same way as the transitions between employment and unemployment. The estimated coefficients for the year dummies are displayed in Figure 4.5. In all country groups except the UK, job to job transitions increased in the most recent years. Central and Eastern Europe as well as Scandinavia experienced the sharpest increases between 1998 and 2008. In all groups, a peak in 2007 can be observed. However, workers aged 54 and above are less sensitive to the cycle in the whole sample, Central and Eastern Europe and Scandinavia (e.g. Figure 4.6). These findings suggest that older workers have experienced a smaller increase in job-to-job transitions than younger workers. In Central and Eastern Europe, young

Figure 4.5
Cyclical Sensitivity of Job to Job Transitions – Estimated Coefficients for Year Dummies



Source: EU-LFS, own calculations.

Figure 4.6
Heterogeneity in the Cyclical Sensitivity of Job to Job Transitions – Loading Factors



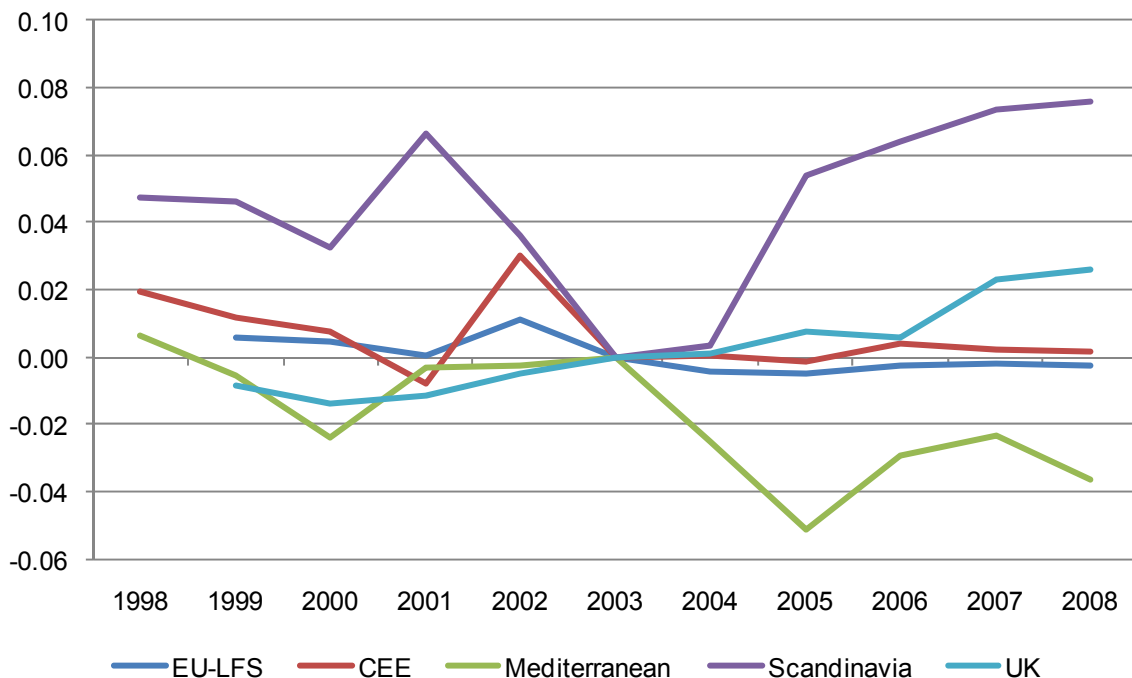
Source: EU-LFS, own calculations. – Notes: The boxes show the 95% confidence interval. The black line indicates the estimated coefficient.

workers (up to the age of 24) even experienced a sharper increase in job-to-job transitions as presented in Figure 4.5. Similar results can be found for several countries. While old workers are less sensitive to the cycle in Austria, Poland, Sweden and Slovenia, young workers experience a more pronounced time trend in Poland, Romania, Sweden and Slovenia.

Finally, the transition rate between inactivity and employment is investigated since the previous section shows that it is an important transition rate. The cyclical sensitivity of these transitions in the different country groups is presented in Figure 4.7. While no time trend in the whole sample can be observed, transition rates are significantly higher in the Mediterranean countries after 2003. In Scandinavia, a large dip in inactivity to employment transitions occurred in 2003 and 2004. In contrast, transition rates in the UK slightly increased over time.

Figure 4.7

Cyclical Sensitivity of Inactivity to Employment Transitions – Estimated Coefficients for Year Dummies



Source: EU-LFS, own calculations.

In the whole sample, Central and Eastern Europe and Scandinavia, old workers experience a less pronounced time pattern than workers at the core age. By contrast, young workers in Central and Eastern Europe even experienced the time pattern in a more pronounced way.

Summing up, the results of this subsection suggest that there is some time pattern in transition rates in some of the country groups. However, there is only little heterogeneity in the time pattern between different demographic groups.

4.4 Conclusion

In this chapter, we analyse transitions between different labour market states, as well as direct job-to-job transitions, in the EU member states. This issue is of paramount importance

for the future of EU labour markets, as well as for their economies. On the one hand, labour market flexibility is important as it allows economies to adjust to the requirements of an ever changing world economy, and to keep up with technological change. Therefore, it also plays an important role for the productivity and growth potential of the EU economies. On the other hand, flexibility imposes costs on both workers and firms. Therefore, the question is how to combine the required flexibility with as little uncertainty for firms and workers as possible.

In order to give an EU-wide overview of labour market flexibility, we first provide a descriptive picture of labour market transitions. The descriptive evidence displayed in this chapter confirms the well-known fact that worker characteristics play an important role in this context: Young workers, having accumulated little (specific) human capital, are more mobile than older workers; women are more likely to transit to and from “inactivity” than men, presumably because they often assume more family responsibilities; higher skills go together with a lower risk of becoming unemployed or inactive, and a higher probability to find a job.

The EU-LFS data base offers the opportunity to analyse these issues in more detail. Furthermore, the data base includes information about different household characteristics, which we also exploit by using econometric methods. Our main findings are as follows. First, the presence of small children in the household goes together with increased transitions from employment to unemployment and inactivity, as well as with reduced job finding rates of the unemployed and increased transitions from unemployment to inactivity. This implies that the presence of small children in the household generally goes together with worse labour market prospects. Therefore, extending and improving child care facilities in the EU is likely to have beneficial labour market effects. Second, the labour market status of the spouse generally is a good predictor of individual labour market success. For example, having an unemployed spouse is associated with reduced job finding probabilities of the unemployed, while having an employed spouse goes together with increased employment security. However, it is not straightforward to give this result a causal interpretation as two effects may be at work: On the one hand, the labour market status of the spouse may exert a causal impact on the labour market transitions of an individual. This may happen because the incentives of an individual, for example to remain employed if the spouse is unemployed, are affected; or it could be the case that the employed spouse of an individual worker can provide information about labour market opportunities, which increases this individual’s labour market prospects. On the other hand, however, the regression results may pick up selection effects (“assortative mating”), i.e. individuals with a high probability of being employed may tend to marry each other. In this case, there would also be a strong link between the employment probability of an individual and the presence of having an employed spouse. Third, we find that women face worse labour market prospects in terms of labour market transitions than men in the Mediterranean countries, while the opposite seems to be the case in the UK.

Our econometric exercise also yields estimates of country specificities with respect to labour market transitions. Using these country-specific indicators, we are thus able to identify “flexicurity-type” economies which feature low job stability and high levels of job-to-job transitions, but also relatively high employment security (not necessarily in the same job) and high job-finding rates of the unemployed. These countries include Denmark, Finland and the UK, but also the Baltic States and Spain. At the other side of the spectrum, with high job security but low exit rates from unemployment, we find for example Germany, Greece, and Italy.

Investigating cross-country differences further, we relate our country-specific indicators to institutional indicators. We find that lower implicit tax rates go together with higher job finding

probabilities of the unemployed, while search benefits of the unemployed and increased spending on active labour market policies are associated with higher transitions from inactivity to employment. This can be seen as an indication that these institutions and policy measures have the desired effects. However, these results should be interpreted with some care, as our methodology only uncovers correlations, which are not necessarily causal effects.

Finally, we investigate whether the business cycle has heterogeneous effects on different worker groups, i.e. if specific worker groups are more affected by the business cycle than others. Our analysis finds scant evidence for this hypothesis, which may also be due to the fact that the time period under investigation does not display very strong cyclical variation.

5. Task 4: Temporary Employment

5.1 Background

In all European countries, legislation regarding temporary work has been reformed several times during the last two decades. This development is due to the fact that temporary work, as well as other “non-standard” work arrangements, have gained importance during the last decades (Buddelmeyer et al. 2005).

Since permanent employment is connected with strong employment protection and therefore high firing costs, fixed-term contracts act as an alternative for employers. Firing costs are reduced and therefore firms are able to adjust their workforce in a more flexible way. Additionally, temporary contracts can be used as a screening instrument (Bookmann and Hagen 2008). From the workers’ perspective, fixed-term contracts reduce employment security, but they may also facilitate labour market entry of disadvantaged young workers.

The introduction, and especially the increase in temporary employment can be linked to increased unemployment rates (e.g. Holmlund and Storrie 2002, and Ingham and Ingham 2010). There are several research questions raised in the literature regarding temporary employment. Who are the workers that have entered temporary employment? Do temporary jobs increase employment, or do they maybe even increase unemployment? For example, Blanchard and Landier (2002) argue that temporary employment in France increased unemployment while Ingham and Ingham (2010) suggest that the increase in temporary employment in Poland led to a decrease in unemployment. Is temporary employment voluntary, and do workers benefit from these jobs? Finally, many papers investigate whether there is a stepping stone function for those workers compared to unemployed workers.

In this chapter, we focus on the question who takes up temporary jobs, i.e. we investigate the characteristics of workers in temporary employment. Socio-demographic characteristics, household characteristics as well as job characteristics are taken into account. Furthermore, we examine whether there is a time trend and if there are differences between the EU countries. Finally, we relate the differences between countries to differences in institutional settings and economic conditions.

The theory of compensating wage differentials suggests that negative job characteristics are compensated by additional wage premiums. In the case of temporary jobs, workers relinquish job security and therefore should be compensated. Instead, previous results (e.g. Booth, Francesconi and Frank 2002) indicate that temporary employment is less desirable than permanent employment, and that there are even wage discounts instead of wage premiums. Booth et al. (2002) find for the UK a wage gap of 16 per cent for men and 14 per cent for women in temporary jobs compared to workers in permanent jobs. Furthermore, their findings suggest that life satisfaction and training opportunities are lower for temporarily employed workers. De Graaf-Zijl, van den Berg and Heyma (2010) observe that temporary employed earn less than permanent employed. However, their findings also suggest that there are no differences in wages and training possibility for unemployed workers that find a regular job through temporary employment compared to those that directly find their job when unemployed. Since the EU-LFS data do not cover income and wage variables, we cannot investigate this issue. However, we investigate the reasons for temporary employment and can differentiate between voluntary and involuntary temporary employment.

The stepping stone hypothesis can be investigated by using a long panel survey. The future labour market outcomes of temporarily employed workers are compared to comparable unemployed workers. Booth et al. (2002) find some evidence for a stepping stone function of temporary employment in the UK. Since there is no longitudinal information in the data, we use a cohort analysis to provide some evidence on the stepping stone function of fixed-term contracts.

The empirical strategy to investigate temporary employment is briefly described in Section 5.2. Descriptive results on temporary employment, the reasons for temporary employment and the combination of temporary and part-time employment are presented in Section 5.3. Section 5.4 presents the results of the econometric analysis. Finally, the main results are summarized in Section 5.5.

5.2 Empirical Strategy

In this chapter, we restrict our analysis to employed workers, and thus complement the investigation of labour force participation in Task 1. The descriptive analysis first provides an overview of the extent of temporary employment overall, and in the different Member States, by gender, by age group, by industry and job duration. Furthermore, reasons for temporary employment and the duration of the fixed term contracts are displayed.

In the econometric analysis, probit models will be estimated with the type of contract as outcome variable (see Box 2.2 for details). To investigate the extent of temporary employment, individual characteristics, information on household composition, as well as job characteristics act as explanatory variables. First, individual characteristics include sex, age, education and field of education. Second, the information on household composition includes the number of adults (aged 15-64), the number of small children (aged 0-4), the number of school children (aged 5-14), and the number of elderly (aged 65 and above) living in the household. Additionally, the European Labour Force Survey permits the identification of spouses in a household. Therefore, indicators on whether a spouse lives in the household and the spouse's labour market status are included. Third, we control for job characteristics like occupation and industry. Finally, we account for differences between countries and over time.

The results of Task 1 indicate that there are important differences in labour supply between men and women. To investigate if there are also differences regarding temporary employment, in this chapter some analyses are carried out for men and women separately.

The differences in the extent of temporary employment between the Member States are further investigated. They could be due to different economic situations or institutional settings. Therefore, correlations between country-specific effects and indicators for economic situation and institutional settings are calculated. Indicators for economic conditions include the GDP growth rate, the unemployment rate, the population growth rate, and the fertility rate. Institutional settings are represented by indicators on taxes, income inequality, employment protection, mean retirement age, spending on pensions, availability of child care facilities, spending on child benefits, income replacement at birth and parental leave expenditures.

As indicated above, we investigate the association between the personal, household and job characteristics on the one hand, and the probability of temporary employment on the other hand. Given the cross-country differences in legal frameworks, labour supply and eco-

conomic conditions, this correlation could vary across countries. We therefore analyse temporary employment separately for country groups. We distinguish between five country groups, which read as follows:

1. CEE: Bulgaria, Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Romania, Slovenia and Slovak Republic.
2. Continental Countries: Austria, Belgium, France, Germany, Netherlands and Luxembourg.
3. Mediterranean Countries: Cyprus, Greece, Italy, Portugal and Spain.
4. Scandinavian Countries: Denmark, Finland and Sweden.¹⁰
5. Ireland and United Kingdom.

Since the decisions between part-time and full-time employment on the one hand, and temporary and permanent employment on the other hand, are simultaneous, in the second step of the econometric analysis, *multinomial logit* models for the combinations of these employment states are estimated (see Box 4.1 for details). In this analysis, the focus is on the characteristics of those workers who are either part-time employed or temporarily employed.

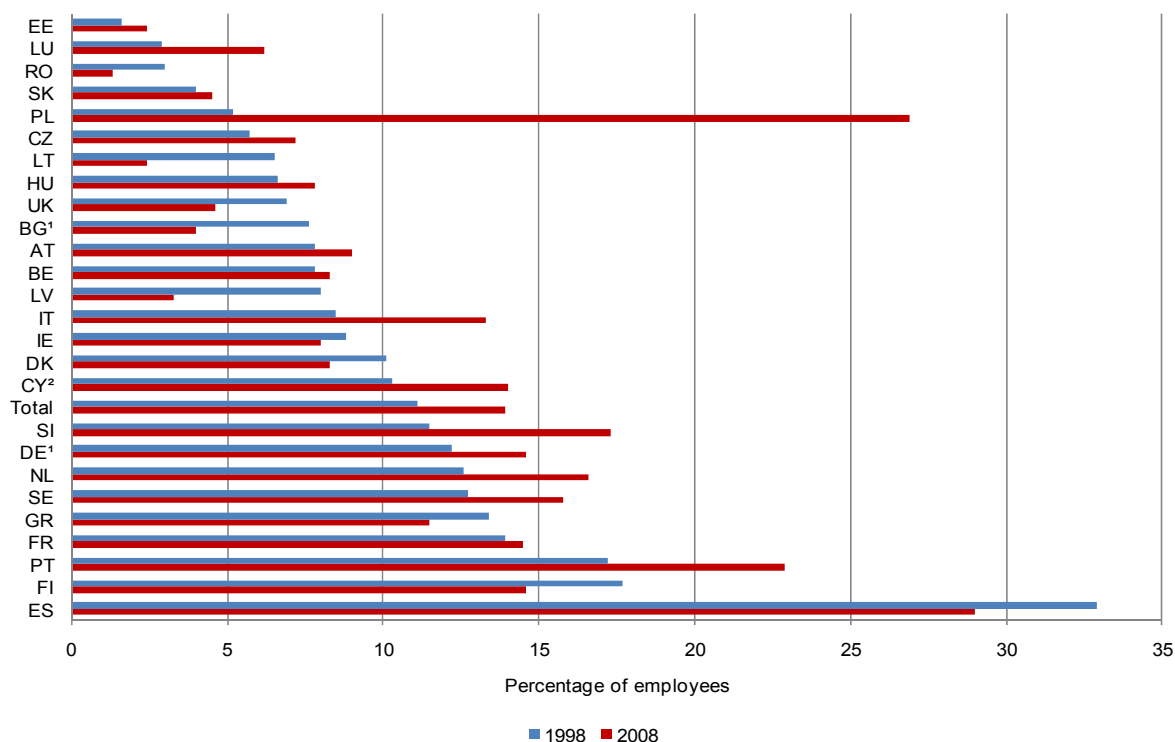
For all models, marginal effects (instead of hard to interpret coefficient estimates) are reported together with the corresponding t-values for the null hypothesis that the estimated marginal effects are zero. The empirical analysis is based on employed individuals aged between 15 and 64 living in private households. Furthermore, we restrict our analysis to individuals that are not working, such as soldiers (occupation group “armed forces”). In all estimations, we control for the clustering of standard errors by country, i.e. we allow observations within a specific country to be correlated due to unobservables (e.g. common culture). Moreover, we use person weights in all regressions.

5.3 Descriptive Overview

Almost 14 per cent of all employed workers covered by the EU-LFS have a fixed-term contract (see Figure 5.1 and Table A.5.1 in the appendix). This figure increased by more than 2 percentage points between 1998 and 2008. However, there is large variation in the extent of temporary employment between the different Member States. While only 1.3 per cent and 2.4 per cent of all employed workers in Romania and Estonia, respectively, have a temporary employment contract, this is true for 29 per cent and 27 per cent of all Spanish and Polish workers, respectively. Except for Poland, all countries of Central and Eastern Europe have relatively low shares of temporary employment. Indeed, the share of temporary contracts in Poland was about 5 per cent in 1998 and increased sharply afterwards. The trends that can be observed are quite different between the countries. While the share of temporary employment contracts is almost stable in Belgium, Estonia, France, Ireland, and Slovakia, the share increased strongly in Cyprus, Italy, Luxembourg, the Netherlands, Portugal, Sweden and Slovenia. However, a strong decline in temporary contracts can be observed in Bulgaria, Denmark, Finland, Lithuania, Latvia, Romania and Spain. Although some differences

¹⁰ Household characteristics cannot be derived for Denmark, Sweden, and Finland (in the majority of years). Therefore these countries will not be included in the econometric analysis. They will, however, be covered in the descriptive analysis.

Figure 5.1
Share of temporary employment in total employment
 1998 and 2008



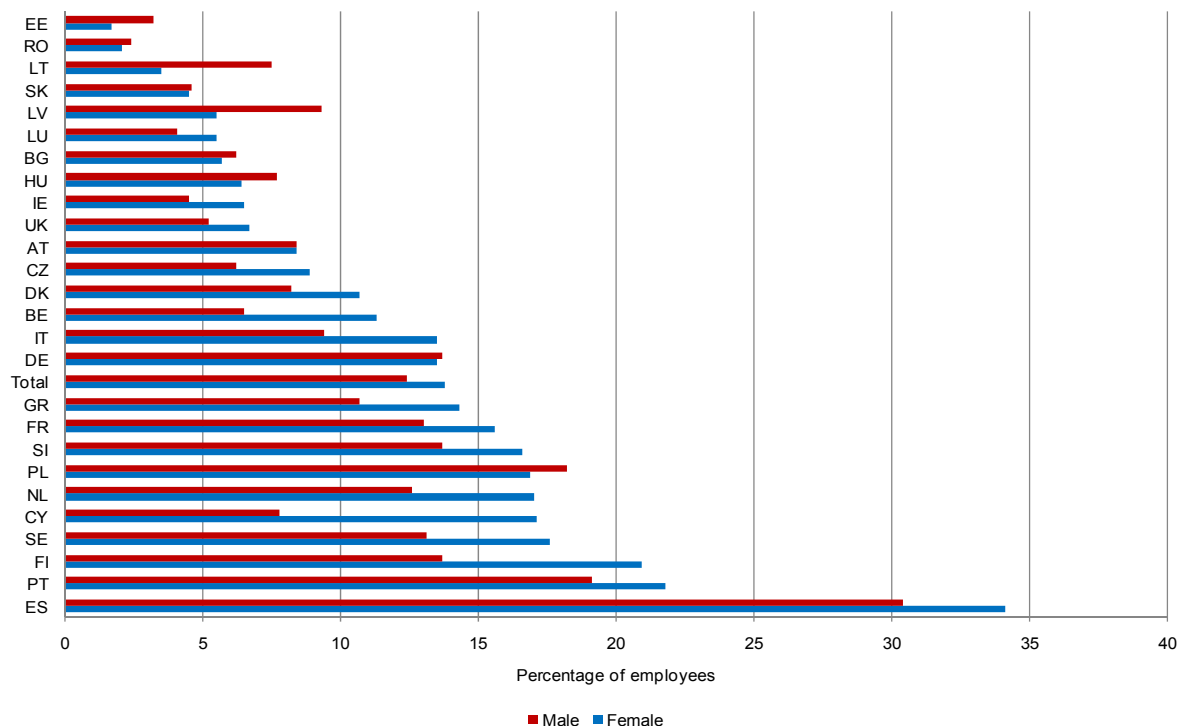
Source: EU-LFS, own calculations. – ¹data refer to 1999 instead of 1998. – ²data refer to 2001 instead of 1998.

between the former EU-15 and the New Member States in the extent of temporary employment can be observed, there is no clear pattern between the country groups in the development of temporary employment. This finding is in line with the evidence presented in OECD (2002).

In Task 1, we observe remarkable differences in the labour supply between men and women. Due to differences in the preferences for work, one could imagine that there are also differences between men and women in temporary employment. We can observe that women are somewhat more likely (1.4 percentage points) to be temporarily employed than men (see Figure 5.2 and Table A.5.2 in the appendix). This difference is a result of different factors in the different Member States. In countries with a relatively high share of temporary employment, the share of temporarily employed women is higher than that of men. By contrast, in countries with less temporary employment, men are more likely to be on temporary contracts than women. The only exception is Poland. The largest differences can be observed for Cyprus, Belgium and Finland, where women are 2.2 times, 1.7 times and 1.5 times, respectively, more likely to have a temporary contract than men. In contrast to this, men are almost two times more likely to be temporarily employed in the Baltic States.

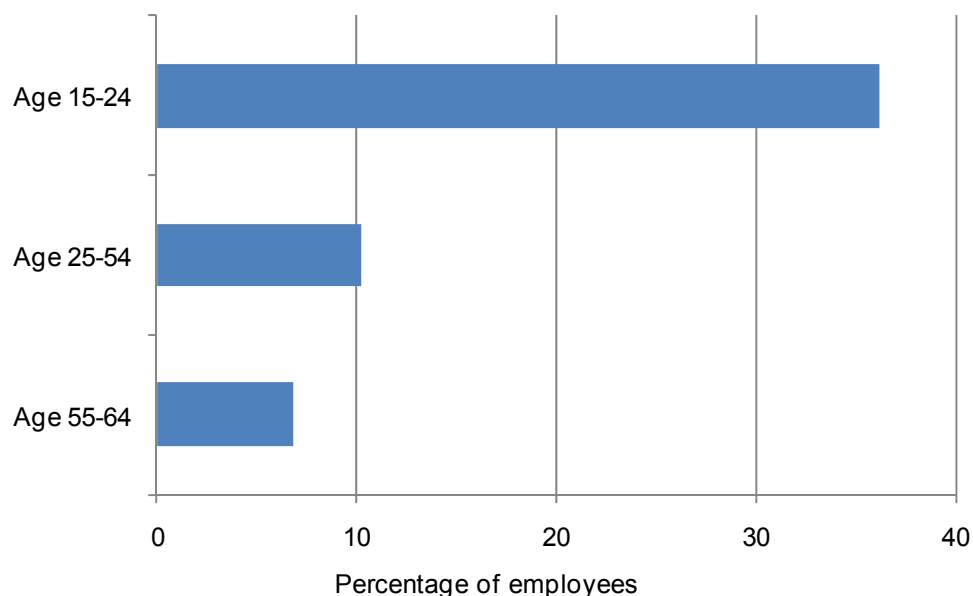
Besides these differences between countries and men and women, we can observe large differences between the age groups (see Figure 5.3 and Table A.5.3 in the appendix). While only 7 per cent of the workers who are older than 53 years are temporarily employed, this is true for 36 per cent of workers up to the age of 24. The negative relationship between age and temporary employment holds for all countries. However, the largest differences can be observed for countries in Continental Europe. Young workers are almost 6 times more likely

Figure 5.2
Share of temporary employment in total employment, by gender
 1998 to 2008



Source: EU-LFS, own calculations.

Figure 5.3
Share of temporary employment in total employment, by age group
 1998 to 2008



Source: EU-LFS, own calculations.

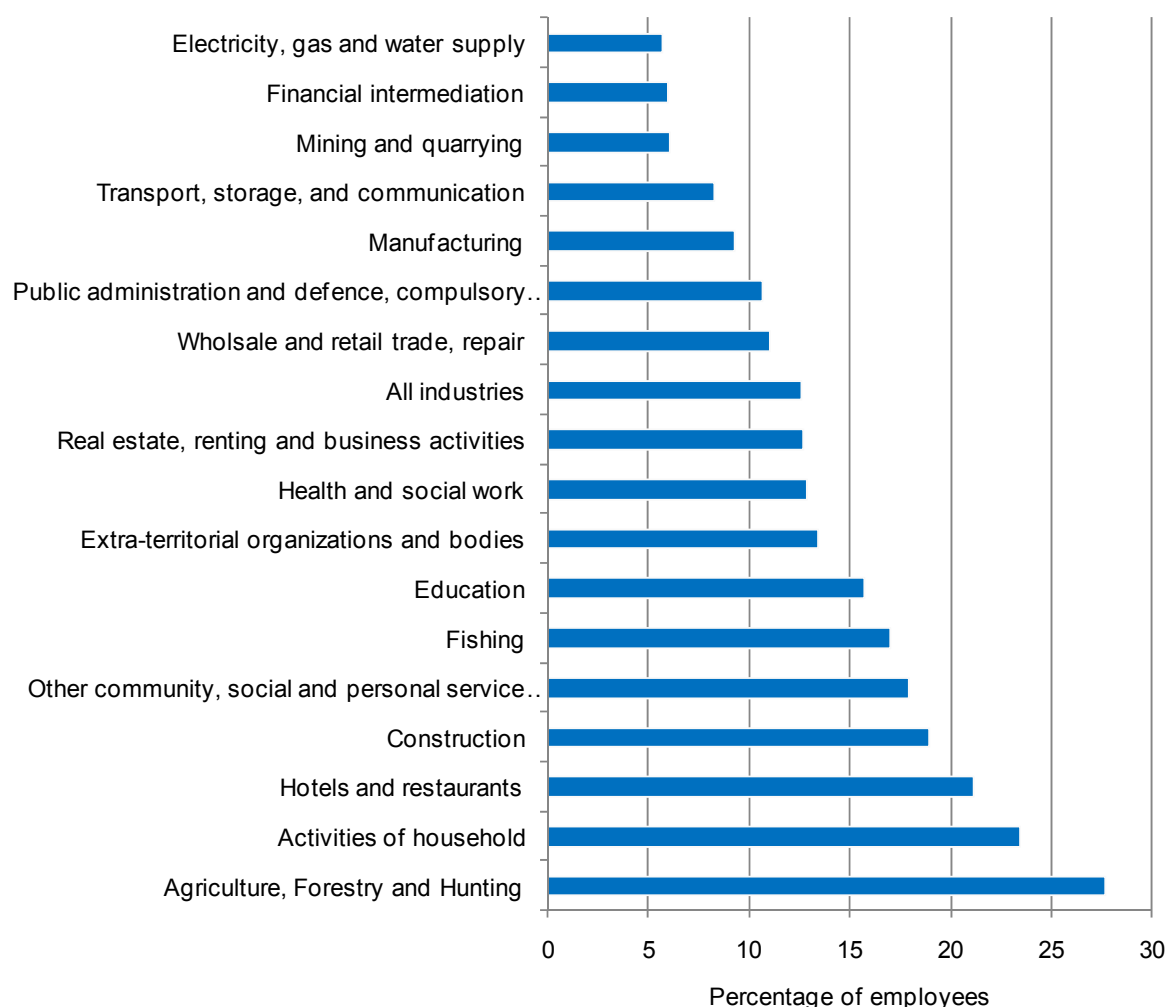
to be temporarily employed than middle-aged workers. These findings are in line with the existing literature that observes a negative relationship between age and temporary employment (e.g. Gebel and Giesecke 2009 for Germany). In some countries like Germany, tempo-

rary contracts are common during vocational training. We therefore restrict our attention to those workers who are not in education. The age differences in Continental Europe are then comparable to those of the other country groups.

Temporary employment is most common in industries with seasonal work such as agriculture, forestry and hunting, and hotels and restaurants, as well as in household activities (see Figure 5.4 and Table A.5.4 in the appendix). By contrast, temporary work is least common in electricity, gas and water supply, financial intermediation, and mining and quarrying. These industries have in common that special job-related skills are necessary.

Figure 5.4

Share of temporary employment in total employment, by industry
1998 to 2008



Source: EU-LFS, own calculations.

The legal framework for the maximum duration of temporary contracts and the number of successive contracts differs between the Member States. For example, there is a relatively generous regulation in Germany with a maximum duration of up to 2 years, no requirements for employers to give reasons for concluding temporary contracts, and there is the possibility for four renewals of the contract. By contrast, there is no limit in duration in Poland, while the number of successive contracts is limited to two. The maximum duration of temporary employment in Spain depends on the purpose of the fixed-term contract. In Ireland, there are no restrictions on the conclusion of a fixed-term contract, and the cumulated maximum duration

is 4 years, while there is no limit for the number of renewals. Furthermore, fixed-term contracts are explicitly mentioned in the employment protection law. In the Netherlands, almost no restrictions on temporary employment exist at all. Due to these differences in legislation, one can expect differences between the countries in the duration of each of the contracts and the number of renewals.

22 per cent of all workers with a temporary contract have a contract with a duration of 3 months or less (see Table A.5.5 in the appendix). The duration is up to one year for almost 70 per cent of all contracts. However, there is a large variation between the Member States. While almost half of all temporary contracts in Ireland are of a duration of more than 3 years, this is true for only 1.7 per cent of all fixed-term contracts in Slovakia. Durations of more than two years are quite common (between 41 per cent and 56 per cent) in Portugal, Germany, Cyprus, Austria and Ireland. By contrast, short-term contracts are most common in Lithuania, Hungary, Spain and Latvia. It can be seen that the duration is longer in the former EU15-States than in the New Member States. However, there are some exceptions like Spain, France and the Czech Republic. Despite the particular amount and time trend of fixed-term contracts in Poland, the distribution of contract durations in Poland is quite similar to the overall distribution in the European Union.

Unfortunately, there is no information on the number of renewals of the contract. However, the combination of job duration and the type of contract gives some indication about renewals. Both, job duration and the duration of temporary contracts, are measured in categories. We compare the duration of the temporary contract to the job duration. If the category of job duration exceeds the category of contract duration, we assume that there was at least one renewal of the contract.¹¹ 36 per cent of all temporarily employed workers experience at least one renewal of their contract (see Table A.5.6 in the appendix). There are only very few renewed contracts in Estonia, Finland and Ireland, while more than 50 per cent of all workers hold a renewed contract in Hungary, Portugal and Slovenia. In the countries with the highest shares of temporary employment, Spain and Poland, 43 per cent and 41 per cent, respectively, of all workers hold a renewed contract.

There can be different reasons why workers take up fixed-term employment. 59 per cent of all temporarily employed workers did not find a permanent job, and 12.5 per cent did not want a permanent job (see Table A.5.7 in the appendix). In most countries, more than half of all temporarily employed workers did not find a permanent job and are therefore involuntarily in temporary employment. This number is the highest in Spain (91 per cent), Cyprus (89 per cent), Greece (83 per cent) and Lithuania (82 per cent). In most of the countries of continental Europe, the share of involuntary temporary workers is much lower. This is especially true for Austria and Germany. In these countries, more than 60 per cent of these contracts cover a period of training, which seems to be due to the vocational education system. In the whole EU, 20 per cent of temporary contracts cover a period of training. 52 per cent and 34 per cent of all temporary workers in Ireland and the United Kingdom, respectively, state that they did not want a permanent contract.

There exists some evidence for several countries that there is a stepping stone function of temporary employment into permanent employment (e.g. Booth et al 2002, Berton, Devicienti

¹¹ We exclude temporary contracts with a duration of more than 3 years because this duration category is defined without an upper bound. We therefore cannot compare those durations to the categories of job duration because we do not know if the duration is four, five or even more years.

and Pacelli 2007 and Picchio 2008). Since the EU-LFS is not a longitudinal data set, it is not possible to observe the same person for a period of time and to investigate if someone leaves temporary employment into permanent employment. We therefore investigate the probability of temporary employment dependent on the labour market status of the preceding year. Unfortunately, for the year preceding the interview, we cannot distinguish temporary and permanent employment. In this analysis, we restrict our attention to workers holding a temporary or a permanent contract in the year of the survey and therefore exclude workers who are currently unemployed or inactive: 9.7 per cent of those who were employed in the preceding year are in temporary employment in the year of the survey. This number increased between 1998 and 2008 from 8.3 per cent to 10.4 per cent (see Table A.5.8 in the appendix). At the same time, temporary employment increased from 11.1 per cent to 13.9 per cent (see Table A.5.1 in the appendix). Therefore, the probability of employed persons to be temporarily employed in the following years is smaller than for entrants into employment. Although there is some state dependence in temporary employment, there seem to be some workers who change from temporary to permanent employment. Furthermore, the increase in temporary employment for those employed in the previous year is somewhat smaller than the increase in temporary employment for the overall population. This is some evidence that there is a stepping stone function which slightly increases over time. If the transition rate from temporary employment to permanent employment stays stable over time, one would expect the same growth rate of temporary employment for the employed workers as for new entrants.

However, it is not possible to draw causal conclusions from this analysis. In a separate analysis for the different Member States, we observe in all countries that the probability of temporary employment is lower for those who were employed in the preceding year than for all workers (see Tables A.5.9 and A.5.1 in the appendix). These differences are most pronounced in Sweden, the Netherlands, Spain and Finland. Therefore, these countries experience some remarkably high transition rates from temporary to permanent employment.

Regarding those who were unemployed, retired or inactive in the preceding year, the probability of temporary employment is much higher (see Table A.5.1 in the appendix). There is no clear time trend that can be observed. In contrast, a clear increase in the probability of temporary employment of students and pupils (from 46.9 per cent to 53.6 per cent) can be observed. This result indicates that the development of temporary employment is mostly driven by new labour market entrants. Separate analyses for the Member States reveal large differences in the risk of temporary employment of labour market entrants. 86 per cent of all students who enter the labour market and find a job in Spain end up with a fixed-term contract; by contrast, in Romania only 12 per cent of all students enter the labour market with a temporary contract. Regarding the probability rates of entrants from school and entrants from unemployment, in most countries school entrants have higher probabilities to hold a fixed-term contract. This difference is the highest in Austria and Germany because of the widely used vocational education. However, in some countries unemployed individuals face much higher risks than new entrants. In Lithuania, Bulgaria and Hungary unemployed persons are by 18, 16 and 12 percentage points, respectively, more likely than school entrants to be temporarily employed.

As a second descriptive approach to investigate the stepping stone hypothesis, we investigate cohort groups and their development over time. However, due to the five year categories in the age variable, it is not possible to follow one single birth year cohort. We can only

observe the same five cohorts five years later. In our analysis, we restrict our attention to those cohorts that are in the age groups 15-19, 20-24 or 25-29 and are observed at least five years later, too. The descriptive cohort results (see Table A.5.10 in the appendix) show that the probability of temporary employment increased over time. This increase was the highest for those aged between 15 and 19. 37 per cent of those who are born between 1979 and 1983 are temporarily employed in 1998 (when this cohort was in the first age group). The cohort of those born between 1984 and 1988 are temporarily employed in the same age group (in 2003) with a probability of 47 per cent. The main focus is on the development of the same cohort. For all observed cohorts, the probability of temporary employment decreased after 5 (and 10) years. This finding gives some additional evidence for a stepping stone function of temporary employment. Especially, this stepping stone function seems to increase over time. Berton et al. (2007) and Picchio (2008) for Italy, de Graaf-Zijl et al. (2010) for the Netherlands, and Booth et al. (2002) for Britain, as well as OECD (2002, Chapter 3) also find temporary jobs to be a stepping stone into permanent employment.

Besides the stepping stone function of temporary employment, a focus is on the combination of the type of contract and part-time and full-time employment. 3.4 per cent of all workers are part-time employed with a fixed-term contract. In the New Member States, only very few workers are both, part-time employed and temporarily employed (see Table A.5.11 in the appendix). This is mostly due to the fact that only few workers in these countries work part-time. By contrast, 9.5 per cent, 6.6 per cent and 5.3 per cent of all workers in the Netherlands, Sweden and Spain, respectively, are temporary part-time workers. Overall, the probability of a fixed-term contract is higher for part-time employed (20 per cent) than for full-time employed workers (11.6 per cent). Part-time employed workers in Spain, Greece Poland, Portugal and Slovenia experience a probability of temporary employment which is at least 46 per cent.

5.4 Econometric Analysis

The descriptive overview presented above provides some insights into the composition of workers in temporary employment. However, it is not possible to investigate all characteristics at the same time. This problem can be solved with the help of regression analysis.

The analysis of the probability of temporary employment for all workers, and separately for men and women (see Table A.5.12 in the appendix), shows that there are only few differences between men and women. The probability of temporary employment is the highest in Spain, Poland, Finland and Portugal (in Portugal somewhat less for women). The lowest probabilities for men can be observed in Romania and Estonia, and for women in Romania and Ireland. Young workers are more likely to be temporarily employed than workers of middle and old age. This result is in line with the literature that finds temporary employment to be most common for young workers (e.g. Bookmann, Hagen 2008 and Gebel, Gieseke 2009). Medium-skilled workers have lower probabilities of temporary employment than both low-skilled and high-skilled workers. This result is found by Gebel and Gieseke (2009) for Germany. The probability is positively correlated with the number of adults and the number of children, with singles having higher rates of temporary employment than those with a partner. The latter finding is in line with Picchio (2008) who finds married workers to be more often in permanent employment than singles but in contrast to Bookmann and Hagen (2008) who do not observe any differences. However, these coefficients are very small quantitatively. It can

be summed up that the differences between countries and age groups are much larger and therefore most decisive.

However, some essential differences can be observed for the field of education, the occupation and industry (see Tables A.5.13 and A.5.14 in the appendix).¹² Workers with an educational degree in social sciences, business and law are less likely to be temporarily employed than workers with a general degree. Legislators, senior officials and managers are the least likely to be temporarily employed and workers in elementary occupations are most likely to be in this situation. As seen in the descriptive analysis above, workers in agriculture, forestry and hunting are more often temporarily employed than workers in all other industries. In manufacturing, workers are less likely to have a fixed-term contract.

The observed differences between the countries are investigated further by examining whether there is some correlation between institutional settings and macroeconomic indicators. One can expect that there is some relationship between employment protection and temporary employment since temporary employment can be some way to evade strict employment legislation. Furthermore, increased unemployment rates can result in a more generous legislation and therefore higher rates of temporary employment. However, we cannot observe any significant relationship between any of the institutional indicators and the country fixed effects (see Table A.5.15 in the appendix). This finding is in contrast to Kahn (2010), who finds effects of labour market reforms on temporary employment.

Besides the differences in the extent of temporary employment between countries, it is possible that there is a different relationship between socio-demographic and household characteristics and the probability of holding a fixed-term contract. We therefore separately investigate the five country groups described in Section 5.2. Differences between the country groups can be observed for older workers. In Continental Europe and the Mediterranean countries (see Tables A.5.16 and A.5.17 in the appendix), older workers are less often temporarily employed than middle-aged workers, while they are more often temporarily employed in the UK and Ireland (see Table A.5.18 in the appendix). In Central and Eastern Europe, there is no difference between these two groups (see Table A.5.19 in the appendix). Similar differences can be observed regarding the skill level of workers. There are no differences between the skill groups in Continental Europe and the Mediterranean countries. This finding is in contrast to Gebel and Giesecke (2010). Their findings suggest that high-skilled workers are most likely to be on temporary contracts. By contrast the findings of Picchio (2008) indicate that low-skilled workers are most likely to be in temporary employment in Italy. In the analysis at hand, high-skilled workers in UK and Ireland are the most likely to be temporarily employed while low-skilled workers are most affected in CEE countries.

In all country groups, workers with children are more likely to be temporarily employed and those without a partner are most likely to be temporarily employed. These findings are in line with Picchio (2008). However, the association between these characteristics and the probability of holding a temporary contract is very small in the UK and Ireland, while it is largest in the Mediterranean countries.

In the previous section, we observed that most workers in temporary employment are in temporary employment involuntarily. By using a multinomial logit analysis, we now investigate the characteristics that are correlated with the different reasons for temporary employ-

¹² Since there is no full coverage of these variables by all respondents, we analyze these characteristics in addition to the baseline model mentioned above.

ment. The results indicate that the share of involuntary temporary workers is the lowest in Austria and Ireland, while it is the highest in Spain (see Table A.5.20 in the appendix). By contrast, the smallest number of workers is in temporary employment due to education in Spain, while the highest share can be observed in Austria. Women are more likely to be in temporary employment involuntarily than men. Regarding age groups, middle-aged temporary workers most often did not find a temporary job. Although, young workers are the biggest group in temporary employment, middle-aged workers are the most often involuntarily in temporary employment while young workers are in temporary employment most often because of education. Medium-skilled workers hold a fixed-term contract more often due to the fact that they did not find a permanent job than low-skilled and high-skilled temporary workers.

There is also a slightly negative correlation with the number of adults and the number of older children in the household, but a slightly positive correlation with the number of small children and the number of elderly persons in the household. Temporarily employed workers who do not live with a partner are more likely to be voluntarily in temporary employment than those with a partner.

The decision to take up a job with a permanent or fixed-term contract is taken simultaneously with the decision between part-time and full-time employment. We therefore investigate the worker characteristics of workers in the different combinations of working-time and employment contract. Since we investigated both, characteristics of temporarily employed workers and part-time workers in this section and Section 2.4, respectively, we now focus on those workers who are part-time employed and have a temporary contract.

The probability to be both, part-time and temporarily employed is lowest in Romania (see Table A.5.21 in the appendix). Overall, the CEE countries except for Poland and Slovenia have very low shares of workers with these job characteristics. The probability is highest in the Netherlands. Male workers as well as middle-aged workers are less likely to be in this worker group than female workers and workers of different age groups, respectively. Regarding the skill level, low-skilled workers have the highest probability of part-time temporary employment. A slightly positive relationship between the number of small children and the number of elderly persons in the household with this employment type can be observed. Single workers are more likely to be temporarily and part-time employed than workers having a partner in the household. Compared to the findings for temporary employment, the differences between countries and age groups are the most decisive factors for the probability to be temporarily part-time employed.

Regarding the field of education, workers with a general degree have the highest probability to be part-time and temporarily employed, while workers with a degree in engineering, manufacturing and construction have the lowest probability (see Table A.5.22 in the appendix). A similar pattern can be seen regarding occupations: workers in elementary occupations as well as skilled agricultural workers have the highest probability of having a fixed-term contract (see Table A.5.23 in the appendix). However, workers in the industry of education have the highest probability. This can also be due to the fact that positions in academia (e.g. Ph.D. positions) are often fixed-term and part-time.¹³

¹³ Separate regressions for the country groups are quite similar and therefore not reported.

5.5 Conclusion

In this section, we investigate the features of temporary employment in the European Union and its combination with part-time employment. Temporary employment has become more important during the observation period from 1998 to 2008. However, there are different time trends that can be observed in the Member States. Differences in the legal framework of the Member States are reflected in the amount of temporary employment, the duration of the contracts and the share of prolonged fixed-term contracts. Except for Poland and Slovenia, Member States from Central and Eastern Europe (CEE) are less affected by temporary employment than EU15 countries. In those countries, men are more likely to be temporarily employed than women. Spain, Poland and Portugal stand out from the other countries by their very high share of temporary employment. In the countries with high shares of temporary employment, women are more affected.

Besides differences between the countries, being young is the most decisive characteristic of temporarily employed workers. In all countries, young workers are the most affected by fixed-term contracts. However, the share of involuntary temporary workers is higher for middle aged workers. Overall, most temporarily employed workers state that they are in temporary employment because they did not find a permanent job. This finding suggests that temporary employment is judged as negative by employees. This can be an indication that there are no compensations, e.g. higher wages, for the reduced job security which goes together with a temporary contract.

Since temporary employment makes a labour market more flexible, and is in most countries a reaction to high unemployment rates, one can expect that there is some relationship between institutional settings and economic conditions of the Member States and their amount of temporary employment. However, in our analysis we cannot find any relationship at all. Rather, differences in legislation and past unemployment developments could be influential factors.

Some cohort-based analyses of young workers as well as the investigation of the labour market state of the preceding year give some indication that there is a stepping stone function of temporary employment. This finding is in line with Booth et al (2002). The findings further suggest that this function even increases over time.

Besides temporary employment, other types of non-standard work arrangements like part-time employment have become more important in the last decades. We therefore examine the combination of part-time employment and temporary employment. Both types of employment are more common in the EU-15 than in the New Member States. However, part-time employment is mainly voluntary while temporary employment is mainly involuntary. However, it can be seen that the risk of temporary employment is higher for part-time employed than for full-time employed workers. Therefore, workers who choose to work part-time may somehow be penalized by reduced employment security.

Summing up, we observe that it is mainly young workers who are temporarily employed and that there are important differences between EU-15 and New Member States in the use of temporary employment. Due to data restrictions, we cannot investigate the stepping stone function of temporary employment. However, we find some evidence that transitions from temporary to permanent employment are non-negligible, at least in some countries. Furthermore, we find some evidence that part-time employment is more frequently combined with temporary employment than full-time employment.

6. Task 5: Education and Training

This section summarizes the results of our empirical investigations with respect to further education and training, i.e. task 5 of the overall study. Section 6.1 briefly explains the background and objectives of the analyses. An overview on the empirical strategy of the work conducted in this task is provided in section 6.2. In section 6.3 we present the empirical results which comprise an extensive descriptive overview together with the results of the econometric analyses. Section 6.4 summarizes the results and provides some tentative conclusions.

6.1 Background and Objectives

The improvement of the adaptability of workers and investments in human capital through better education and skills are (among others) perceived as milestones on the road towards meeting the objectives of European Employment Strategy. This is of particular relevance given the fact that during the last fifty years all European societies have transformed their demographic composition to a considerable extent. The demographic burden induced by population ageing constitutes long-term societal challenges for all European countries, though with some heterogeneity regarding the precise timing (see e.g. Fertig and Schmidt (2004) for a more detailed discussion). In terms of its economic repercussions, population ageing is primarily equivalent to a declining labour supply of younger relative to that of older workers (and also to the number of retirees). It is rather uncontroversial that this relative shift in labour supply has a direct effect on social security systems, especially the pension systems but also the health and old-age care insurance. However, it is very likely that demographic change will also display indirect effects via behavioral responses of individuals. The following labour market related outcomes might respond to population ageing by changes in the behavior of agents: (i) the structure of wages, the income distribution and savings; (ii) the level and structure of employment and unemployment; (iii) the organization of work; (iv) the structure of product demand and (v) the human capital accumulation of smaller cohorts. These various direct and indirect effects are intimately related and might exert repercussions on demographic change itself, i.e. specifically on family formation and fertility, as well as on the (early) retirement decisions of older workers.

Against this background as well as technological and structural change, it is widely accepted that the EU needs higher and more effective investment in human capital embedded in a coherent strategy of lifelong learning. Such investments typically enhance the access to employment, raise productivity levels and quality at work and thus enable individuals to cope with a changing economy. Hence, with the Council Resolution from June 2002 on lifelong learning the Member States of the EU committed themselves to develop such a strategy. Furthermore, the Council Resolution emphasizes “that lifelong learning must cover learning from the pre-school age to that of post-retirement, including the entire spectrum of formal, non-formal and informal learning. Furthermore, lifelong learning must be understood as all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective” (Council Resolution on lifelong learning, 27 June 2002, C163/2).

This definition takes into account that the formation of skills and competences is a life-cycle phenomenon and, therefore, the result of a long-term *process* rather than that of isolated efforts. This is also emphasized by recent insights from interdisciplinary research on (child) development and skill formation (see Knudsen et al. (2006)). According to this literature, skills are produced by environments, investments and genes. Furthermore, skills are multiple in nature, ranging from cognitive to non-cognitive competences and are used with different weights for different tasks. Thus, human skill formation must be seen as a multistage technology, where each stage corresponds to a period in the life cycle of an individual. Specifically, skills produced at one stage augment skills at later stages (self-productivity of skills), and skills produced at one stage raise the productivity of investment at later stages (dynamic complementarity). These two features of skill formation together produce multiplier effects, i.e. “skills beget skills” (for more details see Cunha and Heckman (2007)).

Against this background, our analyses with respect to formal and non-formal education using EU-LFS micro data which are summarized in this section must be seen as a crude approximation since the data only allow us to investigate repeated snap-shots of investments in human capital without being able to control for the biography of past investments. Consequently, despite the large set of observable individual characteristics, it is very likely that our empirical results are considerably plagued by unobserved heterogeneity. Hence, estimation results do not constitute causal effects and have to be interpreted cautiously. Specifically, we provide a descriptive overview on participation in formal and non-formal training, the intensity of both forms of training as well as their fields. Furthermore, we investigate the associates of training by estimating several regression models for all outcomes allowing for different specifications with respect to country grouping.

Our empirical results suggest considerable heterogeneity with respect to countries and country groups, but also some rather clear patterns regarding the association between outcomes and different characteristics of the surveyed individuals within country groups. The latter especially holds for characteristics such as gender, age, completed education and some job-related attributes. The next section provides an overview on the empirical strategy by explaining the utilized indicators and econometric models.

6.2 Empirical Strategy

The empirical analyses focus on employed individuals. Overall around 9 per cent of all individuals (older than 22) in the EU-LFS participate in some form of training. Among them is a substantial share of unemployed and inactive individuals. It seems safe to argue that encouraging these two groups to invest in human capital necessitates a different strategy and set of measures than for employed workers. Hence, our empirical investigation of education and training aims at shedding some light on those groups of employed workers (in terms of socio-demographic, household and job characteristics) who exhibit a relatively large reluctance against further investments in training and education.

The presentation of estimation results is structured along the following lines: In a first step, we present the associates of training participation for the baseline specification. To this end, we use two dummy variables indicating individual participation in (i) formal and (ii) non-formal training to construct a third indicator representing any kind of training, i.e. the participation in formal and/or non-formal education. These three indicators are used as outcomes in the first part of the econometric analyses. The measures of training intensity, i.e. the level of formal

education and the number of hours in non-formal training, are then investigated in a second part. In both analytical parts we start by estimating a baseline specification which contains the full set of country- and time-specific intercepts together with a large set of socio-demographic, household and job-related characteristics. In a next step, we then divide our sample into five country groups for which separate regression models are estimated. All of these separate regressions of course contain the full set of observable characteristics.

By estimating separate models for country groups we allow the estimated coefficients for all individual characteristics to vary across these country groups. Thus, compared to the baseline specification in which only the intercepts are allowed to be different across countries, we implement a more flexible specification with respect to the estimated slopes by running separate regressions for groups of countries. An alternative approach to this would be the estimation of interaction terms between individual characteristics and country indicators. In its extreme, a fully interacted model, i.e. allowing for a separate slope estimate for each and every variable in all countries, is equivalent to running separate regression models for each and every country. Such an approach yields a huge load of estimation results for which the derivation of comprehensive conclusions is practically unfeasible. Furthermore, with such an approach one would deliberately waste the potential of a dataset which explicitly aims at providing comparable information across countries. Hence, the separate regressions for groups of countries provide a balance between flexibility in outcome responses and comparability of the derived results.

Specifically, EU-LFS data on further education and training covers the time period from 2003 to 2008. In 2003, however, there is no information for eight countries (AT, BE, HU, IT, LT, PL, PT and UK), whereas from 2004 onwards all 26 countries are covered. These 26 countries are subdivided into five country groups according to a classification based on geographical and institutional considerations:

1. Anglo-Saxon countries: Ireland and United Kingdom.
2. Continental countries: Austria, Belgium, France, Germany, Netherlands and Luxembourg.
3. Central and Eastern European countries: Bulgaria, Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Romania, Slovenia and Slovak Republic.
4. Mediterranean countries: Cyprus, Greece, Italy, Portugal and Spain.
5. Scandinavian countries: Denmark, Finland and Sweden.

Due to missing information for the household variables the Scandinavian have to be excluded from the econometric analyses. Thus, results for this country group are restricted to descriptive statistics. Furthermore, for 2003-2008 we constructed the following set of indicators from the EU-LFS data as outcome variables in our analyses:

Indicators for participation in education and training:

1. *Participation in formal and/or non-formal training*: Indicator variable taking on the value of 1, if an individual participated in formal education, non-formal training or both; 0 otherwise.
2. *Participation in formal training*: Indicator variable taking on the value of 1, if an individual participated in formal education; 0 otherwise.

3. *Participation in non-formal training*: Indicator variable taking on the value of 1, if an individual participated in non-formal training; 0 otherwise.

Indicators of intensity of education and training as well as field of training:

1. *Level of formal training*: Ordinal indicator taking on the value of 1, if an individual participated in a training course on ISCED-levels 1 or 2, the value of 2, if an individual participated in a training course on ISCED-levels 3 or 4 and the value of 3, if an individual participated in a training course on ISCED-levels 5 or 6.
2. *Intensity of non-formal training*: Number of hours an individual spent in non-formal training activities in the last four weeks preceding the interview.
3. *Field of non-formal training activity*: Multinomial indicator taking on the following values: 1, if an individual participated in unknown or general programs; 2, if an individual participated in either teacher training, education science, humanities, languages, arts or foreign languages; 3, if an individual participated in either social sciences, business and law; 4, if an individual participated in either science, mathematics, computing, life science (including biology and environmental science), physical science (including physics, chemistry and earth science), mathematics, statistics, computer science, computer use, engineering, manufacturing, construction, agriculture or veterinary; 5, if an individual participated in health and welfare courses; 6, if an individual participated in services courses.

The set of individual characteristics comprises three sub-sets which contain the following indicators:

Individual socio-demographic characteristics:

1. Gender: Indicator variable taking on the value of 1, if an individual is male; 0 otherwise.
2. Age in five year brackets: Indicator variable taking on the value of 1, if an individual belongs to a specific age group; 0 otherwise. These groups comprise 17-21, 22-26, 27-31, ..., 57-61, 62+.
3. Level of completed education: Indicator variable taking on the value of 1, if an individual's highest level of completed education corresponds to (i) ISCED 1 or lower, (ii) ISCED 2, (iii) ISCED 3, (iv) ISCED 4, (v) ISCED 5-6; 0 otherwise.
4. Years since completed education: Number of years since highest level of completed education was attained; this variable was constructed by subtracting the year in which the highest level of completed education was attained from the year of the interview. The specifications contain also the squared number of years to allow for a non-linear relationship.
5. Marital status: Three indicator variables taking on the value of 1 if an individual is either married or divorced or single; 0 otherwise.

We do not use an indicator for the nationality of the individual since there are so many completely missing country-year pairs in the EU-LFS data. Hence, considering this information will result in a loss of about one-half of all observations and extremely restricted country coverage.

Household characteristics:

1. Household size: Number of individuals living in the household of the interviewed person.

2. Labour market status of household members: Number of employed individuals living in the household of the interviewed person.
3. Children in need for care: Number of children younger than four years of age living in the household of the interview person.

Labour market- and job-related characteristics:

1. Occupation: Indicator variables taking on the value of 1 if an individual's job corresponds to ISCO0 or ISCO1 or ISCO2 or ... ISCO9; 0 otherwise. ISCO comprise the following occupations: ISCO0: Armed forces; ISCO1: Legislators, senior officials and managers; ISCO2: Professionals; ISCO3: Technicians and associate professionals; ISCO4: Clerks; ISCO5: Service workers and shop and market sales workers; ISCO6: Skilled agricultural and fishery workers; ISCO7: Craft and related trades workers; ISCO8: Plant and machine operators and assemblers; ISCO9: Elementary occupations.
2. Total labour market experience: Indicator variables taking on the value of 1 if an individual entered the labour market a pre-specified time interval ago; 0 otherwise. The time interval is specified in terms of years since labour market entry and covers the following year brackets: up to 6 months; 6-12 months; 1-2 years; 2-3 years; 3-5 years; 5-10 years; 10-15 years; 15-20 years; 20-25 years; 25-30 years; 30-35 years; 35 and more years.
3. Part-time job: Indicator variable taking on the value of 1, if an individual works part-time; 0 otherwise.
4. Temporary contract: Indicator variable taking on the value of 1, if an individual holds a fixed-term work contract; 0 otherwise.
5. Sector of economic activity: Three indicator variables taking on the value of 1, if an individual either works in the agricultural or industrial or services sector; 0 otherwise.

For all binary outcome variables we estimate *Probit* models and report marginal effects (instead of hard to interpret coefficient estimates) together with the corresponding t-values for the null hypothesis that the estimated marginals are zero. Training intensity outcomes are estimated by OLS and *Tobit* models. In all estimation we control for the clustering of standard errors by country, i.e. we allow observations within a specific country to be correlated due to unobservables (e.g. common culture). Moreover, we use person weights in all regressions. For all individual characteristics modeled by more than one indicator (e.g. education, age or occupations) and the country- (group-) specific intercepts we also perform pair-wise tests of equality. Due to the large sets of disjoint indicator groups this amounts to more than 470 tests in the baseline specification. Hence, to keep the exposition clear and concise we will not report the full set of test statistics. Rather, we will highlight the most important findings of the test batteries in the discussion of estimation results. The next sub-section (6.3.1) summarizes the empirical results for the participation indicators. Training intensity measures are the subject of section 6.3.2.

6.3 Empirical Results

6.3.1 Participation in education and training

The presentation of results regarding participation in education and training starts by an extensive descriptive overview to document the variation in outcomes across countries, time,

gender, and country groups. Econometric estimation results are then summarized in section 6.3.1.2.

6.3.1.1 Descriptive overview

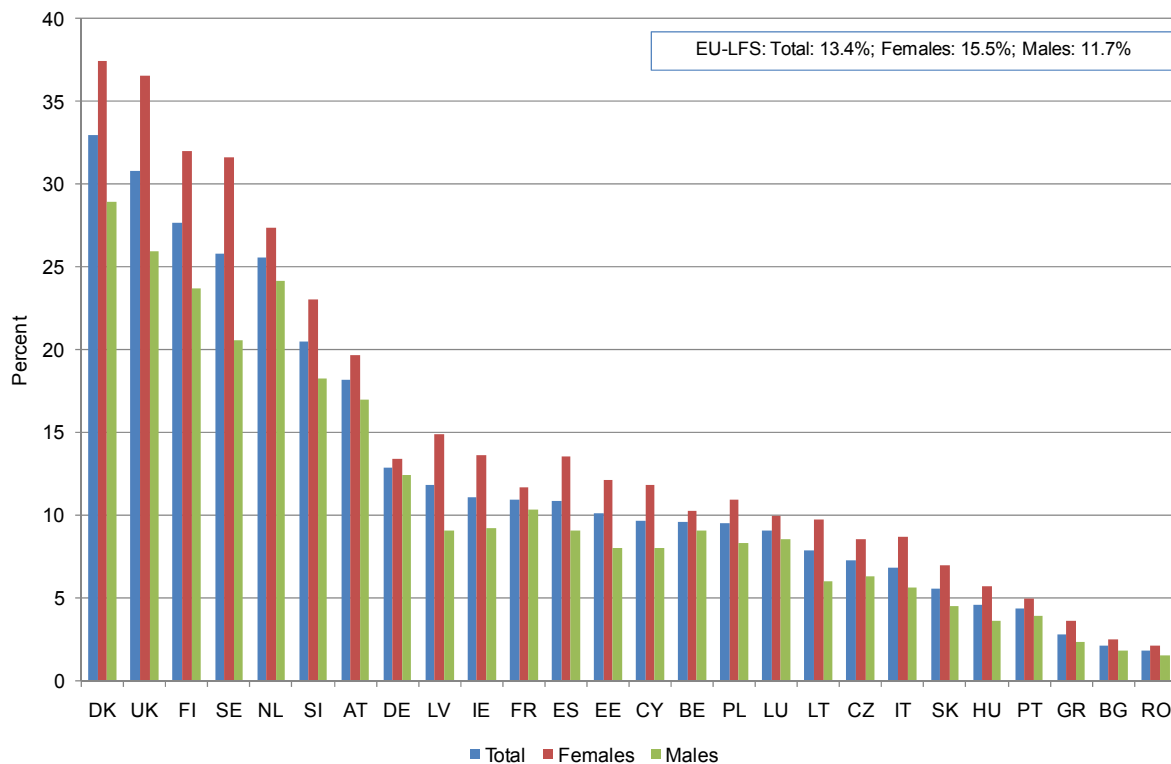
On average across all countries and survey years, around 13.4 per cent of all employed individuals in the EU-LFS participate in some form of training (either formal or non-formal or both). Unconditionally, we observe a considerable difference between men and women, with on average 15.5 per cent of all females, but only 11.7 per cent of all males participating. Breaking this overall participation down into formal and non-formal training, we find an average participation rate of slightly less than 6 per cent in formal and around 8.6 per cent in non-formal education. Less than one percent of all employed workers participate in both forms of training. Again, women tend to train more frequently (participation rates of 6.8 per cent in formal education and 10.1 per cent in non-formal training) compared to men (5.2 per cent for formal and 7.4 per cent for non-formal training).

Figure 6.1 illustrates the distribution of general participation rates (in any kind of training) across countries. Quite unsurprisingly, we observe remarkable heterogeneity behind the above mentioned averages. Roughly speaking, countries might be divided into three distinct groups. The first group of countries – covering Denmark, the United Kingdom, Finland, Sweden, the Netherlands, Slovenia and Austria – clearly exhibit above average training participation. Especially in Denmark, the UK and Finland, participation rates are more than twice as high as the EU-LFS average. Austria still exceeds the average by almost five percentage points. One remarkable aspect in this context is the fact that all Scandinavian countries are among this above-average group, whereas we do not observe any Mediterranean country here.

The second country group comprises a set of countries near the EU-LFS average. This group includes Germany, Latvia, Ireland, France and Spain, and thus contains the first Mediterranean country together with two Continental countries as well as one Eastern European and the other Anglo-Saxon country. With overall participation rates for the total population ranging from around 13 per cent in Germany to almost 11 per cent in Spain, we observe a clear-cut drop compared to Austria (the last country of the first group) with more than 18 per cent participation. In the third group of countries – those with clear below-average training participation – Mediterranean and Central and Eastern European countries dominate the picture. The only exceptions here are the two Continental countries Belgium and Luxembourg. Participation rates in this group range from around 10 per cent in Estonia to less than 2 per cent in Romania. Thus, the highest backlog with respect to further education and training of employed workers seems to exist in the new Member States but also in some old Member States such as Italy, Portugal and Greece.

Figure 6.1

Average participation rates in formal and/or non-formal training by country 2003-2008



Source: EU-LFS, own calculation.

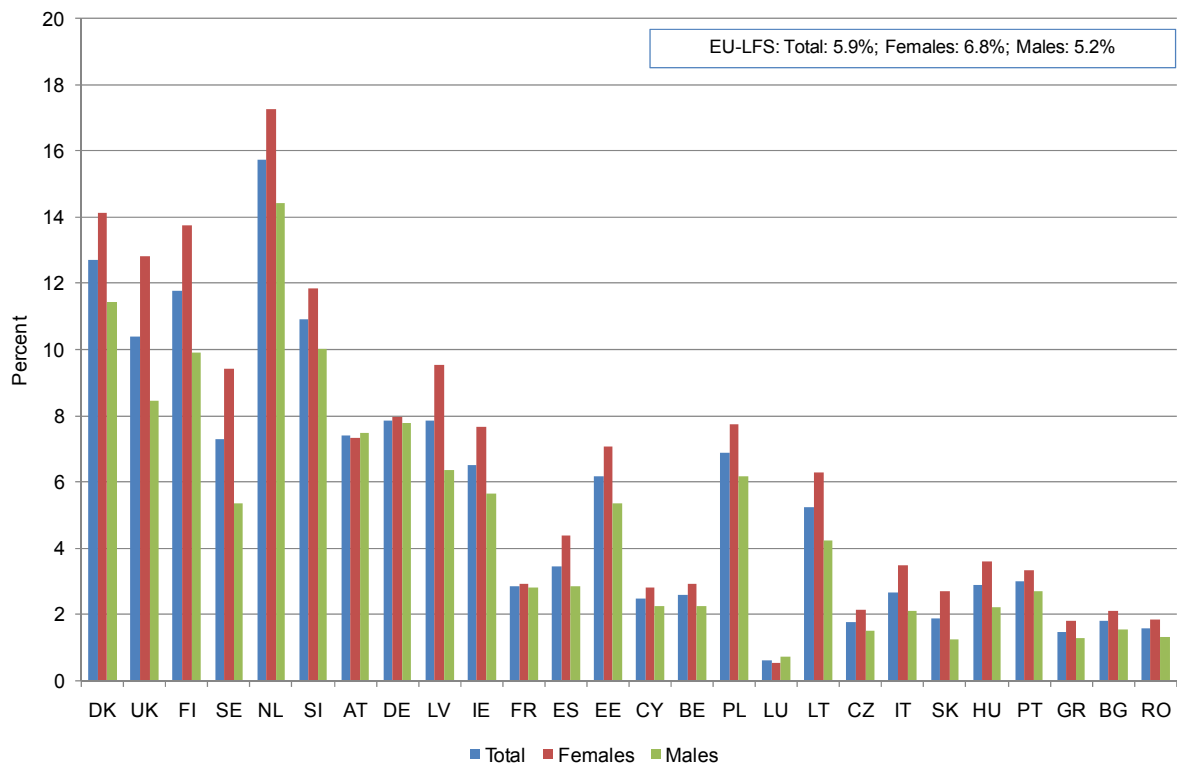
Furthermore, the unconditional variation across gender documented in Figure 6.1 suggests that women tend to exhibit higher participation rates in all countries. This difference across gender seems to be especially pronounced in the top 4 countries, i.e. the Scandinavian countries and the UK. Although absolute differences between females and males tend to diminish with overall participation, we do not observe a single country in which participation of men is higher than that of women. These differences, however, are unconditional, i.e. they neglect the fact men and women are different with respect to many other – potentially relevant – characteristics which will be controlled for in the econometric analyses.

Figures 6.2 and 6.3 illustrate the decomposition of overall participation in any kind of training into formal education on the one hand and non-formal training on the other hand. To simplify comparisons the ordering of the countries is the same as in Figure 6.1. With respect to formal education, Figure 6.2 demonstrates that the above-average group of countries is extended and now also includes Germany and Latvia. The country with the highest participation in formal education is the Netherlands with almost three times the EU-LFS average. Denmark and Finland still belong to the top 3 countries, whereas the UK and especially Sweden are outperformed by Slovenia. Interestingly, participation in formal education is also higher in Germany and Latvia than in Sweden.

Furthermore, it becomes transparent that France and Spain no longer display average participation rates. Formal education in both countries is clearly below-average and comparable to Cyprus and Belgium. A move up the country ranking can be observed for Estonia, Poland and Lithuania. In these countries participation rates in formal education are around the EU-LFS average. Thus, workers in the Baltic countries exhibit higher (unconditional) propensities

Figure 6.2

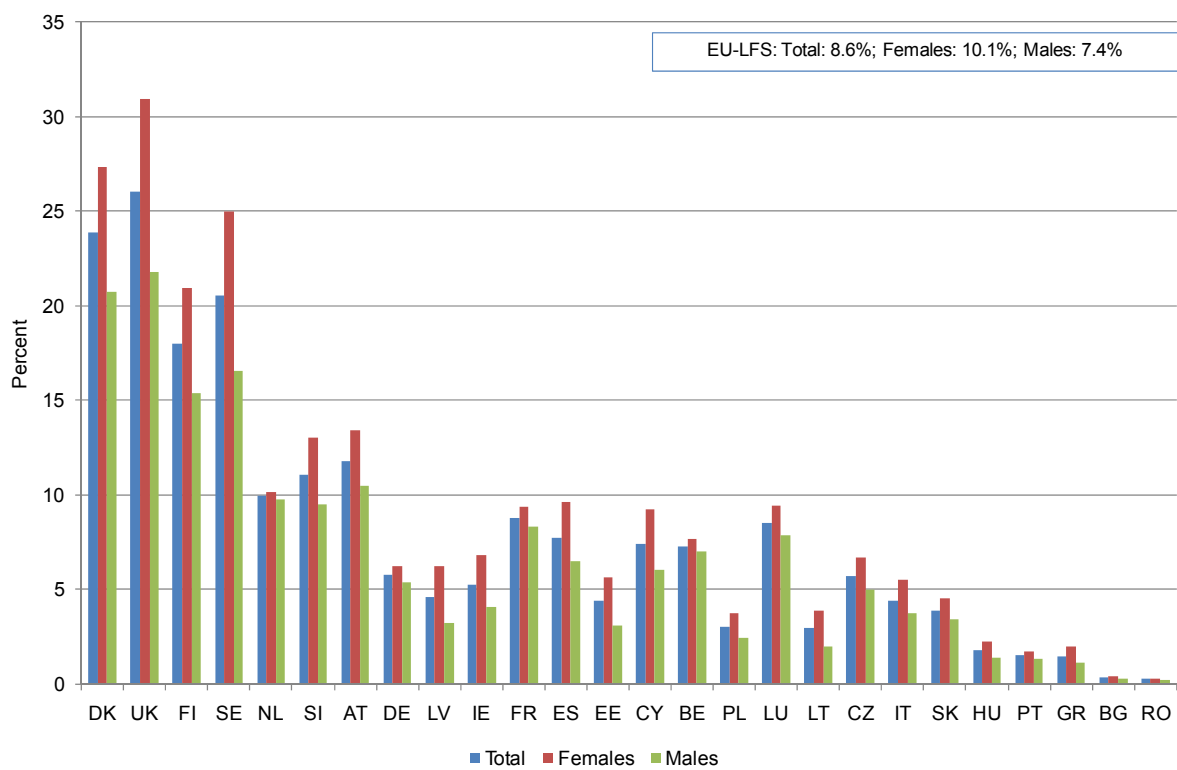
Average participation rates in formal education by country 2003-2008



Source: EU-LFS, own calculation.

Figure 6.3

Average participation rates in non-formal training by country 2003-2008



Source: EU-LFS, own calculation.

to engage in formal education than employed individuals in all Mediterranean and also some Continental countries. Finally, with respect to formal education gender differences are no longer as pronounced as for overall participation in any kind of training. Formal education participation of males is higher than that of females in Austria and Luxembourg and almost equal in Germany and France.

Regarding average participation rates in non-formal training, Figure 6.3 reveals smaller adjustments of the country distribution than Figure 6.2. Still, Denmark, the UK, Finland and Sweden constitute the top 4 countries. Also, the Netherlands, Slovenia and Austria still exhibit clearly above-average participation rates. However, we also observe a sharp drop in non-formal training participation when moving from the top 4 countries towards the next three. Basically, average participation rates almost halve. Moreover, Germany, Latvia, Ireland and Estonia experience a move down the country ranking, whereas the opposite holds for Cyprus and Luxembourg. Again, we observe an over-representation of Mediterranean and – to a lower extent – Central and Eastern European countries in the below-average country group. Also, the now well-known gender differences sustain, i.e. unconditionally women tend to exhibit higher training propensities than men. In general, one might summarize that in quantitative terms overall participation in any kind of further training is rather driven by non-formal training participation than by formal education.

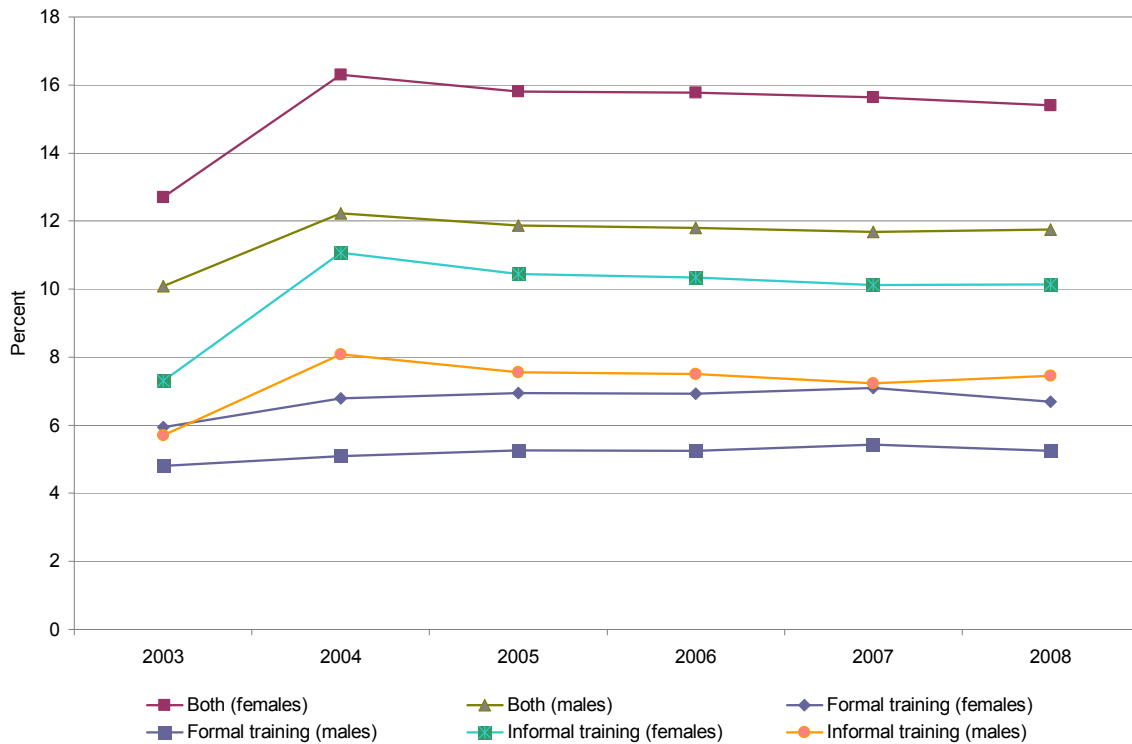
Figure 6.4 illustrates temporal variation in participation rates in our sample. From this figure it becomes transparent that there is almost no variation in the average propensity of employed individuals to engage in further training from 2004 onwards. The pronounced increase from 2003 to 2004 is to a very large extent the result of the increasing sample due to the complete country coverage in 2004. Specifically, the fact that information for Austria and the United Kingdom is completely missing in 2003, but available from 2004 onwards, lifts average training participation considerably. From 2004-2008 the indicators vary within an extremely narrow band. Hence, variation across countries clearly dominates variation over time.

Figure 6.5 documents average participation in formal and/or non-formal training by the five groups of countries defined *a priori* on the basis of geographical considerations. As already mentioned in Section 6.2 these groups comprise:

1. Anglo-Saxon countries: Ireland and United Kingdom.
2. Continental countries: Austria, Belgium, France, Germany, Netherlands and Luxembourg.
3. Central and Eastern European countries: Bulgaria, Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Romania, Slovenia and Slovak Republic.
4. Mediterranean countries: Cyprus, Greece, Italy, Portugal and Spain.
5. Scandinavian countries: Denmark, Finland and Sweden.

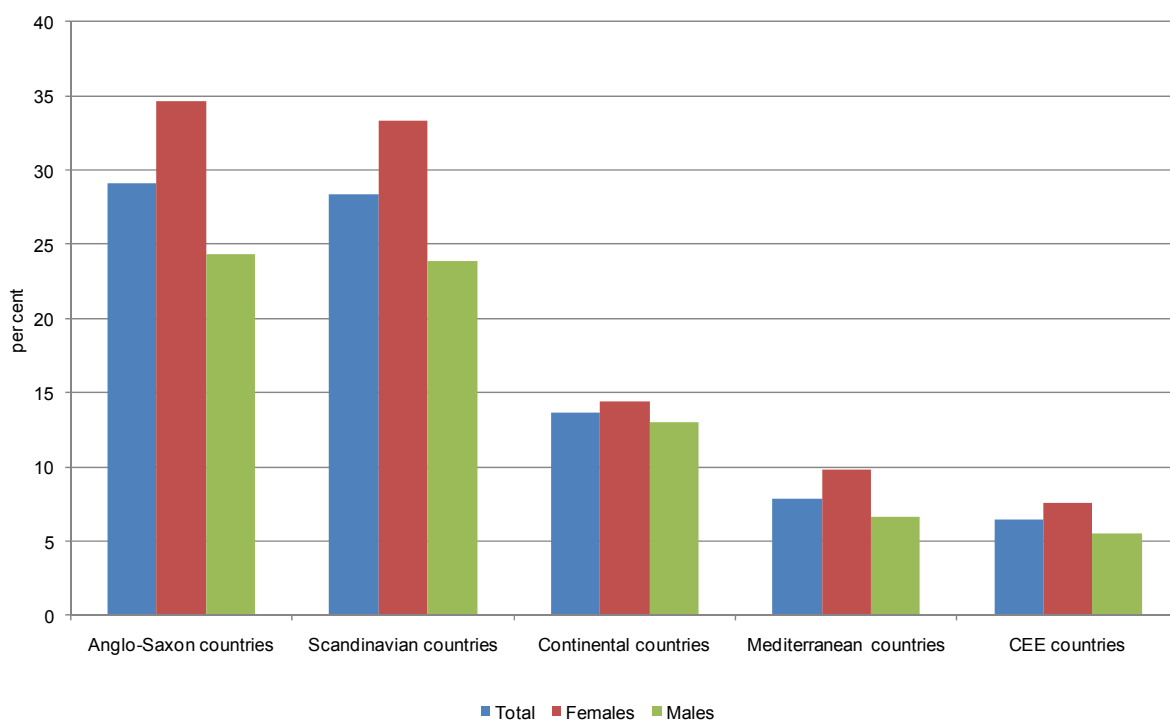
Quite unsurprisingly, the country-specific picture from above is reflected in a clear ordering of average training propensity across these five groups. Average participation rates of employed workers in the Anglo-Saxon and Scandinavian countries are clearly the highest in Europe and reach almost 30 per cent for the total population. For these two country groups we also observe a distinct gender differential with women tending to train more frequently than men. The difference between the sexes amounts to around ten percentage points in both country groups.

Figure 6.4
Temporal variation of participation rates



Source: EU-LFS, own calculation.

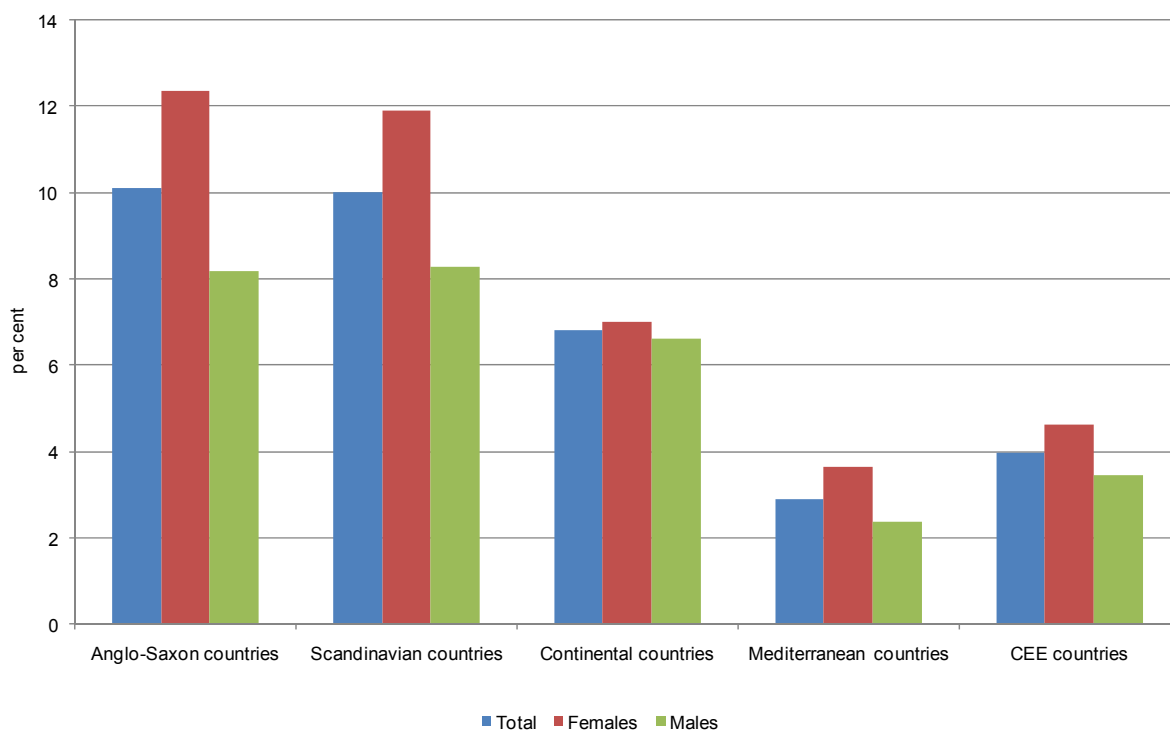
Figure 6.5
Average participation rates in formal and/or non-formal training by country group 2003-2008



Source: EU-LFS, own calculation.

Figure 6.6

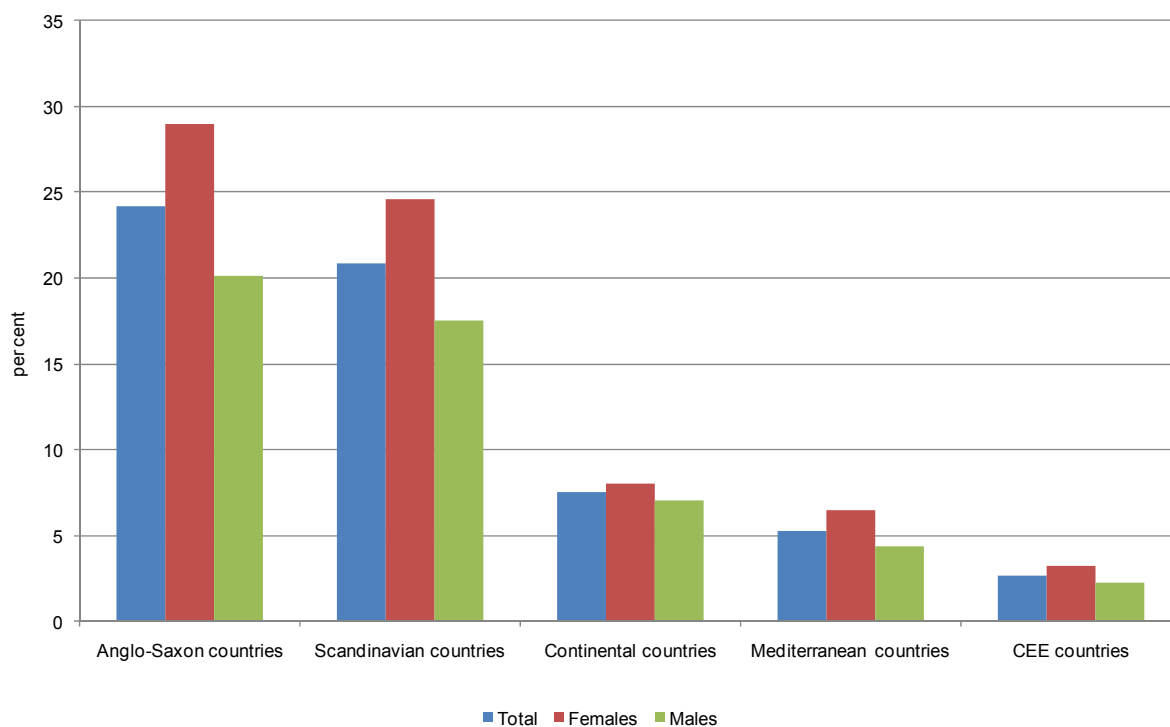
Average participation rates in formal education by country group 2003-2008



Source: EU-LFS, own calculation.

Figure 6.7

Average participation rates in non-formal training by country group 2003-2008



Source: EU-LFS, own calculation.

When moving to the group of Continental countries, we observe a pronounced drop in average participation rates. Furthermore, the unconditional gender differential seems to vanish. Compared to the Anglo-Saxon and Scandinavian countries, Continental Europe exhibits only around one-half of average participation in any kind of further training, with participation rates of females and males being almost equal. Finally, the propensity to engage in further training is the lowest in the Mediterranean countries and Eastern Europe. In these countries average participation rates are clearly below 10 per cent, with those of men being even lower.

The general country group-specific picture for any kind of training is resembled with respect to formal education on the one hand and non-formal training on the other (see Figures 6.6 and 6.7). However, formal education in Eastern Europe constitutes one noticeable exception from the general picture. In these countries – mainly driven by the Baltic States – average participation rates clearly exceed those in the Mediterranean countries, but are still considerably lower than in Continental Europe.

6.3.1.2 Econometric results

This section summarizes the econometric estimation results for the set of participation indicators. Due to missing household variables we had to exclude Denmark and Sweden from the sample. This is especially unfortunate since both of them belong to the top group of countries in terms of training participation. However, we are confident that the estimation results for the individual associates of training participation do not suffer from severe biases since the distribution of observable individual characteristics in those countries is comparable to that of other countries and estimations without household characteristics yield comparable results for all other characteristics. Table A.6.1 in the appendix summarizes the econometric estimation results for the three participation indicators which were analyzed using Probit models. The model controls for the full set of individual characteristics delineated in Section 6.2 together with the country- and time-specific fixed-effects (intercepts).

Baseline Specification – Country Differences

Estimation results suggest pronounced country differences even after controlling for the full set of individual characteristics. Compared to the reference country UK we observe significantly negative deviations for all countries with the exception of Finland. On average and all other things equal, the highest difference to the UK is exhibited by Romania with almost 10 percentage points. Differentials exceeding nine percentage points are displayed by Bulgaria, Germany, Greece, Hungary and Italy. The two countries which are closest to the United Kingdom are Finland (no significant difference) and Slovenia (with a more than three percentage points difference to the UK). From the battery of pair-wise tests on coefficient equality it becomes transparent that the vast majority of differences in point estimates for the country intercepts are indeed significantly different from zero. In other words, the estimated country fixed-effects differ systematically from each other. One exception from this are the estimated marginal effects for Ireland and Latvia for which the null hypothesis of equality cannot be rejected on an acceptable level of significance. In general, however, the large sample size allows very precise point estimation and, thus, observable differences in estimated marginals tend to become significant.

By comparing the country-specific results for any kind of training with those for formal education on the one hand and for non-formal training on the other, it becomes transparent that the above mentioned differentials are mainly driven by the results for non-formal training. For the latter indicator, country differences to the UK range from slightly more than 2.5 percentage points in Finland to around seven percentage points in Romania. Most countries differ by around 5-6 percentage points. Again, the vast majority of observable differences in point estimates between each and every country turns out to be statistically significant. One noticeable exception here is the comparison of Bulgaria with Romania for which the test results suggest equal point estimates.

The picture is somewhat different for participation in formal education. The quantitative dimensions of the estimated differences to the United Kingdom are not only considerably smaller and exceed two percentage points in France only. They are also insignificant in two cases (Estonia and Lithuania) and even significantly positive for Finland, Latvia and Slovenia. In the latter two countries, point estimates roughly suggest around 0.5-0.8 percentage points higher participation rates, all other things equal. Furthermore, from the 276 pair-wise tests on equality of country intercepts 37 deliver insignificant results, i.e. do not allow rejecting the null hypothesis of point estimate equality. Among the equal point estimates are those for Estonia and Lithuania, i.e. the two countries which do not display significant deviations from the United Kingdom.

Baseline Specification – Socio-demographic and household characteristics

With respect to gender, we do not observe significant differences between women and men for overall participation in any kind of training. This insignificant coefficient estimate is, however, the weighted average of a significantly positive estimate for participation in formal education and a significantly negative one for non-formal training. Thus, holding all other characteristics constant, males tend to engage more frequently in formal education than females, whereas the opposite holds for non-formal training, which is consistent with the evidence provided in OECD (2003, Chapter 5). The unconditional differences between both sexes presented in Section 6.3.1.1, therefore, partly vanish or even change their sign as soon as we control for observable individual characteristics.

For individual participation in any kind of training a hardly pronounced age-profile can be observed. Individuals of the age bracket 32-36 form the reference group here. Compared to them and all other things equal, younger cohorts tend to exhibit significantly higher average participation rates, especially those workers in their early twenties. Workers from 27 to 56 years of age do not differ significantly from the reference cohort and older workers display a significantly lower propensity to engage in further training activities. Furthermore, pair-wise testing of these coefficient estimates suggest that these cohorts do not exhibit significant differences among each other.

For participation in formal education the age-profile is much more pronounced. Compared to the reference category, all younger cohorts exhibit significantly higher participation propensities and all older cohorts tend to display lower ones. For the latter age-groups the differences to the reference category are, however, not unanimously significant. Point estimates further suggest that – all other things equal – the average probability to engage in formal education goes down by around 3-4 percentage points with increasing age for the

cohorts older than 47. Moreover, the majority of observable differences in point estimates for the cohorts tend to be significant.

Furthermore, the age profile looks clearly different for non-formal training. Here, the youngest cohort and individuals between 37 and 46 display significantly higher participation propensities than the reference group (32-36 years of age). The opposite only holds for the oldest age group. Finally, non-formal training of workers in their 40s and 50s seems to be largely comparable to that of individuals in their early 30s.

Estimation results for the level of completed education indicate declining overall training propensities with respect to existing human capital endowment. Quantitatively, employed workers with a completed level of education up to ISCED1 exhibit a more than five percentage points lower overall training propensity than individuals with the highest level of completed education (ISCED5 or ISCED6). This education profile seems to be completely driven by non-formal training participation. For this form of human capital investments, significant differences from the reference group can be observed for all education categories. Furthermore, pair-wise tests on coefficient equality indicate that all observable differences in point estimates are significantly different from zero. By contrast, for formal education more or less the opposite holds. Here, almost all observable differences in point estimates turn out to be insignificant. That is, the level of completed education seems to play an important role for the decision to participate in non-formal training, but only a minor one for formal education. Finally, participation in further training of the employed seems to be negatively associated with the time since education was completed. This can be observed for overall, formal and non-formal training. For overall and formal training, however, our estimation results suggest a U-shaped relationship, whereas for non-formal training it rather seems to be linear.

For the set of socio-demographic characteristics, we finally observe significantly higher participation probabilities for single and divorced workers compared to married individuals with respect to overall and formal education. Point estimates for single and divorced workers, however, do not differ significantly. Regarding non-formal training activities, single and married employees do not exhibit significant differences, whereas divorced workers tend to engage more frequently in this kind of human capital investments.

Overall training participation is significantly and negatively associated with the number of persons as well as the number of small children and the number of employed living in the household of an employed worker. Basically, we find these associations for formal education as well as non-formal training, however, somewhat more pronounced for the latter. Hence, estimation results suggest that especially time constraints due to the responsibility to care for young children are accompanied by significantly lower human capital investments.

Baseline Specification – Labour market- and job-related characteristics

The occupation of employees seems to play a substantial role for the decision to participate in further training. For all participation indicators we observe almost unanimously significant positive deviations of the different occupation groups from the reference group “elementary occupations”. Furthermore, the quantitative dimensions of the point estimates are especially pronounced for the four groups of occupations with a comparatively high-skill profile, i.e. ISCO1 (legislators, senior officials and managers), ISCO2 (professionals), ISCO3 (technicians and associate professionals) and ISCO4 (Clerks). Pair-wise tests further suggest that point

estimates for these groups do not only differ significantly from the reference category but also from the rest of the occupations, i.e. ISCO5 (Service workers and shop and market sales workers), ISCO6 (Skilled agricultural and fishery workers), ISCO7 (Craft and related trades workers) and ISCO8 (Plant and machine operators and assemblers).

Moreover, with respect to labour market experience (measured by the time since an individual started to work) employed workers with less than 15 years of experience tend to engage less frequently in any kind of training than the reference group, whereas the opposite holds for employees with experience between 15 and 35 years. This picture is almost exclusively driven by participation in non-formal training, where the estimated differences are much more pronounced and more often statistically significant. For formal education the experience-profile looks completely different. Starting with workers exhibiting more than one year of labour market experience, we observe significantly higher participation probabilities for all experience groups compared to the reference group. Most of these point estimates are comparable in quantitative terms and, thus, the observable differences between them are quite often insignificant.

Individuals working part-time display a significantly higher overall training propensity than full-time working employees. This association is, however, completely driven by participation in formal education. The same observations hold for workers with a temporary contract with slightly larger point estimates. Separate regressions by age-group reveal, that this somewhat surprising result is driven by younger cohorts. The average participation propensity in formal education of part-time workers (workers with temporary contracts) is 3 (4) percentage points higher over all age-groups. Among workers younger than 37 years of age this difference amounts to 14 (11) percentage points and becomes insignificant for individuals older than 40 years of age.

It has to be emphasized, however, that it is anything but clear whether and to which extent higher training propensities of part-time or temporary (young) workers is the cause or the effect of human capital investments. For instance, an individual might be employed part-time because she engages in further training activities and, therefore, cannot work full-time due to time restrictions. By contrast, it is possible that a worker engages in further training because she only has a part-time job and aims at qualifying for full-time employment. With respect to economic activity by sectors, workers in the agricultural and industrial sector tend to display lower participation rates than individuals working in the service sector. This pattern holds for formal as well as non-formal training and pair-wise testing suggests that observable differences between agriculture and industry are significant.

Finally, we re-estimated the baseline specifications replacing the country dummies by the country group indicators. Estimation results with respect to all individual characteristics do not differ qualitatively (i.e. with respect to sign and significance) from what we observed in the baseline specification. Against the background of the descriptive overview from above, the country group indicators themselves display the expected patterns. That is, Anglo-Saxon and Scandinavian countries exhibit significantly higher participation rates than the group of Continental countries which in turn do not differ from the countries in Eastern Europe and the Mediterranean region. The two country groups at the top of the participation rate distribution differ from each other with respect to non-formal training participation, but not for formal education.

Country Groups – Anglo-Saxon countries

Results of the estimation of a separate model for the two Anglo-Saxon countries, i.e. the United Kingdom and Ireland, are summarized in Table A.6.2 in the appendix. These estimates suggest that the Anglo-Saxon countries are very much unique compared to the other country groups with respect to the robustness of results across the three participation indicators (see also results for all other country groups below). With very few exceptions we observe the same qualitative relationships between individual characteristics on the one and formal education or non-formal training on the other hand. Thus, the estimation results for overall participation in either formal and/or non-formal training of employed workers exhibit almost no heterogeneity with respect to the kind of human capital investment. The most noticeable exception in this context is the coefficient estimate for gender, which suggests that males exhibit a significantly higher propensity to engage in formal education than females (by about 0.2 percentage points on average, all other things equal) whereas participation in non-formal training is considerably higher for women than for men (by about 6 percentage points, *ceteris paribus*).

The average propensity to invest in human capital is significantly and substantially lower among employed workers in Ireland than in the United Kingdom. The difference to the UK amounts to almost two percentage points for formal and more than 22 percentage points for non-formal training. Furthermore, compared to workers in their early 30s we observe significantly higher overall participation probabilities for all younger as well as the two cohorts directly following the reference age-group. Starting with workers in their late 40s, engagement in further training activities seems to decrease again. Point estimates for the age-groups further indicate a very clear picture with respect to quantitative dimensions which is largely confirmed by the battery of pair-wise tests on coefficient equality. The observable age-profile for any kind of training is by and large resembled regarding formal education on the one and non-formal training on the other hand.

Furthermore, estimation results indicate a rather clear-cut profile with respect to the level of completed education. Compared to employed workers with the highest level of completed education all individuals in the Anglo-Saxon countries tend to participate less frequently in further training, independently of its specific kind. With the exception of ISCED-categories 2 and 3 for formal education, all observable differences turn out to be significant when pair-wise tests are applied. Again, the years since the highest level of education was attained exhibit the U-shaped relationship which we also observe for the baseline specification. Along the same lines, our empirical results suggest that marital status and household indicators are important associates of the participation decision with the relationships being by and large equivalent to that of the baseline specification. In this context it seems worth to highlight the very large estimate for the number of young children in the household compared to that of other country groups (see below).

Also very much in line with the observations for the baseline specification and remarkably robust across the three participation indicators are the results for the occupation-profile. Especially workers with occupations requiring more sophisticated skills tend to exhibit higher participation rates than workers in elementary occupations. With the exception of the ISCO8-group (plant and machine operators and assemblers) the results for formal education are qualitatively equivalent to those for non-formal training.

Compared to the group of workers which entered the labour market 35 or more years ago, participation in formal education and non-formal training is significantly higher for all other experience brackets. However, testing the observable differences among these experience-groups delivers no clear-cut picture. Some of them are statistically significant, others are not. To some extent this might be the result of the quite arbitrary summary into year brackets. Thus, it would be clearly preferable to use the original variable, i.e. the year in which an individual started to work.

Finally, for the rest of the labour market- and job-related indicators we again observe highly significant and remarkably robust estimation results. Part-time working individuals as well as workers with a temporary contract display higher participation rates. Contrary to the baseline results, in the Anglo-Saxon countries part-time work is associated with higher training propensities than holding a fixed-term contract. Moreover, service sector workers tend to be found significantly more often among training participants than individuals from the agricultural or industrial sector.

Country Groups – Continental countries

The results of separate estimations for the group of Continental countries, i.e. Austria, Belgium, Germany, France, Luxembourg and the Netherlands, are summarized in Table A.6.3 in the appendix. From this table it becomes transparent, that the Netherlands exhibit significantly higher overall participation rates than the reference country Austria, whereas all other countries display significant negative deviations. The point estimates for the latter four countries turn out to be by and large the same. This holds especially for the pair-wise comparisons of Belgium, Luxembourg and Germany.

Moreover, the results for overall participation in any kind of training are quite robust with respect to formal education on the one and non-formal training on the other hand. The only exception here is the Netherlands, for which we observe a significantly positive deviation from Austria in terms of formal education and a significantly negative differential for non-formal training. Furthermore, the battery of pair-wise tests on coefficient equality suggests that all observable differences in point estimates are significantly different from zero.

In Continental Europe men tend to exhibit higher overall participation propensities compared to women (all other things equal). This overall relationship is, however, dominated by the association for formal education. With respect to non-formal training the gender differential changes its sign. Furthermore, the age-profile in the Continental countries is quite similar to what we find in the baseline specification. Again, the youngest cohorts tend to display highest propensities to participate in further training. Compared to employed workers in their early 30s, older cohorts exhibit negative – but not always significant – deviations. Starting with the age-group 42-46 and moving up to the oldest cohorts, the tests of pair-wise equality suggest that point estimates do not differ significantly.

Moreover, in Continental Europe the level of completed education seems to be especially relevant for the decision to participate in non-formal training. Workers with a lower level of human capital endowment exhibit significantly lower participation propensities, with observable differences between education groups being unanimously significant. This picture is less clear-cut for the decision to participate in formal education and becomes intricate for overall participation in any kind of training. Along the same lines, the relationship between the time

of completed education and training participation is less pronounced than in the baseline specification or in the Anglo-Saxon countries. By and large, an increasing number of years since the highest level of completed education was attained seems to be accompanied by lower participation rates.

With respect to marital status we observe higher participation propensities for divorced workers and a somewhat mixed picture for singles compared to married employees, respectively. Moreover, household composition seems to be relevant as well. Both an increasing household size and an increasing number of employed individuals living in the household are accompanied by significantly lower participation propensities in non-formal training, but not in formal education. The number of young children, however, unanimously exhibits a negative association with all indicators of further training activities.

The occupation-profile in Continental Europe is again very similar to what we have observed so far. Occupations requiring higher skills are more often found among training participants. This observation holds for both kinds of human capital investments. By contrast, the experience-profile is dominated by non-formal training for which we observe significantly lower participation probabilities for workers who started their career lately compared to individuals with the largest number of years on the labour market. Furthermore, part-time workers display significantly higher propensities to engage in formal education than full-time workers, whereas the opposite holds for non-formal training. Holding a temporary contract, however, is associated with significantly higher participation probabilities independently of the kind of training. Finally and along the same lines as in other country groups, service sector workers are significantly more often found among participants than individuals being active in one of the other two sectors.

Country Groups – Central and Eastern European countries

Table A.6.4 in the appendix provides an overview on the estimation results for the group of Central and Eastern European countries, which comprises Bulgaria, the Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Romania, Slovenia and Slovakia. For overall training participation we observe significantly negative deviations from the reference country Slovakia for Bulgaria, Hungary and Romania and significantly higher participation rates for all other countries. Quantitatively, average participation propensities for any kind of training in Slovenia exceed those in Slovakia by almost 11 percentage points, whereas on the other end of the distribution Bulgarian and Romanian participation rates fall short of Slovakian by about 2.5 percentage points. Pair-wise testing furthermore reveals that all observable country differences are significant with the exception of Lithuania and Poland.

Interestingly, the overall participation differentials are the weighted averages of rather heterogeneous estimates for formal education and non-formal training. For instance, employed workers in Bulgaria tend to display significantly higher participation probabilities regarding formal education than Slovakian workers, but significantly lower propensities to engage in non-formal training. The same observation holds for Estonia, Hungary, Lithuania, Poland and Romania. The opposite relationship, i.e. lower participation in formal and higher in non-formal training, can be observed for the Czech Republic. In general, all observed country differences for formal education and non-formal training turn out to be significant. The only exception in this context is the differential between Bulgaria and Romania for non-formal training.

In Eastern Europe we do not observe significant gender differences in the decision to participate in further training activities. Moreover, the age-profile for overall training participation is not very pronounced. In fact, the youngest cohorts exhibit higher propensities to engage in any kind of training than employed workers in their early 30s. However, the majority of the older cohorts neither differ significantly from the reference group nor from each other. This result is again the weighted average of very heterogeneous associations between age-groups and participation in the different forms of further training. For formal education we observe a very clear-cut age-profile, i.e. participation rates decline with increasing age. Here, the vast majority of observable differences between the single age brackets, furthermore, turn out to be significant. For non-formal training the relationship between age and participation is much more intricate. Younger cohorts than the reference group tend to display lower and some of the older cohorts exhibit significantly higher participation propensities.

The heterogeneous picture for the different forms of further training also emerges with respect to the level of completed education. While participation in formal education is significantly higher for all education groups compared to the reference group, the complete opposite holds for non-formal training. Furthermore, observable differences between the single education-groups are very small and often insignificant. Hence, for participation in any kind of training we cannot pin down a significant and clear-cut relationship between the level of completed education and the participation decision. By contrast, the longer formal education dates back, the lower are all three participation indicators.

Estimation results for marital status are completely driven by formal education with divorced workers and singles exhibiting significantly higher propensities to invest in human capital. An increasing number of persons in the household is accompanied by significantly lower values for all three participation indicators, whereas the association between the number of employed individuals in the household and participation is significant (and positive) for formal education only. The number of young children is again negatively associated with the decision to participate in formal education, but displays no significant relationship with non-formal training.

With respect to occupations the profile for Eastern Europe is similar to what we have observed so far. Individuals belonging to the groups comprising ISCO1 to ISCO4 display higher participation probabilities than the reference group as well as the occupation groups ISCO5 to ISCO8. This result is quite robust for both forms of further training activities. By contrast, estimation results for labour market experience are dominated by non-formal training activities. Here, we hardly observe significant associations for overall participation in any kind of training as well as the propensity to engage in non-formal training. With respect to formal education, the picture is again somewhat more intricate with significantly higher participation probabilities for some experience groups compared to the reference group and insignificant deviations for many others.

Similar to other country groups, part-time work and temporary contracts seem to be relevant in Eastern Europe as well. In these countries, however, the quantitative dimension of the estimate for part-time work exceeds that of fixed-term contracts and the overall relationship for any kind of training is dominated by that for formal education. Finally, we also observe the well-known associations between participation propensities and sector affiliations with service sector workers being found significantly more often among participants than employees from the other two sectors.

Country Groups – Mediterranean countries

The estimation results for the Mediterranean country group can be found in Table A.6.5 in the appendix. This group includes Cyprus, Greece, Italy, Portugal and Spain. Regarding participation in any kind of training only Greece displays significantly negative deviations from the reference country Portugal. All other countries exhibit significantly higher average participation propensities and the estimated coefficients differ significantly from each other. This overall picture is, however, again the weighted average of quite heterogeneous estimation results for formal education on the one and non-formal training on the other hand.

Whereas we observe negative deviations from Portugal for all countries with respect to formal education, the opposite holds for non-formal training and all countries except Greece. Furthermore, the battery of pair-wise tests on equality of the estimated coefficients indicates that all country differences are statistically significant. Thus, observable country differences for any kind of training are clearly dominated by participation in non-formal training.

In the Mediterranean countries we observe a somewhat unique age-profile. With respect to overall training participation all workers aged between 17 and 56 tend to display significantly higher propensities to engage in any kind of training compared to the reference group. For the cohorts comprising workers between 17 and 31 years of age these associations are dominated by the results for formal education, whereas for the age-groups from 37 to 56 non-formal training participation drives the overall picture. For the latter form of human capital investment, we also observe significantly negative deviations from the reference group for the age-brackets 22-26 and 27-31. Hence, the relationship between age and training participation is quite intricate. This, however, might also be the result of the allocation of individuals to rather arbitrarily defined age-groups. For the purpose of analyzing individual participation decisions it would definitely be of great advantage to receive an individual's age in years.

Regarding the level of completed education we observe significantly lower propensities to participate in any kind of training for the two lowest levels compared to the highest level of education. This relationship is driven by the results for non-formal training for which a clear education-profile emerges. All observable differences between point estimates turn out to be significant. Such a profile cannot be observed for participation in formal education. For this form of further training activity the majority of estimated marginals neither suggests significant deviations from the reference group, nor do the point estimates deviate from each other when pair-wise tests on equality are applied. By contrast, the number of years since the highest level of completed education was attained again exhibits the U-shaped relationship with over training and formal education.

Moreover, for the group of Mediterranean countries estimation results regarding marital status and household variables are very much in line with that for the other country groups. Divorced workers and singles tend to participate more frequently than married individuals and child care obligations seem to be accompanied with lower participation propensities. Along the same lines, the occupation-profile looks similar to that of other country groups with occupations requiring higher skills displaying significantly higher values of all three participation indicators. Somewhat exceptional, however, is the experience-profile in the Mediterranean countries. Here, workers with less than 15 years of experience exhibit significantly lower overall propensities to invest in any kind of further training than individuals with 30 or even more years on the labour market. This result is dominated by non-formal training propensities

and cannot be found for formal education. For the latter, the experience groups ranging from 15 to 30 years tend to be found significantly more often among participants than the reference group. Finally, part-time workers and employees holding a fixed-term contract display higher participation rates, especially in formal education activities, whereas workers in the agricultural and industrial sector exhibit lower propensities to engage in further training than workers in the services sector.

Adding information at the macro level

Finally, we added information at the macro level to investigate the sensitivity of results especially for the country fixed-effects with respect to aggregate data. Extending the set of regressors by e.g. the overall unemployment rate or youth unemployment rates does not entail any noteworthy changes of regression results. Upon theoretical reasoning, one might hypothesize that training participation might be higher in countries with severe (youth) unemployment since investing into human capital can serve as a job maintenance tool. However, the macro variables are all insignificant and neither the estimated country intercepts nor the marginal effects of the individual characteristics change with respect to sign or significance.

Using the estimated country intercepts as the dependent variable in a second stage regression on average (youth) unemployment rates basically yields comparable results, i.e. insignificant point estimates. At most, we are able to establish a weakly significant relationship between country intercepts on the one hand and average GDP p.c. as well as the average share of medium and high-skilled individuals in a country on the other hand. Both indicators display a weakly significant positive correlation with the estimated country dummies suggesting that richer countries and countries with a better educated workforce tend to exhibit higher participation rates in further training activities. This overall relationship is clearly driven by participation in non-formal training rather than formal education. However, it must be emphasized that this two-step regression approach relies on 25 observations (i.e. countries) in the second step only. Thus, inference is impeded by a very small number of observations and, consequently, degrees of freedom.

6.3.2 Level, intensity and field of learning

This section summarizes the results of our empirical analyses with respect to the level, intensity and field of learning. The intensity of formal education is measured by the training level in three categories for which an *Ordered Probit* model is estimated. That is, we investigate the associates of training level choice conditionally on a positive participation decision. Non-formal training intensity is modeled by the number of hours spent in such activities. In a first step, this outcome will be analyzed within an OLS regression model for those individuals with a strictly positive number of hours, i.e. again conditionally on a positive participation decision.

In a second step, we complement this by estimating a *Tobit* model for all individuals in the sample (see also Box 2.3 in Chapter 2). In this endeavor, the number of hours of workers who did not participate in non-formal training is set to zero. The *Tobit* model then assumes an unobservable (latent) variable “willingness to participate in non-formal training activities” that underlies observed “number of hours in non-formal training” which in turn linearly depends on a set of observable characteristics. Individuals with the lowest willingness to participate would score a negative number of hours if that were possible. Hence, a certain thre-

shold has to be exceeded to observe positive values of the variable “number of hours in non-formal training” which is interpreted as the manifestation of the unobservable willingness to train. Hence, the *Tobit* model is an amalgamation of the participation decision and the choice of training intensity.

The field of non-formal training is modeled by a multinomial variable covering the following programs:

1. Unknown or general programs
2. Teacher training, education science, humanities, languages, arts or foreign languages
3. Social sciences, business and law
4. Science, mathematics, computing, life science (including biology and environmental science), physical science (including physics, chemistry and earth science), mathematics, statistics, computer science, computer use, engineering, manufacturing, construction, agriculture or veterinary
5. Health and welfare
6. Services

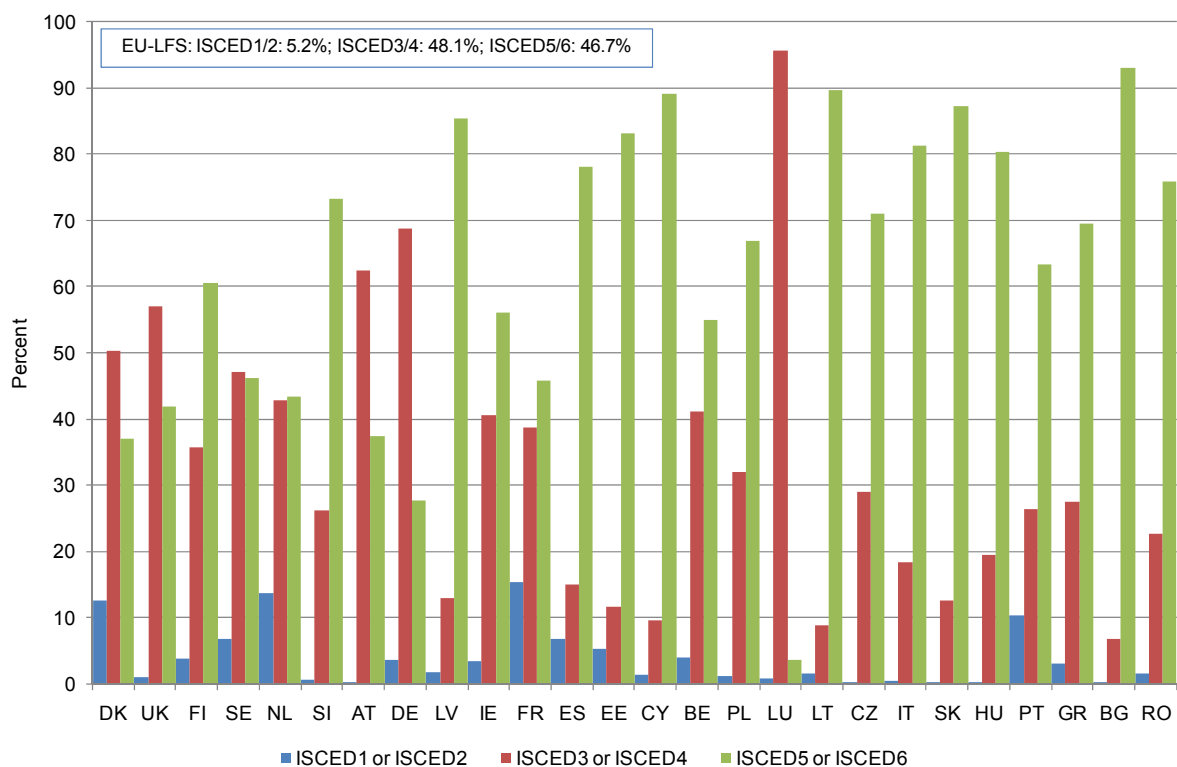
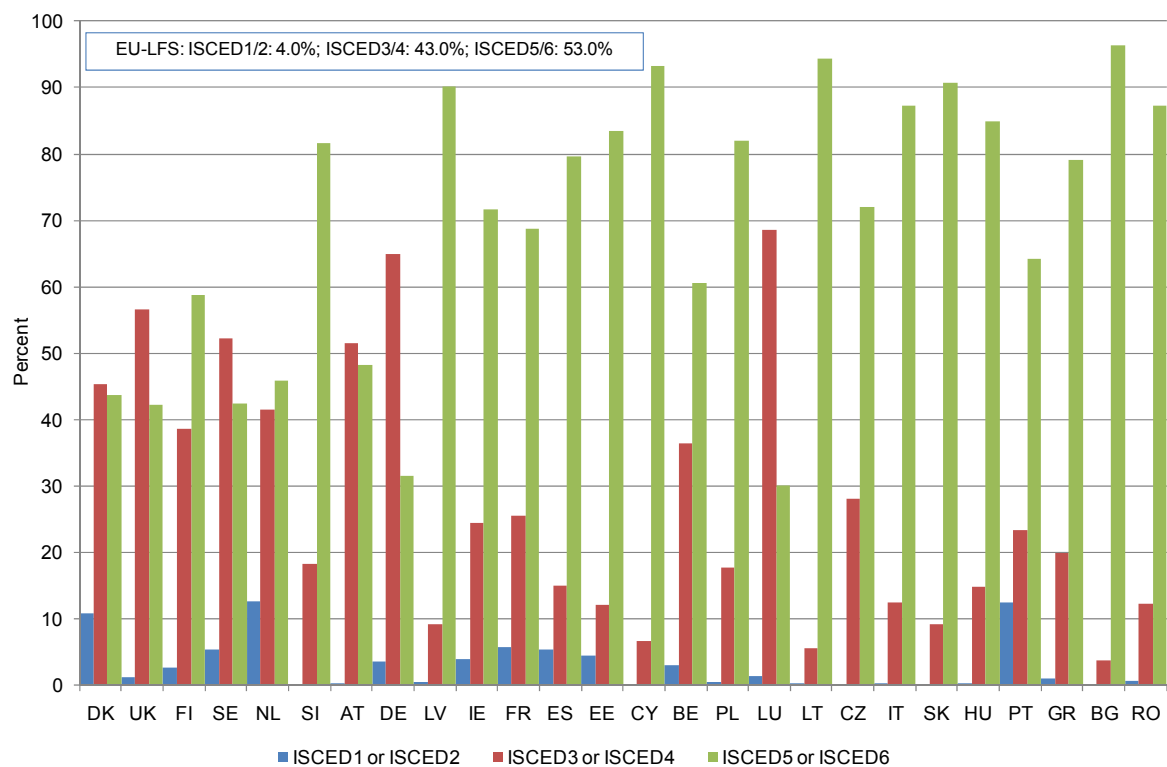
Again, we start the presentation of results by a descriptive overview of the variation in outcomes. Section 6.3.2.2 is then devoted to the econometric estimation results.

6.3.2.1 Descriptive overview

On average across all countries and survey years, the distribution of the level of formal education of all employed workers in the EU-LFS is highly left-skewed. Specifically, around 4.6 per cent of participating workers engage in training allocated to ISCED 1 or ISCED 2, 45.5 per cent in courses on the ISCED 3 or 4 levels and 49.9 per cent chose the highest ISCED 5 or 6 levels. The respective distribution for females is even more pronounced towards the highest level of formal education (4.0 per cent ISCED 1/2, 43.0 per cent ISCED 2/3 and 53.0 per cent ISCED5/6), whereas the mode of the distribution for males is the medium ISCED 3/4 category (48.1 per cent, compared to 5.2 per cent in ISCED1/2 and 46.7 per cent in ISCED 5/6).

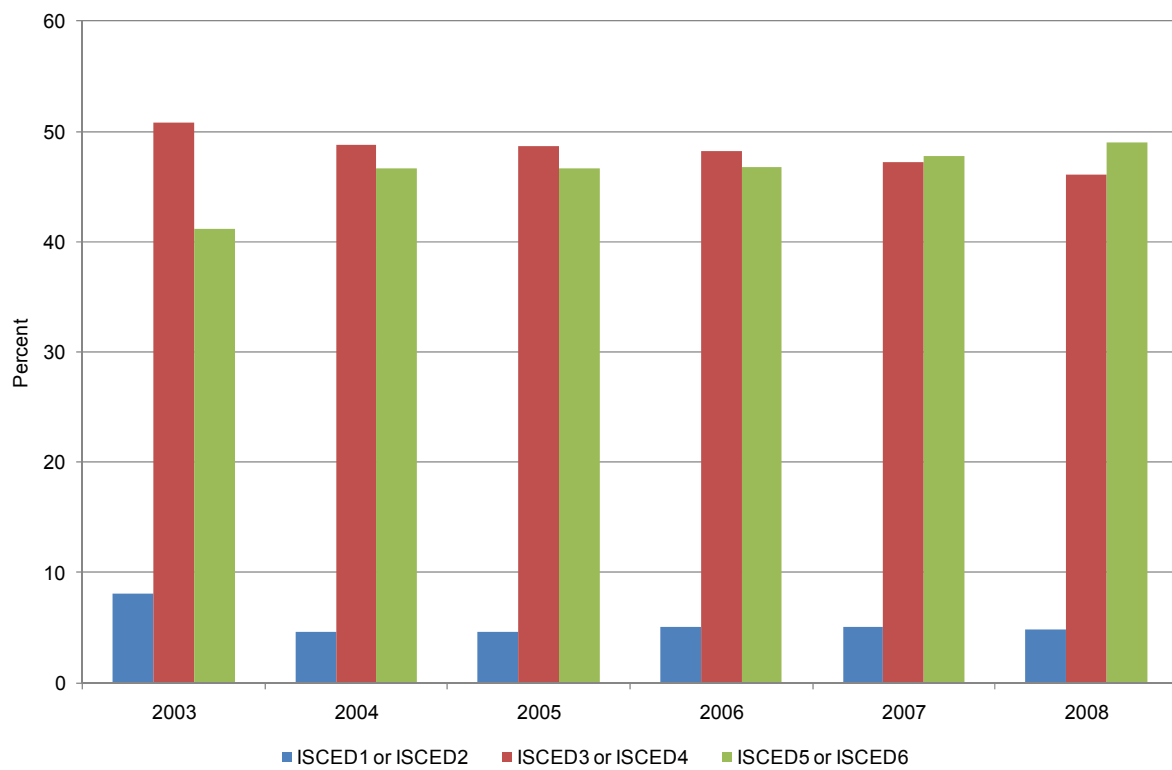
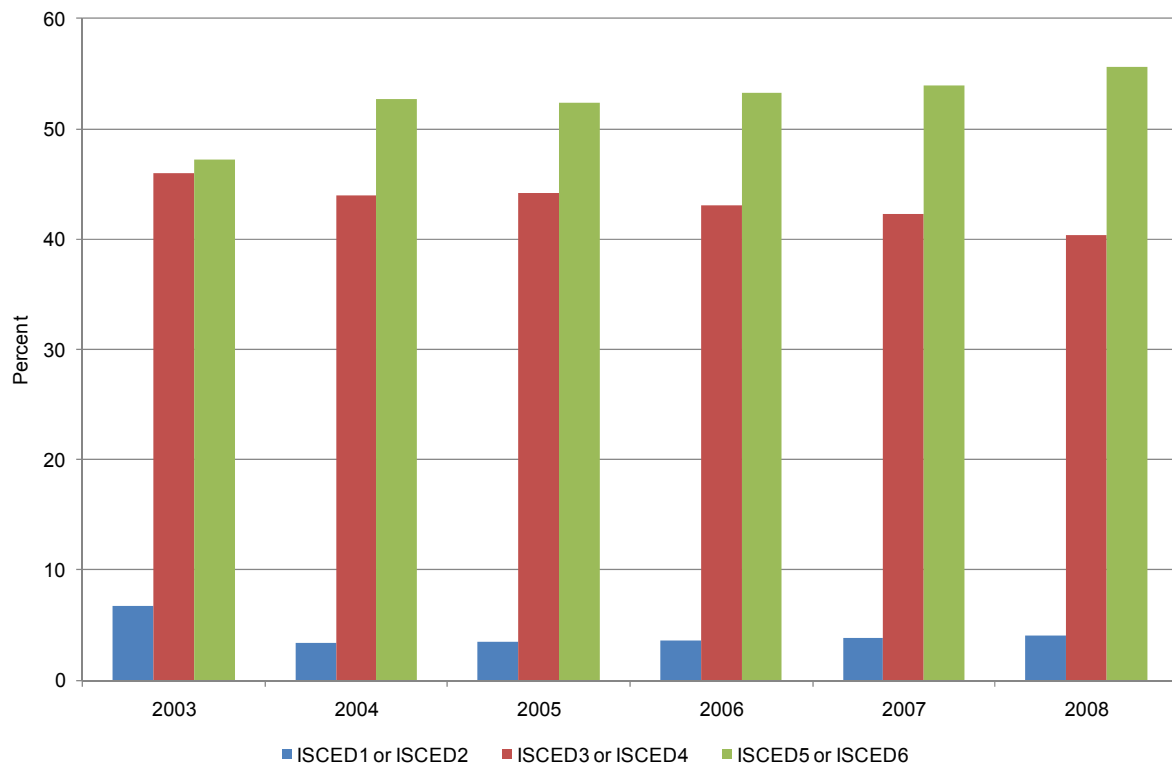
As might be suspected these averages again hide substantial variation across countries. Figure 6.8 illustrates the distribution of average levels of further education across all EU-LFS countries, separately for females and males. In this and the following figures we again present the same country ordering as in Section 6.3.1, i.e. by the level of participation in descending order, to simplify comparisons. The first and most striking observation is the extremely left-skewed distribution of education levels in those countries with the lowest participation levels. That is, especially in the Mediterranean and Central and Eastern European countries the vast majority of those individuals who decided to participate in further education for employed workers choose the highest training levels. In Bulgaria, almost all participants engage in courses allocated to ISCED5/6. The share of participating workers in highest level courses also exceeds 80 per cent in Slovenia, Latvia, Estonia, Cyprus, Poland, Lithuania and Slovakia, in other words, almost exclusively in Central and Eastern European countries. Hence, this might be interpreted as evidence that further training of employed workers is highly selective in the latter countries.

Figure 6.8
Average level of formal education by country 2003-2008 – females (top) and males (bottom)



Source: EU-LFS, own calculation.

Figure 6.9
Temporal variation in level of formal education – females (top) and males (bottom)



Source: EU-LFS, own calculation.

Only a handful of countries display a rather balanced distribution of training levels with respect to a comparison of medium and high categories. These are Denmark, the Netherlands and Austria for females, as well as Sweden and the Netherlands for males. The medium category is the main choice of participating employees in the United Kingdom, Sweden, Germany and Luxembourg for females as well as in Denmark, the United Kingdom, Austria, Germany and Luxembourg for males.

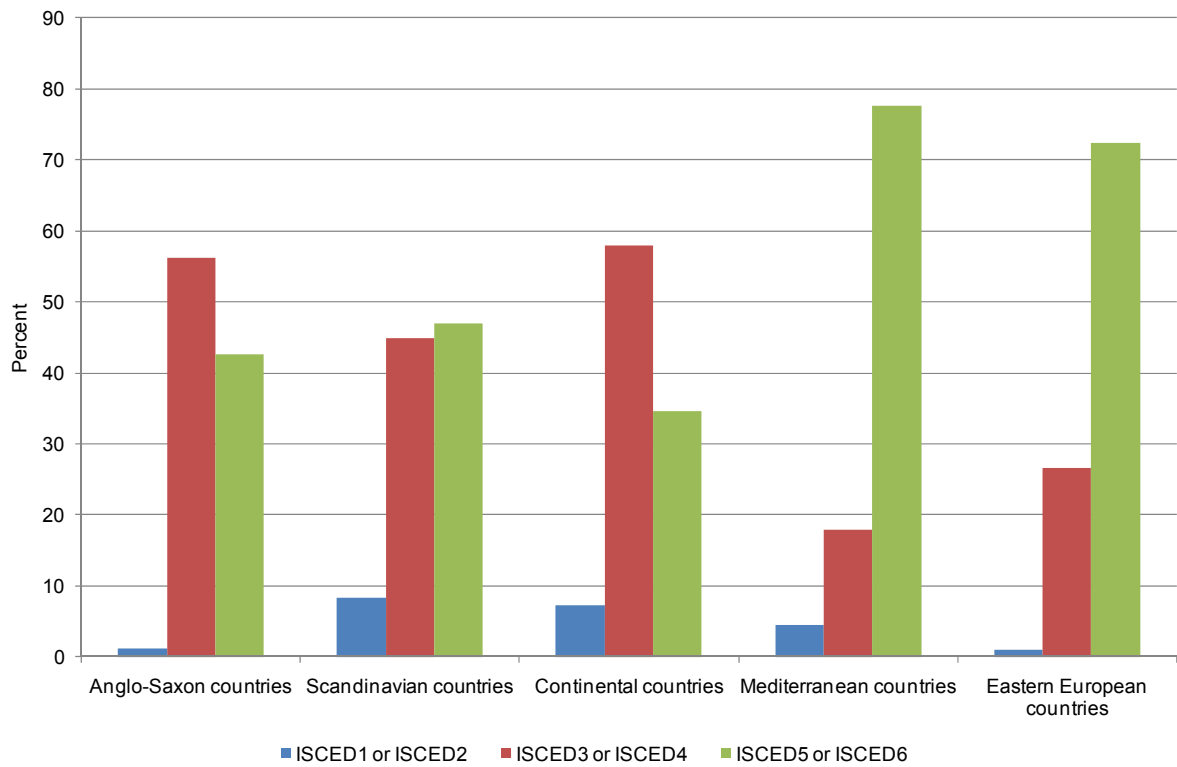
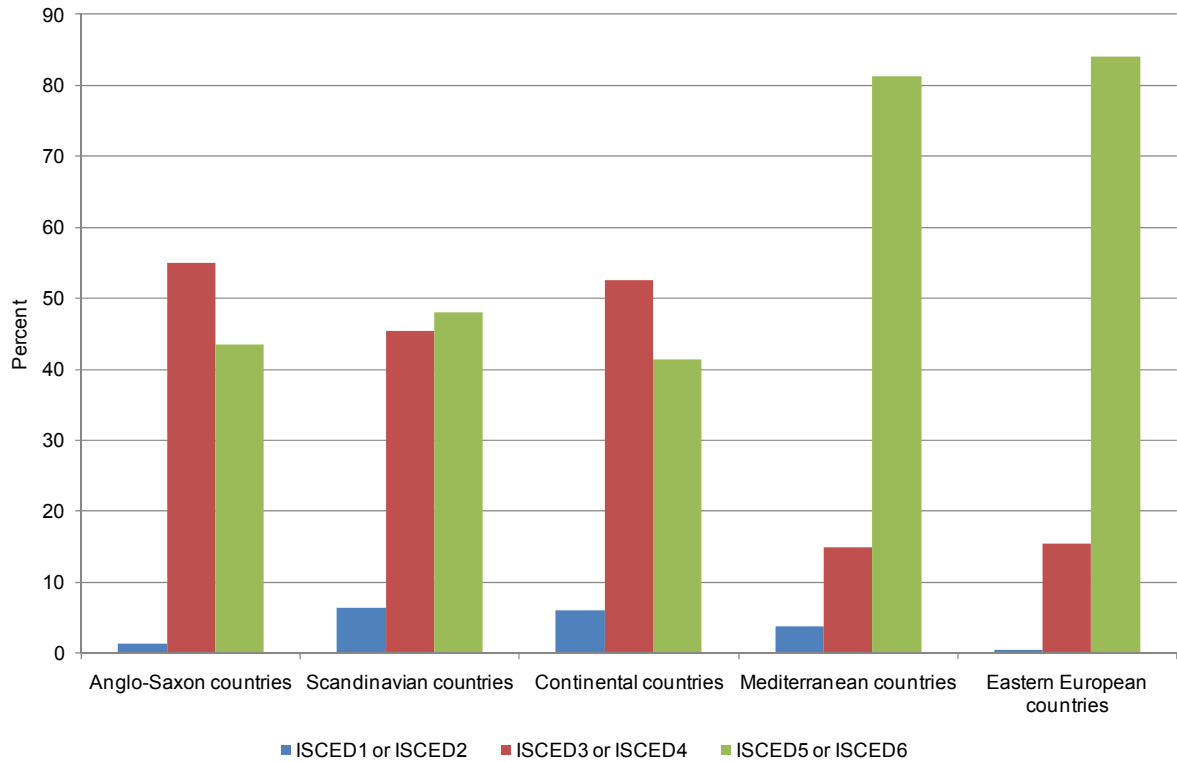
Comparable to the results for participation rates, Figure 6.9 documents that we observe only small variation over time. Again, there is a pronounced rise for the highest level of education from 2003 to 2004 due to the countries entering the sample in 2004 (in this case especially Lithuania, Hungary and Italy) and a slight increase from 2007 to 2008. In general, however, variation across countries is substantially higher than over time.

The distribution of formal education levels across the five country groups illustrated in Figure 6.10 suggests similarities of level choice in the Mediterranean and Central and Eastern European countries on the one and the rest of EU-LFS countries on the other hand. The highest education level clearly dominates in Southern and Eastern Europe, i.e. in those countries with below-average participation rates. Unconditionally, in these countries the share of females in courses allocated to ISCED5/6 is remarkably higher than that of males. In general, this observation also holds for the other country groups. However, gender differences are not that pronounced there.

Furthermore, we observe similarities for the Anglo-Saxon and Continental countries. In both groups the medium education category forms the mode of the level distribution for women as well as men. By contrast, in Scandinavia the medium and highest categories are almost balanced and the unconditional differences between both sexes are negligible. Hence, on the one hand it can be summarized that those countries with the lowest average propensities to participate in formal education display the highest level choices. On the other hand, countries with above-average participation rates tend to a more balanced distribution of education levels, with the Scandinavian countries exhibiting almost equal shares of participants in the medium and highest education categories.

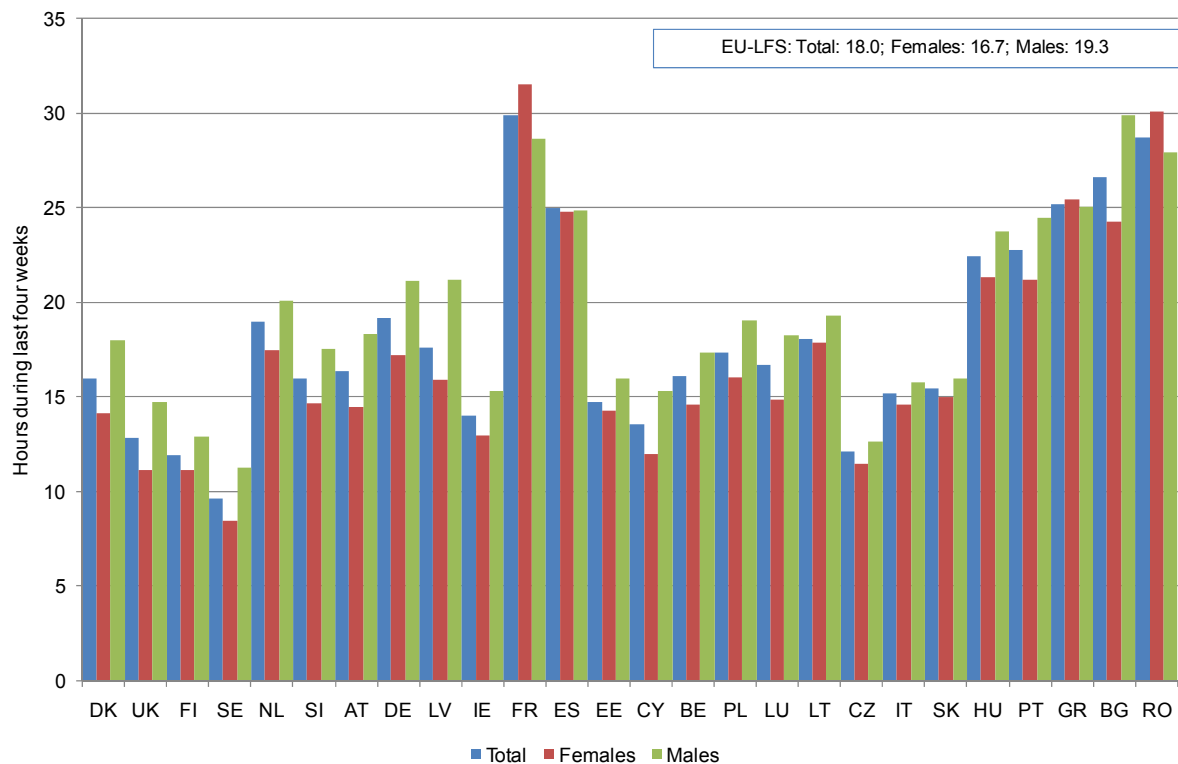
The distribution of non-formal training intensities across countries – summarized in Figure 6.11 – is once more different from what we have observed so far. Comparable to our findings for formal education, countries with below-average participation tend to exhibit a significantly higher than average non-formal training intensity. Along the same lines, in those countries with the highest participation rates the average training intensity is the lowest. This holds in particular for the Nordic states Finland and Sweden which – together with the Czech Republic – form the bottom group with respect to training intensity. However and by contrast to formal education, training intensity is also very high in France and Estonia, i.e. two countries for which we observed average formal participation rates. Furthermore, it is also remarkable that training intensity for males exceeds that of females in several countries, e.g. in Denmark, the United Kingdom, the Netherlands, Slovenia, Austria, Germany, Portugal and Bulgaria. Hence, the gender picture for participation and formal levels of education is different from that for non-formal training intensity.

Figure 6.10
Average level of formal education by country group 2003-2008 – females (top) and males (bottom)



Source: EU-LFS, own calculation.

Figure 6.11
Average intensity of non-formal training by country 2003-2008



Source: EU-LFS, own calculation.

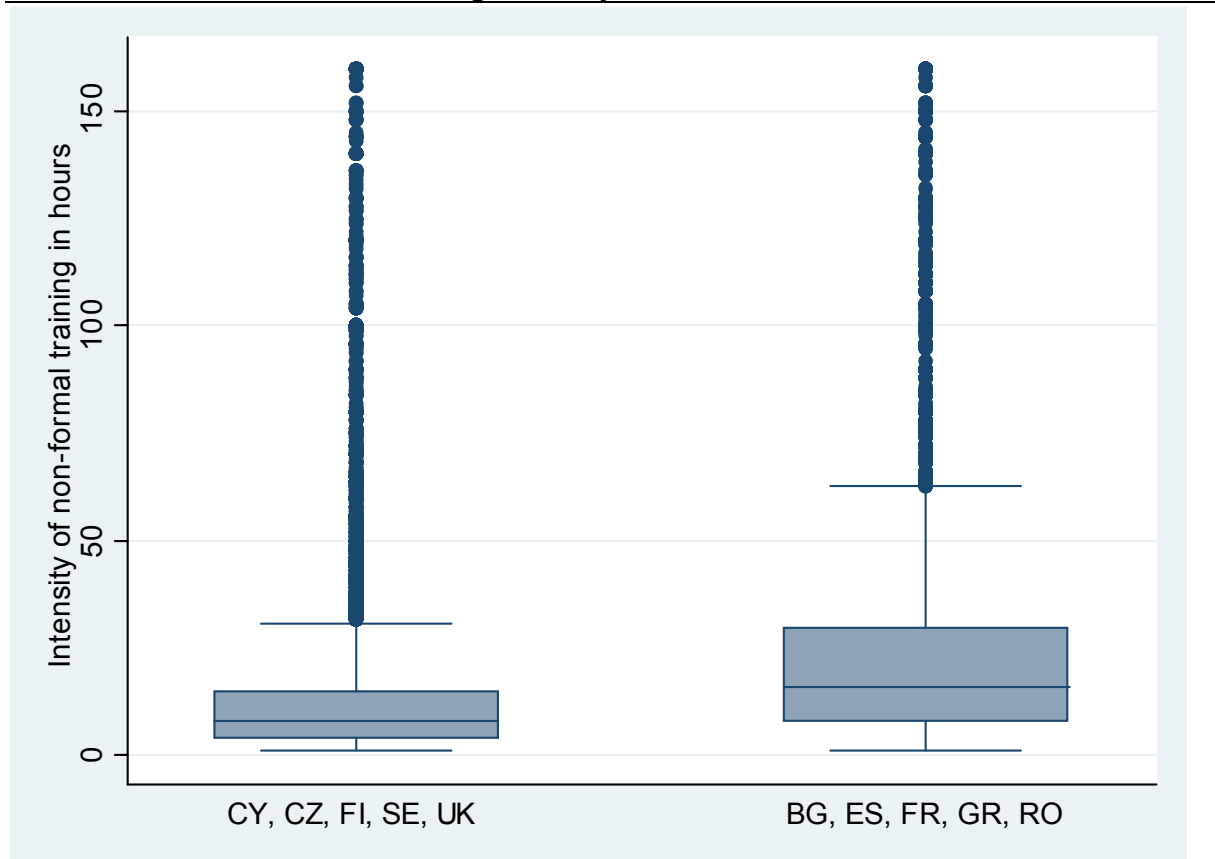
Figure 6.12 provides a more detailed impression of the distribution regarding training intensity. In general, the EU-LFS measures non-formal training intensity by the number of hours an individual spent in non-formal training activities in the last four weeks preceding the interview. When looking into the raw data, one observes values of up to 300 hours which are obviously implausible. Fortunately, such extreme outliers are rare. Thus, we decided to drop all implausible values from the sample and to restrict the maximum number of hours to 160. By doing so, we lose slightly more than 1 per cent of all observations. However, even the resulting distribution of training intensity exhibits an enormous spread. This is illustrated in Figure 6.12 for some selected countries. Specifically, we present the distribution of training hours for the five countries with the highest and the five countries with the lowest average intensity in our sample.

To illustrate several parameters of the training intensity distribution a box-plot is chosen (cf. also Box 2.3 in Chapter 2). The box marks the area in which 50 per cent of all observations can be found. Thus, the lower boundary of the box displays the bottom quartile of the distribution, whereas the top quartile is marked by upper boundary of the box. The line within the box represents the median. The spread of the distribution is illustrated by the whiskers on top and below the box, indicating the distributions maximum and minimum, respectively, as long as there are no outliers. Outliers are defined as observations deviating more than 1.5 times the box length from the upper or lower quartile. In case such outliers exist, they are marked by dots.

Figure 6.12 suggests that training intensity in those countries with low average values is not only considerably lower; the complete distribution is much more compressed than in the

Figure 6.12

Distribution of non-formal training intensity for selected countries – 2003-2008



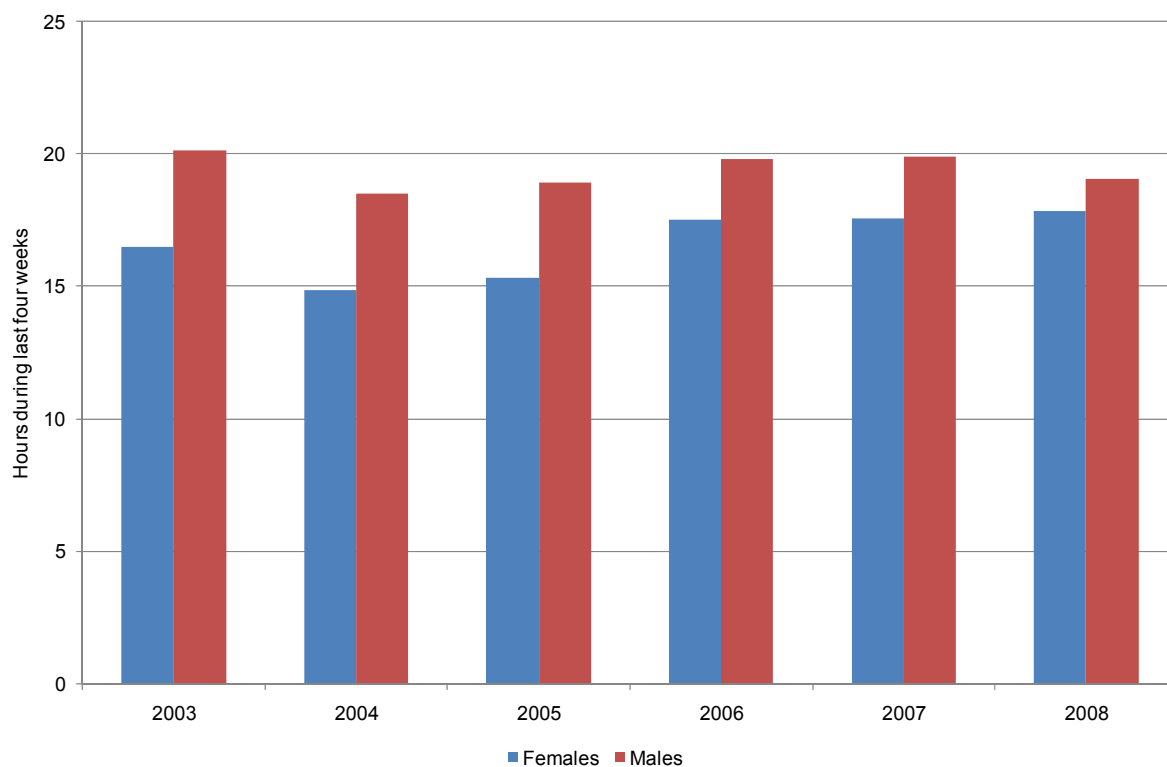
Source: EU-LFS, own calculation.

country group with the highest average intensity. The left box is basically flat and the length of the whiskers is limited. By contrast, the right box is much more bulky and its whiskers cover a larger extent of potential hours. Furthermore, even for the restricted values of intensity (at 160 hours max.) we observe many outliers, starting at around 30 hours in the first and 60 hours in the second country group.

By contrast to what we have observed so far, non-formal training intensity exhibits also somewhat larger temporal variation. Figure 6.13 suggests that the average number of hours for males decreases from 2003 to 2004, returns to its original level in 2006 and 2007 and exhibits a slight decline again in 2008. The temporal variation for females is basically equivalent, with the exception that we do not observe a noticeable change between 2007 and 2008. Although there seems to be more variation across time with respect to non-formal training intensity than regarding participation rates and education levels, variation across countries still dominates the picture.

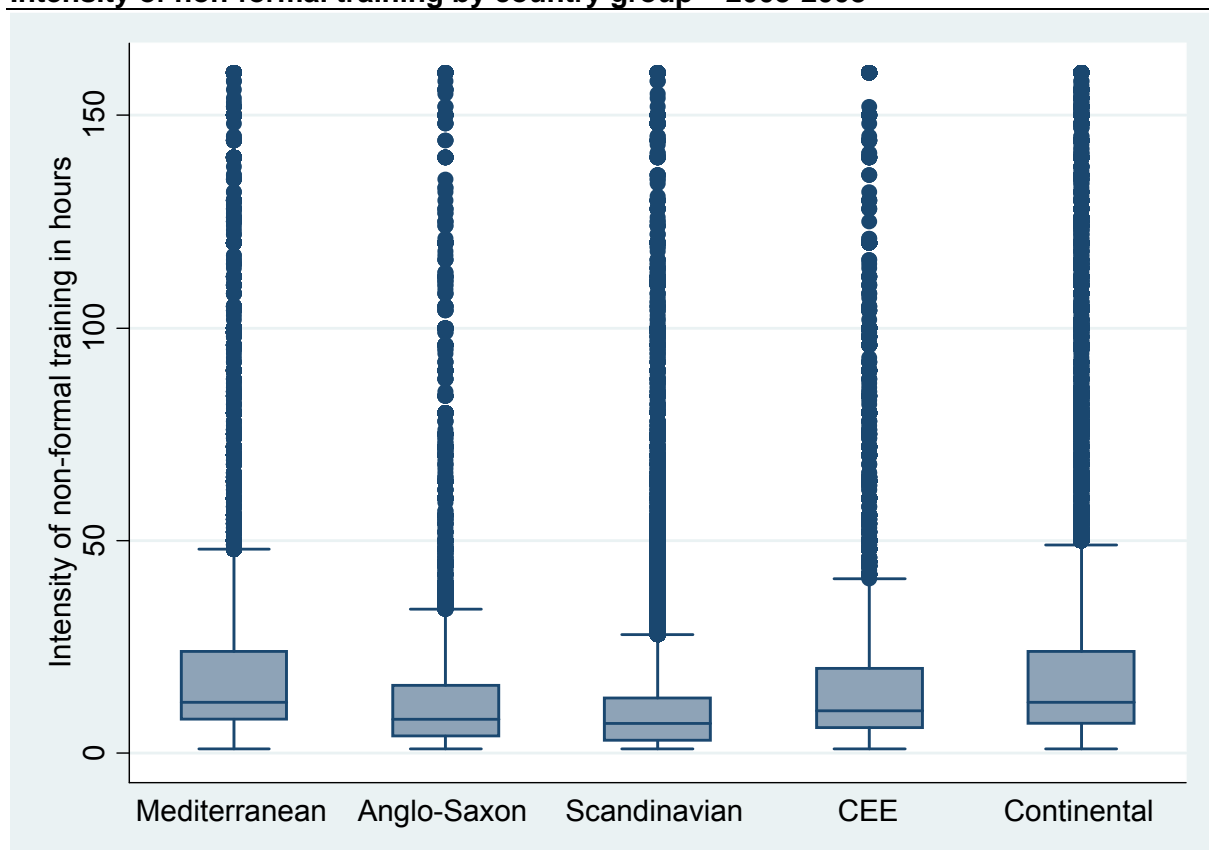
Figure 6.14 provides an overview of participants' training intensity for the five country groups. Again, this is done by using a box-plot. It becomes transparent that the Scandinavian countries exhibit the most compressed distribution with a low median, a narrow "normal" spread, and a huge amount as well as large range of outliers. On the other extreme, the Continental and Mediterranean countries display not only the highest medians, but also the largest variation with a "normal" maximum of almost 50 hours and, thus, a smaller range of

Figure 6.13
Temporal variation in intensity of non-formal training



Source: EU-LFS, own calculation.

Figure 6.14
Intensity of non-formal training by country group – 2003-2008

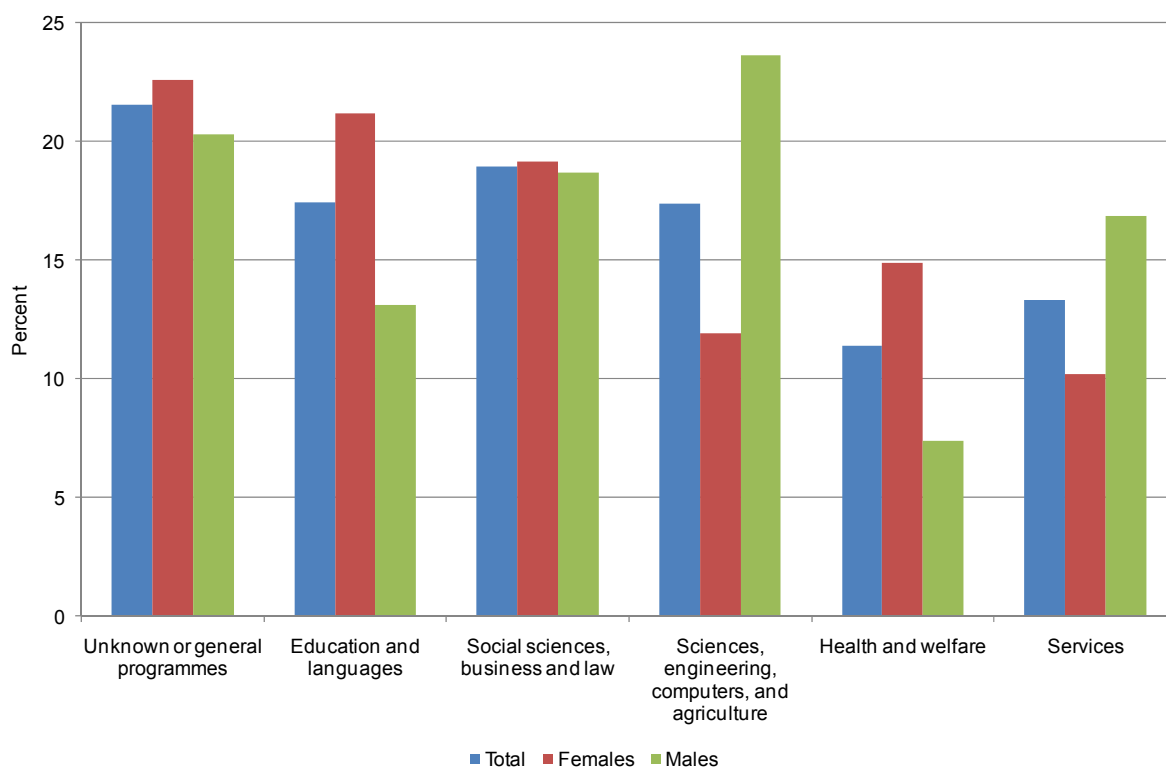


Source: EU-LFS, own calculation.

outliers. The Anglo-Saxon and Central and Eastern European countries form the medium group in this context with a more compressed distribution in UK and Ireland than in Eastern Europe.

Figure 6.15 illustrates the distribution of the fields of non-formal training in the EU-LFS countries. For around 20% of all participants the training field is either unknown or coded as general. This share is, however, almost exclusively driven by respondents from the UK, where almost 77% of all answers are recorded as unknown or general. In all other countries this share varies between 0.7% and almost 11% (except the Netherlands with 36%). The three most frequently chosen fields of non-formal training activities with around 17-19% participation rates for the total population are “education and languages”, “sciences, engineering, computers, and agriculture” and “social sciences, business and law”. However, for these three fields we observe substantial differences with respect to gender. Whereas participation in “education and languages” is dominated by females, the opposite holds for “sciences, engineering, computers, and agriculture”. By contrast, participation rates in courses devoted to “social sciences, business and law” are equally distributed across gender. The training fields “health and welfare” as well as “services” exhibit considerably lower participation rates than the above mentioned. Again, the differences with respect to gender are pronounced. Participation in “health and services” is two time higher for women than for men. Courses in “services” are, by contrast, considerably more often attended by males.

Figure 6.15
Fields of training – EU-LFS average 2003-2008



Source: EU-LFS, own calculation.

Finally, Figure 6.16 provides an overview on training fields by country. The United Kingdom is omitted from this figure since – as mentioned above – almost 77% of participants’ answers are recorded as unknown or general. Furthermore, for Denmark, Ireland, Portugal, Sweden and Slovenia information on the field of non-formal training is completely missing.

Figure 6.16
Fields of training by country – Total population 2003-2008

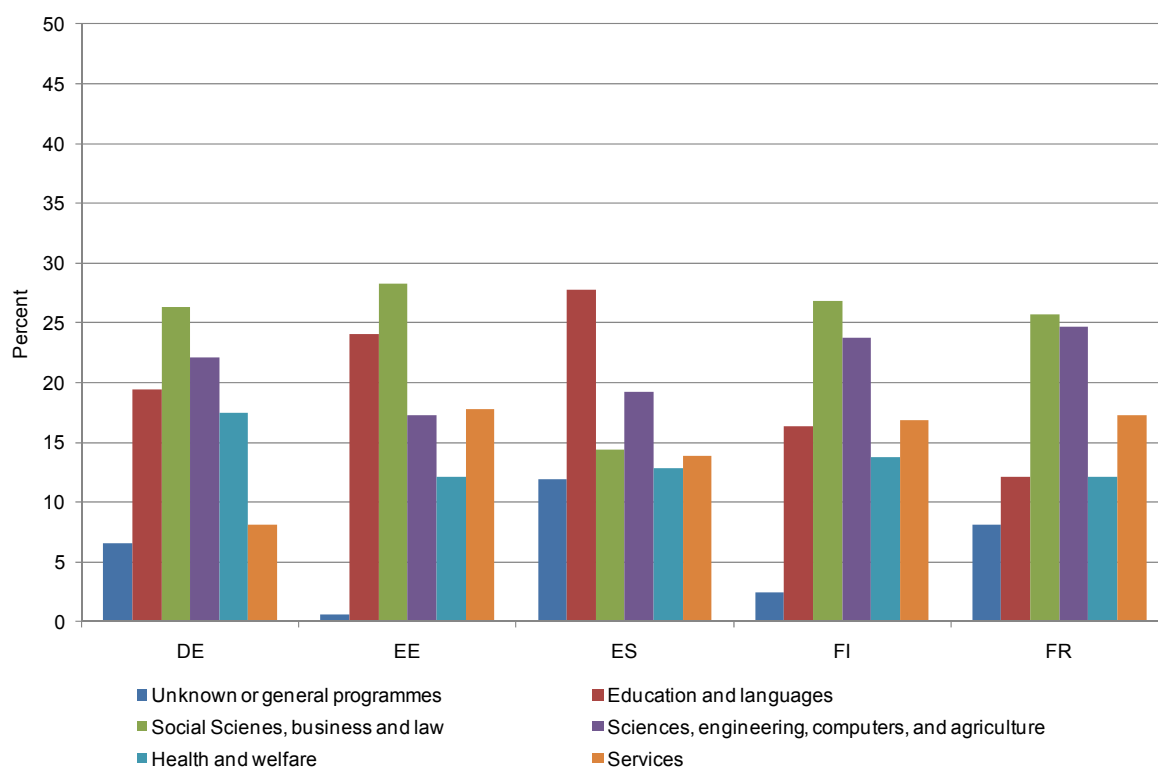
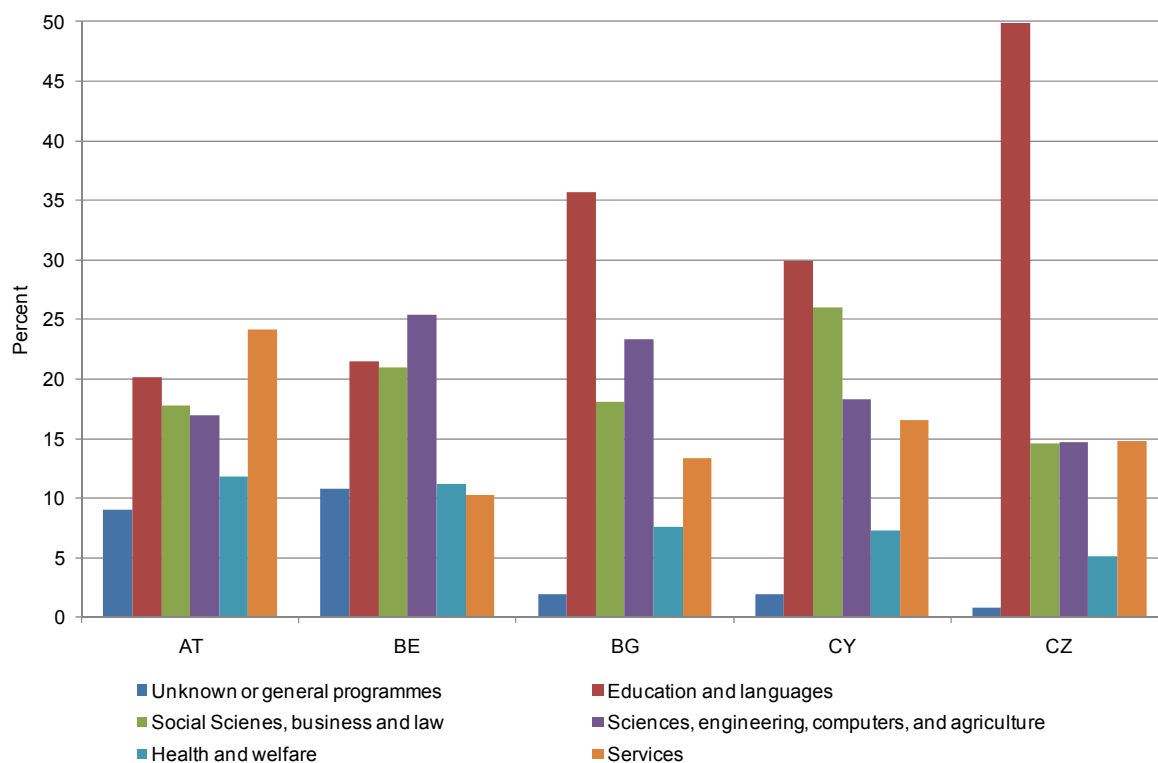
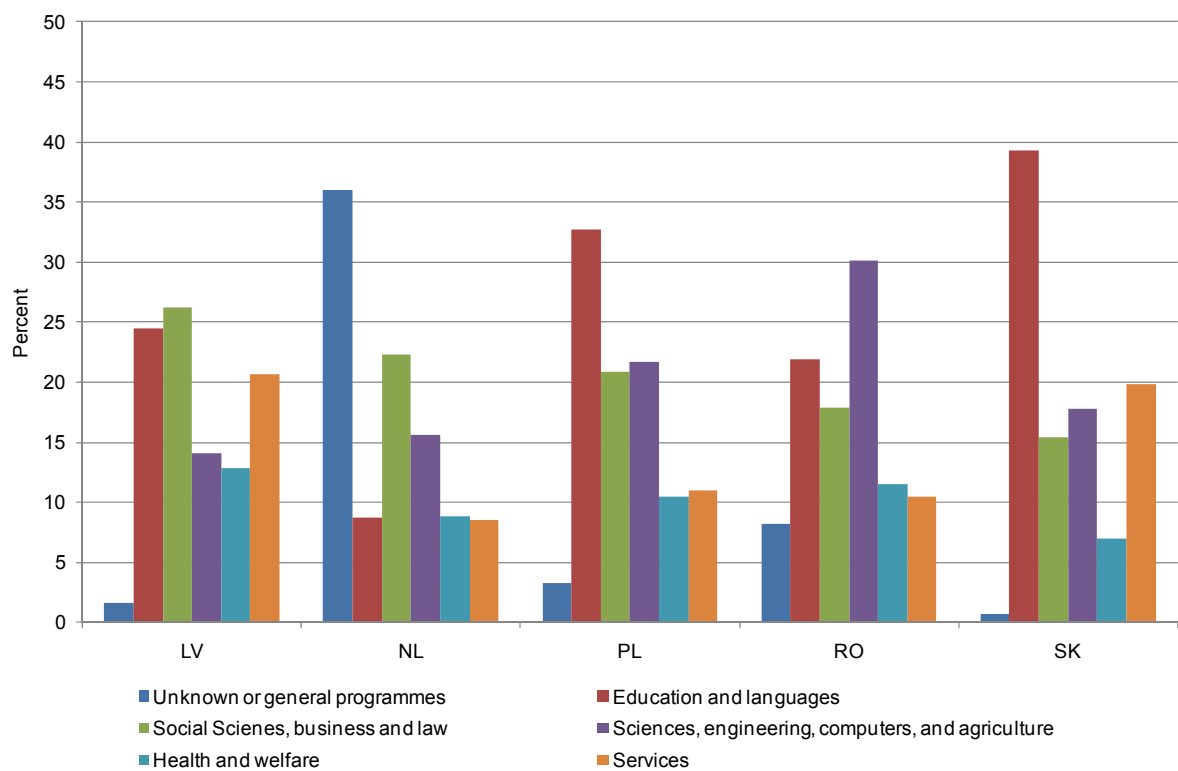
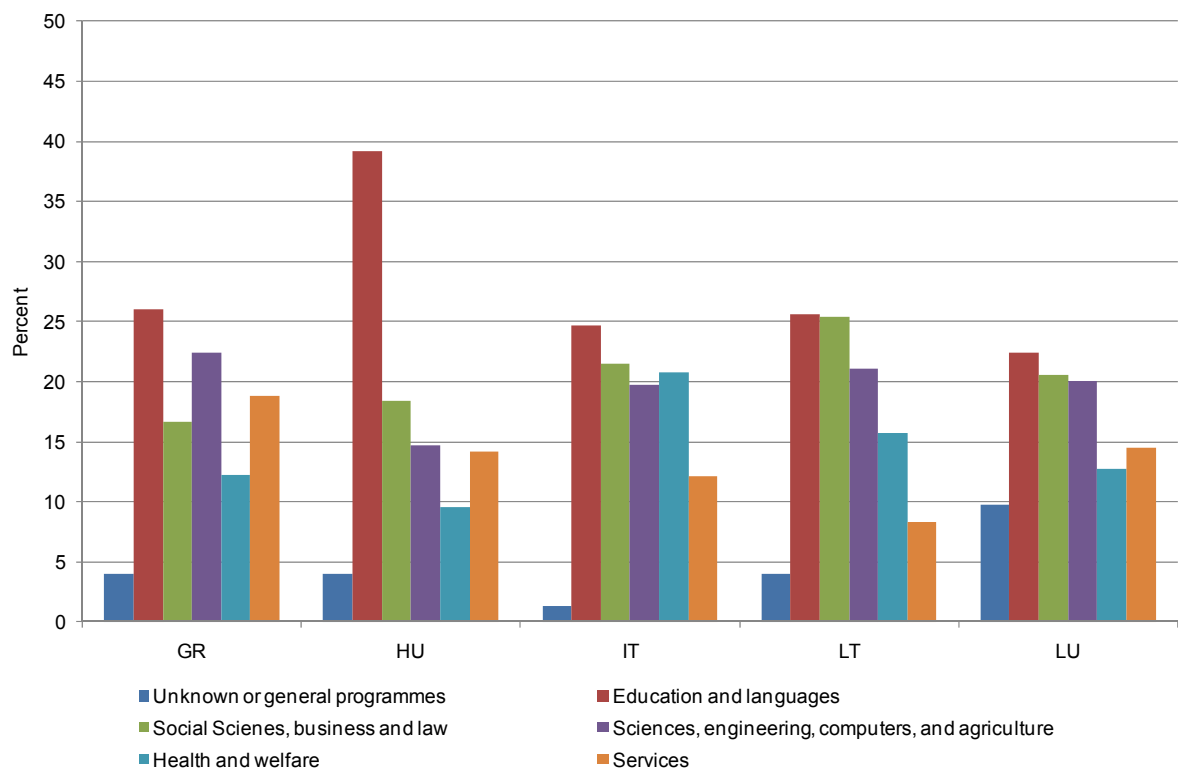


Figure 6.16, continued



Source: EU-LFS, own calculation.

From this figure it becomes transparent that “education and languages” is especially popular in the Central and Eastern European countries with participation rates reaching 50% in the Czech Republic and almost 40% in Hungary and Slovakia. Courses in “social sciences, business and law” are relatively often attended in Cyprus, Germany, Estonia, Finland, France, Lithuania and Latvia with participation shares of 26-28%. Belgium, Bulgaria, Germany, Finland, France, Greece and Romania exhibit a comparatively high share of participants in courses devoted to “sciences, engineering, computers, and agriculture” with 22-30% of all participants in non-formal training activities. Participation shares in programs regarding “health and welfare” are considerably above the EU-LFS-average in Germany, Italy and Lithuania, whereas non-formal training in “services” related activities are especially popular in Austria, France, Greece, Latvia and Slovakia.

6.3.2.2 Econometric results

This section summarizes the results of our econometric analyses with respect to the above-described indicators of training intensity. Again, we start by presenting the results of the baseline specification including country- and time-specific intercepts together with the full set of individual characteristics. For the Ordered Probit-Model we report coefficient estimates together with marginal effects for the highest and the lowest education level. Due to the non-linear nature of the model the estimated coefficients cannot be interpreted directly in quantitative terms. However, the marginal effects can be calculated straightforwardly on the basis of coefficient estimates. These marginal effects provide the change in the probability to choose the lowest level of education (i.e. $\Pr(Y=1)$) or the highest level (i.e. $\Pr(Y=3)$) in response to a unit-change in the respective individual characteristic.

Level of formal education – Baseline specification

Table A.6.6 in the appendix summarizes the results for the choice of training level for those employed workers participating in formal education. To simplify comparisons the reference categories for the different groups of dummy variables are equivalent to those of the participation estimations. Hence, the United Kingdom again serves as the reference country, for which we have observed significantly higher participation rates compared to all other countries except Estonia, Finland and Lithuania (no significant difference) as well as Latvia and Slovenia which exhibited significantly higher propensities than the UK.

Against this background, it is very interesting that the estimated coefficients of the Ordered Probit model suggest higher levels of formal education in almost all countries compared to the United Kingdom (all other things equal). With the exception of the Netherlands and Sweden, the estimated marginal effects indicate that the average propensity to choose the lowest education level are between 2 (in Belgium, Germany and Luxembourg) and 11 percentage points (in Bulgaria) lower than in the UK. On the other end of the distribution we observe significantly higher probabilities to choose the highest level of education varying between 12 and 57 percentage points (*ceteris paribus*).

Furthermore, the battery of pair-wise tests on equality of coefficient estimates suggests that the majority of observable differences between the countries is statistically significant. In 31 out of 276 cases only, the test statistic does not allow to reject the null hypothesis of equal point estimates. Among these practically equal country pairs are many Continental countries,

especially Austria, Belgium, Germany and Luxembourg, but also the two countries which do not differ from the UK, i.e. the Netherlands and Sweden.

With respect to gender our estimation results indicate – all other things equal – higher levels of formal education for males than for females. Hence, men do not only tend to exhibit higher participation rates in formal education than females, but also seem to choose higher levels. Specifically, the probability to engage in formal education at the highest level is on average about 3 percentage points higher for men than for women. Moreover, age seems to be relevant for level choices as well. Specifically, compared to participating workers in their early 30s, the youngest cohort and all older cohorts exhibit a lower propensity to choose a high level of education. The estimated marginals suggest a relatively clear-cut picture with an increasing probability to be observed at the lowest education level with increasing age and a decreasing propensity to choose the highest level.

Similarly, the profile with respect to the level of completed education is rather straightforward as well. Workers with a lower level of completed education display significantly higher probabilities to be observed among participants at the lowest training level and a significantly lower propensity to choose the highest level. With the exception of the comparison of ISCED-group 4 to ISCED5/6, all observable differences in point estimates turn out to be statistically significant. By contrast, elapsed time since the highest level of completed education was attained seems to be of minor importance for level choices.

Regarding marital status and household composition, we observe higher level choices for single compared to married workers and lower levels for households with young children. Hence, the latter group of workers does not only exhibit lower participation propensities, but also lower levels of training conditional on a positive participation decision, whereas the opposite holds for singles. By contrast, neither household size nor the number of employed individuals living in the household seems to be relevant for the decision on education levels.

The general occupation profile for the participation decision is by and large resembled with respect to level choices. Workers in high-skill occupations tend to exhibit higher participation rates and are more often found in high levels of formal education compared to the reference group (elementary occupations). The probability to be observed among participants of courses at the highest level is about 15 to 19 percentage points higher for occupational groups ISCO1 and ISCO2 than for the reference group (ISCO9). By contrast, labour market experience seems to play a minor role for level choices. To some extent workers who entered the labour market recently tend to engage in formal education activities at a lower level than employees who started their career 20 or even more years ago.

Finally, individuals working part-time exhibit a significantly higher propensity to choose the highest level of education than full-time workers. Quantitatively, the difference between these two groups amounts to almost 14 percentage points. Contrary to that and to what we have observed for the participation decision, holding a temporary contract does not exhibit a significant association with level choices.

Intensity of non-formal training – Baseline specification

The estimation results for the intensity of non-formal training – approximated by the number of hours an individual spent in such activities during the last four weeks preceding the interview – are summarized in Table A.6.7 in the appendix. The left part provides the results of

the OLS-estimations, i.e. for those workers with a strictly positive value for the number of hours in training. The right part summarizes the results of a Tobit model for which the outcome measure of all non-participants was set to zero. In what follows, we will concentrate on OLS-results and highlight the most noticeable differences to that of the Tobit model.

Compared to the reference country (i.e. the United Kingdom), OLS-estimations suggest that the vast majority of countries exhibit a significantly higher training intensity. Exceptions are Cyprus and Ireland with insignificant point estimates for the respective country dummies as well as the Czech Republic, Finland and Sweden for which significantly negative deviations from the UK can be observed. Quantitatively, the country fixed-effects indicate up to almost 18 hours more of non-formal training in France compared to the UK – on average and all other things equal. On the other end of distribution, Swedish workers display a lower training intensity of almost 5 hours less than their colleagues in the UK. The pair-wise tests on equality of point estimates indicate that the majority of observable differences between then countries are significant.

However, the Tobit-results suggest a different picture with respect to country-specific training intensity. Since the Tobit model implicitly incorporates the participation decision, countries with significantly lower training propensities also exhibit significantly lower intensities than the United Kingdom. For instance, in Bulgaria the average participation probability is more than 6 percentage points lower than in the UK. Thus, the Tobit model estimates a significantly lower training intensity by around 52 hours, whereas the OLS-model – that is, the model for participants only – yields about 12 hours more. Similar results can be observed for many other countries like France, Greece, Hungary, Italy, Lithuania, Portugal and Romania, i.e. across all of our pre-specified country groups.

Along the same lines, OLS-estimation results suggest that men spend more time in non-formal training activities than women – conditional on a positive participation decision. However, the Tobit model indicates that the opposite holds, as soon as we consider the fact that participation rates of males are significantly lower than that of females. This picture recurs for the estimation results regarding age and the level of education. The most obvious case is the level of completed education. Quite unsurprisingly, OLS-estimates indicate no systematic relationship between training intensity and the level of completed education once a positive participation decision has been reached. However, when incorporating this decision we observe a clear-cut and highly significant education-profile with training intensity decreasing with declining human capital endowments by substantial quantities.

Marital status and household characteristics seem to be relevant for training intensities as well. Within the group of participants, divorced and single workers tend to spend – on average and *ceteris paribus* – almost one hour more in non-formal training activities than married individuals. Hence, divorced employees do not only exhibit significantly larger participation rates but also higher intensity levels. For household size we again observe the opposite directions in coefficient estimates when comparing OLS- with Tobit-results due to the significantly declining participation propensities for increasing household size. Child care obligations do not seem to matter once a positive participation decision has been reached. However, considering the negative association with the decision to participate, a higher number of young children is accompanied by a lower number of hours in non-formal training.

The occupation-profile is rather flat for participants but displays the expected significantly higher intensities for occupations with higher probabilities to engage in non-formal training.

Results for labour market experience are comparable. Among all participants, workers who entered the labour market recently exhibit a significantly higher intensity than the reference group. Furthermore, the difference to the reference group seems to diminish with increasing labour market experience. However, implicitly considering the participation decision in the Tobit model, yields insignificant estimates for the lowest experience groups and significantly negative deviations from the reference group for workers with 2-15 years of experience.

Moreover, participants working part-time display no significant differences in training intensity than full-time workers. By contrast, individuals holding a fixed-term contract tend to spend significantly more time in non-formal training activities, irrespectively of the estimation model. Finally, among participants the sector affiliation seems to be irrelevant, whereas Tobit-results suggest significantly lower intensities for workers in the agricultural and industrial sector due to their lower propensities to participate.

Fields of non-formal training – Baseline specification

The results of the multinomial logit model for the choice of training fields are summarized in Table A.6.8 in the appendix. These estimation results suggest the following:

For the field “education and languages” we observe significantly higher participation rates for females than for males. Furthermore, age does not seem to play a substantial role, whereas human capital endowment matters. More specifically, participation shares increase with the level of completed education. By contrast, they decrease with household size and especially for households with a larger number of young children. Moreover, workers in ISCO2-occupations (professionals) display significantly higher participation shares than workers in elementary occupations, whereas the opposite holds for employees in occupations ISCO5 to ISCO8. Comparable to age, labor market experience seems to play no role for the decision to participate in “education and languages” courses. However, part-time workers are significantly more often found among participants than full-time employed. Finally, workers from the industry sector exhibit significantly higher participation rates in this field of non-formal training than service sector employees.

For the field “social sciences, business and law” we do not observe significant gender differences. Here, however, age is associated with choices. Specifically, the youngest and all age-groups older than 47 years of age display significantly lower participation propensities than workers in their early 30s. Furthermore, individuals with low levels of completed education (ISCED2 or less) are significantly less often found in such courses. The same holds for singles compared to married workers. With respect to occupations we observe a clear division: workers with occupations ISCO1 to ISCO5 display significantly higher and employees in occupations with ISCO6 to ISCO8 significantly lower participation probabilities than workers in elementary occupations. Moreover, part-time working individuals and workers with temporary contracts are also less often found among participants in this field of non-formal training. Finally, the same holds for employees in the agricultural or industry sector compared to those from services.

For the field “sciences, engineering, computers, and agriculture” men tend to display significantly higher participation propensities than women. Furthermore, employed individuals with completed levels of education according to ISCED 2 or 3 exhibit significantly higher participation propensities than workers with ISCED 5 or ISCED 6. By contrast, household characteris-

tics do not seem to matter for this field of non-formal training. For occupations we observe individuals with ISCO7 and ISCO8 more often among participants than workers in elementary occupations, whereas the opposite holds for ISCO5. Finally, employees in the agricultural and industry sector display higher probabilities to engage in this field of non-formal training than workers in the services sector.

Quite unsurprisingly, participants of non-formal training in the field of “health and welfare” are significantly more likely to be female than males. Furthermore, individuals younger than 32 years of age display lower participation probabilities than workers in the early 30s, whereas the opposite can be observed for employees older than 37. The highest level of education does not unfold any significant association with the choice of this training field. Increasing household size, however, is associated with higher participation rates in “health and welfare” courses. Employed individuals in ISCO4-occupations are significantly less often found among participants in this training field. Moreover, “health and welfare” courses are significantly more often attended by workers with more than three but less than 20 years of labour market experience. Finally, also part-time working employees display higher propensities to attend courses in this field of non-formal training activities.

Males are more often found in the field “services” than women, whereas the opposite can be observed for older workers. Furthermore, the lower the level of completed education the higher participation propensities in activities devoted to “services”. Singles tend to choose this field more often than married workers, whereas we do not observe significant associations with household characteristics here. For occupations the results indicate that workers with ISCO1 to ISCO4 jobs display lower participation propensities than employees in elementary occupations, whereas the opposite holds for ISCO8. Labour market experience, part-time work and fixed-term contracts seem to be of minor relevance here.

Level of formal education – Anglo-Saxon countries

Table A.6.9 in the appendix summarizes the estimation results for the level of formal education in the United Kingdom and Ireland. Contrary to the rest of the country groups we had to condense the three levels of education into two due to the very small number of observations at the ISCED1/2-level (around 500 workers out of almost 30,000). Hence, the level of formal education for the group of Anglo-Saxon countries takes on the value of 1, if an individual chooses a course at the level (i.e. ISCED5/6) and 0 otherwise.

Estimation results suggest that Irish workers participating in formal education tend to be found more often in higher education levels than their colleagues in the United Kingdom. In other words, the average worker in the UK exhibits a significantly higher participation propensity but tends to choose a lower level of education. By contrast, males do not only tend to participate significantly more often in formal education than females, they also display a higher probability to choose the highest education level. Furthermore, estimation results reveal a rather clear-cut age-profile with older workers tending to be found more often among participants of low level training courses than prime age individuals.

Significant differences from the reference group can also be observed with respect to the level of completed education. Here, workers whose human capital endowment is lower, tend to exhibit a significantly lower propensity to choose the highest level of education. Moreover, elapsed time since attaining the highest level of completed education displays the well-

known U-shaped relationship with level choices. Marital status and household size seem to be of minor relevance for the decision on education levels. By contrast, a higher number of employed individuals and young children in the households is accompanied by a significantly lower propensity to participate in highest level courses.

With respect to occupations we again observe significantly larger probabilities to be found in the highest level of education for the high-skill occupations ISCO1 to ISCO3 compared to the reference group (elementary occupations), respectively. Furthermore, regarding labour market experience our estimation results suggest that workers with the most experience display the highest probability to choose the highest level of education, whereas individuals who started to work during the last two years exhibit 17 to 18 percentage points lower propensities to choose courses at the ISCED5/6-level. Finally, part-time and temporary workers do not only exhibit higher participation rates but also higher probabilities to be observed among participants of courses at the highest education level. By contrast, the complete opposite holds for workers from the agricultural and industrial sector compared to service sector employees.

Intensity of non-formal training – Anglo-Saxon countries

The estimation results of the OLS- and Tobit models for non-formal training intensity, i.e. the number of hours in such activities, for the Anglo-Saxon countries are provided in Table A.6.10 in the appendix. From this table it becomes transparent, that the average participant in Ireland displays no significant difference in training intensity from a comparable worker in the United Kingdom. Furthermore, conditional on a positive participation decision, males tend to spend on average around three hours more in non-formal training activities than females (all other things equal). However, given their significantly lower participation probability the Tobit model indicates a lower training intensity for men.

An analogous picture – though with reversed signs – can be observed for the different age-groups. Here, OLS-results indicate significantly lower intensities for workers aged 37 to 56 compared to the reference group, which turn to be significantly higher in the Tobit model due to the higher participation propensities of these age-groups. For the level of completed education Tobit-estimates again document the clear-cut picture with higher intensities for workers with higher human capital endowments, whereas the OLS-estimates suggest no significant differences to the reference group among the group of participants. Moreover, the number of years since the highest level of completed education was completed displays the well-known U-shaped relationship to training intensity.

According to both econometric models, divorced workers tend to spend more time in non-formal training activities than married individuals – on average, one and a half hour more, all other things equal –, whereas the empirical results for singles depend on the estimation model. Conditional on a positive participation decision, an increasing household size, more employed individuals as well as a higher number of young children in the household are all accompanied by significantly higher non-formal training intensities. Incorporating the participation decision into the model by estimating a Tobit-specification yields negative associations for household size and young children due to the lower participation rates for these households.

The occupational groups with relatively high skill requirements display lower training intensities than the reference occupation when the estimation is restricted to participants only. Again, the relationship reverses its sign in the Tobit model since these occupations tend to be found significantly more often among participants. The results of both models with respect to labour market experience are by and large similar for all experience groups up to 15 years. For the groups thereafter, OLS-results suggest negative deviations from the reference group, whereas the opposite holds for the Tobit model.

Finally, although part-time workers tend to display higher participation propensities, estimates from both models suggest that they spend a lower number of hours in non-formal training activities. The quantitative dimension of the Tobit-estimate is, however, considerably smaller than the OLS-coefficient. By contrast, holding a fixed-term contract job seems to be irrelevant for the intensity of non-formal training. Workers in the agricultural sector tend to spend significantly less time in non-formal training than service sector workers – independently of the econometric model. For participants from the industrial sector, however, the OLS- and Tobit-estimates exhibit opposite relationships.

Level of formal education – Continental countries

Estimation results for the level of education in the Continental countries are summarized in Table A.6.11 in the appendix. Compared to the reference country Austria we observe significantly negative deviations for all other countries in this group. Interestingly, the largest deviation appears for the Netherlands, i.e. for the only country which exhibited significantly higher participation propensities than Austria. Ordered Probit-estimations suggest that the probability to observe the average worker in the Netherlands among participants of highest level education courses is by more than 18 percentage points lower than that of the average Austrian worker. The pair-wise tests on coefficient equality further indicate that the observable differences between Belgium, Germany, France and Luxembourg are not significant. Hence, average participants in these countries basically display the same level choices. Moreover, we do not observe significant differences between women and men in this context.

Estimation results for level choices with respect to age are very much in line with the results for participation. Again, individuals being younger than the reference group exhibit significantly positive deviations, though not always on an acceptable significance level. For all workers being older than the reference group we observe the opposite, with deviations being statistically significant throughout. Furthermore, pair-wise testing of these estimates reveals that the vast majority of observable differences are significantly different from zero. Furthermore, we also find a clear-cut picture with respect to the level of completed education. Participants with lower human capital endowments exhibit significantly and substantially lower probabilities to choose the highest level of education compared to the reference group and also compared among each other. Elapsed time since the highest level of completed education was attained displays an inversely U-shaped relationship to level choices for which the linear term is shy of being significant, though.

Single workers tend to be found significantly more often among participants of courses at the highest education level compared to married individuals, whereas no significant differences appear for divorced employees. Moreover, increasing household size is accompanied by lower education levels, whereas the number of employed individuals and young children seems to be irrelevant for level choices.

For the occupation-groups the estimation results for level choices by and large resemble those for the participation decision. Specifically, the groups ISCO1 to ISCO4 do not only exhibit significantly higher propensities to participate in formal education than the reference category but also tend to choose higher levels of education. The difference to the reference group amounts up to more than 15 percentage points (for workers belonging to the ISCO2-group). By contrast, labour market experience seems to play a minor role for level choices. Compared to the reference category only the directly preceding experience group displays a significant deviation. The battery of pair-wise tests on coefficient equality indicates that this group is also significantly different from the rest of the experience brackets.

Finally, part-time workers do not only display higher participation rates (see Table 4.4) but also tend to be found significantly more often among participants of courses at the highest education level. By contrast, workers with a fixed-term contract display significantly lower level choices although they revealed higher participation propensities as well. For sector affiliation no significant differences can be observed.

Intensity of non-formal training – Continental countries

Table A.6.12 in the appendix summarizes the estimation results for the intensity of non-formal training in the Continental countries group. For the country intercepts we observe significantly higher intensities in all countries compared to Austria (reference country) among participants, i.e. according to OLS-estimation results. The difference to Austria amounts up to over 14 hours more in such activities for the average French worker. However, once we consider the significantly lower participation propensities in all the countries compared to Austria, the estimated coefficients reverse their signs. Thus, incorporating the participation decision into the estimation of training intensity yields a completely different picture compared to the analysis for participants alone.

Both estimation strategies yield no significant differences between females and males. With respect to age, however, we observe a clear profile among participants which suggests that older workers tend to spend less time in non-formal training activities than individuals in their early 30s. The observable differences between the age-groups ranging from 37 to 61 are mostly insignificant, though. Considering the participation decision by using a Tobit model yields a much more intricate relationship between training intensity and age. Here, all age-groups exhibit negative deviations from the reference group, with that for oldest cohort being the only significant though. The relationship between human capital endowment and training intensity within the group of participants is again rather intricate, but very well-defined once the participation decision is considered. For the Tobit model we observe a significantly positive association between the highest level of completed education and training intensities. To put it differently, Tobit estimates suggest that individuals with lower levels of human capital endowment spend significantly less time in non-formal training activities than workers with a higher level of completed education. This observation also holds with respect to the number of years since completion of education in the Tobit model, whereas we do not observe any significant relationship to training intensities among participants alone.

Conditional on a positive participation decision marital status seems to play a relevant role for training intensity. On average and all other things equal, divorced and single workers tend to spend almost one hour more in non-formal training activities than married individuals. For divorced workers this association remains robust when applying a Tobit model, whereas it

turns insignificant for singles. All household indicators exhibit significantly negative associations to training intensities in the Tobit model. Among the group of participants, we observe a significant coefficient estimate for the number of employed individuals in the household only. This estimate suggests that a unit-increase in the number of employed is accompanied by a decrease in hours of slightly more than one.

For the different occupational groups our OLS-estimation results indicate that the occupations comprising ISCO1, ISCO2, ISCO4 and ISCO7 exhibit significantly lower training intensities than the reference group. However, given the significantly higher participation rates of these groups we observe a reversal of signs for the Tobit model. An analogous picture is found for the relationship between experience and training intensity. The Tobit model again reveals a rather clear-cut picture suggesting that a lower amount of experience is associated with a lower number of hours in non-formal training activities. Among participants only, the relationship is much more intricate. Here, workers who started their career rather lately display higher intensities than the reference group, whereas the majority of all other experience groups exhibit no significant differences to workers with 35 or more years of experience.

Among the group of participants, we do not observe significant differences between part-time and full-time workers. The Tobit model, however, translates lower participation propensities of part-time workers into significantly lower training intensities. By contrast, the association between the number of hours in training activities and temporary contracts turns out to be significantly positive for both econometric approaches. Finally, sector affiliation seems to be irrelevant once a positive participation decision has been reached, whereas the lower participation propensities for agricultural and industrial workers are reflected in significantly lower intensity estimates within the Tobit-framework.

Fields of non-formal training – Continental countries

The vast majority of estimated associations between field choice and individual characteristics for the Continental countries is qualitatively the same to what we have found in the baseline specification. That is, neither the sign nor the significance of estimates are different. There are only a few exceptions worth noting. The first is that in this country group we observe a significantly higher propensity to participate in courses devoted to “sciences, engineering, computers, and agriculture” for workers in ISCO2- to ISCO4-occupations as well. In the benchmark specification this association was insignificant. Furthermore, in the Continental countries this field of non-formal training activity is significantly less often chosen by workers with temporary contracts. Finally, among participants of training activities regarding “services” we observe no significant differences with respect to gender in Continental Europe.

Level of formal education – Central and Eastern European countries

The estimation results for the level of formal education in Eastern Europe can be found in Table A.6.13 in the appendix. Compared to Slovakia serving as the reference country we observe significantly higher training levels in Bulgaria, Lithuania, Latvia and Romania. These countries also exhibited significantly higher participation rates than Slovakia. Significantly negative deviations from the average worker in Slovakia can be observed for the Czech Republic, Estonia, Hungary, Poland and Slovenia. With the exception of the Czech Republic all of these countries displayed significantly higher average propensities to participate. Hence,

for the country fixed-effects there seems to be no clear relationship between participation and level choices in Eastern Europe. The battery of pair-wise tests on equality of coefficient estimates suggests that the observable differences between Hungary and Poland as well as between Lithuania and Latvia are insignificant. No significant deviations are, furthermore, observable for the comparison of level choices between women and men.

The majority of age-groups exhibit significantly higher levels of formal education than the reference group. Exceptions are participants between 17 and 21 with significantly lower levels and workers between 22 and 26 as well as between 57 and 61 for which we observe no significant deviations from participants in their early 30s. Thus, by and large older participants are more likely to be found in highest level courses than the reference group, whereas the opposite holds for the youngest cohort. The education profile is again very clear with lower human capital endowments being associated with significantly lower level choices. The observable differences between the single categories of completed education are, furthermore, unanimously significant. Moreover, we observe an imprecisely estimated inversely U-shaped relationship between the number of years since completion of education and level choices.

Furthermore, our estimation results indicate that divorced workers exhibit significantly lower level choices compared to the reference group of married individuals, whereas the opposite holds for singles. Similar to the findings for participation, all household indicators suggest that these characteristics play an important role for the decision on education levels with observable associations pointing in the same directions. Specifically, increasing household size and more young children in the household are associated with lower levels of education, whereas a higher number of employed individuals in the household is accompanied by higher probabilities to observe a participant at the highest level of formal education.

Along the same lines, results for level choices and occupations resemble by and large those for the participation decision. Occupations requiring relatively high skills are significantly more often found among participants of courses at the highest education level. Specifically, workers with a job belonging to the ISCO1-group tend to display a 19 percentage points higher propensity to choose the highest education level, for the ISCO2-group this probability even amounts to almost 23 percentage points (in each case compared to reference group). By contrast, practically no significant estimates are found for experience groups. Thus, labour market experience seems to play a minor role for level choices in the Continental countries.

Estimation results for temporary work contracts and agricultural workers indicate that these characteristics are also irrelevant for the decision on education levels. However, part-time workers tend to be found significantly more often among participants of courses at the highest education level than full-time working individuals. The opposite holds for participants being active in the industrial sector. These workers display a significantly lower probability to choose the highest education level than service sector employees in Eastern Europe.

Intensity of non-formal training – Central and Eastern European countries

Table A.6.14 in the appendix provides an overview on the estimation results for non-formal training intensity within the group of Central and Eastern European countries. Conditional on a positive participation decision, our OLS-results indicate significantly higher intensities in all

countries (except the Czech Republic) compared to the reference country Slovakia. The average participant in Romania tends to spend around 14 hours more in non-formal training activities than the average Slovakian participant. On the other end of the distribution, Czech workers tend to invest around two hours less in such activities.

Considering participation rates within a Tobit model, we observe reversing signs for all countries except Slovenia. Thus, Slovenian workers do not only tend to exhibit higher participation propensities but also higher training intensities (on average and all other things equal). Pair-wise testing of coefficient equality indicates that all observable differences between countries are statistically significant. Moreover, male participants tend to display significantly higher intensities than female participants. However, this association turns insignificant in the Tobit model.

With respect to age, our OLS-results suggest that cohorts older than 36 but younger than 62 tend to spend more time in non-formal training than the reference group. This relationship is by and large robust with respect to the estimation strategy. The Tobit model, however, indicates that the youngest age-group also spends more time in non-formal training than workers in their early 30s. Furthermore, we observe the well-known relationships regarding the level of completed education. For Eastern Europe no significant differences among participants, i.e. conditional on a positive participation decision, are observable, whereas the Tobit model which incorporates the participation decision suggests a clear-cut education profile with lower human capital endowments being associated with lower training intensities. Independently of the estimation method, the number of years since completion of education is negatively correlated with training intensity.

Marital status and household characteristics exhibit no significant relationship to training intensity among participants. The Tobit model, however, suggests that an increasing household size is accompanied by a decrease in the number of hours spent in non-formal training activities.

Conditional on a positive participation decision, occupations seem to play a minor role for training intensities. By contrast, when the participation decision is incorporated in the model using a Tobit-framework, we find a significantly positive relationship between training intensity and occupations requiring higher skills. Moreover, our estimation results suggest a rather intricate relationship between labour market experience and training intensity for both econometric approaches with most experience groups displaying no significant deviations from the reference group.

Finally, part-time work and fixed-term contracts seem to be irrelevant for training intensities as well. Neither the OLS- nor the Tobit model reveals any significant estimate for these job-related indicators. By contrast, we find significant associations to non-formal training intensity for sector affiliation when applying a Tobit model, with workers from the agricultural and industrial sector tending to spend less time in non-formal training than service sector workers. For the group of participants, this observation holds for industrial workers only.

Fields of non-formal training – Central and Eastern European countries

In general, estimation results for the Central and Eastern European countries resemble those for the baseline specification. The most important differences are the following. For the field “education and languages” we observe no significant associations for the occupations

ISCO5 and ISCO6, i.e. workers in these occupations do not display higher participation propensities than employees in elementary occupations in Central and Eastern Europe. Furthermore, for participation in courses devoted to “social sciences, business and law” the significant relationships between age- and education-groups in the baseline specification vanish for the group of central and Eastern European countries. Instead, labour market experience seems to play a relevant role for the choice of this training field. Specially, workers who started their career rather recently display higher participation propensities in this field of non-formal training. With respect to the field “sciences, engineering, computers, and agriculture” we observe significantly higher participation probabilities for workers older than 47 years of age in the Central and Eastern European countries. Finally, the participation in activities devoted to “services” is also unique in this country group in the sense that married workers are significantly more often found in this training field than singles.

Level of formal education – Mediterranean countries

Ordered Probit estimation results for the level of formal education in the Mediterranean countries are summarized in Table A.6.15 in the appendix. Compared to the reference country Portugal we observe significantly lower average education levels in Greece and Spain, whereas the average worker in Cyprus is significantly more often found among participants of courses at the highest level. No significant deviations from Portugal can be observed for Italy. The pair-wise tests on coefficient equality suggest that all observable differences between countries are significantly different from zero. Quantitatively, the probability to choose the highest education level is – on average and all other things equal – around 5 percentage points lower in Greece than in Portugal and more than 2.5 percentage points higher in Cyprus.

Males are significantly more often observed among participants of courses at the highest level of formal education than females. Hence, men in the Mediterranean countries do not only exhibit higher participation propensities but also tend to choose higher education levels than women. With respect to age, the majority of cohorts does not exhibit significant deviations in level choices compared to the reference group of participants in their early 30s. Highest level choices are observable for participants between 27 and 31, whereas the lowest values are exhibited by the youngest cohort and individuals between 57 and 61. By contrast, a rather clear profile can be found for human capital endowment. On average and all other things equal, participants with lower levels of completed education tend to display lower level choices than the reference group with differences to the reference group diminishing with increasing levels of completed education. Furthermore, we observe an inversely U-shaped relationship between the number of years since completion of education and level choices.

Marital status seems to play no substantial role for the decision on the level of education among participants. We neither observe significant deviations from married workers for divorced participants nor for singles. By contrast, increasing household size is negatively associated with the level of formal education, whereas the opposite holds for the number of employed individuals in the household. Although the number of young children is negatively associated with participation propensities, it seems to be irrelevant for level choices.

The occupation profile in the Mediterranean countries is by and large the same as in the other country groups. Workers with jobs requiring relatively high skills tend to exhibit higher participation probabilities and also higher education levels than workers in elementary occu-

pations. For instance, the probability to find an individual from the ISCO1-group among participants of courses at the highest education level is almost 10 percentage points higher compared to ISCO9-workers. A comparable magnitude can be observed for the ISCO2-group. The results for labour experience again indicate a much more intricate relationship. Here, workers who started their career lately and those with 3 to 10 years of experience tend to exhibit significantly lower levels of education than the reference group. Many of the observable differences between experience groups turn out to be statistically insignificant.

Furthermore, part-time workers in the Mediterranean countries display significantly higher education levels than full-time employed individuals. By contrast, no significant estimate is found for temporary contracts. Interestingly, participants from the agricultural sector are significantly more often found in courses at the highest level of education compared to service sector workers, whereas the opposite holds for individuals who are active in the industrial sector.

Intensity of non-formal training – Mediterranean countries

Table A.6.16 in the appendix presents the results for non-formal training intensities in the Mediterranean countries. With the exception of Greece and Spain, all observable country differences turn out to be statistically significant. Conditional on a positive participation decision, the average worker in Italy and Cyprus tends to spend less time in non-formal training activities than her colleague in Portugal. The opposite is observable for Greece and Spain. On average and all other things equal, OLS-results suggest that Spanish and Greek participants invest around 2.5 hours more in non-formal training than participants in Portugal, whereas Italian employees spend more than 5 hours less. The Tobit model which incorporates the participation decision, however, indicates that there are no significant deviations between Greece and Portugal, whereas we observe significantly higher training intensities for Italy, Cyprus and Spain.

Within the group of participants only, males exhibit significantly higher training intensities than females. This relationship, however, reverses its sign in the Tobit model due to the significantly higher participation probabilities of women. Furthermore, OLS-results suggest that participants aged 37 to 51 tend to spend significantly more time in non-formal training than the reference age-group, whereas the opposite holds for the youngest cohort and participants between 52 and 56. Considering participation rates by using a Tobit model, we observe significantly higher training intensities for almost all cohorts older than the reference group as well as the youngest workers. For individuals between 22 and 31 years of age, the Tobit-results indicate significantly lower intensities. Furthermore, results of the latter econometric approach suggest that lower human capital endowments are associated with significantly less time in non-formal training activities. OLS-results, by contrast, exhibit only minor differences between levels of completed education. The same observation holds for the number of years since completion of education. Here, again, the significantly negative association with respect to participation is translated into a significantly negative relationship between this indicator and training intensity in the Tobit model.

Qualitatively robust results across econometric models are found for divorced workers. Among participants they tend to spend almost one hour more in non-formal training activities than married participants. The Tobit model indicates that this difference amounts up to more than 3 hours due to the significantly higher participation propensity of divorced workers. An increasing household size is positively associated with training intensity among participants

and displays a significantly negative association in the Tobit model. The number of employed individuals in the household seems to be irrelevant for intensities conditional on a positive participation decision. The Tobit model, however, indicates significantly higher intensities with an increasing number of employed individuals in the household. Child care obligations seem to be accompanied by a significantly lower number of hours in non-formal training independently of the econometric approach.

Among participants we, furthermore, observe significantly higher training intensities for occupational groups ISCO5 to ISCO7 compared to the reference category (ISCO9). These groups of occupations also exhibit significantly higher participation rates (see Table 4.6). Hence, the Tobit model indicates quantitatively even larger deviations from the group of elementary occupations with up to 10 hours more for the ISCO6-group. Quantitatively, the difference to the reference group is even larger for workers belonging to the groups ISCO1 and ISCO2 in the Tobit model, although we find no significant estimates for these groups conditional on a positive participation decision, i.e. in the OLS-model. With respect to labour market experience, our OLS-results suggest that all groups with up to 5 years of experience exhibit higher training intensities than the reference group (i.e. 35+ years of experience). The same observation holds for the groups of participants with 15-20 and 25-30 years of experience, respectively. However, incorporating the participation decision into the model reveals that all experience groups which started their career 10 or less years ago spend significantly less time in non-formal training activities than the reference group. Only workers with labour market experience between 30 and 35 years exhibit significantly higher training intensities.

Finally, part-time work seems to be irrelevant for training intensities in the Mediterranean countries independently of the econometric approach. Furthermore, the results for temporary contracts are also robust across estimation strategies. Here, we find a significantly positive association with training intensity. The opposite holds for sector affiliation. Workers being active in either the agricultural or the industrial sector spend significantly less time in non-formal training activities, again irrespective of the econometric model.

Fields of non-formal training – Mediterranean countries

The econometric results for field choices in the Mediterranean countries exhibit the largest number of deviations from the baseline specification. However, the majority of results is qualitatively still the same. For the field “education and languages” we observe significantly lower participation propensities for workers older than 42 years of age compared to those in their early 30s. Furthermore, in the same field of non-formal training workers in occupations ISCO5 and ISCO6 exhibit no significant differences to employees in elementary occupations. No significant differences are also found for part-time workers compared to full-time working employees.

In the Mediterranean countries men tend to display significantly higher participation propensities than females with respect to the field “social sciences, business and law”. Participation in non-formal training activities devoted to “sciences, engineering, computers, and agriculture” is significantly higher for workers in their mid-30s to mid-40s and significantly lower for employees older than 50 years of age. However, we do not find a significant education profile for the choice of this field. Instead, labour market experience seems to be relevant, with workers who started their career rather recently choosing significantly less often such training activities. The same also holds for part-time workers in the Mediterranean countries. Finally,

for activities with respect to “services” we observe a rather clear age-profile in this country group. Here, the young exhibit significantly higher and the old significantly lower participation probabilities than individuals in their early 30s. Furthermore, such training activities are more prevalent among workers with a rather low level of labour market experience.

6.4 Summary and Conclusions

This chapter investigates (i) take-up rates of formal as well as non-formal education and training and (ii) the intensity and level of learning activities as well as the probabilities of choosing different fields for the most recent learning activity using LFS-data for 2003-2008. The sample consists of employed individuals between 22-67 years of age for which several outcome indicators were analyzed within a multivariate econometric framework with respect to their association with a large set of socio-demographic characteristics (gender, age groups, highest level of education, years since completion of education, marital status), household characteristics (household size, number of employed individuals and young children in household) as well as labour market and job-related characteristics (occupation groups, labour market experience groups, part-time work, temporary contract, sector of economic activity). All econometric models are implemented using country- and time-fixed effects.

In general, the econometric investigations consist of estimating a baseline specification, in which information on all available countries is pooled and several sensitivity analyses, including separate models for country groups and the addition of aggregate data on the country level. All econometric analytical steps are prepared by a comprehensive statistical description of the variation in outcomes.

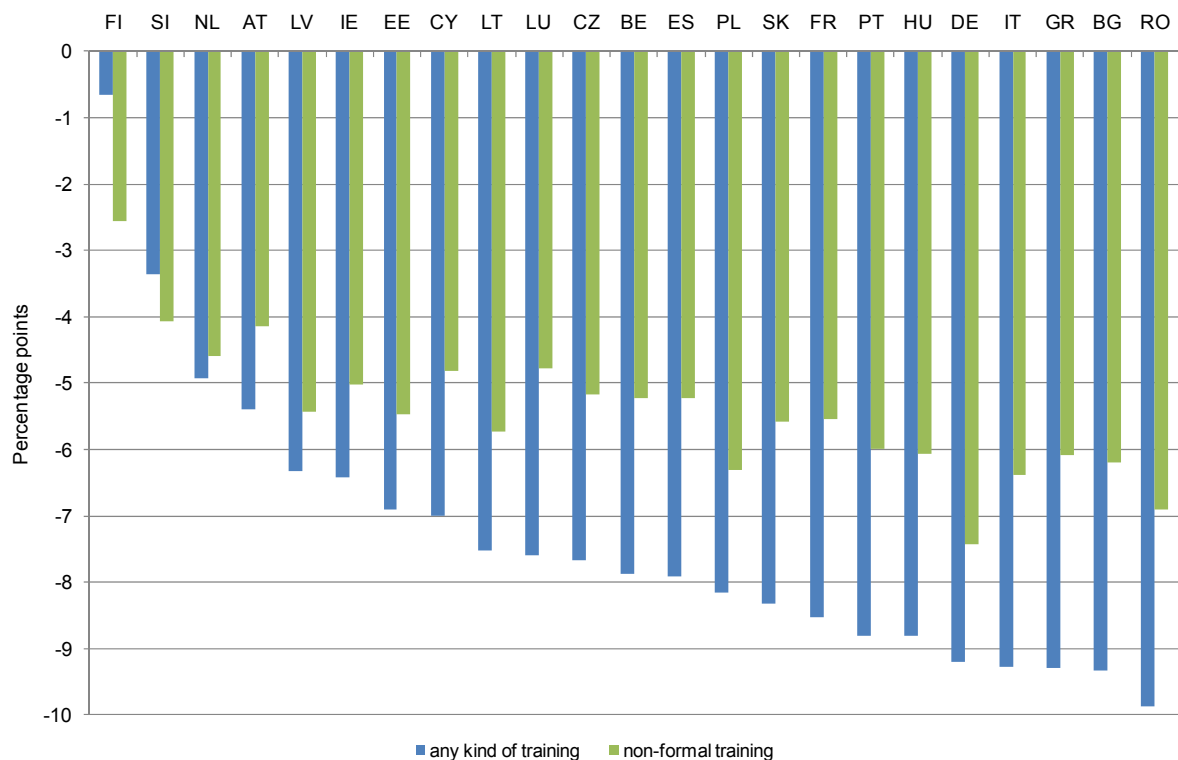
Results – Participation decision

With respect to the participation in formal education and non-formal training our empirical results indicate pronounced country differences even after controlling for individual, household and job-related characteristics. Their quantitative magnitude is considerably smaller than without controlling for the differences in the structure of the working population across countries. However, these country differences still amount up to 10 percentage points and are highly significant. Figure 6.17 illustrates this for participation rates in any kind of training and non-formal training.

From this figure it becomes transparent, that compared to the United Kingdom, i.e. the sample country with the highest further training activities among employed workers, and conditional on the characteristics of the working population the following countries exhibit the largest backlog: Poland, Slovakia, France, Portugal, Hungary, Germany, Italy, Greece, Bulgaria and Romania. This group comprises five Central and eastern European, three Mediterranean and two Continental countries, and hence, indicates that the largest potential to increase worker training can be found in the New Member States. However, it also demonstrates that training propensities in Germany and France are very low given their rather favourable structure of the worker population. Both of these two countries display around average participation rates without controlling for the characteristics of employees (see Figure 6.1). Conditioning on the latter, however, reveals that training activities in Germany and France are clearly below average.

Figure 6.17

Country differences in participation rates relative to the United Kingdom



Source: EU-LFS, own calculation.

Figure 6.17 also demonstrates that the observable country differences in overall training activities are predominantly driven by non-formal training. For the majority of countries, the differences in overall participation rates can be attributed to differences in non-formal training by one half or even more.

With respect to individual-level characteristics, we do not find significant gender differences for overall participation in any kind of training. This is, however, the weighted average of significantly higher participation propensities in formal education for males and significantly higher probabilities in non-formal training activities for females. Furthermore, the econometric estimations reveal a pronounced age group-profile for formal education with younger cohorts exhibiting higher participation rates. For non-formal training the relationship to age is much more intricate. It is very difficult to assess whether and to which extent this intricate relationship is a reflection of reality or simply due to the fact that information on age is provided in pre-defined and rather arbitrary groups in the EU-LFS. In any case, it seems desirable and advisable to receive age in years for scientific projects utilizing individual-level data from the EU-LFS.

A rather clear-cut profile is observable for the level of completed education with significantly lower participation rates for lower levels of human capital endowments. This relationship is, however, completely driven by participation in non-formal training. Furthermore, we also find a u-shaped relationship with respect to time since completion of education for overall and formal training participation. This indicates that participation rates decrease directly after completion of education but tend to increase again a couple of years later. Moreover, non-married workers exhibit higher participation propensities than married employees, especially

in formal education. By contrast, increasing household size and especially young children in the household are negatively associated with participation for all forms of training.

Another important associate of participation in further training activities of employed workers are their occupations. This observation holds independently of the specific training form, i.e. for formal education as well as non-formal training. In general, workers with occupations demanding relatively high skill-levels (i.e. ISCO1-4) tend to invest more frequently in further training than all other occupations. With respect to labour market experience we, again, observe a rather intricate picture for overall and formal education which is probably due to the quite arbitrary grouping of this information in the dataset. Thus, comparable to the age information it would be preferable to receive labour market experience in years than in year brackets in future versions of the EU-LFS. Finally, we also observe a positive association between part-time work and temporary contracts on the one hand and participation rates on the other hand, especially for formal education. These relationships are clearly dominated by workers younger than 40 years of age and it must be emphasized that the direction of causality in this context is anything but clear.

Extending the baseline specification by data on the macro level (e.g. by unemployment rates or youth unemployment rates) does not entail any noteworthy change of results. Neither the estimated country differences nor the associations between characteristics and participation indicators change with respect to sign or significance. The same holds for a two step approach, i.e. when the estimated country intercepts are regressed on macro indicators. This indicates that, in general, macroeconomic information does not help in explaining individual-level decisions on further investments in training.

Estimation results for the different country groups suggest that the Anglo-Saxon countries are unique in that sense that they exhibit very robust results across the three participation indicators, i.e. almost no heterogeneity with respect to the kind of further investments in human capital. The associates of such investments in the Continental countries deviate somewhat from what we find in the baseline specification, but even stronger from the group of Anglo-Saxon countries. The Central and eastern European countries exhibit very heterogeneous results with respect to training form, not only for the country fixed-effects but also for many individual characteristics. A comparable picture with respect to heterogeneity is, finally, also found for the Mediterranean countries. In the latter group, however, we observe a stronger dominance of non-formal training than in Central and Eastern European countries.

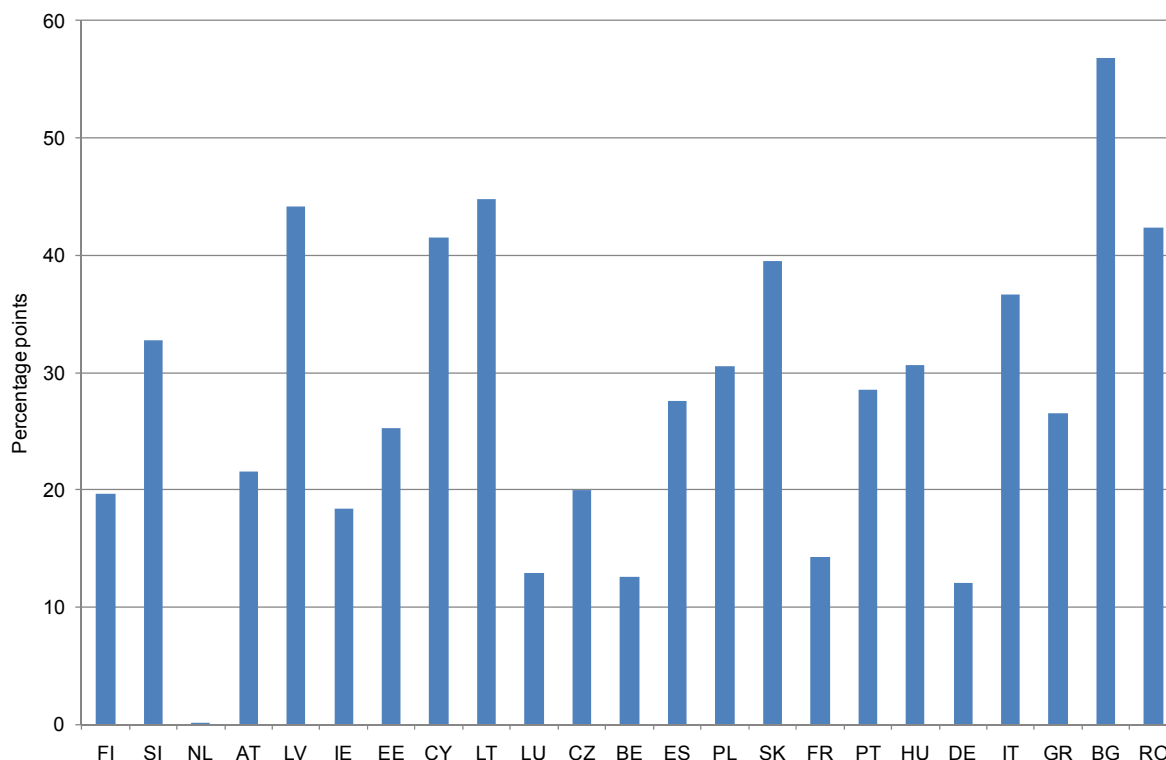
Results – Level of formal education

The estimation results for the level of training among workers who participate for formal education reveal that almost all countries (exception: the Netherlands) exhibit higher level choices than the United Kingdom. This is illustrated for the highest level of education in Figure 6.18, which contains the estimated country intercepts conditionally on the structure of the population in the respective country. The majority of these country intercepts differ significantly from each other. Among the largest differences to the UK are those for countries which exhibit relative low participation rates, e.g. Bulgaria, Romania, Italy and Slovakia. This indicates that in these countries further training of employed workers is not only a relatively rare event, but also rather selectively. Moreover, the figures also indicate that the probability to choose the highest level of formal education is also relative large in the Baltic States Latvia and Lithuania as well as Slovenia and Poland. That is, the propensity of employed workers in

Central and Eastern European countries to participate in formal education at the highest level is substantially higher than those in other country groups.

Figure 6.18

Country differences in the probability to choose the highest level of formal education (ISCED 5-6) relative to the United Kingdom



Source: EU-LFS, own calculation.

Furthermore, our results suggest that men choose significantly higher levels than women, whereas the youngest cohort and all older cohorts than individuals in their early 30s systematically exhibit lower level choices. Quite unsurprisingly, we also observe a straightforward profile for the level of completed education, which indicates that higher levels of human capital endowment are associated with the choice of higher levels for further training. By contrast to participation, there seems to be no significant role for time since completion of education in this context.

The estimated occupation-profile is by and large the same as for participation, i.e. workers with jobs demanding relatively high skills are more often observed among participants of formal training courses at the highest possible level. Also comparable to what we have seen for participation, the relationship between level choices and labour market experience is anything but clear. Finally, part-time workers are more often found in courses at highest level than full-time working individuals. However, we observe no significant association with temporary contracts.

Results – Intensity of non-formal training

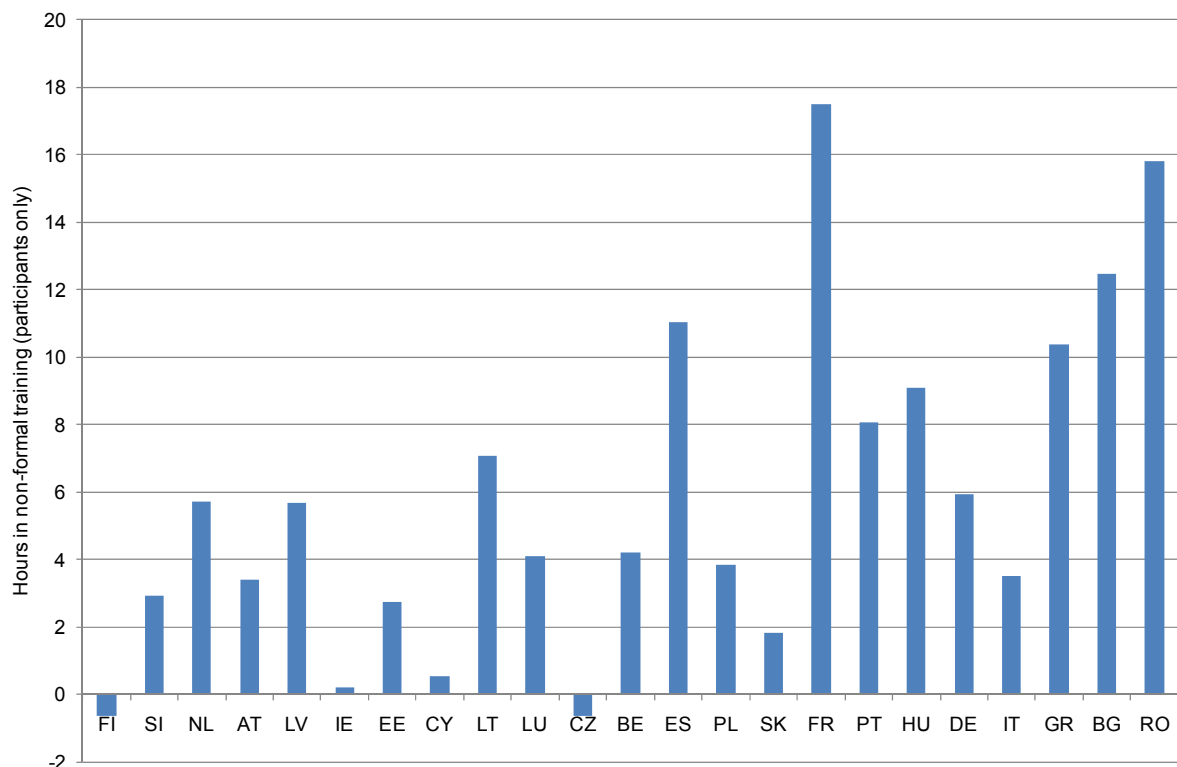
For the intensity of non-formal training, which is measured by the hours spent in non-formal training activities during the month preceding the interview, we estimate two econometric models. The first model is restricted to participants only, i.e. individuals reporting strictly posi-

tive hours of training activities. This model is estimated by OLS. As an alternative, we also implement a Tobit-model, which is an amalgamation of the participation decision and the choice of training intensity. In the latter, the outcome measure of all non-participants is set to zero and these individuals are incorporated in the estimations. Thus, the first (OLS-) model delivers results conditionally on a positive participation decision, whereas the second (Tobit-) model implicitly accounts for the participation decision.

The estimation method has a substantial impact on derived results. With respect to country-specific intensities the OLS-model delivers comparable results to what we have seen for the choice of formal education levels. That is, countries with relatively low participation rates exhibit comparatively large non-formal training intensities, even after controlling for the large set of socio-demographic, household and job-related characteristics of the individuals. This is illustrated in Figure 6.19. By contrast, the Tobit-model, which implicitly accounts for the differences in participation propensities, suggests a For instance, the estimated country difference between the United Kingdom and Bulgaria in the OLS-model indicates that the average Bulgarian *participant* exhibits a higher training intensity of 12 hours, whereas the Tobit-model suggests that the average Bulgarian *worker* display a lower intensity of 52 hours.

Figure 6.19

Country differences in hours spent in non-formal training (among participants) relative to the United Kingdom



Source: EU-LFS, own calculation.

The differences in results due to the econometric model also very pronounced with respect to level of completed education, for which we observe no systematic profile in OLS-model, but significantly lower training intensities for lower levels of human capital endowment in the Tobit-model. Furthermore, the estimated associations change their signs for many other individual characteristics (among them gender). There are two notable exceptions. OLS- and

Tobit-model indicate the same relationships between training intensity on the one hand and temporary contracts as wells the indicator for divorced/widowed workers on the other hand.

Results – Field of non-formal training activities

For around 20% of all participants in non-formal training activities the respective field is either unknown or coded as general. This share is, however, almost exclusively driven by respondents from the UK, where almost 77% of all answers are recorded as unknown or general. In all other countries this share varies between 0.7% and around 11% (except the Netherlands with 36%). The three most frequently chosen fields of non-formal training activities with participation rates of around 17-19% for the total population are “education and languages”, “sciences, engineering, computers, and agriculture” and “social sciences, business and law”. However, for these three fields we observe substantial differences with respect to gender. Whereas participation in “education and languages” is dominated by females, the opposite holds for “sciences, engineering, computers, and agriculture”. By contrast, participation rates in courses devoted to “social sciences, business and law” are equally distributed across gender. The training fields “health and welfare” as well as “services” exhibit considerably lower participation rates than the above mentioned. Again, the differences with respect to gender are pronounced. Participation in “health and services” is two time higher for women than for men. Courses in “ser-vices” are, by contrast, considerably more often attended by males.

Furthermore, our investigations suggest that non-formal training in “education and languages” is especially popular in the Central and Eastern European countries with participation rates reaching 50% in the Czech Republic and almost 40% in Hungary and Slovakia. This is presumably due to the fact that individuals in the New Member States invest into learning the most prominent community languages English, French and German.

Courses in “social sciences, business and law” are relatively often attended in Cyprus, Germany, Estonia, Finland, France, Lithuania and Latvia with participation shares of 26-28%. Hence, in a wider sense business related activities seem to be popular in more mature Member States, but also in the Baltic States. Belgium, Bulgaria, Germany, Finland, France, Greece and Romania exhibit a comparatively high share of participants in courses devoted to “sciences, engineering, computers, and agriculture” with 22-30% of all participants in non-formal training activities. Again, this group consists of Old Member States as well as countries which enter the Union recently. Participation shares in programs regarding “health and welfare” are considerably above the EU-LFS-average in Germany, Italy and Lithuania only, whereas non-formal training in “services” related activities are especially popular in Austria, France, Greece, Latvia and Slovakia.

7. Task 6: Intra-EU Mobility and Migration

This section summarizes the results of our empirical investigations with respect to intra-EU mobility and migration, i.e. task 6 of the overall study. Section 7.1 explains the background and objectives of the analyses. In Section 7.2 we briefly delineate the peculiar data situation, especially with respect to country and year coverage. An overview on the empirical strategy of the work conducted in this task is provided in section 7.3. In section 7.4 we present the empirical results which comprise a descriptive overview together with the results of the econometric analyses. Finally, Section 7.5 provides a brief outlook regarding the remaining working steps in this task.

7.1 Background and Objectives

Since the end of the Second World War societies in Europe have transformed their composition to a very large extent. In particular, many societies in Europe have been shaped by their intense and multi-faceted immigration experience, leading to the heterogeneous societies we observe today (see e.g. Chiswick and Hatton 2001). Certainly, much of this change is a reflection of international developments, most notably European economic and political integration, but also the demise of socialism in Eastern Europe, the consequences of post-war baby booms and baby busts, and the ensuing population ageing (for an overview see e.g. Fertig and Schmidt 2002).

Furthermore, the situation in many European labor markets is characterized by rather high average unemployment. However, there is simultaneously a shortage of high-qualified labor in many countries. Hence, many observers argue for an immigration policy directed at actively recruiting highly qualified workers from abroad (see e.g. Zimmermann et al., 2002, European Commission 2008). This position reflects the perception that the industrialized countries are involved in a constant competition for high-skilled workers (for an overview on high-skilled migration see e.g. Regets 2001). Whereas immigration from non-EU countries is regulated by different national laws, within Europe the legal arrangements facilitate this competition. Article 39 of the EC Treaty elevated the free movement of people within the European Union to one of the fundamental freedoms, with a transition period for the most recent Member States though, and, thus, has smoothed the way for labor migration across national borders in the EU. In addition, the European Commission launched several initiatives for a common immigration policy with the aim of strengthening the cooperation of Member States in the policy field of immigration (for more details see European Commission 2008).

Nevertheless, mobility within the European Union is still rather low (see Bonin et al. 2008). The reasons for this phenomenon are unclear, however, since the determinants and consequences of intra-EU-migration are widely unresearched. Following Fertig and Schmidt (2002) economic research concerning migration issues can be conceptualized into three broad fields, each of them interrelated with each other. All these research areas carry important implications for immigration policy. These fields may be described by the following set of research questions:

1. Which factors determine the decision to migrate, i.e. which are the motives or driving forces behind observed immigration flows? Since the decision to migrate is in all likelihood the outcome of a systematic process, the characteristics of those who decide

to move to a new destination are hardly a random sample of the indigenous population of neither the country of origin nor the destination country. Understanding the composition of migration flows seems therefore to be an important prerequisite for the analysis both of migrant performance and the impact of immigration, which are the remaining two aspects of economic migration research.

2. Which factors determine the economic performance of immigrants in the destination country, i.e. do migrants' wages, employment prospects or the risk to depend on welfare payments converge or diverge to those of comparable natives with the duration of residence and what are the reasons for these developments?
3. Which factors determine the economic impact of immigration on the destination country as a whole or on the population of the destination country, i.e. does immigration, for instance, exhibit a significant impact on the age structure of the destination country's society or does it reduce the wages or employment prospects of, say, low-skilled natives or resident migrants of preceding entry cohorts, and if so, what are the mechanisms at work?

These three areas are interrelated with each other and exhibit a close connection to immigration policy. The composition of immigration flows can, at least in principle, be regulated by different policy regimes yielding a different skill or country-of-origin mix of observable inflows. Since formal and informal human capital endowments determine the economic performance of immigrants in the destination country, and the transferability of these endowments may vary with the country of origin, immigration policy plays a decisive role for the economic performance of immigrants. Moreover, economic prospects of immigrants and the impact of immigration on the destination countries' economies are certainly closely related and might exhibit repercussions on the decision of potential migrants to enter the country.

Against this background, the investigations summarized in this section contribute to the first set of research questions by providing a statistical portrait of (i) migration *flows into* EU Member States, (ii) migration *flows within* EU Member States (between two adjacent years), (iii) the *stock* of immigrants living in these countries as well as (iv) *cross-border commuters*, i.e. individuals who live in a specific Member State but work in another. Specifically, we aim at determining whether and to which extent country-specific peculiarities in migration activities react sensitive to the inclusion of individual characteristics and aggregate data. Our estimation results suggest that the country-specific indicators are extremely robust towards the inclusion of additional information. Hence, international as well as internal migration are to a very large extent determined by factors peculiar to the specific countries, which can by and large not be attributed to observable country characteristics. This confirms central findings of earlier contribution using aggregate data only (see Fertig 2001, Fertig and Schmidt 2000).

Thus, we observe considerable path dependence (including country-specific return migration, see e.g. Dustmann 1996) which are specific to the different countries and cannot easily be traced back to the economic conditions or the labor market situation of this country. Finally, we also document that the duration of residence in the country plays an important role for the relative (un-) employment experience of migrants. Again, this is a well-known fact from the literature on labor market performance of migrants (see the seminal papers by Chiswick 1978, and Borjas 1987; for a more recent application to Germany see Fertig and Schurer 2007). The remainder of this chapter is organized as follows: In the next section we present out investigations with respect to indicators capturing international migration activities into EU

member States. Section 7.3 is devoted to internal migration within the sample countries of the EU-LFS. The phenomenon of working abroad or cross-border commuting is investigated in Section 7.4. Finally, Section 7.5 provides a summary and some conclusions.

7.2 International Migration

7.2.1 Data and empirical strategy

Available and missing data

Theoretically, the EU-LFS data allow constructing a large set of indicators on international migration using the information on country of residence one year before the survey (COUNTRY), nationality (NATIONAL), country of birth (COUNTRYB) and years of residence in a specific Member State (YEARESID). These variables can, in general, be used separately to construct migration indicators. For instance, short-term migrants can be identified as individuals who report another country of residence one year before the interview than their current country of residence. Or individuals reporting another nationality than that of their country of residence can be identified as foreigners. Clearly, the combination of these two indicators can, in principle, provide additional valuable information, e.g. on short-term migration flows of foreigners. Other combinations of the above mentioned variables are easily imaginable.

However, practically the set of indicators is limited by missing country-year pairs on single variables and the incomplete overlap of the different variables. This problem is documented in Table 7.1 which provides the years of *missing* information for the 26 EU-LFS-countries. From this table it becomes transparent that information on the country of residence one year before the interview is completely missing for the following Member States: Bulgaria, Czech Republic, Hungary, Ireland, Lithuania, Latvia, Poland, Romania, Slovenia and Slovakia. Thus, the majority of data gaps apply to the new Member states from Central and Eastern European.

Furthermore, the table also documents that data coverage for the nationality of individuals often does not coincide with years for which short-term migration information is available. The same holds, though to a lesser extent, for the comparison of available information on country of birth and nationality. Country of birth information is very often missing for the years 2004-2008 which results in a sharp drop of observations for this time period (see also below). Hence, for the empirical analyses on migration many potential indicators cannot be considered since the number observations is too low to provide a stable fundament (see also below).

Empirical strategy

The empirical analyses aim at providing a statistical portrait of international migration to the EU. To this end, we focus on the determination of country-specific fixed effects which capture time-invariant factors peculiar to a specific European country. Since the different countries display different regulations with respect to immigration and, thus, look back on a specific immigration history, it seems natural to expect that migration is a phenomenon which is dominated by country-specific peculiarities. Hence, after providing a descriptive overview for *all potential* indicators of international migration we start the econometric investigations for

Table 7.1
Missing information for migration background variables by countries

Country of residence	Nationality	Country of birth	Country of residence one year before interview	Years of residence
AT	2004-2008	2004-2008	./.	./.
BE	2004-2008	2004-2008	./.	./.
BG	1998-2000 & 2004-2008	1998-2005	1998-2008	1998-2005
CY	1998 & 2004-2008	2004-2008	1998	1998
CZ	2004-2008	1998-2008	1998-2008	1998-2001
DE	1998-2001 & 2004-2008	1998-2001	1998-2001	1998-2001
DK	1999, 2001, 2003	./.	./.	./.
EE	1999-2002	1999-2003	./.	./.
ES	2004-2008	2004-2008	./.	./.
FI	./.	./.	./.	./.
FR	2003-2008	./.	2003-2005	./.
GR	2004-2008	2004-2008	./.	./.
HU	1998-2003	1998-2003	1998-2008	./.
IE	2003	./.	1998-2008	2007
IT	1998-2004	1998-2003	./.	./.
LT	2004-2008	2004-2008	1998-2008	./.
LU	2004-2008	2004-2008	1999	./.
LV	1998-2003	1998-2003	1998-2008	1998-2001
NL	./.	./.	2000-2005	./.
PL	1998-2003	1998-2003	1998-2008	1998-2003
PT	1999-2000 & 2004-2008	2004-2008	./.	./.
RO	1998-2003	1998-2003	1998-2008	1998-2004
SE	2000-2008	./.	2005	./.
SI	1998-2003	1998-2003	1998-2008	1998-1999
SK	2003	1998-2003	1998-2008	1998-2002
UK	./.	./.	1998 & 2008	./.

selected indicators by estimating a baseline specification with country- and time-specific fixed effects only (baseline specification). These indicators are selected on this basis of data availability considerations, i.e. only indicators for which a stable and solid data base is available. The baseline specification is then extended successively by adding observable characteristics of the individuals and, finally, also aggregate data for the countries. The presentation of results focuses on the changes in the estimated country-specific intercepts.

Specifically, we use EU-LFS data on the various migration indicators for the time period from 1998 to 2008 with varying country coverage. For this sample period, we construct the

following set of potential indicators of international migration to the EU as outcome variables in our analyses:

4. *(Short-term) Migrant*: Indicator variable taking on the value of 1, if an individual residing in a specific country lived in another country one year before the interview; 0 otherwise.
5. *(Short-term) Intra-EU-migrant*: Indicator variable taking on the value of 1, if a *Migrant* relocated from another EU27-country; 0 otherwise.
6. *(Short-term) Migrant from outside EU*: Indicator variable taking on the value of 1, if a *Migrant* relocated from a country outside the EU27; 0 otherwise.
7. *Born outside country of residence*: indicator variable taking on the value of 1, if an individual was born outside his/her country of residence; 0 otherwise.
8. *Foreigner*: Indicator variable taking on the value of 1, if an individual does not hold the citizenship of his/her country of residence; 0 otherwise.
9. *Second-generation foreigner*: Indicator variable taking on the value of 1, if a *Foreigner* is born in his/her country of residence; 0 otherwise.
10. *Very recent immigrant*: Indicator variable taking on the value of 1, if a *Foreigner* resides in his/her country of residence for two years or less; 0 otherwise.
11. *Recent immigrant*: Indicator variable taking on the value of 1, if a *Foreigner* resides in his/her country of residence for more than two but less than eleven years; 0 otherwise.
12. *Past immigrant*: Indicator variable taking on the value of 1, if a *Foreigner* resides in his/her country of residence for eleven years or more; 0 otherwise.

The set of individual characteristics used to portray the different migration groups comprises three sub-sets which contain the following indicators:

Individual socio-demographic characteristics:

6. Gender: Indicator variable taking on the value of 1, if an individual is male; 0 otherwise.
7. Age in groups: Indicator variable taking on the value of 1, if an individual belongs to a specific age group; 0 otherwise. These groups comprise 15-24, 25-49 and 50-65.
8. Level of completed education: Indicator variables taking on the value of 1, if an individual's highest level of completed education corresponds to (i) ISCED 1 or lower, (ii) ISCED 2, (iii) ISCED 3 or ISCED 4, (iv) ISCED 5 or 6; 0 otherwise.
9. Marital status: Indicator variable taking on the value of 1 if an individual is married; 0 otherwise.

Household characteristics (due to the missing information this is used very restrictively):

4. Household size: Number of individuals living in the household of the interviewed person.
5. Labor market status of household members: Number of employed individuals living in the household of the interviewed person.
6. Children in need for care: Number of children younger than four years of age living in the household of the interview person.

Labor market- and job-related characteristics (for employed individuals only):

6. Occupation: Indicator variables taking on the value of 1 if an individual's job corresponds to ISCO1 or ISCO2 or ... ISCO9; 0 otherwise. ISCO comprise the following occupations: ISCO1: Legislators, senior officials and managers; ISCO2: Professionals; ISCO3: Technicians and associate professionals; ISCO4: Clerks; ISCO5: Service workers and shop and market sales workers; ISCO6: Skilled agricultural and fishery workers; ISCO7: Craft and related trades workers; ISCO8: Plant and machine operators and assemblers; ISCO9: Elementary occupations.
7. Part-time job: Indicator variable taking on the value of 1, if an individual works part-time; 0 otherwise.
8. Temporary contract: Indicator variable taking on the value of 1, if an individual holds a fixed-term work contract; 0 otherwise.

Since all outcomes are binary, we estimate *Probit* models and report marginal effects (instead of hard-to-interpret coefficient estimates) together with the corresponding t-values for the null hypothesis that the estimated marginals are zero. In all estimations, we control for the clustering of standard errors by country, i.e. we allow observations within a specific country to be correlated due to unobservables (e.g. common labor market institutions or culture). Moreover, we use person weights in all regressions. For all individual characteristics modeled by more than one indicator (e.g. education, age or occupations) and the country-specific intercepts we also perform pair-wise tests of equality. Due to the large sets of disjoint indicator groups this amounts to more than 300 tests in some specifications. Hence, to keep the exposition clear and concise we will not report the full set of test statistics. Rather, we will highlight the most important findings of the test batteries in the discussion of estimation results.

7.2.2 Descriptive overview

(Short-term) Migrants

The number of individuals which can be identified in the EU-LFS data as relocating to a sample country between two survey years is in general very low. Table 7.2 documents the absolute number of migrants for each year and country, i.e. the number of observations in the dataset, for those countries with valid information at all. That is, we omitted all countries with completely missing information (see above Section 7.2.1). From this table two important things become transparent. Firstly, for some country-year pairs the number of migrants which can be identified in the data is extremely low. For instance, we observe less than ten migrants in Estonia for 2000-2004, in Belgium for 2000-2001 and in Finland for 2007. Less than 50 migrants can be observed for 35 country-year pairs in total (ignoring all zero observations); adding all country-years pairs with zero migrants the number of cells with less than 50 observations amounts to more than 60.

It is difficult to assess whether and to which extent the small number of migrants which can be identified in the EU-LFS data is simply a reflection of reality, i.e. essentially low migration flows, or the results of some recording problem, e.g. due to the problem to get hold of someone who arrived rather recently in a specific country. On average across all countries and survey years, slightly less than 0.3% of all individuals in the EU-LFS move into a sample

Table 7.2
Total number of migrants in EU-LFS by country
 1998-2008

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
AT	227	163	124	129	155	111	339	728	394	444	398
BE	61	24	2	8	50	46	70	287	290	338	318
CY	0	70	164	202	169	217	201	691	670	697	765
DE	0	0	0	0	701	677	606	1,112	98	85	103
DK	50	46	43	41	41	26	36	126	97	179	102
EE	29	28	6	3	2	1	2	23	43	43	28
ES	76	79	117	200	247	252	285	1,294	253	251	208
FI	31	46	37	39	34	24	26	47	28	5	0
FR	388	434	506	490	501	0	0	0	148	410	382
GR	149	65	93	91	70	54	73	272	142	206	198
IT	177	198	66	174	183	145	75	275	320	487	568
LU	0	0	59	54	38	9	40	196	352	39	38
NL	124	128	0	0	0	0	0	0	46	45	84
PT	73	70	66	74	126	97	76	272	232	281	296
SE	0	0	0	0	0	0	0	0	88	75	125
UK	0	64	65	58	69	64	136	125	125	546	0

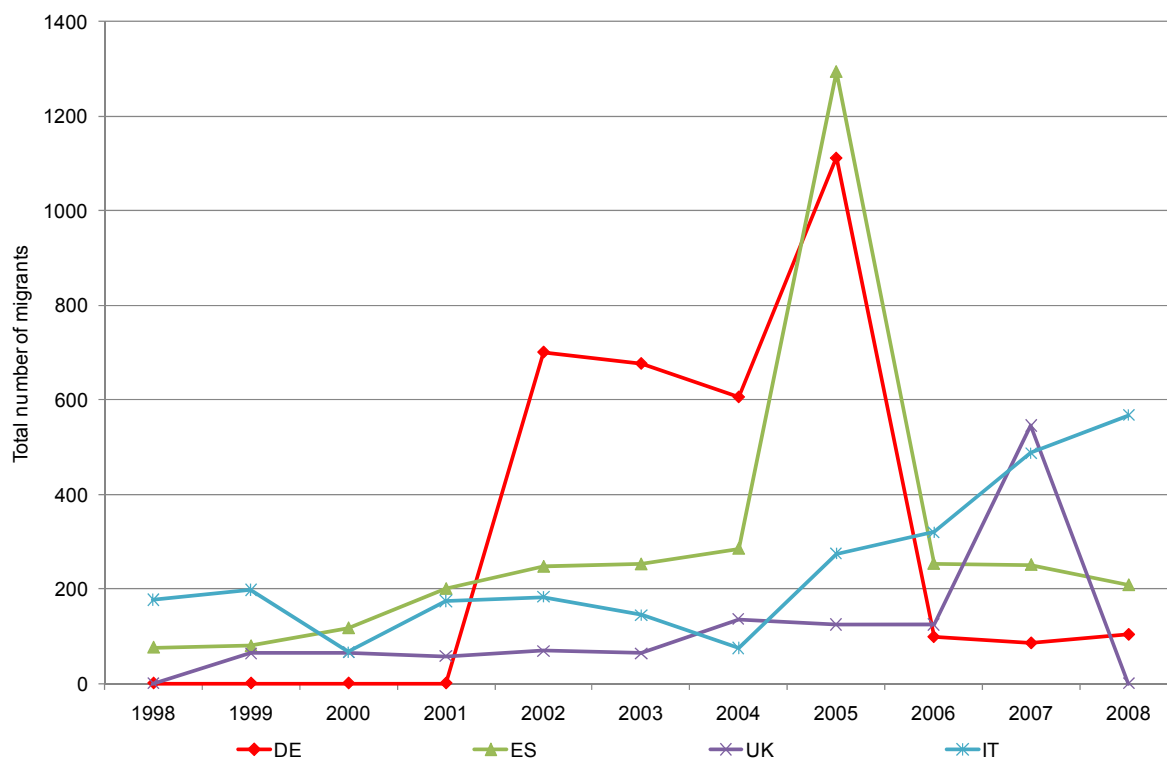
Source: EU-LFS, own calculations.

country between two survey years. This number by and large corresponds to what we know about migration activities in Europe from aggregate data (see e.g. Bonin et al. 2008 or Fertig 2001).

A second important point documented in Table 7.2 is the fact that the absolute number of migrants exhibits a rather strange pattern across time for many countries. In other words, there are countries for which we observe extremely large increases from one year to another and a sharp drop back another year later. Four striking examples are illustrated in Figure 7.1. The German sub-sample of the EU-LFS, for instance, contains around 700 migrants in the first sample year (2002; there is no information for Germany prior to 2002). The number of observations then reduces to around 600 in 2004 and almost doubles in 2005. In 2006 it then drops to less than 100. A comparable peak in 2005 can be observed for Spain. Here, however, the number of observations in 2006 reduces to the base level of 2004. Italy and the United Kingdom exhibit completely different patterns than Germany and Spain and also differ from each other.

For all other countries we observe similarly erratic numbers of observations over time. In the vast majority of cases, the development of the total number of migrants is accompanied by a similar development of overall sample sizes and thus the (weighted) share of migrants relative to total population is considerably more robust over time. However, we cannot preclude that the temporal variation in migrant flows is contaminated by some recording problem.

Figure 7.1
Total number of migrants in EU-LFS for selected countries 1998-2008



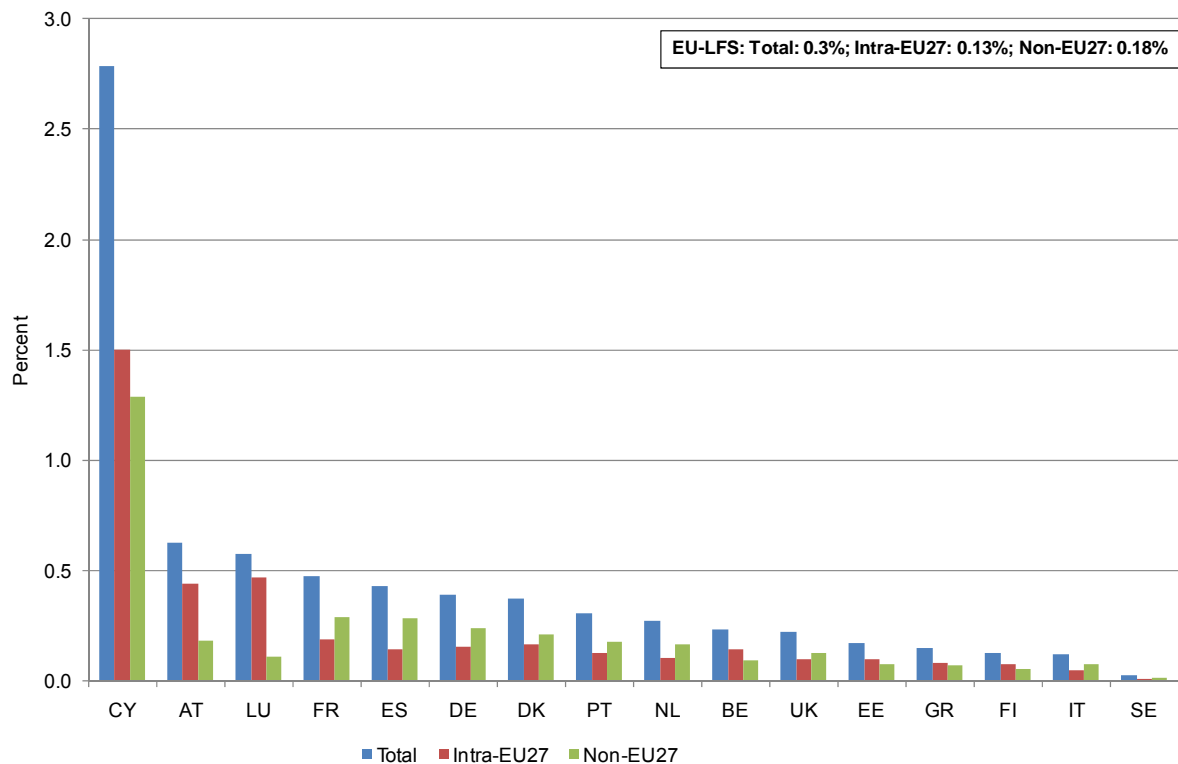
Source: EU-LFS, own calculations.

Figure 7.2 illustrates the average shares of migrants relative to the total population of the destination country. As already mentioned above, the EU-LFS average across all countries and survey years is nearly 0.3%. The majority of these migrants, i.e. almost 60%, relocate from outside the EU27 to a sample country. Cyprus clearly holds an exceptional position in this context. Relative to its population the country experienced an annual immigration rate of around 2.8% in the ten years period 1999-2008 and, thus, almost ten times the EU-LFS average. Cyprus is also exceptional with respect to the composition of migrant flows. Contrary, to the EU-LFS average the majority of migrants to Cyprus relocate from another EU27-country. The latter can also be observed for Austria and Luxembourg, i.e. two countries with clearly above average migration flows as well. In all other countries with above average migrant shares, i.e. France, Spain, Germany and Denmark, the composition of migration flows is dominated by non-EU27 countries.

Within the group of countries displaying around-average migration flows, i.e. Portugal, the Netherlands, Belgium and the United Kingdom, the composition of immigrants is also dominated by individuals from non-EU27 countries with the exception of Belgium. Finally, the figure indicates that migration flows among sample countries (with valid information) are the lowest in Estonia, Greece, Finland, Italy and Sweden. In this group the differences between migrants from other EU27- and non-EU27-countries is hardly visible for all countries except Italy, for which the number of non-EU27 migrants is almost twice the number of individuals relocating from another EU27 Member State.

Figure 7.2

Shares of migrants relative to total population by country 1998-2008



Source: EU-LFS, own calculations.

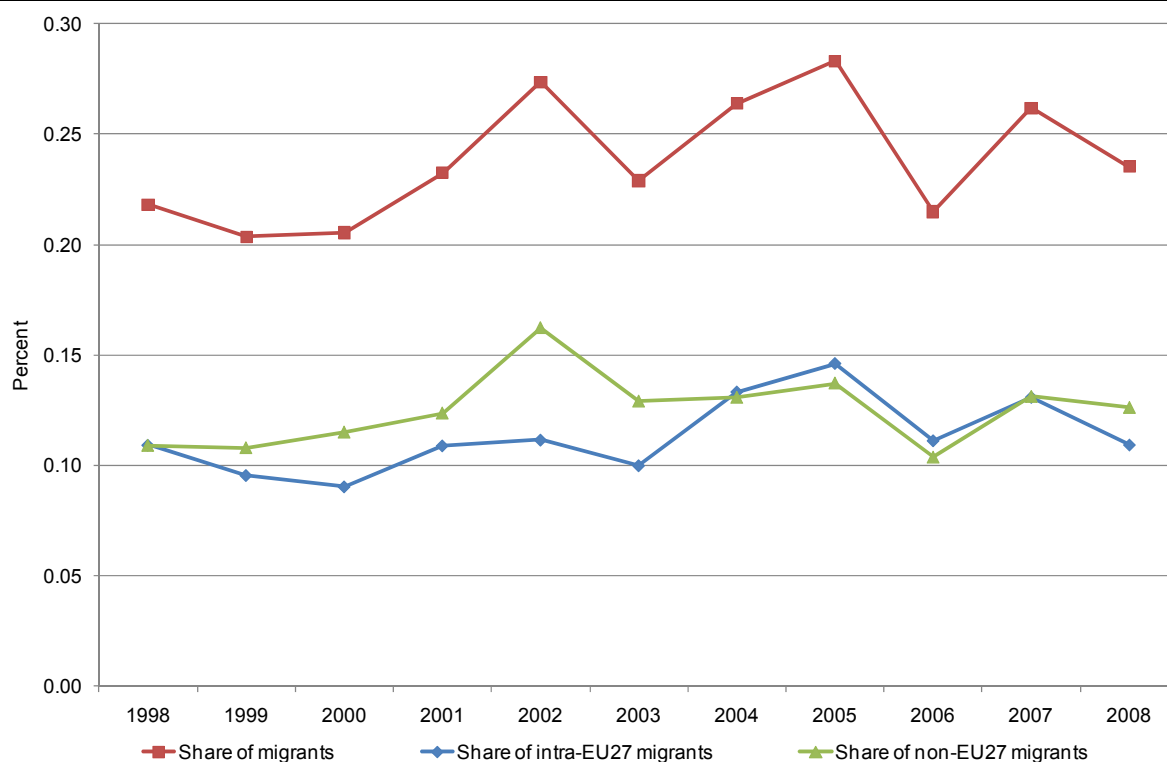
Figure 7.3 documents the development of migrant shares over time. This figure indicates quite substantial variation over the sample years with an increase of migration flows from 1999 to 2002 which is followed by almost yearly up and down movements around an annual total migration flow of 0.25%. The pattern in total migration over time can also be found for intra-EU27 and non-EU27 migration, though somewhat smoother. Furthermore, it becomes transparent that migration flows from outside the EU27 exceeded those within the EU27 prior to 2003. In the years thereafter we hardly observe any difference in the composition of migration flows. Whether and to which extent the temporal variation in observed annual immigration to sample countries is the reflection of “true” developments and/or the result of varying sample sizes across time is extremely difficult to assess.

Against the background of the above documented data problems, econometric estimations of short-term migration flows would rest on a rather shaky fundament since the number of observations documented in Table 7.2 becomes even lower the more individual characteristics are considered due to missing information on these describing variables. Hence, we abstain from providing econometric estimation results for these indicators. Rather, we will focus on the stock of migrants which can be approximated in the EU-LFS by different indicators.

Approximation of Migration Background by Nationality, Country of Birth and Years of Residence

Using EU-LFS data the stock of migrants can be approximated by (i) non-nationals living in the sample countries, (ii) individuals born outside their country of residence and (iii) the combination of the latter two indicators. Clearly, all these indicators are only an imperfect approximation since they do not properly represent naturalized persons or individuals holding the

Figure 7.3

Temporal variation in shares of migrants relative to total population

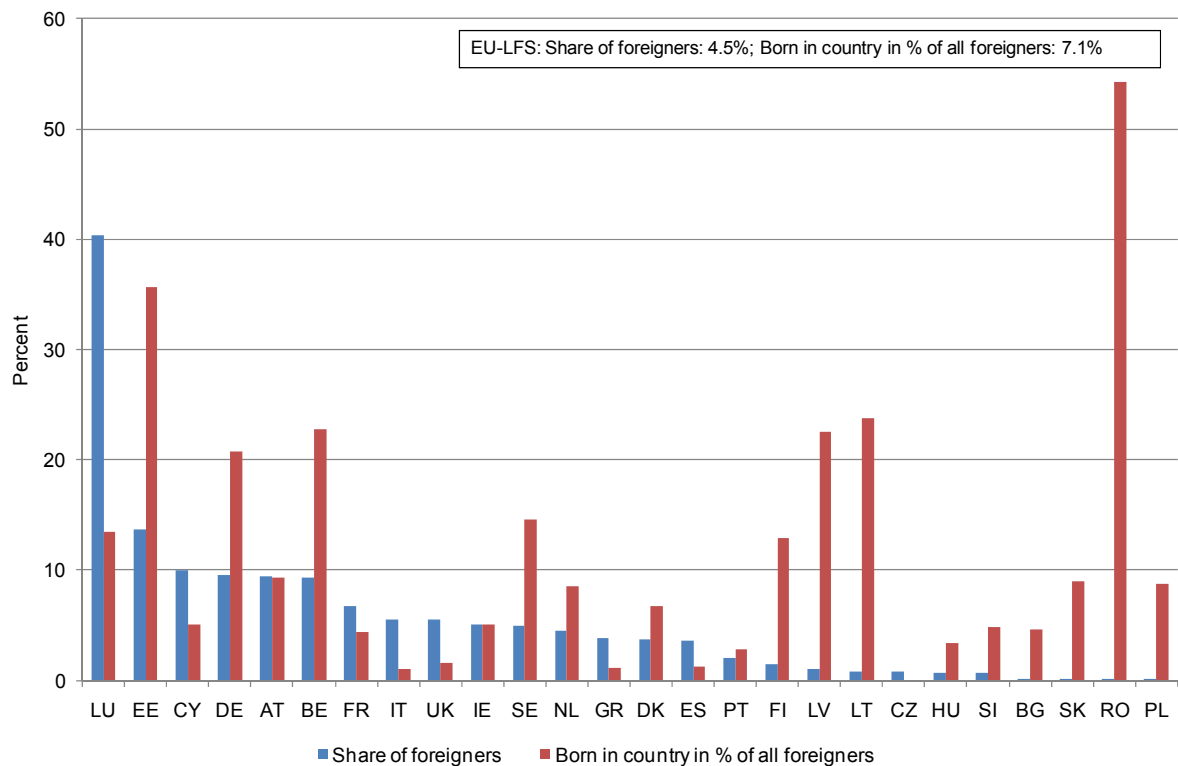
Source: EU-LFS, own calculations.

citizenship of their country of residence but whose parents immigrated. Thus, the concept of migration background in a wider sense cannot be modeled with EU-LFS data. Rather, we have to follow the restrictive and traditional concepts.

The first thing one has to note with respect to the variable nationality is the relatively low number of non-national observations for some country-year pairs. For instance, in Bulgaria we observe only 25 foreigners in 2008. In Latvia, Poland, Romania, Slovenia and Slovakia the number of foreigners in the dataset varies between 35 and 55 in the sample year 2004. In all of these countries the number of foreigners is three to four times higher in all other sample years (for which the variable on nationality is filled at all). Thus, the empirical base for some country-year pairs is again rather small and the temporal variation for some countries hard to explain.

Overall, the average share of foreigners in the EU-LFS data amounts to 4.5% of total population across all countries and sample years (see Figure 7.4). Without Luxembourg where the foreigner share lies over 40% and is, hence, exceptional throughout the EU, the population-weighted average share of non-nationals residing in our sample countries is around 4.4%. Thus, by ignoring Luxembourg the weighted EU-LFS average is reduced only slightly. With almost 14% the second highest foreigner share in the data is displayed by Estonia, probably due to the Russian minority. Cyprus follows with around 10%. These three countries form the top three group with respect to the share of non-nationals. They are followed by the three larger EU Member States Germany, Austria and Belgium, all of them exhibiting foreigner shares around 9.5% of total population. With less than 7%, France is next in the country distribution and, thus, there is a clear drop in foreigner shares from Belgium to France. Similar

Figure 7.4
Foreigners by country 1998-2008



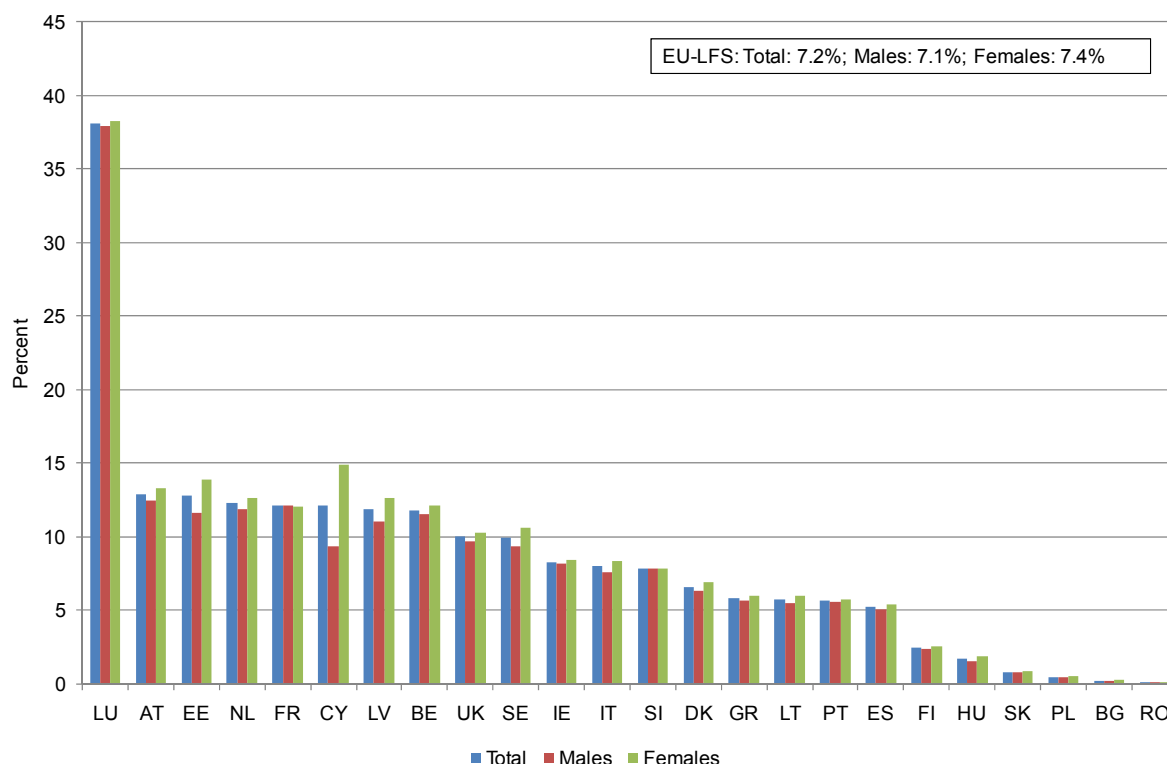
Source: EU-LFS, own calculations.

to that, there is again a rather pronounced decline in the share of non-nationals from France to Italy and the United Kingdom with 5.5% each. Following these countries, the population share of foreigners residing in the sample countries decreases rather steadily from Ireland (5.1%) to Poland, Romania and Slovakia at the end of distribution with 0.1% each.

Relative to the total population the share of foreigners born in the country (the second generation, for short) amounts to around 0.3%. Again, Luxembourg displays the highest share (5.4%), followed by Estonia with 4.9% as well as Germany and Belgium with around 2% each. In all other countries the share of foreigners who were born in the country of residence is less than 1% of the total population. Hence, relative to total population the country ranking is comparable to what we have observed so far, though much more compressed. This picture, however, changes substantially as soon as we look at the share of foreigners born in the country relative to all foreigners residing there. This is the second series provided in Figure 7.4. From that it becomes transparent that immigration to Luxembourg is much more dominated by individuals directly migrating to the country than, for instance, that of Estonia, Germany or Belgium. In the latter countries a substantial share of foreigners (more than one fifth in each country) is born in the country of residence and, thus, possesses no personal migration experience. By contrast, the share of second generation foreigners in the United Kingdom is less than 2% of all foreigners which is probably due to the *ius solis* citizenship law.

Thus, the country-specific history of migration together with national citizenship laws is reflected rather clearly in the number of second generation foreigners among all foreigners. This indicator is exceptionally high in the Baltic States and Romania due to a substantial share of country-specific minorities among the population of non-nationals living in these

Figure 7.5
Share of individuals not born in their country of residence by country 1998-2008



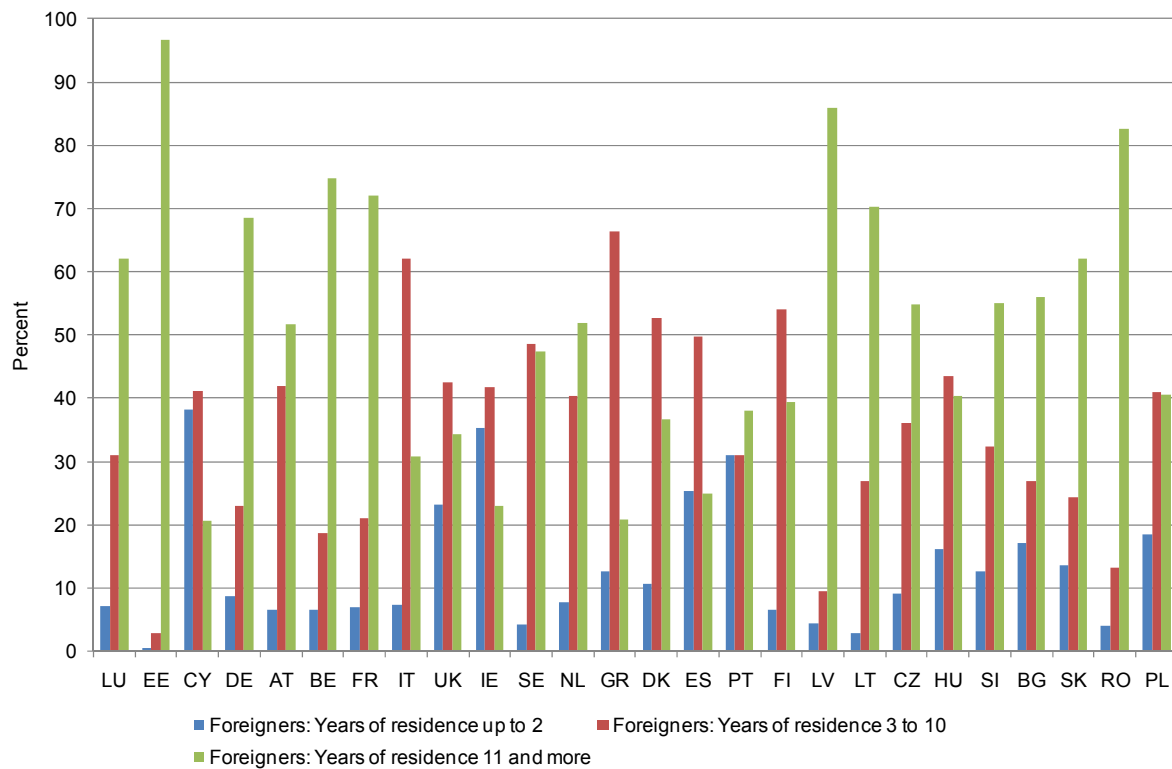
Source: EU-LFS, own calculations.

countries. By contrast, it is very low in Italy, Greece and Spain, i.e. three countries who used to be emigration countries in the past and transformed to immigration countries rather lately. It is also very low in the United Kingdom due to its citizenship regulations.

The second approximation of migrant stocks within the EU, i.e. the population share of individuals not born in their country of residence is illustrated in Figure 7.5. Unsurprisingly, Luxembourg again exhibits the highest share of immigrants defined as individuals who were not born in the country in percent of the population aged 15-65. With around 37% population share Luxembourg exceeds to EU-LFS-average by more than five times. Clearly, above-average immigrant shares are also observed for Austria, Estonia, the Netherlands, France, Cyprus, Latvia, Belgium, the United Kingdom and Sweden. Furthermore, it becomes transparent that Cyprus is unique in the sense that the country displays a remarkably larger share of immigrants among the female population than among males. On the other end of the distribution, the population share of individuals not born in their country of residence is clearly below 1% in Slovakia, Poland, Bulgaria and Romania, i.e., in Central and eastern European countries only.

The country-specific differences in immigration history and citizenship laws are also reflected by the distribution of years of residence among foreigners. Figure 7.6 illustrates this by dividing the information of years of residence which are right-censored at 11 years in the EU-LFS data into three groups. The first group comprises very recent immigrants with a duration of stay of up to two years. The second group is formed by recent immigrants with less than 11 but more than two years of residence in the country. The final group comprises all foreigners with eleven and more years. Thus, all foreigners born in the country and those who immigrated more than ten years ago are summarized in the latter group.

Figure 7.6
Years of residence of foreigner population by country 1998-2008

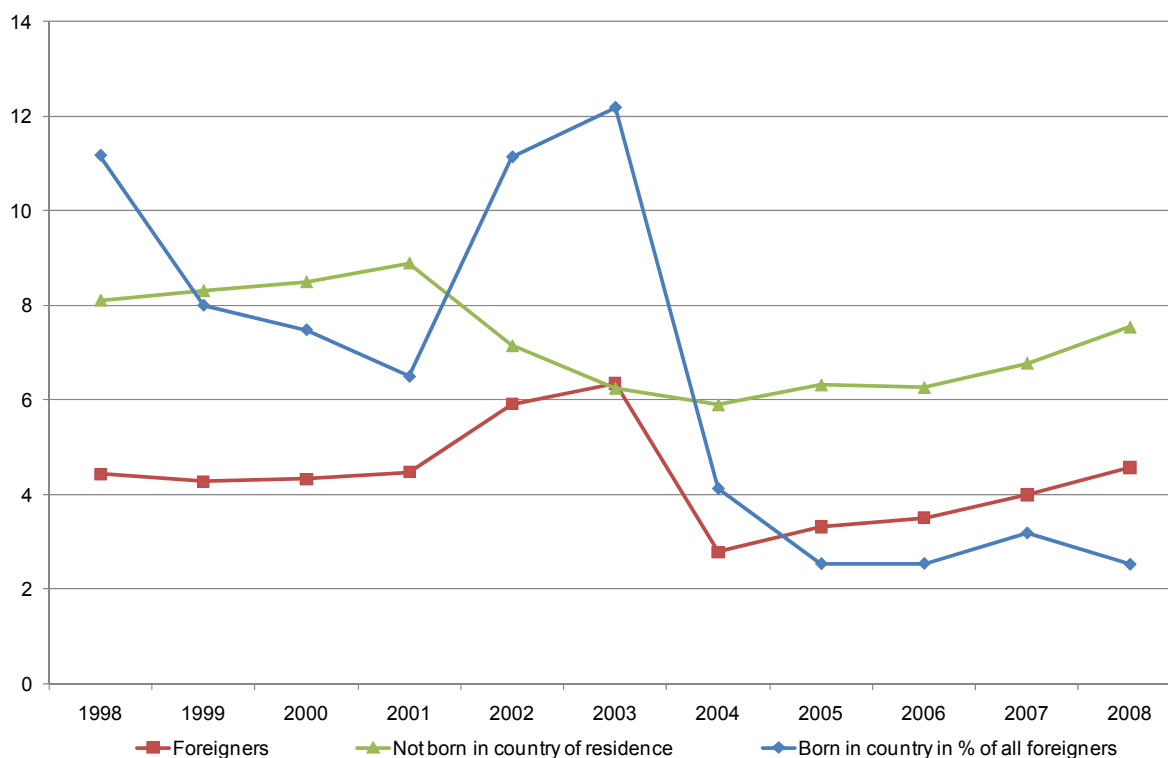


Source: EU-LFS, own calculations.

Figure 7.6 suggests that currently immigration activities are relatively high in Cyprus, Ireland, Portugal, Spain and the United Kingdom. In these three countries the share of very recent immigrants among all foreigners is 23% and higher (EU-LFS average: 14.3%). By contrast, this share is less than 5% in Estonia, Sweden, Latvia, Lithuania and Romania. On average and across all years, almost 40% of all foreigners in our sample live for more than two but less than eleven years in their country of residence. This share is relatively high in Italy, Greece and Finland reflecting their transformation to immigration countries in the recent past. The lowest shares are again displayed by Romania and the Baltic States. These four countries together with the “classical” European immigration countries Germany, Belgium, France and Luxembourg exhibit the highest shares of foreigners with the highest duration of residence. Whereas the EU-LFS average is around 46%, in the latter countries between 62% and 97% of all foreigners reside there for eleven years or more.

The temporal variation in (weighted) shares of foreigners and individuals born outside their country of residence is documented in Figure 7.7. From this it becomes transparent that missing country-year pairs together with varying sample sizes for the different countries is reflected in a rather odd development of the foreigner indicators across time. The overall share of foreigners is rather constant between 1998 and 2001, displays a moderate increase from 2002 to 2003 and a sharp drop in 2004. After that we observe a steady rise in this share back to the original level. The development for the share of individuals born outside their country of residence is comparable to that for the foreigners share, though on a higher general level. By contrast, the interaction of both indicators, i.e. the share of foreigners born in

Figure 7.7

Temporal variation in shares of foreigners and individuals born outside the country

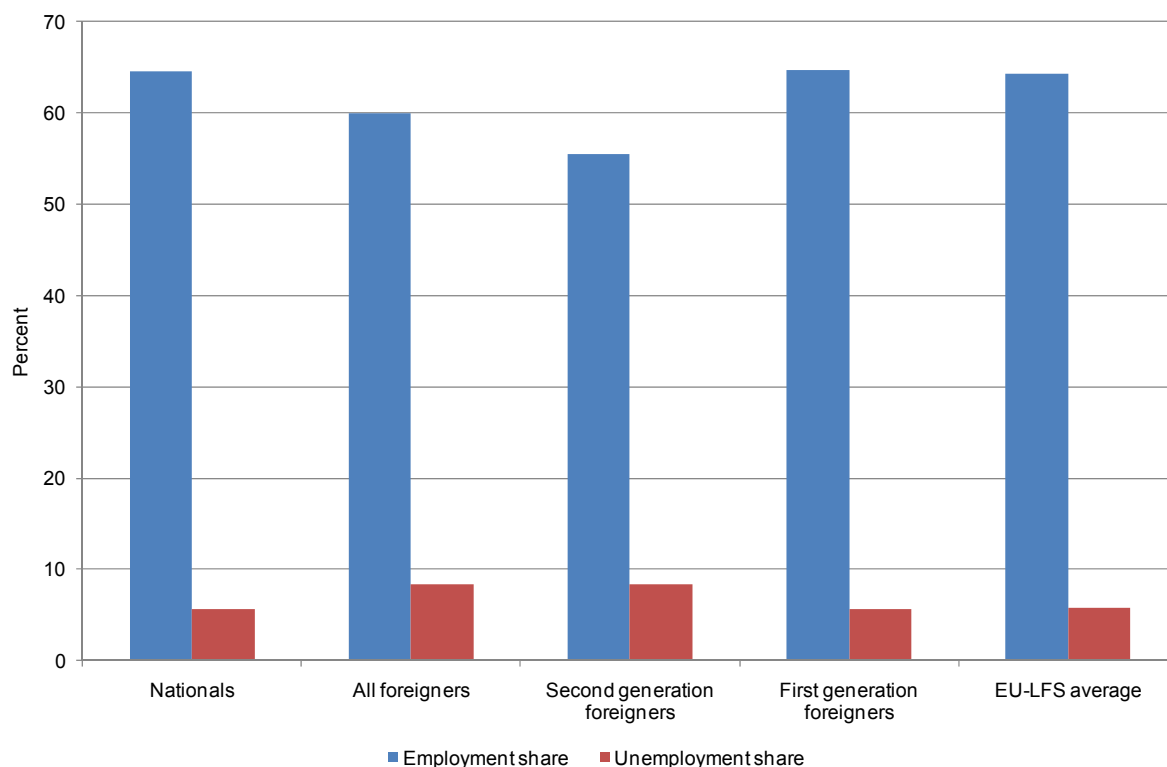
Source: EU-LFS, own calculations.

the respective country of residence, is extremely implausible. This share moves down between 1998 and 2001, sharply increases in 2002 and also in 2003, and drops to a completely implausible low level thereafter. Against the background of the selectively missing data for complete countries (see Table 7.1 above) this is certainly no reflection of reality but the manifestation of data coverage.

Hence, for the econometric portrait on migrant stocks across EU Member States we concentrate on the indicators “foreigner” and “born outside country of residence”, respectively, and omit the interaction of both of them, since even year-specific dummy variables will in all likelihood not remove the above documented data problems. Before moving to the econometric results, Figure 7.8 documents employment and unemployment shares among natives and foreigners. This figure indicates that there are substantial differences between foreigners who migrated to and those born in their country of residence. Whereas natives and first-generation immigrants display average employment shares of around 64.5%, only 55.5% of all foreigners born in the country are employed.

The lower employment shares of second-generation immigrants might be explained by the fact that they are – on average – younger than first generation immigrants. Thus, one might expect them to be more often in education (and hence counted as being inactive in the figure). However, on average they also exhibit significantly higher unemployment shares than first generation immigrants (8.4% compared to 5.6%). This might be interpreted as an indicator for dissimilation rather than assimilation in terms of economic prospects and is a matter of concern in many Continental European countries (see e.g. the contributions collected in the symposium on second-generation immigrants in the *Journal of Population Economics*, 2003).

Figure 7.8

(Un-) Employment shares – Natives vs. foreigners, 1998-2008

Source: EU-LFS, own calculations.

However, the data coverage problems documented in Figure 7.7 above which are especially pronounced for the country of birth information prohibits such strong structural conclusions. Indeed, taking into account time-fixed effects in the regression model entails remarkable differences to this purely descriptive picture (see below).

7.2.3 Econometric results

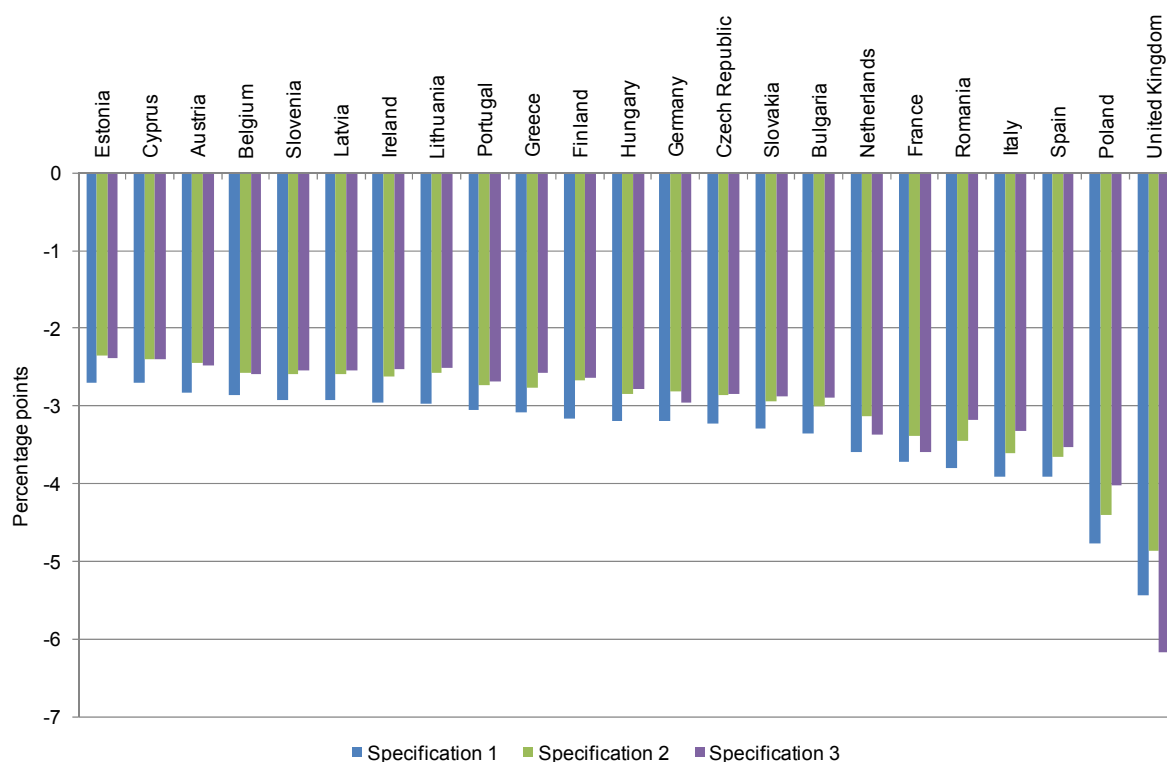
The presentation of our econometric results is structured along the following lines. In a first step we estimate several specifications for each outcome variable using the country- and time-fixed effects. In a second step, we successively add individual-level data. This exercise aims at investigating whether and to which extent the estimated country-fixed effects are sensitive with respect to the socio-demographic composition of migrant groups. Finally, we also extend the specifications by aggregate information for each and every country, again to check the robustness of country-specific intercepts.

Table A.7.1 in the appendix documents the results for three specifications with the indicator foreigner as the outcome variable. The first specification contains country- and time-fixed effects only. In the second specification the full set of individual and household characteristics is included in the model. Finally, for specification 3 the sample is restricted to employed individuals only and job-related characteristics are added to the model. The corresponding estimates for the country dummies are illustrated in Figure 7.9.

Quite unsurprisingly, all countries display significantly lower average foreigner shares compared to Luxembourg. As could be expected from the descriptive statistics presented above,

Figure 7.9

Estimated country fixed effects for foreigners – Deviation to Luxembourg



Source: EU-LFS, own calculations.

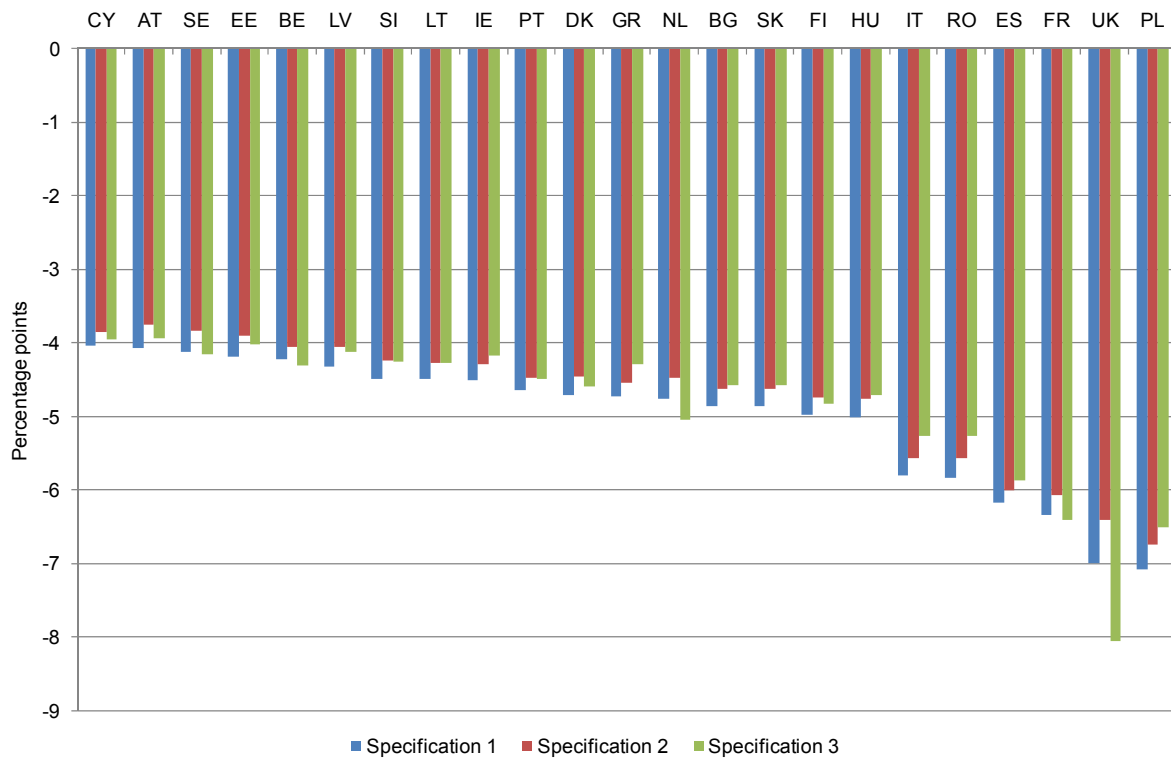
Estonia, Cyprus, Austria and Belgium are the countries with the smallest deviations from the reference country. In general, the differences to Luxembourg vary between 2.5 and 5.5 percentage points in the first specification. The pattern of country-specific deviations does not change much if control variables on the individual and household level are included into the model. In quantitative terms the differences to Luxembourg are reduced for all countries in the sample. Restricting the sample to employed individuals only, still does not remove the significant differences to the reference country. However, for some countries we observe an increase of the quantitative dimensions compared to specification 2. For Estonia and Austria differences increase only slightly; for Germany, the Netherlands and France the increase is rather pronounced; and for the United Kingdom the deviation to Luxembourg even exceeds that of the first specification. This suggests that in these countries the employment rate among foreigners is relatively low.

Furthermore, the results of specification 2 indicate that the average foreigner in our sample is rather young, displays either a very low level of completed education or a very high one, is significantly more often married than natives, and lives in households with higher numbers of young children. With respect to employment probabilities we do not observe significant differences between foreigners and natives. However, unemployment propensities are significantly higher among foreigners than among natives.

Finally, specification 3 indicates that among employed individuals only, the characteristics of foreigners are by and large the same as for all individuals. Still, they are younger and exhibit a higher probability to be married as well as to live in households with small children. By contrast to specification 2, the estimation results for the third specification suggest that employed

Figure 7.10

Estimated country fixed effects for share of individuals not born in their country of residence – Deviation to Luxembourg



Source: EU-LFS, own calculations.

foreigners do not display lower education levels than natives. Rather among employed individuals foreigners with ISCED3 or 3 levels of completed education can be significantly less often observed in the sample than among workers holding the highest level of education. Furthermore, compared to elementary occupations (ISCO9) foreigners have a significantly lower propensity to be observed in all other occupations. Specifically, the propensity to observe a foreigner in occupations requiring relatively high skill levels (ISCO1 to ISCO4) is comparatively low. For occupations from ISCO5 to ISCO8 the deviation to elementary occupations is still significant, but quantitatively less pronounced. In general, however, according to our estimates non-nationals are overrepresented in occupations with a rather low-level skill profile. This observation is in line with the significantly positive association between the foreigner and the temporary job indicator which suggests that the propensity of holding a fixed-term contract is systematically higher for foreigners than for natives.

Table A.7.2 in the appendix summarizes the results of three comparable specifications for the outcome variable “not born in country of residence”. Qualitatively, the results are by and large the same as those for foreigners. Specifically, the majority of the estimated associates for the socio-demographic and job-related characteristics suggest the same pattern. Moreover, the estimated country differences to Luxembourg (see Figure 7.10) are very much in line with those presented above. For some countries we can observe minor moves up or down the distribution, but the general pattern resembles that for foreigners. The most notable difference to the findings for foreigners is the significantly lower employment propensity for individuals who were not born in their country of residence. Hence, our results suggest that individuals not born in their country of residence exhibit a one percentage point lower employment propensity than persons who were born there.

Table 7.3
Estimated country differences to Luxembourg (specification 1)

	Up to 2 years		3-10 years		11+ years	
Cyprus	38.1	1	10.8	7	-35.2	25
Portugal	28.3	2	-0.8	15	-20.7	21
Ireland	28.2	3	5.9	9	-27.9	22
Spain	21.9	4	18.9	4	-32.9	23
United Kingdom	12.4	5	5.7	10	-16.2	20
Greece	7.7	6	34.6	1	-35.0	24
Poland	7.4	7	1.7	14	-5.1	13
Bulgaria	5.3	8	-12.8	20	11.9	6
Hungary	4.9	9	4.3	13	-5.4	14
Slovakia	2.4	10	-14.7	22	16.1	4
Czech Republic	1.4	11	5.0	12	-5.1	12
Slovenia	1.0	12	-6.9	17	9.8	8
Denmark	0.9	13	16.1	5	-14.0	18
Germany	0.8	14	-9.5	18	9.2	10
France	-0.3	15	-12.0	19	11.8	7
Belgium	-0.9	16	-14.5	21	14.9	5
Austria	-0.9	17	10.7	8	-9.6	15
Netherlands	-1.4	18	5.5	11	-2.6	11
Finland	-3.6	19	18.9	3	-13.7	17
Sweden	-4.0	20	15.2	6	-12.6	16
Italy	-5.1	21	22.4	2	-14.0	19
Lithuania	-6.7	22	-5.4	16	9.7	9
Latvia	-7.6	23	-29.4	24	40.4	2
Romania	-8.2	24	-25.9	23	37.7	3
Estonia	-12.0	25	-35.8	25	49.9	1

Source: EU-LFS, own calculations.

Tables A.7.3, A.7.4 and A.7.5 in the appendix document the estimation results for the three groups of foreigners which were summarized according to their duration of residence in the country. These three groups are very recent immigrants (up to two years of residence), recent immigrants (3 to 10 years of residence) and past immigrants (11 and more years of residence). These estimations include an indicator of the respective duration of residence as the outcome variable, and the entire population of foreigners in the EU-LFS as the estimation sample. Hence, natives are dropped from the estimations in this step of the analysis. Specifically, we aim at investigating whether and to which extent the composition of foreigners with respect to their duration of stay differs across countries and with respect to observable characteristics at the individual and/or household level.

With respect to country differences, Table 7.3 documents the estimated country-fixed effect (net of time-fixed effects) with Luxembourg serving as the reference category. To simplify

comparisons the table does not only contain the point estimate but also the rank of deviation from Luxembourg for each and every country as well as the respective outcome indicator.

From the table it becomes transparent that Cyprus, Portugal, Ireland and Spain exhibit the largest shares of very recent immigrants. The deviation to Luxembourg clearly exceeds 20 percentage points. Thus, these are the countries with the highest very recent immigration activities among all sample countries. These countries, however, also display comparatively low shares of recent and past immigrants. In fact, they are all found at the bottom of the distribution with respect to immigrants residing in the country for eleven or more years. Spain is to some extent exceptional since it also exhibits a relatively high share of immigrants in the medium duration category, which all other of the mentioned countries do not.

Italy, Greece and Finland are the countries with the highest shares of recent migrants, i.e. foreigners with duration of residence between 3 and 10 years. This is a reflection of their rather recent transformation to immigration countries. Interestingly, very recent migration activities in Italy and Finland are relatively low, whereas the opposite holds for Greece. Hence, current migration policies in the two Mediterranean countries Italy and Greece seem to differ substantially. Finally, Estonia, Latvia and Romania are the three countries with the largest shares of past immigrants, i.e. individuals residing in these countries for eleven or more years. Clearly, this is a reflection of the large minorities who live in these countries for decades. These three countries are, however, also at the opposite end of the distribution for very recent and recent immigrants. Thus, the stock of migrants in Estonia, Latvia and Romania is not a phenomenon of immigration activities during the last years but rather a manifestation of minority policies in these countries.

With respect to observable characteristics, our estimation results (specification 2) suggest that very recent and recent migrants are significantly younger than past migrants. Furthermore, it becomes transparent that past migrants exhibit a significantly higher probability to hold an educational degree according to ISCED 2 rather than ISCED5 or 6. For very recent and recent migrants lower levels of completed education are less likely than ISCED5 or 6. Thus, compared to individuals residing for eleven or more years in the country, immigrants who entered it less than eleven years ago seem to be better educated. Despite this rather favorable labor market characteristic, the employment probability of very recent and recent migrants is significantly lower than that of past immigrants. Since both groups of “new” arrivals do not display significantly higher unemployment shares, they are more often found in the inactive labor market status.

Regarding marital status we do not observe significant differences among duration groups. Household size is, however, significantly larger for past immigrants than for the other foreigner sub-groups. Since the number of young children is the highest for the medium group, these two findings suggest, that past migrants tend to live together with older children significantly more often. Finally, specification 2 suggests that the number of employed individuals in the household is significantly higher among very recent and significantly lower among past immigrants. Hence, among very recent immigrants there seems to be a larger share of working couples, whereas the sole breadwinner model seems to dominate among past immigrants.

Restricting the sample to employed foreigners only (specification 3), clearly indicates that foreigners tend to be found significantly more often in occupations demanding relatively high skills with an increasing duration of residence. Whereas among very recent immigrants ele-

mentary occupations (ISCO9) dominate the picture, we do not observe significant differences for the medium sub-group with respect to occupations ISCO2-ISCO7 and the sub-group of foreigners with the longest duration of residence is significantly more often found among ISCO1 to ISCO4 occupations, i.e. relatively high-skill occupations. Finally, specification 3 also suggests that workers with temporary contracts are significantly more often found among very recent immigrants, whereas the opposite holds for past immigrants. By contrast, for part-time work we do not observe significant differences between the three duration groups.

Adding aggregate information to the econometric models

As a final step in portraying international migration to the EU, we added aggregate data to the econometric regression models presented above to investigate the sensitivity of results especially for the country fixed-effects with respect to aggregate data. However, extending the set of regressors by e.g. the unemployment rate, (growth rates of) GDP per capita or population growth rates does not entail any noteworthy changes of regression results. All these macro variables are individually insignificant and neither the estimated country intercepts nor the marginal effects of the individual characteristics change with respect to sign or significance.

Hence, the stock of migrants variables cannot be “explained” by such indicators at the macro-level. Against the background of the rather weak relationships between aggregate indicators and migration flows documented in the literature (see e.g. Fertig and Schmidt 2000), this finding is certainly no surprise. It would be difficult to argue upon theoretical reasoning that the stock of migrants should depend on economic growth or labor market indicators given the low response of migration flows to changes in such variables.

Employment and unemployment shares among natives and foreigners

In a final step, we investigate the nexus between migration background and the labor market situation in our sample countries in somewhat more detail. Specifically, we estimated two specifications of a Probit model with a dummy for being employed or unemployed as the outcome measure, respectively. The first specification comprises the full set of individual characteristics (including variables at the household level). In the second specification the model is extended by years of residence as additional control variables. The economic literature on labor market performance of immigrants (see the seminal papers by Chiswick 1978 and Borjas 1987) typically models time of residence in the country by a second-order polynomial to allow a concave “catch-up” process or assimilation profile. Unfortunately, this is not possible with EU-LFS data, since the duration of stay information is right censored at eleven years. Hence, we have to approximate this rather crudely by our three dummy variables on years of residence.

Table A.7.3 in the appendix summarizes the estimation results for the employment indicator as the outcome variable. From the first specification it becomes clear that average employment is almost eleven percentage points lower in Slovakia than in Luxembourg. The negative deviation with respect to the latter country amounts to around ten percentage points in Slovenia. Almost equal – at least not significantly different – employment rates can be observed for France, Ireland and Estonia. Average employment rates in Portugal and the United Kingdom are significantly higher than in Luxembourg. With respect to individual control variables

we do not observe many surprises. Males tend to exhibit higher employment propensities than females; employment rates are lower for the youngest than for the oldest age group, whereas the opposite holds for the comparison of prime age individuals with those being 50 or older. Furthermore, there is a clear-cut and well-known education pattern with lower educated individuals displaying lower employment probabilities. Moreover, married individuals display higher employment rates than non-married, whereas employment propensities decline with increasing household size.

To some extent surprising are the estimation results for the number of employed individuals and the number of young children in the household, respectively. Results for the first indicator suggest that individual employment probabilities significantly increase with the number of employed individuals living in the household. This might be the result of networking effects, i.e. employed household members provide informal information on job vacancies to other household members and, thus, contribute to their higher employment prospects. Completely counterintuitive is the significantly positive point estimate for the number of young children in household. However, since the number of young children is a subset of the overall number of persons living in the household, this estimate has to be interpreted as that of an interaction term, i.e. the deviation from the estimate for the overall household size variable. Thus, we observe a declining employment propensity with increasing household size for which the quantitative dimension is lower as soon as young children are involved. The reason for this might be the availability of family care facilities in larger households which enables the parents to work.

Finally, specification 1 indicates a negative difference in average employment rates for foreigners compared to natives and a positive deviation from this for foreigners born in the country. Both point estimates are, however, not significantly different from zero. Thus, the findings from the estimations above are confirmed which by and large suggested no systematic differences in employment prospects between natives and immigrants. However, they countervail the descriptive picture suggested by looking at unconditional means only (see Figure 7.8 above).

Adding the years of residence in the destination country as additional regressors to the model has no considerable impact on the estimated country dummies and leaves the estimates for all individual and household control variables practically unchanged. However, the point estimate for the (first generation) foreigner indicator changes its sign, but remains statistically insignificant. By contrast, the years of residence dummies are significant and suggest a clear-cut pattern. Individuals residing in the country for less than three years exhibit an employment propensity which is more than 18 percentage points lower than that of individuals who live there for eleven or more years. The difference between the latter group and those who reside in the country for three to ten years is still significantly negative, but with around seven percentage points considerably smaller. Hence, the duration of stay in the country is a very important covariate of labor market prospects which implies that unconditional comparisons of average labor market indicators between natives and migrants can be completely misleading.

For the unemployment indicator the estimation results can be found in Table A.7.7 in the appendix. Basically, these results confirm the message presented for employment. By comparing specifications 1 and 2, we do not observe any noteworthy changes of point estimates except for the two foreigner indicators. Adding the duration of residence reduces the point estimate for the (first generation) foreigner indicator by around one third. Hence, whereas the

first specification suggested that average unemployment shares is around 1.5 percentage points higher among foreigners than among natives, this difference is around 1 percentage point in the second specification. However, the inclusion of years of residence also renders the negative deviation for the interaction term (foreigner born in the country) insignificant. The point estimates for the residence indicators hint toward the expected pattern, i.e. higher unemployment shares among recent immigrants, but are statistically insignificant.

7.3 Internal Migration

In the following we present the results of our investigations with respect to internal migration within EU member States. The first sub-section briefly explains the data and the empirical strategy. We then present a descriptive overview and finally summarize the results of the econometric estimations.

7.3.1 Data and empirical strategy

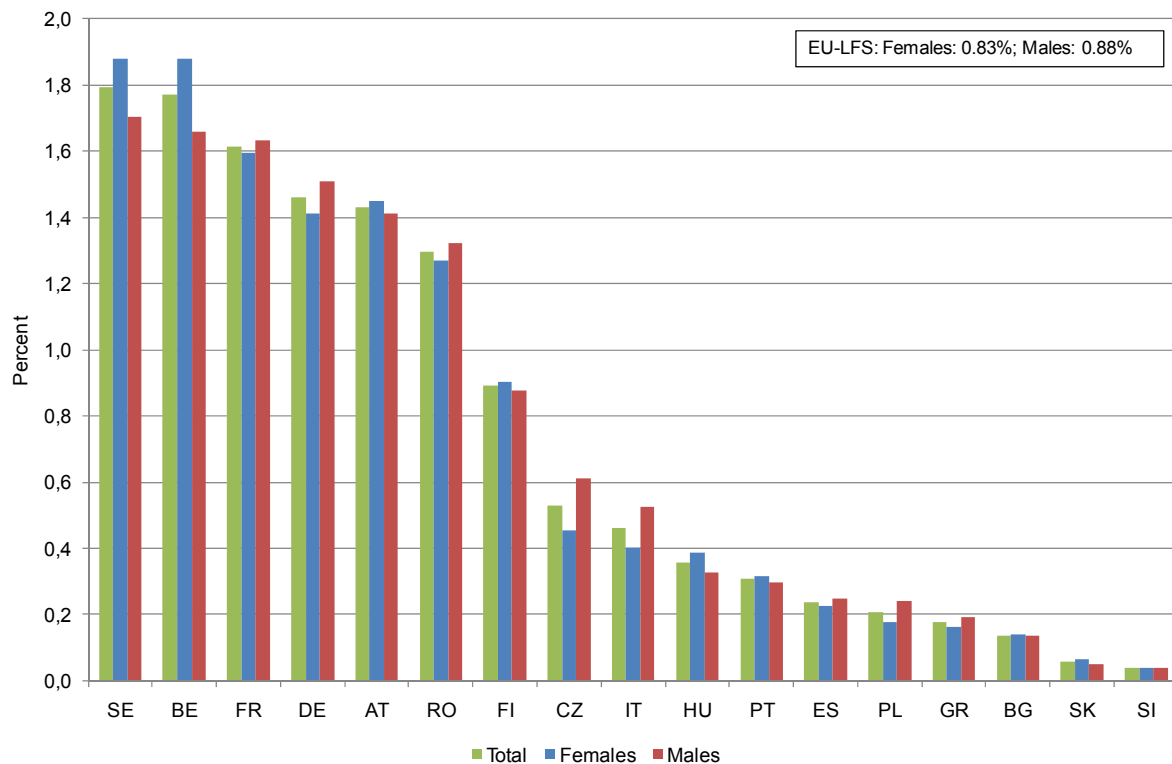
Internal migration, i.e. the relocation of an individual within a sample country, can be modelled using the information on the current region of residence and the region one year before the survey from the EU-LFS. These variables are available for 17 countries. Completely missing are Denmark, Cyprus, Estonia, Ireland, Latvia, Lithuania, Luxembourg, the Netherlands and the United Kingdom. For the countries with available information the majority provide these variables on the NUTS2-level. Exceptions are Austria, Czech Republic, Germany, Slovenia and Slovakia, for which only the NUTS1-level is available.

For all of these countries an indicator is constructed, which takes on the value of 1, if an individual reported that his/her region of residence in the year preceding the interview is not equal the current region (and 0 otherwise). These individuals are denoted as internal migrants and are portrait statistically in what follows. The econometric estimations follow the well-known two step approach. The first step comprises the baseline specification with country- and time-specific fixed-effects only. In the second step, we successively add individual characteristics to control for the structure of the population in the sample countries.

7.3.2 Descriptive overview

On average, across all countries and over time, the internal migration rate in the EU-LFS amounts to 0.85% of the population between 15 and 65 years of age. The corresponding rate for males is slightly higher than that of females (0.88% vs. 0.83%). Figure 7.11 illustrates the average country-specific internal migration for the years 1998 to 2008. The largest shares of relocating individuals can be observed within Sweden and Belgium with around 1.8% of the working age population. Clearly above-average rates are also exhibited by France, Germany, Austria and Romania. The only country displaying around-average internal migration activities is Finland. The values of all other countries lie below the EU-LFS-average with the lowest internal migration rates being observed for Slovakia and Slovenia. Interestingly, in the two countries with the highest internal migration rates, the share of women relocating from one region to another is remarkably larger than that of men. In all other countries, the difference between males and females is either negligible or males exhibit higher migration rates. The latter is especially pronounced in the Czech Republic as well as Italy and, though to a smaller extent also in Germany.

Figure 7.11
Shares of internal migrants by country, 1998-2008

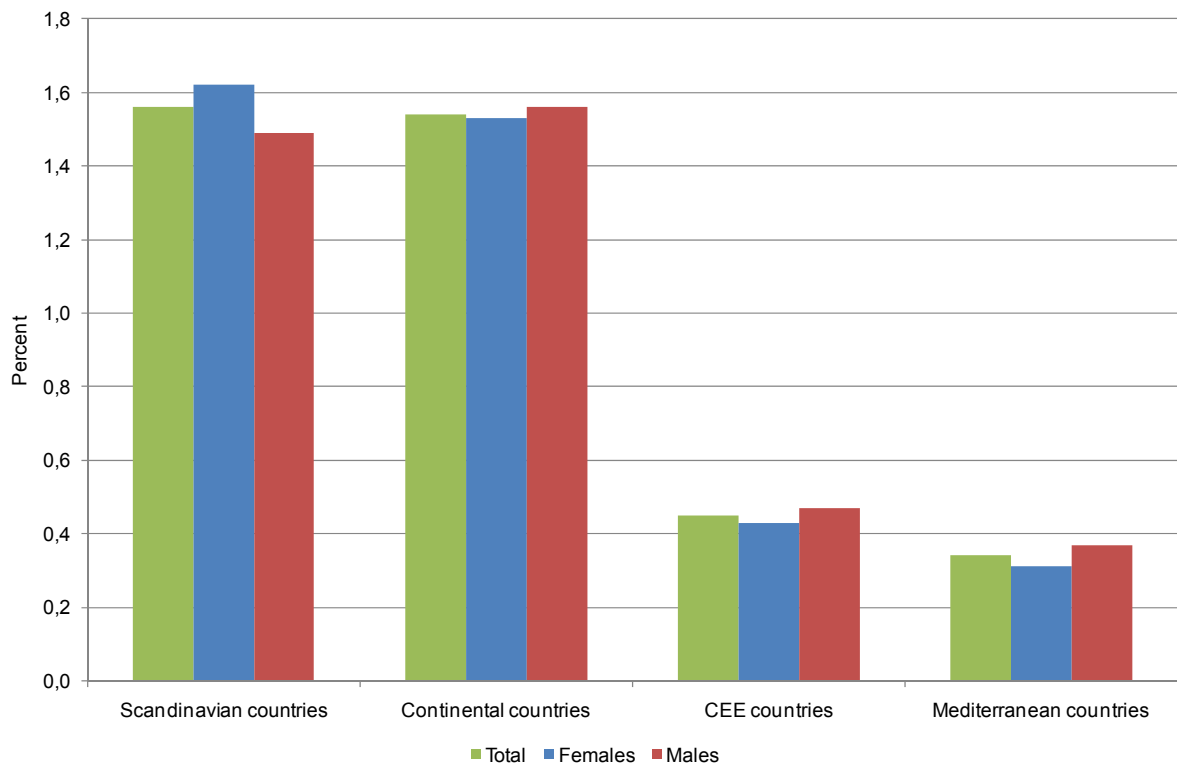


Source: EU-LFS, own calculations.

Figure 7.12 illustrates that the country-specific picture from above collapse into a clearly divided pattern with respect to country groups. Internal migration is a relatively widespread phenomenon in the Scandinavian and Continental countries. In the Central and Eastern European as well as the Mediterranean countries internal migration rates are only around one fourth of those in the other two country groups. Furthermore, internal migration is dominated by females within the Scandinavian countries, whereas the opposite holds for all other country groups.

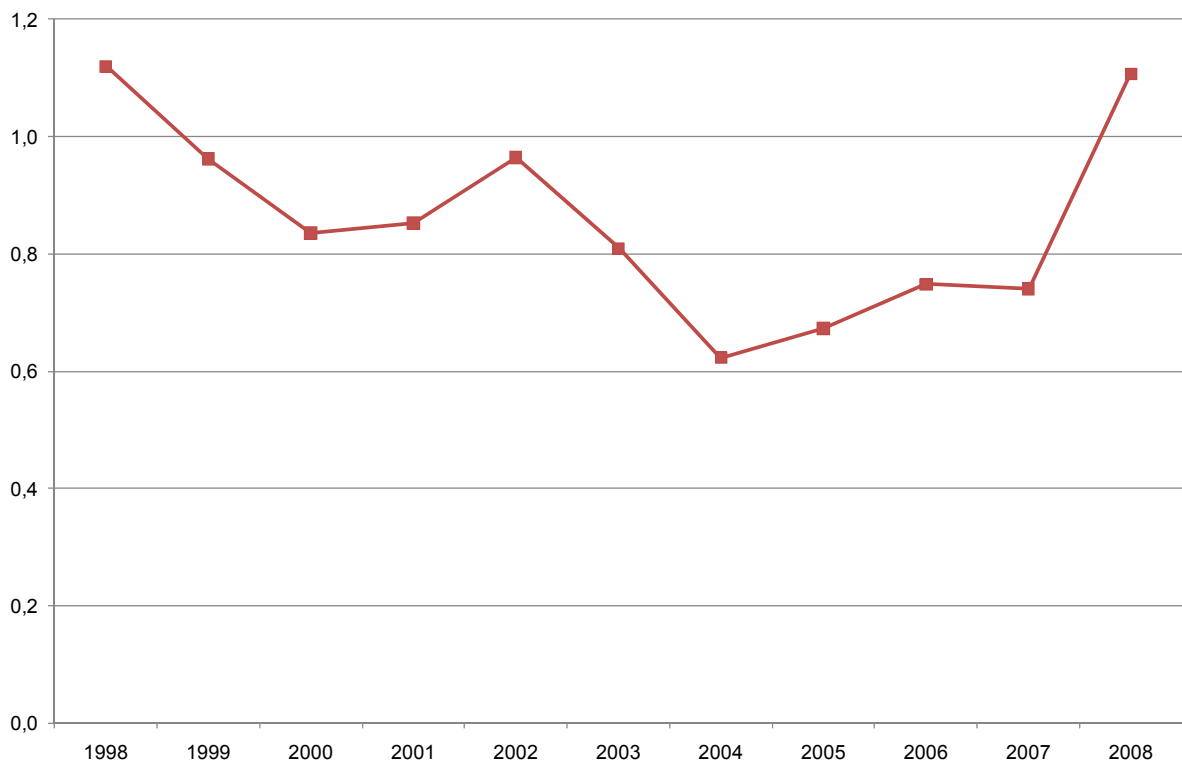
With respect to time, Figure 7.13 documents considerable variation of internal migration rates over the sample horizon. Between 1998 and 2004 we observe an almost steady decline in internal migration from around 1.1% to 0.6%. Hence, internal migration rates almost halved. The period 2004 to 2007 displays a moderate increase in migration rates from 0.6% to 0.75%. Between the last two sample years, however, we observe a return of internal migration rates to the base level of 1998, and, thus, an increase of around 50% in internal migration activities between 2007 and 2008. Since it is difficult to assess whether and to which extent this is the reflection of reality or a recording problem, the implementation of time fixed-effects in the econometric models is indispensable.

Figure 7.12
Shares of internal migrants by country groups, 1998-2008



Source: EU-LFS, own calculations.

Figure 7.13
Temporal variation in shares of internal migrants



Source: EU-LFS, own calculations.

7.3.3 Econometric results

Table A.7.8 in the appendix summarizes the estimation results for the outcome indicator “internal migrant”. These results suggest that controlling for temporal variation is important. In the baseline specification, which contains country- and time-fixed-effects only, we find no significant differences between the reference country Sweden on the one hand and Austria, Belgium and France on the other hand. In general, the estimated country differences vary between 0 (France) and -0.7 (Poland and Spain) percentage points. Extending the model by observable characteristics of the individuals (without household characteristics) again changes the country-specific results considerably. Now, Austria displays significantly lower rates of internal migration than Sweden. By contrast, the corresponding rates for France are significantly higher than those for Sweden. Furthermore, the difference between Romania and Sweden becomes insignificant. Altogether, the quantitative dimensions of the estimated country intercepts are reduced and the countries with the largest deviations to Sweden independently of the model specification are Portugal, Bulgaria, Italy, Greece, Slovakia, Slovenia, Poland and Spain.

With respect to individual characteristics our estimations indicate that internal migrants are more likely to be male, younger than 50 years of age and highly educated (ISCED5/6). Furthermore, the probability to relocate within a country decreases with increasing household size, especially with an increasing number of employed individuals in the household. However, the existence of young children in the household counteracts this again, and, thus increases the propensity to migrate again.

Finally, internal migrants are significantly more likely to be employed or unemployed than inactive. On the other hand, those who were employed or unemployed in the year preceding the interview exhibit significantly lower propensities to relocate than inactive individuals. This suggests that the decision to relocate within a country is accompanied by a change in labour market orientation. In particular, it seems likely that internal migrants migrate mainly for economic reasons. For many people who were employed or unemployed (i.e. looking for a job) the year before, there may therefore be less of a reason to migrate than for inactive persons. For the unemployed, this can be explained if there are more people who migrate to a region where they expect to find a job than people who migrate because they have found a job which requires them to move. However, the latter mechanism also seems to play a role as indicated by the fact that the correlation between internal migration and labour market status in the preceding year is lower for unemployed individuals than for employed individuals. By contrast, among those who migrate, the proportion of employed and unemployed individuals is higher than the proportion of inactive persons, which is again consistent with the fact that internal migration takes place mainly for economic reasons.

7.4 Cross-Border Commuting

This sub-section summarizes the results of the empirical analyses for cross-border commuting. A brief outline of the data and empirical strategy can be found in the following paragraphs. After that we present a descriptive overview of this phenomenon for the different countries and over time. Finally, the econometric estimation results are documented in Section 7.4.3.

7.4.1 Data and empirical strategy

The EU-LFS also provides information on the country of place of work and, thus, allows the construction of an indicator on cross-border commuting. Individuals, who reported that their place of work is not their country of residence, are denoted as cross-border commuters. Information on this variable is available for all sample countries except Cyprus, Ireland, Lithuania, Latvia and Slovenia.

Along the same lines as in the preceding sections, we utilize the indicator “cross-border commuter”, which takes on the value of 1, if an individual’s place of work is outside his country of residence (and 0 otherwise), as an outcome variable in the following empirical investigations. These analyses comprise a descriptive overview across countries and time together with econometric estimations. The latter, again, follow the established set-up from above, i.e. we first estimate a baseline specification to pin down the country-specific intercepts net of time-specific variation. In a second step, this baseline specification is extended by observable individual characteristics to control for the structure of the working population in the respective countries.

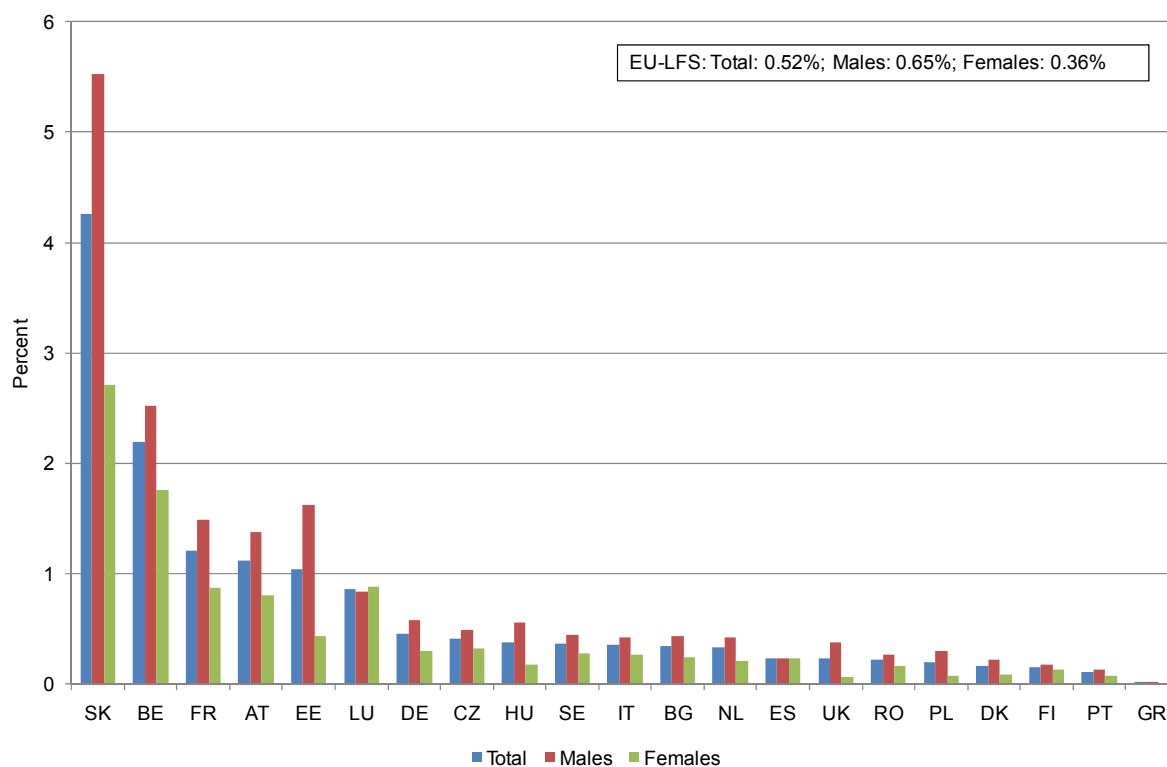
7.4.2 Descriptive overview

From Figure 7.14 it becomes transparent that the largest share of cross-border commuters among the working population between 15 and 65 years of age can be observed for Slovakia. There, around 5.5% of all males and 2.7% of all females reported to work outside the country. This is almost ten times the EU-LFS average. By far the largest share of Slovakian cross-border commuters works in the Czech Republic, followed by an almost equal number of commuters to Austria and Hungary. This extremely high share, which is even around two times the rate of cross-border commuters in the next country (Belgium), is somewhat surprising, since Slovakia exhibited very low internal migration rates (see above). All other countries with relatively high cross-border commuting activities also exhibit above-average internal migration rates (see e.g. Belgium, France and Austria). Hence, mobility patterns seem to be completely different in Slovakia compared to the Continental countries.

Furthermore, it becomes transparent that in almost all countries the share of male cross border commuters is higher than that of females. Exceptions from this can only be observed for Luxembourg and Spain, which exhibit almost balanced cross-border commuting rates with respect to gender. Figure 7.15 illustrates the aggregation of commuter shares for the different country groups. The largest shares are clearly exhibited in Continental Europe, followed by the Central and eastern European countries. On average, the latter display cross-border commuting rates of slightly more than one half of the corresponding values for the Continental countries. All other country groups (for the Anglo-Saxon countries this is the United Kingdom alone, since data on Ireland are missing) exhibit comparable rates of around 0.2% for the total population. As could have been expected from the country-specific cross-border commuting rates, the corresponding shares for males are higher than that for females in all country groups without exception.

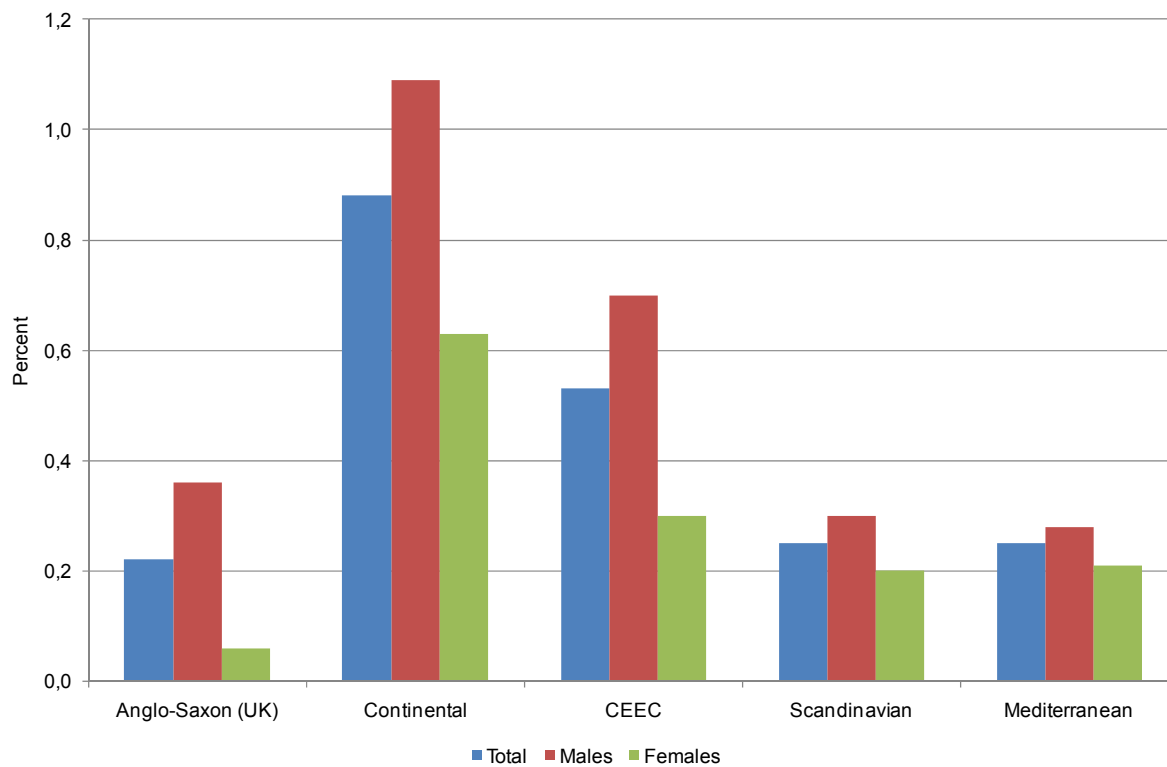
The variation in cross-border commuting activities across time is summarized in Figure 7.16. This figure indicates that cross-border commuting rates used to vary between 0.4% and

Figure 7.14
Shares of cross-border commuters by country, 1998-2008



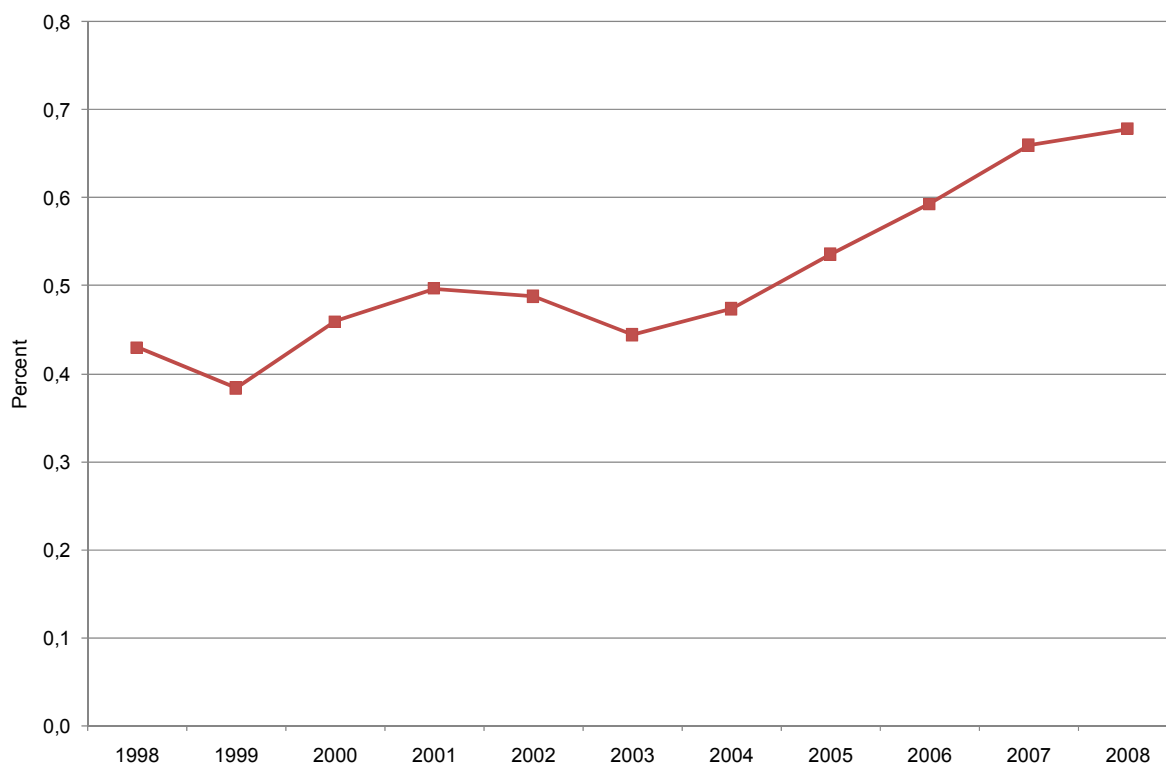
Source: EU-LFS, own calculations.

Figure 7.15
Shares of cross-border commuters by country groups, 1998-2008



Source: EU-LFS, own calculations.

Figure 7.16

Temporal variation in shares of cross-border commuters

Source: EU-LFS, own calculations.

0.5% between 1998 and 2004. From 2005 onwards we observe a steady increase to almost 0.7% in the last year of our sample period. Hence, during the last five years of the considered time horizon cross-border commuting rates increased by more than 40%.

7.4.3 Econometric results

Table A.7.9 in the appendix contains the estimation results for the outcome variable “cross-border commuter”. Net of time-specific variation and controlling for individual socio-demographic characteristics only, the first specification suggests that country-specific differences to Slovakia vary between -0.2 percentage points for Belgium and -0.5 percentage points for the United Kingdom. These country-specific intercepts do not change very much as soon as labour market and job-related characteristics are taken into account. Neither sign nor significance of the estimated deviations to Slovakia exhibit any change. Furthermore, even the quantitative dimensions remain almost constant.

With respect to individual characteristics we observe a significantly higher propensity to commute across borders of around 0.2 percentage points for males than for females. Furthermore, cross-border commuters are, on average, rather to be found in the prime age group (25-49 years of age) than among the young or the old. Individuals with the highest completed level of education (ISCED5 or 6) exhibit significantly higher probabilities to work abroad than all other education groups. By contrast, marital status seems to play no role in this context. Along the same lines, all estimations including household characteristics yielded insignificant estimates for these indicators. Thus, we omitted them from the model to avoid the loss of observations from the Scandinavian countries.

Finally, with respect to labour market status in the year preceding the interview we do not observe any significant relationship to cross-border commuting activities. However, occupations seem to matter for the decision to work abroad, independently from an individual's human capital endowment. Specifically, craft and related trades workers (ISCO7) tend to display a significantly higher propensity to commute across borders than workers with elementary occupations (ISCO9, the reference group), clerks (ISCO4) and skilled agricultural and fishery workers (ISCO6). Quite unsurprisingly, part-time working employees tend to display significantly lower commuting propensities than full-time working individuals. By contrast, the opposite holds for workers with fixed-term contracts. That is, among cross-border commuters workers with a temporary contract tend to be over-represented.

7.5 Summary and Conclusions

This chapter investigates several indicators of (i) international migration to EU Member States and between them, (ii) migration activities within a specific Member State (internal migration) and (iii) cross-border commuting, i.e. working in another country than the country of residence. To this end, we utilize individual-level data from the EU-LFS for 15 to 65 year old individuals and the time period 1998 to 2008. Theoretically, the dataset allows the construction of a large set of indicators with respect to migration activities. Specifically, it is possible to construct the following variables as outcome indicators for the empirical investigations:

1. *(Short-term) Migrant*: Indicator variable taking on the value of 1, if an individual residing in a specific country lived in another country one year before the interview; 0 otherwise.
2. *(Short-term) Intra-EU-migrant*: Indicator variable taking on the value of 1, if a Migrant re-located from another EU27-country; 0 otherwise.
3. *(Short-term) Migrant from outside EU*: Indicator variable taking on the value of 1, if a Migrant relocated from a country outside the EU27; 0 otherwise.
4. *Born outside country of residence*: Indicator variable taking on the value of 1, if an individual was born outside his/her country of residence; 0 otherwise.
5. *Foreigner*: Indicator variable taking on the value of 1, if an individual does not hold the citizenship of his/her country of residence; 0 otherwise.
6. *Second-generation foreigner*: Indicator variable taking on the value of 1, if a Foreigner is born in his/her country of residence; 0 otherwise.
7. *Very recent immigrant*: Indicator variable taking on the value of 1, if a Foreigner resides in his/her country of residence for two years or less; 0 otherwise.
8. *Recent immigrant*: Indicator variable taking on the value of 1, if a Foreigner resides in his/her country of residence for more than two but less than eleven years; 0 otherwise.
9. *Past immigrant*: Indicator variable taking on the value of 1, if a Foreigner resides in his/her country of residence for eleven years or more; 0 otherwise.
10. *Internal migrant*: Indicator variable taking on the value of 1, if an individual residing in a specific region of his/her country of residence lived in another region of the same county one year before the interview; 0 otherwise.
11. *Cross-border commuter*: Indicator variable taking on the value of 1, if the place of work of an individual is located in another country than his/her country of residence; 0 otherwise.

These indicators are described with respect to their variation across countries and over time. From this description it becomes transparent that the data situation with respect to the first three indicators on short-term migrations flows is not sufficient to serve as a valid base for empirical applications. Hence, individual-level data from the EU-LFS does not seem to be appropriate to investigate short-term migration flows between two survey years.

The data situation regarding stocks of migrants is better. Although data coverage for nationality and country of birth of individuals is anything but perfect and exhibits many completely missing country-year pairs, the variation across country and over time for each single indicator displays plausible results which are consistent with aggregate information on the country-level. Thus, nationality on the one and country of birth on the other hand are two variables which can be used for empirical analyses with sufficient confidence. However, this does not hold for the combination of them. The interaction of nationality and country of birth which yields an indicator for foreigners born in their country of residence and, thus, a population sub-group which is of great interest in many – especially Continental European – countries, delivers a completely implausible and incredible development over time. Therefore, this indicator has to be used with extreme caution, if at all.

The most credible indicator of international migration in the EU-LFS seems to be the information on years of residence. This variable reflects the complete set of country-specific migration policy, migration history, citizenship law as well as minority policies. However, even this variable exhibits one important shortcoming: it is right-censored at eleven years of residence. That is, for empirical applications, e.g. on the labour market performance of migrants compared to that of natives, it is not possible to distinguish individuals with eleven years of residence from those of, say, 25 years. Thus, the investigation of assimilation profiles which are standard in the international literature on immigrant performance is not possible with EU-LFS data. For this reason it seems desirable and advisable to provide the years of residence variable uncensored, if technically possible.

For the last two indicators, i.e. internal migration and cross-border commuting, the data situation is considerably more satisfying. Although the country coverage of region of residence within a specific country is rather limited and recoding levels vary between NUTS1 and NUTS2, both the variation across countries and over time appears to be plausible and credible. This holds in even stronger terms for cross-border commuting.

The empirical investigations with respect to the above mentioned indicators also comprise some econometric estimations with the explicit aim to analyze the robustness of country-specific effects in international as well as internal migration activities. In this endeavour, we apply different specifications of Probit-Models containing country- and time-specific dummy variables, indicators for socio-demographic characteristics (gender, age groups, highest level of education, marital status), household characteristics (household size, number of employed individuals and young children in household) as well as labour market and job-related characteristics (occupation groups, part-time work, temporary contract; for employed individuals only).

In general, our estimation results suggest that the country-specific indicators are extremely robust towards the inclusion of additional information. Hence, international as well as internal migration activities are to a very large extent determined by factors peculiar to the specific countries, which can by and large not be attributed to observable individual or country char-

acteristics. In addition, the different migration indicators exhibit some stable results with respect to observable individual characteristics.

Specifically, the average foreigner in our sample is rather young, displays either a low or a very high level of education, is more often married than natives and has more young children. He/she exhibits no significant differences regarding employment probabilities, but displays a significantly higher unemployment propensity than natives. For employed individuals only, the average employed foreigner does no longer display lower education levels than natives, is significantly more often found in occupations with a relatively low skill-profile and displays a higher propensity to hold a temporary work contract. The results for individuals not born in their country of residence are very much in line with those for foreigners.

With respect to years of residence, we observe that very recent and recent migrants are significantly younger than past immigrants (i.e. those with 11+ years of residence) and also better educated. However, despite these rather favourable characteristics of (very) recent immigrants, the employment probabilities among past migrants are significantly higher. Furthermore, the latter are more often found in high-skill occupations and less often hold a fixed-term contract than individuals who entered the country rather recently. These results are certainly no surprise given the findings of the existing literature which extensively documents that immigrants experience a disadvantage in labour prospects directly upon arrival due to the incomplete transferability of human capital acquired in the country of origin. With an increasing duration of residence which is typically accompanied by investments in destination country-specific human capital this initial disadvantage tends to be diminished.

Although the duration of residence information in the EU-LFS does not allow to replicate the contributions in this literature (for the reasons delineated above), it nevertheless allows to provide to some indicative evidence, that the pattern described above can also be found in the EU-LFS sample countries. Specifically, the estimation of two Probit-models for (un-) employment yields considerably decreasing point estimates for the foreigner indicators when duration of residence information is added. This indicates that the longer the duration of residence, the higher (lower) are (un-) employment probabilities.

The analyses of migration within EU-LFS countries (at NUTS1/2 level) again deliver strong country-specific effects which suggest that internal migration is also driven by forces peculiar to a specific country. Above and beyond these peculiarities, our estimations indicate that internal migrants are more likely to be male, younger than 50 years of age and highly educated (ISCED5/6). Furthermore, the probability to relocate within a country decreases with increasing household size, especially with an increasing number of employed individuals in the household. However, the existence of young children in the household countervails this again, and, thus increases the propensity to migrate again. Finally, internal migrants are significantly more likely to be employed or unemployed than inactive. On the other hand, those who were employed or unemployed in the year preceding the interview exhibit significantly lower propensities to relocate than inactive individuals. This suggests that the decision to relocate within a country is accompanied by a change in labour market orientation.

Finally, the phenomenon of cross-border commuting, i.e. working in another country than the country of residence, is significantly more prevalent among males than females. Furthermore, cross-border commuters are, on average, rather to be found in the prime age group (25-49 years of age) than among the young or the old. Individuals with the highest completed level of education (ISCED5 or 6) exhibit significantly higher probabilities to work

abroad than all other education groups. By contrast, marital status and household characteristics seems to play no role in this context. With respect to labour market status in the year preceding the interview we do not observe any significant relationship to cross-border commuting activities. However, occupations seem to matter for the decision to work abroad, independently from an individual's human capital endowment. Specifically, craft and related trades workers (ISCO7) tend to display a significantly higher propensity to commute across borders than workers with elementary occupations (ISCO9, the reference group), clerks (ISCO4) and skilled agricultural and fishery workers (ISCO6). Quite unsurprisingly, part-time working employees tend to display significantly lower commuting propensities than full-time working individuals. By contrast, the opposite holds for workers with fixed-term contracts. That is, among cross-border commuters workers with a temporary contract tend to be over-represented.

8. Data Access and Quality of the Anonymised EU-LFS Data Set

This chapter outlines some shortcomings and issues of the anonymised EU-LFS data. We focus on the access procedure, data format, anonymisation procedure and especially on problems we encountered in deriving household variables.

8.1 Data Access

The data is delivered in csv-text format. As this is the most universal format, this ensures the easiest access to the data, independently of the software used by the researchers. However, reading in the data (for example to be able to use it in Stata) is time-consuming and error-prone. To solutions seem feasible:

1. Eurostat could provide the dataset in different file formats, at least for the most common statistical software packages (SAS, Stata, SPSS).
2. Eurostat could disseminate import files, together with the data for these packages. Such programs (“do-files” in Stata) are launched within the statistical application and can be used to import the data and label the different variables. This procedure is common practice other data sets. As an example, the National Bureau of Economic Research provides such programs for the use with different statistical packages (SAS, SPSS, Stata) for the use of the Current Population Survey for the U.S. This is also done for SAS by Eurostat, but not for other statistical programs. The RWI would be willing to make available the Stata programs it used to read in and label the EU-LFS data.

Applying one (or both) of these procedures would reduce the deadweight loss which is currently incurred by users of the LFS as the data setup is presumably the same for the majority of research projects. Furthermore it might increase data integrity and the comparability of the results from different research projects.

8.2 Documentation

The EU LFS User Guide and its Annex (Eurostat 2008a, Eurostat 2008b) generally is a high quality publication. Nevertheless, several improvements could be made.

First, the information concerning the weighting factor is not complete. For example, it is not mentioned on which matrix the weight is derived and information about the weights is sparse in general. Special anonymisation weights are delivered for Germany, but the exact definition of these weights remains unclear.

Second, the main anonymisation procedure is not very clear. It is only stated that Household Numbers are anonymised. In practice, it seems to be the case that the country files containing individual information and the household files are anonymised separately. This is a major drawback, as some countries deliver additional household information in separate files which are of no use to the researcher, as they cannot be merged to any other data file. Especially in the quarterly survey, the anonymisation of identifiers between quarters leads to a highly diminished explanatory power of the data.

One way to improve the clarity of the exposition would be to split up the user guide and to generate two documents, one describing the LFS for external users (i.e. the anonymised

data set) and one for internal use as it often remains unclear, which variables are available to outside researchers and which ones are only available for internal use from within Eurostat and the European Commission. This would also allow giving more room to an explanation of the differences between the two data sets.

8.3 Coding of Variables

When working with the anonymised version of the EU-LFS data set, a number of issues arose (some of them mentioned in the User Guide):

- The REGION1Y variable which gives the NUTS-2 region for the previous year is coded wrongly for Germany, Austria, Italy, Romania and Sweden. It only contains the number of the region and therefore does not follow the official format in the other countries (i.e. 11 instead of the proper DE11).
- The REGION variable is coded as blank instead of 00 in some cases.
- The NATIONAL/COUNTRYB variables often contains “NO ANSWER” instead of the common “999” (or blank) codes for cases where the information is missing.
- The variable relating to the country of birth (COUNTRYB) displays different characteristics, depending on the country delivering the information. As it is, nearly every country delivers a different set of country groups, making detailed comparisons between countries virtually impossible. It would be useful to have a common structure of the variable, independently of the country under investigation.
- In Luxembourg, Ireland and the UK, the variable HATLEV1d is coded as 1, 2, 3 instead of the proper L, M, H which refers to low, medium and high levels of education.
- The region of work identifier should be coded as COUNTRYW + REGIONW. This would be consistent with the official definition of NUTS Codes. At the moment, the region of work identifier does not contain the country identifier.
- The variable STARTIME contains negative values, which is not mentioned in the User Guide and makes no sense, given that it should contain job tenure in months.
- STARTIME can in principle be used to identify direct job-to-job transitions. For example, in annual data, if the previous labour market state is employment, and if the tenure of the current job is less than twelve months, the worker is likely to have transited directly from one job to another job. However, this identification scheme is only possible if the time between the two interviews is exactly twelve months. This may not always be the case, depending on the sampling design. In order to enable the exact identification of direct job-to-job transitions, information about the time of the interview (which month) would therefore be useful.
- The variable LEAVTIME contains negative values as well, though it should contain duration data in months.

8.4 Issues with the Household Variables

We derive two sets of household indicators for the analysis. First, ‘basic household indicators’ relate to the number of persons in the same household which display specific character-

istics, such as age. These indicators include the number of persons living in the household, the number of employed individuals living in each household, the number of children living in the household aged zero to four years and five to fourteen years, and the number of elderly persons living in the household. Second, we derive three household indicators providing information on the labour supply of spouses given that an individual shares a household with his/her spouse. An example of such an indicator is the employment status of the spouse.

Assuming that missing observations are coded as such, the 'basic household indicators' can be calculated based on the household identification number (HH_ID). As suggested in the EU-LFS User Guide we generate HH_ID as a combination of the quarter and household number (QHNUM), the reference year (REFYEAR) and the country (COUNTRY). Similarly, each person is identified by the combination of HH_ID and the sequence number of household members (HHSEQNUM). Finally, the relationship of other household members with the reference person (HHLINK) can be used to match spouses with each other and generate variables containing information on the labour supply of the spouse.

8.4.1 Basic household indicators

Table 8.1 shows that the variable HH_ID is available for all available country/year combinations. This is in line with the EU-LFS User Guide (Eurostat 2008b: 140) and suggests that the generation of the basic household indicators is possible for all available years and countries. Unfortunately, this impression is misleading. For several country/year combinations the sequence number of household members (HHSEQNUM) is either completely missing or two or more household members have received the same number. Both observations are a violation of the implementation rules as laid down in the EU-LFS User Guide, which states that "a given sequence number should identify only one person of the household. [...] A two-digit sequence number should be allocated to each member of the household" (Eurostat 2008b: 9). Consequently, it is not possible to identify persons unambiguously and we set all household-related variables to missing for these observations. The following country/year combinations drop out due to this procedure: Denmark (1998-2008), Lithuania (1998-2001), and the Netherlands (1998-1999). In addition, 87 per cent of all observations in Poland are set to missing for the years 1998-2001.

An even more severe, and in previous reports undetected, problem occurs for all observations in Sweden (1998-2008) and Finland (1999-2004). HH_ID and HHSEQNUM are both available and their combination does identify individuals unambiguously, i.e. there is a unique value for every individual. One may therefore conclude that the generation of the basic household indicators is possible. Unfortunately, this is not the case, because for these countries, each individual is assigned a unique household number, i.e. each household consists of only one person. This is in sharp contrast to the EU-LFS User Guide as the serial number of the household (HHNUM) is "needed to identify the households in the databases. Records relating to different members of the same household carry the same serial number" (Eurostat 2008b: 140). Clearly the calculation of household indicators on this basis does not make

Table 8.1
Availability of Basic Household Indicators according to the Initial Coding in the EU-LFS Database

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
AT	x	x	x	x	x	x	x	x	x	x	x
BE	x	x	x	x	x	x	x	x	x	x	x
BG	-	-	x	x	x	x	x	x	x	x	x
CY		x	x	x	x	x	x	x	x	x	x
CZ	x	x	x	x	x	x	x	x	x	x	x
DE	-	-	-	-	x	x	x	x	x	x	x
DK	x	x	x	x	x	x	x	x	x	x	x
EE	x	x	x	x	x	x	x	x	x	x	x
ES	x	x	x	x	x	x	x	x	x	x	x
FI	x	x	x	x	x	x	x	x	x	x	x
FR	x	x	x	x	x	x	x	x	x	x	x
GR	x	x	x	x	x	x	x	x	x	x	x
HU	x	x	x	x	x	x	x	x	x	x	x
IE	x	x	x	x	x	x	x	x	x	x	x
IT	x	x	x	x	x	x	x	x	x	x	x
LT	x	x	x	x	x	x	x	x	x	x	x
LU	x	x	x	x	x	x	x	x	x	x	x
LV	x	x	x	x	x	x	x	x	x	x	x
NL	x	x	x	x	x	x	x	x	x	x	x
PL	x	x	x	x	x	x	x	x	x	x	x
PT	x	x	x	x	x	x	x	x	x	x	x
RO	x	x	x	x	x	x	x	x	x	x	x
SE	x	x	x	x	x	x	x	x	x	x	x
SI	x	x	x	x	x	x	x	x	x	x	x
SK	x	x	x	x	x	x	x	x	x	x	x
UK	x	x	x	x	x	x	x	x	x	x	x

Source: EU-LFS, own calculations.

any sense and all household variables are set to missing in our analyses. Table 8.2 presents the country/year combinations for which the calculation of basic household indicators is possible.

At this point, it is not clear whether the problem with the household identification number in Sweden and Finland is due to the anonymisation procedure or whether this problem is already present in the data before anonymisation. Unfortunately, we cannot investigate this issue further as we only have access to the anonymised data set.

8.4.2 Labour supply of spouses

The calculation of the second set of household indicators providing information on the labour supply of spouses is possible for all observations for which the variable HHLINK is not missing. Based on this variable, we determine whether a spouse is living in the same household and match the labour market status of spouses if this is the case. Thus, again assuming that missings are coded correctly, Table 8.3 provides an overview for all country/year combinations for which the calculation of indicators concerning the labour market status of spouses seems to be possible. It appears as if in addition to those country/year combinations for which the calculation of household variables is generally not possible (refer to previous section), there are two further cases for which the calculation of indicators for the labour supply of spouses is not possible because HHLINK is missing, namely Finland (2006-2008) and Ireland (2007).

Table 8.2
Availability of Basic Household Indicators – De facto and according to EU-LFS User Guide

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
AT	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
BE	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
BG	-	-	x	xo	xo	xo	xo	xo	xo	xo	xo
CY	-	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
CZ	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
DE	o	o	o	o	xo	xo	xo	xo	xo	xo	xo
DK	-	-	-	-	o	o	o	o	o	o	o
EE	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
ES	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
FI	x	-	-	-	-	o	o	xo	xo	xo	xo
FR	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
GR	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
HU	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
IE	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
IT	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
LT	-	-	-	-	xo	xo	xo	xo	xo	xo	xo
LU	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
LV	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
NL	o	o	xo	xo	xo	xo	xo	xo	xo	xo	xo
PL	x	x	x	x	x	xo	xo	xo	xo	xo	xo
PT	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
RO	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
SE	-	-	-	-	-	-	-	-	-	-	-
SI	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
SK	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
UK	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo

Source: EU-LFS, own calculations. – o = Data availability in non-anonymised datasets according to EU-LFS User Guide.

Table 8.3
De Facto Availability of Household Indicators

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
AT	x	x	x	x	x	x	x	x	x	x	x
BE	x	x	x	x	x	x	x	x	x	x	x
BG	-	-	x	x	x	x	x	x	x	x	x
CY	-	x	x	x	x	x	x	x	x	x	x
CZ	x	x	x	x	x	x	x	x	x	x	x
DE	-	-	-	-	x	x	x	x	x	x	x
DK	-	-	-	-	-	-	-	-	-	-	-
EE	x	x	x	x	x	x	x	x	x	x	x
ES	x	x	x	x	x	x	x	x	x	x	x
FI	x	-	-	-	-	-	-	x	x ^a	x ^a	x ^a
FR	x	x	x	x	x	x	x	x	x	x	x
GR	x	x	x	x	x	x	x	x	x	x	x
HU	x	x	x	x	x	x	x	x	x	x	x
IE	x	x	x	x	x	x	x	x	x	x ^a	x
IT	x	x	x	x	x	x	x	x	x	x	x
LT	-	-	-	-	x	x	x	x	x	x	x
LU	x	x	x	x	x	x	x	x	x	x	x
LV	x	x	x	x	x	x	x	x	x	x	x
NL	-	-	x	x	x	x	x	x	x	x	x
PL	x	x	x	x	x	x	x	x	x	x	x
PT	x	x	x	x	x	x	x	x	x	x	x
RO	x	x	x	x	x	x	x	x	x	x	x
SE	-	-	-	-	-	-	-	-	-	-	-
SI	x	x	x	x	x	x	x	x	x	x	x
SK	x	x	x	x	x	x	x	x	x	x	x
UK	x	x	x	x	x	x	x	x	x	x	x

Source: EU-LFS, own calculations. x = household indicators available, ^abasic household indicators available but information about spouse not available, – = no household indicators available.

Unfortunately, the problem is more serious than that, because several country/year combinations exist where HHLINK takes the value “6” for every individual. According to the EU-LFS User Guide (Eurostat, 2008a, p.8), this value corresponds to any relationship to the reference person other than those explicitly coded. The fact that all observations are characterized by the value six implies that effectively no information exists on the relationship between household members. Thus HHLINK should be coded missing for the country/year combinations in question which are Bulgaria (2000), Finland (2005), Hungary (1998-1999), Ireland (1998-2006), Latvia (1998-2000), Poland (1998-2000), and Slovenia (1998-1999) (refer to Table 8.3).

For completeness it should be mentioned that HHSPOU, a variable provided within the EU-LFS that directly contains the sequence number of the spouse, and HHLINK are non-missing for different country/year combinations. Stated differently, when combining the information contained in HHLINK and HHSPOU, less country/year combinations are missing than listed above. For example, HHLINK is missing for Ireland over the time period 1998-2006, while matching of spouses is possible using HHSPOU. The following country/year combinations are missing for HHLINK, but are available for HHSPOU: Hungary (1999) and Ireland (1998-2006). Analogously, the following country/year combinations are missing for HHSPOU, but available in HHLINK: Bulgaria (2001-2003), Czech Republic (1998-2001), Spain (1998), France (1998-2002), Greece (1998), Italy (1999-2003), Latvia (2001), Poland (2001-2002), Slovenia (2000-2001), Slovakia (1998-2002). The country/year combinations that still remain missing after the combination of both variables can be inferred from Table 4.4.

Table 8.4
Availability of Household Indicators with Respect to Spouse – De facto and according to EU-LFS User Guide

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
AT	x	x	x	x	x	x	xo	xo	xo	xo	xo
BE	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
BG	-	-	-	x	x	x	xo	xo	xo	xo	xo
CY	-	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
CZ	x	x	x	x	xo	xo	xo	xo	xo	xo	xo
DE	-	o	o	o	xo	xo	xo	xo	xo	xo	xo
DK	-	-	-	-	-	-	-	-	-	-	-
EE	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
ES	x	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
FI	x	-	-	-	-	o	o	o	o	o	o
FR	x	x	x	x	x	xo	xo	xo	xo	xo	xo
GR	x	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
HU	-	-	xo	xo	xo	xo	xo	xo	xo	xo	xo
IE	-	-	-	-	-	-	-	-	-	-	xo
IT	x	x	x	x	x	x	xo	xo	xo	xo	xo
LT	-	-	-	-	xo	xo	xo	xo	xo	xo	xo
LU	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
LV	-	-	-	x	xo	xo	xo	xo	xo	xo	xo
NL	-	-	xo	xo	xo	xo	xo	xo	xo	xo	xo
PL	-	-	-	x	x	xo	xo	xo	xo	xo	xo
PT	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo
RO	x	x	x	x	xo	xo	xo	xo	xo	xo	xo
SE	-	-	-	-	-	-	-	-	-	-	-
SI	-	-	x	x	xo	xo	xo	xo	xo	xo	xo
SK	x	x	x	x	x	xo	xo	xo	xo	xo	xo
UK	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo	xo

Source: EU-LFS, own calculations. – o = Data availability in non-anonymised datasets according to EU-LFS User Guide.

8.4.3 Summary and suggestions concerning the household variables

From our perspective as external researchers, we experienced the codification and documentation of the basic household variables as opaque and to some extent misleading. Neither the EU-LFS User Guide nor its Annex mentions problems of data availability when discussing the relevant variables. However, the EU-LFS User Guide does provide a short discussion in Section 2c, which deals exclusively with derived household variables generally not available for anonymised datasets (Eurostat 2008: 36 ff). As one can see in Tables Table 8.2 and Table 8.4, the data availability in the dataset delivered to us and the data availability reported by Eurostat do not correspond in all cases. This is a source of concern for country/year combinations for which we have data that should not even exist in the non-anonymised datasets. In conclusion, we believe that a more thorough and detailed documentation of the central variables HHNUM, HHSEQNUM, and HHLINK would be very helpful for future researchers working with the EU-LFS datasets. This is especially important as the household indicators are the dataset's biggest strength.

Concerning the codification of household variables, we propose the following adjustments:

- (a) If unambiguous identification of persons is not possible or if each household is made up of only one person, all household variables should be coded as missing (e.g. "." or 99). This includes the household ID (e.g. HHNUM), the sequence number (HHSEQNUM) and the relation between household members (HHLINK).
- (b) If information is provided concerning the relation between household members (HHLINK), the household indicators based upon HHLINK (e.g. HHSPOU, HHFATH etc.) should be non-missing for the reference person.

The anonymisation procedure should clearly be revised here. A quick remedy for the household variables problem would be to allow researchers access to the household variables generated by Eurostat. This could be easily achieved, as the files should be available at Eurostat for internal use anyway. If these files would be linked to the original data before implementing the anonymisation procedure, the additional effort for Eurostat should be negligible.

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Appendix

A.1 Measuring Labour Market Transitions in the EU-LFS

In order to calculate labour market transitions, we need to compare the information on the labour market state of an individual worker in two adjacent years. The information used is derived from the variables MAINSTAT (labour market status in the year of the survey) and WSTAT1Y (labour market status in the year prior to the survey), which are directly comparable with each other. In order to keep the analysis tractable, we aggregated the information contained in these variables into three categories: Employment (E), unemployment (U) and inactivity (I), which closely follows the ILO Definition of Labour Force Status. The category “inactivity” comprises full-time education, domestic tasks, retirement and the category “inactive/other”.

For two large countries, Germany and the UK, the variable MAINSTAT is not available. In order to be able to calculate labour market transitions for these countries, we used the information available in the variable ILOSTAT, as well as the variable WSTAT1Y. Unfortunately, the comparability of these two variables over time is less good than between MAINSTAT and WSTAT1Y, but calculating transitions is still possible. For Ireland, we do not have any information on the labour market state in the year prior to the survey. Therefore, we cannot include Ireland in the analyses of this task.

The identification of direct job-to-job transitions is not straightforward in the EU-LFS, because data quality is not good for the crucial variable. In order to identify direct job-to-job flows (or employment-to-employment, EE' flows), we use the information on job tenure. If a worker indicates that he was employed last year and that his current job tenure is less than 12 months, we define this as an EE' flow. Unfortunately, the tenure variable is not available for two countries (Bulgaria and the Netherlands). We therefore estimate two models for transitions from employment, one without considering direct employment-to-employment flows, the other one considering these flows.

A.2 Tables and Figures

Table A.2.1

Labour force participation 1998 and 2008; in per cent

	1998	2008
DK	79.2	80.7
SE	75.5	79.3
UK	74.6	75.6
NL	72.6	79.0
FI	72.5	75.4
LT	72.1	68.4
EE	71.6	73.6
CZ	71.3	69.7
DE ¹	71.1	76.1
AT	71.0	74.7
PT	70.4	74.2
LV	70.1	74.4
RO	69.7	62.9
SI	68.8	71.8
SK	68.5	68.8
FR	67.5	70.7
CY ²	67.4	72.4
EU-LFS	67.1	70.9
PL	65.9	63.8
IE	64.7	72.0
BE	63.2	67.1
GR	63.0	67.1
ES	62.5	72.3
LU	61.9	66.8
BG ²	61.0	67.9
IT	58.8	63.0
HU	58.4	61.5

Source: EU-LFS, own calculations. – ¹data refer to 1999 instead of 1998 3data refer to 2002 instead of 1998. – ²data refer to 2001 instead of 1998.

Table A.2.2
Labour force participation by gender
 1998 to 2008; in per cent

	Female	Male
DK	75.9	83.8
SE	75.4	79.9
FI	73.9	77.6
NL	68.2	83.9
UK	68.0	81.9
DE	67.4	79.7
EE	66.3	74.9
LT	66.2	73.7
PT	66.0	79.1
LV	65.1	75.1
SI	64.7	73.6
AT	64.6	79.1
CY	64.5	80.1
FR	63.7	74.9
CZ	62.6	78.0
SK	62.1	76.0
EU-LFS	61.2	76.8
BG	59.1	67.7
RO	59.0	71.7
IE	58.5	79.7
PL	58.5	70.9
BE	57.3	73.1
ES	55.4	79.5
LU	54.4	75.7
HU	53.5	67.6
GR	52.4	78.3
IT	48.5	73.9

Source: EU-LFS, own calculations.

Table A.2.3

Labour force participation by age group

1998 to 2008; in per cent

	15-24 years	25-54 years	55-64 years
Scandinavian	56.3	88.3	63.3
UK	60.9	84.0	56.2
Continental	45.9	86.2	42.9
EU-LFS	43.9	83.2	43.2
CEE II	36.5	83.9	34.5
CEE I	34.4	81.7	40.6
Mediterranean	39.4	78.6	38.1

Source: EU-LFS, own calculations.

Table A.2.4

Labour force participation by education

1998 to 2008; in per cent

	Low skilled	Medium skilled	High skilled
Scandinavian	61.6	82.5	89.0
UK	55.8	80.1	89.4
Continental	53.9	76.8	86.1
EU-LFS	52.9	75.1	86.8
New Members II	33.5	73.8	87.6
New Members I	42.9	72.1	86.2
Mediterranean	57.1	69.9	85.7

Source: EU-LFS, own calculations.

Table A.2.5

Share of part-time employment in total employment

1998 and 2008; in per cent

country	1998	2008
NL	38.5	46.1
UK	24.1	23.4
SE	23.4	25.7
DK	22.1	23.9
DE ¹	20.3	25.0
FR	17.2	17.1
IE	16.5	18.0
BE	15.7	22.4
AT	15.4	22.6
EU-LFS	14.7	17.5
RO	13.7	8.6
LV	11.7	5.5
FI	11.3	12.9
LU	9.4	17.9
PL	8.9	7.7
PT	8.7	8.6
LT	8.5	6.5
ES	7.8	12.2
IT	7.3	14.1
EE	6.7	6.4
SI	6.7	8.1
CY ²	5.8	6.8
GR	5.6	5.4
CZ	5.3	4.3
HU	3.6	4.3
BG ³	3.3	1.9
SK	2.2	2.5

Source: EU-LFS, own calculations. – ¹data refer to 2002 instead of 1998. – ²data refer to 1999 instead of 1998. – ³data refer to 2001 instead of 1998.

Table A.2.6
Part-time employment by gender
 1998 to 2008; in per cent

	Female	Male
NL	72.7	20.3
UK	42.9	8.7
DE	42.5	7.1
BE	39.2	6.0
SE	37.4	10.0
AT	36.4	4.9
DK	33.8	11.0
LU	31.6	2.1
IE	31.2	6.4
FR	30.3	5.3
EU-LFS	28.9	6.5
IT	21.3	3.9
ES	20.1	3.3
FI	17.5	7.8
PT	13.7	4.0
RO	12.3	10.0
PL	12.0	6.6
CY	11.7	3.2
LV	10.3	6.9
LT	9.9	6.7
EE	9.2	4.1
GR	8.8	2.4
SI	8.7	5.4
CZ	8.3	1.7
HU	5.4	2.4
SK	3.7	1.1
BG	2.7	1.8

Source: EU-LFS, own calculations.

Table A.2.7

Part-time employment by age group
1998 to 2008; in per cent

	Share
age 15-24	23.9
age 25-54	14.6
age 55-64	21.6

Source: EU-LFS, own calculations.

Table A.2.8

Part-time employment by industry

1998 to 2008; in per cent

Economic activity in main job by sector (NACE 1-digit)	
Activities of household	56.48
Health and social work	30.63
Hotels and restaurants	26.39
Other community, social and personal service activities	26.03
Education	23.24
Wholesale and retail trade, repair	20.68
Agriculture, Forestry and Hunting	18.86
Real estate, renting and business activities	18.80
All industries	16.72
Financial intermediation	12.88
Public administration and defence, compulsory social security	12.14
Extra-territorial organizations and bodies	9.94
Transport, storage, and communication	9.78
Fishing	9.33
Manufacturing	6.63
Construction	5.00
Electricity, gas and water supply	4.36
Mining and quarrying	2.28

Source: EU-LFS, own calculations.

Table A.2.9
Reason for part-time employment
in per cent

	CEE I	CEE II	Mediterranean	Continental	Scandinavian	UK	EU-LFS
WOMEN							
Person is undergoing school education or training	4.00	7.47	5.90	6.64	17.79	12.82	7.89
Own illness or disability	6.35	8.85	2.84	2.82	9.39	1.90	3.41
Looking after children or incapacitated adults	6.84	11.94	25.00	29.57	15.81	44.44	28.57
Other family or personal reasons	8.96	5.30	12.14	24.34	19.93	14.39	19.37
Person could not find a full-time job	30.28	21.09	34.50	18.80	22.33	7.34	20.82
Other reasons	43.57	45.34	19.63	17.84	14.76	19.10	19.95
MEN							
Person is undergoing school education or training	3.63	15.92	14.81	25.16	30.04	31.74	21.98
Own illness or disability	6.84	17.06	7.79	7.07	13.48	4.65	8.12
Looking after children or incapacitated adults	0.46	0.38	1.41	4.87	2.84	5.77	3.48
Other family or personal reasons	3.31	2.42	5.37	8.06	19.16	20.95	9.27
Person could not find a full-time job	50.45	19.12	39.33	26.36	18.09	16.70	28.29
Other reasons	35.32	45.12	31.29	28.49	16.39	20.19	28.86

Source: EU-LFS, own calculations.

Table A.2.10
Probit estimation of the participation rate

	all		women		men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
<i>Austria</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Belgium	-0.0923	-19.81	-0.1206	-31.49	-0.0695	-10.74
Bulgaria	-0.1275	-33.46	-0.1021	-24.03	-0.1628	-29.13
Cyprus	0.0128	3.96	-0.0297	-9.77	0.0490	10.91
Czech Republic	-0.0330	-12.55	-0.0383	-16.28	-0.0286	-11.35
Germany	-0.0306	-5.75	-0.0149	-2.46	-0.0448	-9.15
Estonia	-0.0472	-22.16	-0.0247	-6.74	-0.0891	-56.06
Spain	-0.0582	-11.65	-0.1237	-19.28	0.0052	0.77
Finland	-0.0635	-4.57	-0.0007	-0.05	-0.1238	-8.30
France	-0.0623	-21.43	-0.0454	-21.72	-0.0841	-16.27
Greece	-0.0890	-37.03	-0.1687	-51.10	-0.0045	-0.94
Hungary	-0.1197	-50.49	-0.0962	-37.70	-0.1495	-41.49
Ireland	0.0137	3.18	-0.0350	-7.16	0.0524	11.37
Italy	-0.1015	-23.38	-0.1558	-34.77	-0.0464	-6.50
Lithuania	-0.0771	-18.38	-0.0599	-11.52	-0.1136	-31.58
Luxembourg	-0.0770	-30.11	-0.1012	-39.63	-0.0518	-15.14
Latvia	-0.0413	-13.69	-0.0311	-6.97	-0.0715	-20.56
Netherlands	0.0599	15.52	0.0297	8.60	0.0834	19.16
Poland	-0.1673	-34.85	-0.1511	-28.57	-0.1946	-38.76
Portugal	0.0660	9.39	0.0675	9.76	0.0548	5.32
Romania	-0.0606	-18.08	-0.0415	-9.94	-0.0872	-37.88
Slovenia	-0.0606	-20.96	-0.0531	-14.30	-0.0693	-22.90
Slovakia	-0.1004	-21.03	-0.0839	-16.08	-0.1221	-29.35
United Kingdom	0.0371	22.01	0.0428	10.68	0.0289	13.45
<i>1998</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
1999	0.0021	0.34	0.0063	1.05	-0.0010	-0.15
2000	0.0075	0.81	0.0115	1.25	0.0047	0.47
2001	0.0110	0.90	0.0166	1.38	0.0069	0.52
2002	0.0072	0.45	0.0154	0.95	0.0007	0.04
2003	0.0079	0.45	0.0197	1.10	-0.0018	-0.10
2004	0.0048	0.26	0.0184	0.99	-0.0070	-0.37
2005	0.0106	0.55	0.0224	1.07	0.0007	0.04
2006	0.0199	1.06	0.0304	1.47	0.0114	0.66
2007	0.0303	1.57	0.0404	1.81	0.0224	1.29
2008	0.0322	1.68	0.0404	1.71	0.0253	1.56
Male	0.1496	5.82				
<i>Female</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 15-24	-0.3523	-10.93	-0.3397	-9.71	-0.3497	-12.13
Age 25-54	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 55-64	-0.3592	-15.82	-0.3302	-13.33	-0.4127	-15.07
<i>ISCED 0-2</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	0.1672	9.25	0.1996	12.09	0.1295	5.58
ISCED 5-6	0.2619	15.01	0.3146	17.25	0.1971	8.81

Table A.2.10, continued

	all		women		men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Number of persons (15-65) living in household	0.0027	0.44	0.0003	0.04	0.0034	0.62
Number of children (<=4 years) in household	-0.0578	-2.89	-0.0953	-3.71	0.0154	1.47
Number of children (5-14 years) in household	-0.0150	-1.70	-0.0223	-1.83	-0.0149	-2.26
Number of elderly persons living in household (age 65 and above)	-0.0004	-0.04	0.0138	1.34	-0.0019	-0.23
<i>No spouse in household</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	-0.0736	-8.38	-0.2184	-13.83	0.0922	5.42
Employed spouse in household	0.2300	21.04	0.2326	13.30	0.2246	27.02
Pseudo-R ²	0.2111		0.2400		0.1956	
Number of obs.	13,984,378		7,361,092		6,623,286	

Source: EU-LFS, own calculations. – Notes: Reference categories: Austria, Year 1998, Female, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.2.11
Probit estimation of part-time employment

	all		women		men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
<i>Austria</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Belgium	0.0331	27.90	0.0629	25.45	0.0161	12.21
Bulgaria	-0.1131	-57.32	-0.2213	-159.14	-0.0368	-47.33
Cyprus	-0.0803	-74.69	-0.1650	-173.45	-0.0133	-9.75
Czech Republic	-0.0996	-74.18	-0.1933	-126.22	-0.0342	-52.98
Germany	0.0429	11.20	0.0684	9.84	0.0234	17.51
Estonia	-0.0804	-91.26	-0.1684	-119.90	-0.0051	-11.38
Spain	-0.0610	-22.42	-0.1112	-54.58	-0.0202	-9.38
Finland	-0.0345	-4.17	-0.0969	-7.11	0.0243	3.86
France	-0.0073	-6.76	-0.0326	-19.17	0.0122	9.51
Greece	-0.0923	-41.40	-0.1841	-169.72	-0.0279	-18.64
Hungary	-0.1037	-67.96	-0.2074	-163.07	-0.0263	-43.88
Ireland	-0.0119	-2.77	-0.0294	-6.94	0.0112	3.19
Italy	-0.0546	-24.40	-0.1097	-79.41	-0.0106	-4.51
Lithuania	-0.0759	-49.21	-0.1785	-49.28	0.0184	9.97
Luxembourg	-0.0339	-23.62	-0.0408	-18.08	-0.0297	-26.77
Latvia	-0.0798	-72.13	-0.1750	-93.77	0.0021	2.13
Netherlands	0.2591	40.55	0.3778	43.96	0.1778	69.98
Poland	-0.0633	-41.74	-0.1683	-41.52	0.0291	12.28
Portugal	-0.0812	-26.03	-0.1713	-54.95	-0.0113	-2.61
Romania	-0.0609	-26.37	-0.1859	-62.38	0.0570	16.16
Slovenia	-0.0706	-62.82	-0.1699	-113.82	0.0104	9.66
Slovakia	-0.1126	-67.28	-0.2160	-172.58	-0.0431	-61.73
United Kingdom	0.0545	24.72	0.0685	20.56	0.0448	22.06
<i>1998</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
1999	0.0051	0.96	0.0102	1.03	0.0008	0.38
2000	0.0046	0.62	0.0102	0.77	0.0006	0.18
2001	0.0050	0.58	0.0092	0.61	0.0015	0.37
2002	-0.0009	-0.09	0.0001	0.00	-0.0013	-0.27
2003	0.0032	0.30	0.0062	0.33	0.0007	0.15
2004	0.0112	0.79	0.0196	0.77	0.0047	0.79
2005	0.0191	1.31	0.0310	1.16	0.0083	1.51
2006	0.0216	1.41	0.0352	1.28	0.0097	1.65
2007	0.0218	1.39	0.0359	1.30	0.0099	1.57
2008	0.0203	1.24	0.0340	1.18	0.0089	1.32
Male	-0.1834	-13.15				
<i>Female</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 15-24	0.0631	2.62	0.0291	0.80	0.0789	4.35
Age 25-54	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 55-64	0.0923	4.92	0.1448	4.86	0.0723	6.06
<i>ISCED 0-2</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	-0.0346	-3.57	-0.0629	-4.16	-0.0124	-1.59
ISCED 5-6	-0.0673	-7.99	-0.1383	-10.28	-0.0095	-1.06

Table A.2.11, continued

	all		women		men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Number of persons (15-65) living in household	0.0064	3.60	0.0188	3.79	-0.0014	-0.90
Number of children (<=4 years) in household	0.0387	4.25	0.0877	4.48	0.0037	2.68
Number of children (5-14 years) in household	0.0383	5.06	0.0838	4.94	0.0091	3.19
Number of elderly persons living in household (age 65 and above)	0.0043	1.51	0.0007	0.15	0.0008	0.36
<i>No spouse in household</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	-0.0057	-0.74	0.0563	2.97	-0.0326	-14.22
Employed spouse in household	-0.0045	-0.84	0.0452	3.90	-0.0364	-19.45
Pseudo-R ²	0.1613		0.1303		0.0968	
Number of obs.	7,960,263		3,756,792		4,203,471	

Source: EU-LFS, own calculations. – Notes: Reference categories: Austria, Year 1998, Female, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.2.12
Tobit estimation of hours usually worked

	all		women		men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
<i>Austria</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Belgium	-7.1989	-26.71	-8.7192	-35.22	-6.1874	-14.98
Bulgaria	-6.1181	-24.47	-3.0083	-9.61	-10.1891	-33.31
Cyprus	1.4826	6.90	0.0765	0.41	2.1146	6.31
Czech Republic	0.4640	2.72	1.0284	6.60	-0.2871	-2.02
Germany	-3.5604	-14.03	-3.5619	-12.67	-3.5361	-13.60
Estonia	-1.0383	-5.83	1.1887	5.32	-4.7722	-54.23
Spain	-2.0171	-6.29	-5.4300	-17.63	0.7619	1.32
Finland	-4.2119	-5.61	-0.2632	-0.33	-8.0952	-10.09
France	-4.7025	-23.37	-3.4196	-24.29	-6.4143	-17.85
Greece	-1.5635	-7.70	-6.1415	-29.89	2.5095	5.64
Hungary	-6.1276	-37.57	-3.1986	-15.66	-9.7010	-51.68
Ireland	-0.9978	-3.38	-3.5574	-11.92	1.0883	2.84
Italy	-5.4196	-16.41	-8.5903	-27.19	-2.7781	-4.64
Lithuania	-5.6015	-18.82	-2.8670	-8.15	-9.7427	-37.34
Luxembourg	-5.1449	-24.38	-5.9100	-34.92	-4.5280	-17.02
Latvia	-0.3774	-2.17	1.4846	6.61	-3.4272	-16.21
Netherlands	-3.1208	-10.91	-5.5541	-19.03	-1.0231	-3.06
Poland	-7.5572	-22.91	-6.0767	-14.25	-9.6770	-35.43
Portugal	5.8859	10.50	6.7106	16.52	3.9931	3.90
Romania	-4.8765	-19.79	-2.2856	-6.82	-8.1767	-41.71
Slovenia	-1.8780	-11.50	0.0591	0.27	-3.7128	-22.84
Slovakia	-3.6262	-11.10	-1.4328	-3.60	-6.1444	-22.80
United Kingdom	0.3673	2.44	-0.8011	-5.72	1.3729	6.68
<i>1998</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
1999	-0.0227	-0.06	0.1922	0.48	-0.1539	-0.36
2000	0.1885	0.31	0.4858	0.81	-0.0315	-0.05
2001	0.3205	0.43	0.7197	0.98	0.0297	0.04
2002	0.1929	0.22	0.8070	0.92	-0.2876	-0.31
2003	0.3184	0.30	1.0458	1.03	-0.2432	-0.21
2004	0.0704	0.07	0.8519	0.82	-0.5396	-0.46
2005	0.2135	0.20	0.8126	0.72	-0.2117	-0.19
2006	0.7131	0.69	1.2802	1.15	0.3346	0.33
2007	1.2570	1.15	1.8162	1.48	0.8870	0.85
2008	1.3697	1.27	1.8819	1.49	1.0379	1.02
Male	12.4532	7.97				
<i>Female</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 15-24	-23.8872	-8.30	-22.4903	-6.62	-24.5807	-10.88
Age 25-54	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 55-64	-21.8603	-11.08	-21.7133	-9.74	-22.8191	-11.14
<i>ISCED 0-2</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	11.0145	8.29	12.9792	11.38	8.5737	4.55
ISCED 5-6	16.5728	10.41	19.5691	14.05	12.1354	5.10

Table A.2.12, continued

	all		women		men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Number of persons (15-65) living in household	0.3064	0.98	-0.0463	-0.12	0.4594	1.56
Number of children (<=4 years) in household	-4.2223	-3.96	-6.9217	-5.22	0.4845	0.80
Number of children (5-14 years) in household	-1.6807	-2.68	-2.5179	-2.98	-1.4040	-3.79
Number of elderly persons living in household (age 65 and above)	-0.0486	-0.09	0.7821	1.17	0.2926	0.58
<i>No spouse in household</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	-4.4328	-7.78	-14.4199	-9.11	5.4620	6.01
Employed spouse in household	11.4506	15.87	10.0897	9.55	12.4641	22.44
Constant	10.0458	6.8	12.1953	7.00	21.8555	10.07
Pseudo-R ²	0.0475		0.0558		0.04	
Number of obs.	13,682,757		7,246,593		6,436,164	

Source: EU-LFS, own calculations. – Notes: Reference categories: Austria, Year 1998, Female, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.2.13
Intensive and extensive margin: Women

	Extensive margin		Intensive Margin		Composite Effect	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
<i>Austria</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Belgium	-0.1206	-31.49	-2.6038	-10.57	-8.7192	-35.22
Bulgaria	-0.1021	-24.03	5.3829	25.40	-3.0083	-9.61
Cyprus	-0.0297	-9.77	3.0464	22.73	0.0765	0.41
Czech Republic	-0.0383	-16.28	4.9233	46.83	1.0284	6.60
Germany	-0.0149	-2.46	-3.6333	-20.56	-3.5619	-12.67
Estonia	-0.0247	-6.74	3.3084	12.65	1.1887	5.32
Spain	-0.1237	-19.28	1.0988	7.02	-5.4300	-17.63
Finland	-0.0007	-0.05	-0.0776	-0.23	-0.2632	-0.33
France	-0.0454	-21.72	-1.0678	-6.03	-3.4196	-24.29
Greece	-0.1687	-51.10	4.6885	43.70	-6.1415	-29.89
Hungary	-0.0962	-37.70	4.2270	38.01	-3.1986	-15.66
Ireland	-0.0350	-7.16	-2.4394	-17.49	-3.5574	-11.92
Italy	-0.1558	-34.77	-0.2951	-4.59	-8.5903	-27.19
Lithuania	-0.0599	-11.52	2.5975	11.19	-2.8670	-8.15
Luxembourg	-0.1012	-39.63	-0.7819	-5.51	-5.9100	-34.92
Latvia	-0.0311	-6.97	4.9002	33.20	1.4846	6.61
Netherlands	0.0297	8.60	-9.7220	-53.41	-5.5541	-19.03
Poland	-0.1511	-28.57	3.4314	19.19	-6.0767	-14.25
Portugal	0.0675	9.76	3.0957	11.51	6.7106	16.52
Romania	-0.0415	-9.94	5.2220	27.80	-2.2856	-6.82
Slovenia	-0.0531	-14.30	4.2067	36.76	0.0591	0.27
Slovakia	-0.0839	-16.08	5.1996	30.21	-1.4328	-3.60
United Kingdom	0.0428	10.68	-2.9962	-15.89	-0.8011	-5.72
<i>1998</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
1999	0.0063	1.05	-0.3450	-1.95	0.1922	0.48
2000	0.0115	1.25	-0.4415	-2.59	0.4858	0.81
2001	0.0166	1.38	-0.5594	-4.15	0.7197	0.98
2002	0.0154	0.95	-0.5213	-3.41	0.8070	0.92
2003	0.0197	1.10	-0.6373	-2.77	1.0458	1.03
2004	0.0184	0.99	-0.8400	-3.48	0.8519	0.82
2005	0.0224	1.07	-1.0408	-3.90	0.8126	0.72
2006	0.0304	1.47	-0.9997	-3.57	1.2802	1.15
2007	0.0404	1.81	-0.9688	-3.29	1.8162	1.48
2008	0.0404	1.71	-0.9696	-3.16	1.8819	1.49
Age 15-24	-0.3397	-9.71	-1.7476	-2.20	-22.4903	-6.62
<i>Age 25-54</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 55-64	-0.3302	-13.33	-3.3022	-4.26	-21.7133	-9.74
<i>ISCED 0-2</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	0.1996	12.09	0.7335	1.46	12.9792	11.38
ISCED 5-6	0.3146	17.25	1.9115	1.54	19.5691	14.05

Table A.2.13, continued

	Extensive margin		Intensive Margin		Composite Effect	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Number of persons (15-65) living in household	0.0003	0.04	-0.3992	-2.36	-0.0463	-0.12
Number of children (<=4 years) in household	-0.0953	-3.71	-1.9265	-3.00	-6.9217	-5.22
Number of children (5-14 years) in household	-0.0223	-1.83	-1.9255	-3.18	-2.5179	-2.98
Number of elderly persons living in household (age 65 and above)	0.0138	1.34	0.1438	0.80	0.7821	1.17
<i>No spouse in household</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	-0.2184	-13.83	-1.1875	-2.98	-14.4199	-9.11
Employed spouse in household	0.2326	13.30	-0.5990	-1.88	10.0897	9.55
Constant			37.8617	47.79	12.1953	7.00
R ²	0.24		0.1122		0.0558	
Number of obs.	7,361,092		3,676,222		7,246,593	

Source: EU-LFS, own calculations. – Notes: Reference categories: Austria, Year 1998, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.2.14
Intensive and extensive margin: Men
 2006 to 2008

	Extensive margin		Intensive Margin		Composite Effect	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
<i>Austria</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Belgium	-0.0695	-10.74	-1.9518	-24.00	-6.1874	-14.98
Bulgaria	-0.1628	-29.13	-0.3376	-4.87	-10.1891	-33.31
Cyprus	0.0490	10.91	-0.1503	-1.64	2.1146	6.31
Czech Republic	-0.0286	-11.35	1.7004	25.38	-0.2871	-2.02
Germany	-0.0448	-9.15	-2.0682	-26.89	-3.5361	-13.60
Estonia	-0.0891	-56.06	-0.8194	-11.69	-4.7722	-54.23
Spain	0.0052	0.77	-0.4382	-3.33	0.7619	1.32
Finland	-0.1238	-8.30	-1.9716	-10.91	-8.0952	-10.09
France	-0.0841	-16.27	-2.0195	-26.71	-6.4143	-17.85
Greece	-0.0045	-0.94	2.6628	30.69	2.5095	5.64
Hungary	-0.1495	-41.49	-0.6546	-14.89	-9.7010	-51.68
Ireland	0.0524	11.37	-1.0722	-7.73	1.0883	2.84
Italy	-0.0464	-6.50	-0.9214	-7.70	-2.7781	-4.64
Lithuania	-0.1136	-31.58	-2.7577	-21.81	-9.7427	-37.34
Luxembourg	-0.0518	-15.14	-1.7833	-17.83	-4.5280	-17.02
Latvia	-0.0715	-20.56	0.8428	12.71	-3.4272	-16.21
Netherlands	0.0834	19.16	-6.3608	-84.98	-1.0231	-3.06
Poland	-0.1946	-38.76	0.9076	10.47	-9.6770	-35.43
Portugal	0.0548	5.32	-0.6986	-2.81	3.9931	3.90
Romania	-0.0872	-37.88	-0.5326	-12.33	-8.1767	-41.71
Slovenia	-0.0693	-22.90	-0.2935	-8.35	-3.7128	-22.84
Slovakia	-0.1221	-29.35	0.3369	3.83	-6.1444	-22.80
United Kingdom	0.0289	13.45	-0.1541	-1.93	1.3729	6.68
1998	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
1999	-0.0010	.	-0.1018	-1.19	-0.1539	-0.36
2000	0.0047	0.47	-0.2856	-2.84	-0.0315	-0.05
2001	0.0069	0.52	-0.4704	-2.72	0.0297	0.04
2002	0.0007	0.04	-0.5334	-2.76	-0.2876	-0.31
2003	-0.0018	-0.10	-0.5244	-2.79	-0.2432	-0.21
2004	-0.0070	-0.37	-0.4728	-2.21	-0.5396	-0.46
2005	0.0007	0.04	-0.5110	-2.38	-0.2117	-0.19
2006	0.0114	0.66	-0.5430	-2.48	0.3346	0.33
2007	0.0224	1.29	-0.6008	-2.82	0.8870	0.85
2008	0.0253	1.56	-0.6904	-3.67	1.0379	1.02
Age 15-24	-0.3497	-12.13	-3.8961	-4.21	-24.5807	-10.88
Age 25-54	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 55-64	-0.4127	-15.07	-0.9846	-1.78	-22.8191	-11.14
ISCED 0-2	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	0.1295	5.58	-0.1388	-0.34	8.5737	4.55
ISCED 5-6	0.1971	8.81	0.0271	0.03	12.1354	5.10

Table A.2.14, continued

	Extensive margin		Intensive Margin		Composite Effect	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Number of persons (15-65) living in household	0.0034	0.62	0.0280	0.40	0.4594	1.56
Number of children (<=4 years) in household	0.0154	1.47	0.1797	1.89	0.4845	0.80
Number of children (5-14 years) in household	-0.0149	-2.26	-0.1570	-0.72	-1.4040	-3.79
Number of elderly persons living in household (age 65 and above)	-0.0019	-0.23	0.2602	1.61	0.2926	0.58
No spouse in household	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	0.0922	5.42	1.2659	5.73	5.4620	6.01
Employed spouse in household	0.2246	27.02	1.8078	7.40	12.4641	22.44
Constant			42.3293	74.52	21.8555	10.07
R ²	0.1956		0.0554		0.04	
Number of obs.	6,623,286		4,064,385		6,436,164	

Source: EU-LFS, own calculations. – Notes: Reference categories: Austria, Year 1998, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.2.15
Household composition and labour supply of different age groups

	Participation				Parttime employment				Hours worked			
	Women		Men		Women		Men		Women		Men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Age 15-24	-0.3332	-9.54	-0.3358	-11.02	0.0381	1.06	0.0764	4.23	-21.5275	-6.45	-23.0813	-9.96
Age 25-54	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-64	-0.3233	-14.27	-0.4093	-14.98	0.1457	5.09	0.0700	5.71	-20.5852	-9.81	-22.2521	-10.77
ISCED 0-2	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
ISCED 3-4	0.1988	11.76	0.1274	5.47	-0.0642	-4.31	-0.0120	-1.54	12.8354	11.23	8.3275	4.47
ISCED 5-6	0.3151	17.14	0.1962	8.73	-0.1392	-10.40	-0.0092	-1.02	19.5355	13.92	11.9684	5.08
Number of persons (15-65) living in household	0.0003	0.04	0.0025	0.45	0.0206	3.73	-0.0014	-0.88	-0.0388	-0.10	0.4093	1.35
Age 15-24 x Number of children (<=4 years)	-0.0133	-0.32	0.0307	1.66	0.0668	2.87	-0.0103	-2.54	-1.3687	-0.50	2.7694	2.00
Age 25-54 x Number of children (<=4 years)	-0.1293	-5.38	0.0046	0.58	0.0956	4.51	0.0069	2.69	-8.5314	-7.24	-0.1242	-0.28
Age 25-54 x Number of children (<=4 years)	0.0012	0.07	0.0254	1.59	0.0359	1.73	0.0242	3.33	-1.8458	-2.50	-0.8301	-1.12
Age 15-24 x Number of children (5-14 years)	-0.0586	-4.01	-0.0545	-5.24	0.0483	2.73	0.0182	4.04	-5.9878	-6.14	-6.1194	-8.81
Age 25-54 x Number of children (5-14 years)	-0.0079	-0.47	0.0236	4.45	0.0928	4.88	0.0028	1.24	-1.4146	-1.27	1.3745	4.49
Age 25-54 x Number of children (5-14 years)	-0.0189	-1.05	0.0531	3.61	0.0289	2.45	0.0039	0.70	-3.3988	-4.79	2.8755	2.38
Age 15-24 x Number of elderly persons (>= 65 years)	-0.0068	-0.44	0.0111	1.10	0.0225	1.50	-0.0056	-1.10	-1.3283	-1.14	0.7255	0.95
Age 25-54 x Number of elderly persons (>= 65 years)	0.0323	2.35	-0.0063	-0.58	-0.0091	-1.80	0.0016	0.52	2.4862	3.32	0.3988	0.63
Age 25-54 x Number of elderly persons (>= 65 years)	-0.0178	-1.02	-0.0040	-0.27	0.0268	1.69	0.0056	1.76	-3.1075	-2.32	-2.1104	-1.66
No spouse in household	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Inactive/unemployed spouse in household	-0.2171	-13.74	0.0871	5.28	0.0512	2.99	-0.0316	-12.37	-14.2417	-8.87	5.0276	5.80
Employed spouse in household	0.2339	13.37	0.2225	26.01	0.0429	3.94	-0.0357	-19.58	10.2699	10.02	12.2503	22.09
Country Dummies	Output omitted		Output omitted		Output omitted		Output omitted		Output omitted		Output omitted	
Year Dummies	Output omitted		Output omitted		Output omitted		Output omitted		Output omitted		Output omitted	
Constant												
R ²	0.2412		0.1968		0.131		0.0874		0.0563		0.0405	
Number of obs.	7,361,092		6,623,286		3,756,792		4,203,471		7,246,593		6,436,164	

Source: EU-LFS, own calculations. – Notes: Reference categories: Austria, Year 1998 Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.2.16
Simultaneous estimation of the participation decision and hours worked of couples

	Couples without children				Couples with children aged 0-4 years				Couples with children ages 0-14 years				
	Men		Women		Men		Women		Men		Women		
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	
PARTICIPATION													
Labour market participation	0.4294	203.53	0.3457	129.87	0.2192	60.23	0.2602	16.99	0.2162	110.94	0.2980	47.58	
Age 15-24	-0.0436	-28.30	-0.0568	-48.95	-0.0557	-28.46	-0.1804	-84.52	-0.0658	-40.33	-0.1751	-112.29	
Age 25-54	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category		
Age 55-64	-0.2318	-299.69	-0.2200	-218.91	-0.2747	-108.10	-0.1372	-20.10	-0.2510	-232.15	-0.1589	-51.02	
Low skilled (ISCED 0-2)	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category		
Medium skilled (ISCED 3-4)	0.0466	84.42	0.1255	198.83	0.0577	51.38	0.1860	92.53	0.0644	117.52	0.1845	204.77	
High skilled (ISCED 5-6)	0.0868	124.78	0.2101	242.05	0.0712	51.50	0.2986	123.57	0.0821	119.58	0.3044	267.38	
Number of persons (15-65) living in household	0.0287	104.54	-0.0192	-62.26	-0.0230	-38.93	0.0117	11.33	-0.0142	-53.09	-0.0109	-25.67	
Number of children (<=4 years) in household					0.0211	21.46	-0.1181	-86.52	0.0128	27.10	-0.1422	-255.17	
Number of children (5-14 years) in household									0.0003	0.91	-0.0596	-138.20	
Number of elderly persons living in household (age 65 and above)									0.0104	12.58	0.0274	21.92	
Country Dummies	Output omitted		Output omitted		Output omitted		Output omitted		Output omitted		Output omitted		
Year Dummies	Output omitted		Output omitted		Output omitted		Output omitted		Output omitted		Output omitted		
Constant	0.4296	166.43	0.3711	126.34	0.7455	156.91	0.4274	27.42	0.7566	312.21	0.4079	62.00	
Pseudo-R ²	0.1574		0.2097		0.0398		0.1462		0.0466		0.1385		
Number of obs.		2,672,728				506,778				2,205,453			
HOURS WORKED													
log (hours worked of partner)	-0.0073	-1.48	1.1063	34.50	-0.1105	-5.08	0.2304	1.63	-0.0906	-4.43	0.6084	3.10	
Age 15-24	-0.0432	-29.60	0.0308	14.99	-0.0312	-9.61	-0.0303	-8.00	-0.0469	-5.20	0.0042	0.34	
Age 25-54	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category		
Age 55-64	-0.0485	-56.45	-0.1301	-70.38	-0.0559	-13.43	-0.0438	-2.85	-0.0642	-10.59	0.0322	1.35	
ISCED 0-2	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category		
ISCED 3-4	-0.0122	-21.45	0.0655	61.45	-0.0045	-3.14	0.0350	12.93	0.0019	1.16	0.0327	8.81	
ISCED 5-6	-0.0176	-27.15	0.1199	90.63	-0.0144	-8.57	0.0756	20.16	-0.0103	-5.62	0.0909	21.71	

Table A.2.16, continued

	Couples without children				Couples with children aged 0-4 years				Couples with children ages 0-14 years			
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Number of persons (15-65) living in household	0.0087	23.88	-0.0556	-93.00	0.0022	2.66	0.0145	10.09	0.0015	1.51	0.0203	10.21
Number of children (<=4 years) in household					0.0015	0.69	-0.0898	-35.25	0.0013	0.60	-0.0456	-10.93
Number of children (5-14 years) in household									0.0065	4.14	-0.0589	-18.75
Number of elderly persons living in household (age 65 and above)	0.0154	13.92	0.0078	3.65	0.0270	11.35	0.0083	1.47	0.0288	11.35	0.0296	4.30
Country Dummies	Output omitted		Output omitted		Output omitted		Output omitted		Output omitted		Output omitted	
Year Dummies	Output omitted		Output omitted		Output omitted		Output omitted		Output omitted		Output omitted	
Constant	3.7605	207.46	-0.5258	-4.40	4.0937	55.17	2.5285	4.83	4.0485	59.42	1.0027	1.37
Pseudo-R ²	0.0187		-0.1584		-0.0367		0.1527		-0.0196		0.177	
Number of obs.	1,242,668				254,559				178,579			

Source: EU-LFS, own calculations. – Notes: Reference categories: Austria, Year 1998, Female, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.2.17
Correlation between country fixed effects and institutional indicators

	Participation				Part-time				Hours worked			
	Women		Men		Women		Men		Women		Men	
	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
GDP growth	-0.0036	-0.62	-0.0170	-3.39	-0.0332	-3.04	-0.0038	-0.97	0.3824	1.01	-0.8921	-2.64
Population growth	0.0008	0.68	0.0073	4.98	0.0075	2.58	0.0001	0.08	-0.0871	-1.04	0.3898	3.97
Unemployment rate	-0.0087	-2.70	-0.0168	-4.74	-0.0209	-2.19	-0.0046	-1.14	-0.0882	-0.44	-0.7161	-3.43
Tax Rate (single)	-0.0006	-0.36	-0.0034	-1.44	0.0063	1.40	0.0026	2.09	-0.1282	-1.22	-0.2273	-1.88
Ratio Tax Rate one-earner family/ Tax Rate two earner family	-0.0093	-0.30	-0.0564	-1.32	-0.0073	-0.11	0.0360	1.52	-0.5193	-0.29	-3.4207	-1.39
Fertility	0.1048	2.25	0.1413	2.00	0.3794	3.04	0.0760	1.64	-1.8969	-0.79	4.2953	1.08
Income inequality	0.0045	0.32	0.0094	0.69	-0.0318	-1.36	-0.0013	-0.17	0.8521	0.95	0.9975	1.15
Pensions as share of GDP	-0.0003	-0.05	0.0031	0.37	0.0235	1.61	0.0048	1.13	-0.3955	-1.10	0.2540	0.55
Mean retirement age	0.0207	3.47	0.0275	3.69	0.0164	1.10	0.0071	1.41	0.7763	1.73	1.4461	3.58
Child care < 3	0.0019	1.68	0.0033	2.75	0.0083	3.62	0.0018	1.67	-0.0354	-0.54	0.1228	1.68
Employment protection	0.0013	0.04	0.0171	0.55	-0.0198	-0.56	-0.0063	-0.68	0.9489	0.50	1.3974	0.70
Amount of child benefits (% of GDP)	-0.0001	0.00	0.0053	0.24	0.1098	3.49	-0.0032	-0.25	-2.1257	-1.60	-0.4771	-0.32
Income replacement at birth (% of GDP)	0.1407	1.25	-0.0205	-0.12	-0.1124	-0.29	-0.0868	-0.65	9.3907	2.95	4.1306	0.45
Parental leave expenditures (% GDP)	-0.0886	-1.08	-0.2865	-3.91	-0.5078	-2.81	-0.1197	-1.88	4.3712	0.82	-14.2362	-2.92

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.2.18
Labour supply in Central and Eastern European Countries: Group I

	Participation						Part-time						Hours worked					
	Women			Men			Women			Men			Women			Men		
	Marg. Effect	t-value	Reference category	Marg. Effect	t-value	Reference category	Marg. Effect	t-value	Reference category	Marg. Effect	t-value	Reference category	Marg. Effect	t-value	Reference category	Marg. Effect	t-value	Reference category
Bulgaria	Reference category			Reference category			Reference category			Reference category			Reference category			Reference category		
Estonia	0.0629	16.03	0.0497	20.40	0.1225	20.93	0.0716	35.88	3.7176	21.15	4.1142	35.34						
Hungary	-0.0005	-0.13	0.0043	2.05	0.0384	9.08	0.0239	38.58	-0.3158	-1.94	-0.1391	-1.64						
Lithuania	0.0471	9.93	0.0431	5.78	0.1438	18.90	0.1161	44.96	-0.0683	-0.35	-0.3882	-1.07						
Latvia	0.0817	52.98	0.0848	50.29	0.1223	42.42	0.0756	39.31	5.3401	27.42	6.6650	76.55						
Romania	0.0364	4.15	0.0570	25.19	0.0647	6.62	0.0852	15.43	-0.3230	-1.15	1.1090	12.54						
Slovenia	0.0496	27.67	0.0829	21.10	0.1233	16.06	0.0908	23.91	3.1747	27.25	6.0331	26.78						
1998	Reference category			Reference category			Reference category			Reference category			Reference category			Reference category		
1999	-0.0288	-1.19	-0.0445	-2.14	-0.0046	-1.13	0.0021	1.53	-1.9302	-2.00	-2.8297	-2.81						
2000	-0.0363	-1.87	-0.0556	-4.00	-0.0096	-1.82	0.0011	0.24	-2.3271	-3.88	-3.9971	-12.61						
2001	-0.0716	-3.04	-0.0895	-3.57	-0.0084	-1.38	0.0078	1.97	4.1926	-4.43	-5.7882	-4.56						
2002	-0.1013	-10.76	-0.1213	-10.39	-0.0251	-10.04	-0.0060	-5.47	-5.1985	-9.23	-7.0486	-9.43						
2003	-0.1015	-13.10	-0.1129	-13.23	-0.0216	-8.08	-0.0022	-1.27	-5.3286	-10.31	-6.6411	-11.98						
2004	-0.0963	-15.82	-0.1154	-12.78	-0.0229	-5.00	0.0001	0.02	-4.7156	-13.32	-6.5944	-13.93						
2005	-0.1078	-10.53	-0.1122	-11.98	-0.0263	-9.84	-0.0044	-2.57	-5.5207	-8.14	-6.6343	-15.55						
2006	-0.0978	-9.85	-0.0981	-7.93	-0.0276	-7.41	-0.0057	-3.16	-4.9497	-7.34	-5.8394	-9.35						
2007	-0.0965	-6.12	-0.0883	-4.59	-0.0281	-9.63	-0.0086	-4.29	-4.9051	-4.66	-5.2725	-5.04						
2008	-0.0980	-4.80	-0.0847	-3.99	-0.0264	-9.33	-0.0086	-3.52	-5.0386	-3.64	-5.0303	-4.04						
Age 15-24	-0.4336	-40.76	-0.3888	-39.07	0.0458	3.93	0.0277	3.88	-31.7854	-194.19	-28.5835	-21.7						
Age 25-54	Reference category			Reference category			Reference category			Reference category			Reference category			Reference category		
Age 55-64	-0.3334	-8.03	-0.3484	-18.60	0.0839	4.27	0.0615	6.27	-25.1698	-12.85	-23.3855	-15.28						
ISCED 0-2	Reference category			Reference category			Reference category			Reference category			Reference category			Reference category		
ISCED 3-4	0.1840	3.80	0.1709	2.68	-0.0825	-5.15	-0.0626	-9.07	16.4280	8.55	15.5473	4.35						
ISCED 5-6	0.3457	13.32	0.2824	7.07	-0.0805	-6.83	-0.0602	-7.16	24.8881	20.67	23.0951	6.99						
Number of persons (15-65) living in household	0.0193	4.68	0.0035	0.56	0.0019	1.06	0.0009	0.70	1.4070	5.28	0.3801	0.91						
Number of children (<=4 years) in household	-0.0617	-1.01	0.0479	3.56	0.0128	3.30	0.0015	1.64	-4.8523	-1.38	2.5283	3.32						
Number of children (5-14 years) in household	0.0076	1.71	0.0102	1.13	0.0119	6.55	0.0062	6.50	-0.2860	-1.22	0.0134	0.02						

Table A.2.18, continued

	Participation				Part-time				Hours worked			
	Women		Men		Women		Men		Women		Men	
	Marg_Effect	t-value	Marg_Effect	t-value	Marg_Effect	t-value	Marg_Effect	t-value	Marg_Effect	t-value	Marg_Effect	t-value
Number of elderly persons living in household (age 65 and above)	0.0350	2.79	0.0189	1.45	0.0106	3.13	0.0063	3.78	1.5815	2.61	0.7842	1.70
No spouse in household	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Inactive/unemployed spouse in household	-0.2180	-14.20	0.0431	8.38	-0.0071	-2.50	-0.0283	-11.49	-13.3937	-11.06	3.1009	6.52
Employed spouse in household	0.3058	14.47	0.2162	15.10	-0.0020	-0.69	-0.0238	-18.51	15.2321	8.43	12.7184	12.27
Constant									6.7779	7.73	12.4555	3.44
Pseudo-R ²	0.2743		0.1969		0.1152		0.1187		0.0727		0.0502	
Number of obs.	1,423,360		1,263,403		728,180		723,670		1,363,806		1,176,063	

Source: EU-LFS, own calculations. – Notes: Reference categories: Austria, Year 1998, Female, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.2.19
Labour supply in Central and Eastern European Countries: Group II

	Participation				Part-time				Hours worked			
	Women		Men		Women		Men		Women		Men	
	Marg_Effect	t-value	Marg_Effect	t-value	Marg_Effect	t-value	Marg_Effect	t-value	Marg_Effect	t-value	Marg_Effect	t-value
Czech Republic	0.0777	135.35	0.1084	153.35	0.0503	47.75	0.0132	26.51	4.4045	15.78	6.9696	11.84
Poland	-0.0606	-30.55	-0.0585	-17.98	0.0893	63.46	0.0598	56.49	-3.7220	-11.54	-2.2288	-5.05
Slovakia	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category
1998	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category
1999	-0.0251	-6.62	-0.0439	-9.08	-0.0039	-1.21	-0.0013	-1.68	-1.3738	-4.77	-2.4285	-5.34
2000	-0.0377	-6.05	-0.0629	-4.95	-0.0035	-1.01	-0.0045	-2.36	-2.0529	-4.71	-3.5370	-3.80
2001	-0.0282	-3.04	-0.0420	-3.79	-0.0112	-3.02	0.0002	0.03	-2.4949	-6.06	-3.6696	-9.00
2002	-0.0464	-5.31	-0.0628	-10.93	-0.0071	-1.37	0.0014	0.25	-3.4740	-7.76	-4.6849	-12.11
2003	-0.0545	-9.15	-0.0751	-15.28	-0.0064	-1.36	0.0010	0.20	-4.0726	-8.12	-5.4415	-7.68
2004	-0.0678	-7.94	-0.0802	-18.69	-0.0030	-0.50	0.0023	0.40	-4.9285	-7.17	-5.8874	-9.91
2005	-0.0727	-8.85	-0.0597	-13.40	0.0035	0.41	0.0013	0.22	-5.2130	-7.96	-4.8240	-9.47
2006	-0.0614	-8.41	-0.0354	-10.58	-0.0029	-0.40	-0.0029	-0.60	-4.5397	-8.21	-3.5022	-27.58
2007	-0.0410	-4.69	-0.0062	-0.86	-0.0064	-0.98	-0.0065	-1.69	-3.2890	-6.55	-1.9390	-4.35
2008	-0.0263	-2.69	0.0202	1.58	-0.0107	-2.04	-0.0109	-2.85	-2.4799	-4.26	-0.6334	-0.71
Age 15-24	-0.4013	-24.21	-0.3699	-14.84	0.0719	2.44	0.0518	7.91	-30.9551	-20.18	-27.3967	-16.17
Age 25-54	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category
Age 55-64	-0.4166	-16.18	-0.3714	-17.63	0.1909	27.02	0.0831	28.21	-32.8650	-20.63	-23.6827	-10.78
ISCED 0-2	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category
ISCED 3-4	0.2974	7.16	0.3198	4.94	-0.0640	-9.29	-0.0527	-24.29	22.6225	14.19	24.7203	7.33
ISCED 5-6	0.4669	35.13	0.3887	22.22	-0.0731	-9.65	-0.0348	-52.36	31.8290	22.30	32.9998	16.82
Number of persons (15-65) living in household	0.0374	7.80	0.0263	10.69	-0.0009	-0.32	-0.0013	-2.04	2.5757	21.50	1.7013	4.26
Number of children (<=4 years) in household	-0.1641	-2.00	0.0266	5.75	0.0277	2.92	0.0008	1.39	-10.7800	-2.26	1.6639	6.60
Number of children (5-14 years) in household	-0.0005	-0.06	0.0089	1.00	0.0187	3.57	0.0040	10.75	-0.4211	-0.97	0.3500	0.62

Table A.2.19, continued

	Participation				Part-time				Hours worked			
	Women		Men		Women		Men		Women		Men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Number of elderly persons living in household (aged 65 and above)	0.0515	4.70	0.0431	3.01	0.0051	5.81	0.0006	2.76	3.2650	3.33	3.0967	2.52
<i>No spouse in household</i>	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Inactive/unemployed spouse in household	-0.1461	-6.44	0.0682	13.72	-0.0048	-0.61	-0.0172	-4.74	-9.3809	-10.13	4.0867	4.64
Employed spouse in household	0.2674	74.64	0.2161	36.37	-0.0013	-0.59	-0.0144	-6.78	13.2060	7.56	12.1845	5.22
Constant									-2.2862	-1.76	-0.1986	-0.21
Pseudo-R ²	0.2898		0.2411		0.0829		0.121		0.0739		0.0561	
Number of obs.	965,589		865,742		487,920		525,129		963,372		864,272	

Source: EU-LFS, own calculations. – Notes: Reference categories: Slovakia, Year 1998, Female, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.2.20
Labour supply in Continental Europe

	Participation				Part-time				Hours worked			
	Women		Men		Women		Men		Women		Men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
<i>Austria</i>	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Belgium	-0.1229	-65.31	-0.0663	-37.46	0.0746	26.48	0.0178	12.02	-8.7688	-72.53	-6.0410	-50.03
Germany	-0.0248	-5.89	-0.0460	-9.34	0.0851	12.29	0.0244	9.62	-4.1559	-10.52	-4.0445	-9.08
France	-0.0494	-24.77	-0.0787	-38.69	-0.0425	-11.33	0.0119	11.04	-3.7985	-21.09	-6.2495	-35.89
Ireland	-0.0303	-2.95	0.0471	7.43	-0.0304	-3.49	0.0184	2.85	-3.4217	-5.06	0.6317	1.04
Luxembourg	-0.1057	-33.22	-0.0521	-22.09	-0.0547	-8.98	-0.0375	-20.40	-6.0221	-28.79	-4.5533	-16.83
Netherlands	0.0222	6.49	0.0801	27.10	0.4031	36.56	0.1890	48.81	-6.1712	-25.12	-1.5456	-7.33
1998	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
1999	0.0065	1.50	0.0055	3.10	0.0086	0.70	-0.0018	-0.56	0.0604	0.73	0.1868	1.07
2000	0.0134	3.36	0.0202	5.35	0.0025	0.15	-0.0038	-0.53	0.5127	2.11	1.0417	2.71
2001	0.0190	4.86	0.0274	5.99	-0.0046	-0.31	-0.0079	-1.26	0.7568	2.47	1.3793	3.33
2002	0.0314	8.17	0.0226	2.92	-0.0162	-0.71	-0.0096	-1.10	1.6262	3.31	1.4549	3.02
2003	0.0366	4.65	0.0159	1.20	-0.0091	-0.36	-0.0064	-0.76	2.1091	2.79	1.7204	1.38
2004	0.0307	3.49	0.0060	0.38	0.0011	0.04	-0.0040	-0.43	1.7430	2.20	1.3840	1.06
2005	0.0416	5.69	0.0158	1.50	0.0164	0.56	0.0030	0.30	1.9989	2.33	1.9269	1.87
2006	0.0508	12.66	0.0273	7.38	0.0283	0.88	0.0089	0.73	2.4861	3.65	2.5225	3.72
2007	0.0662	15.17	0.0441	8.64	0.0320	1.00	0.0101	0.78	3.2141	4.22	3.3182	5.07
2008	0.0725	19.56	0.0520	9.60	0.0307	0.95	0.0094	0.71	3.4427	4.60	3.5744	4.65
Age 15-24	-0.3308	-4.44	-0.3351	-5.98	-0.0253	-0.31	0.0930	2.68	-18.6879	-3.15	-22.2642	-5.87
Age 25-54	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-64	-0.3722	-23.94	-0.4557	-9.94	0.1436	8.98	0.0690	5.31	-21.5091	-13.83	-23.9866	-6.27
ISCED 0-2	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
ISCED 3-4	0.1744	12.24	0.1358	31.14	-0.0579	-3.75	-0.0175	-3.86	10.3820	14.26	8.9636	14.27
ISCED 5-6	0.2678	9.81	0.2080	8.74	-0.1669	-13.94	-0.0131	-1.83	16.6890	9.22	14.1348	7.41
Number of persons (15-65) living in household	-0.0078	-1.92	0.0085	1.80	0.0332	4.36	-0.0065	-2.21	-0.8484	-4.06	0.6807	2.17
Number of children (<=4 years) in household	-0.1006	-6.70	-0.0160	-1.82	0.1070	4.21	0.0010	0.29	-6.8290	-7.08	-1.4259	-2.09
Number of children (5-14 years) in household	-0.0395	-11.41	-0.0280	-11.49	0.1299	3.73	0.0068	1.26	-3.8411	-5.38	-2.0417	-9.53

Table A.2.20, continued

	Participation				Part-time				Hours worked			
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Number of elderly persons living in household (aged 65 and above)	-0.0346	-2.08	-0.0111	-0.94	-0.0114	-0.76	-0.0051	-1.09	-2.2940	-1.65	-0.0707	-0.09
No spouse in household	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Inactive/unemployed spouse in household	-0.1943	-7.92	0.0651	2.55	0.1347	4.66	-0.0358	-17.07	-11.9990	-7.18	3.6207	1.98
Employed spouse in household	0.2085	9.48	0.2230	26.82	0.0891	3.98	-0.0432	-12.06	7.7566	3.81	11.7556	10.12
Constant									16.598	21.64	19.993	14.86
Pseudo-R ²	0.2319		0.2163		0.092		0.094		0.0533		0.0434	
Number of obs.	2,044,627		1,910,359		1,150,647		1,267,059		2,011,287		1,848,793	

Source: EU-LFS, own calculations. – Notes: Reference categories: Austria, Year 1998 Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.2.21
Labour supply in Mediterranean Countries

	Participation						Part-time						Hours worked						
	Women			Men			Women			Men			Women			Men			
	Marg. Effect	t-value		Marg. Effect	t-value		Marg. Effect	t-value		Marg. Effect	t-value		Marg. Effect	t-value		Marg. Effect	t-value		
Cyprus	-0.0922	-9.11		0.0195	2.39		-0.0099	-2.59		-0.0088	-4.83		-6.4451	-9.85		0.7999	-8.85		1.25
Spain	-0.1755	-35.09		-0.0360	-5.28		0.0802	26.90		-0.0129	-8.18		-11.9786	-32.42		-1.6355	-32.42		-3.53
Greece	-0.2097	-18.04		-0.0448	-3.32		-0.0386	-42.39		-0.0187	-17.73		-12.7706	-16.58		0.3095	-16.58		0.37
Italy	-0.2132	-19.12		-0.0931	-8.19		0.0835	30.40		-0.0058	-3.12		-15.6899	-21.28		-5.6193	-21.28		-7.05
Portugal	Reference category			Reference category			Reference category			Reference category			Reference category			Reference category			Reference category
1998	Reference category			Reference category			Reference category			Reference category			Reference category			Reference category			Reference category
1999	0.0105	1.36		0.0055	0.76		0.0097	2.12		0.0015	2.49		0.5741	1.05		0.1341	1.05		0.30
2000	0.0200	1.48		0.0123	0.92		0.0130	1.17		0.0009	0.33		1.3161	1.34		0.4995	1.34		0.57
2001	0.0262	2.05		0.0174	0.92		0.0158	1.13		0.0012	0.35		1.6566	1.75		0.7561	1.75		0.63
2002	0.0315	2.25		0.0234	1.45		0.0108	1.04		-0.0003	-0.09		2.0221	1.91		1.1214	1.91		1.17
2003	0.0392	2.21		0.0248	1.57		0.0151	1.40		-0.0024	-1.32		2.4745	1.97		1.1199	1.97		1.19
2004	0.0500	2.85		0.0231	1.43		0.0553	1.68		0.0071	1.02		2.5985	1.72		0.7655	1.72		0.69
2005	0.0542	2.08		0.0260	1.10		0.0808	3.18		0.0125	3.29		2.4371	1.43		0.7400	1.43		0.52
2006	0.0602	2.12		0.0338	1.39		0.0861	3.20		0.0135	4.11		2.8199	1.57		1.1441	1.57		0.82
2007	0.0685	2.03		0.0328	1.44		0.0867	2.86		0.0145	3.41		3.3660	1.53		1.0833	1.53		0.83
2008	0.0699	2.15		0.0179	1.36		0.0905	2.56		0.0161	3.39		3.5024	1.68		0.3860	1.68		0.52
Age 15-24	-0.3332	-20.15		-0.4021	-11.10		0.0522	2.72		0.0407	3.50		-27.9677	-14.24		-28.0228	-14.24		-8.62
Age 25-54	Reference category			Reference category			Reference category			Reference category			Reference category			Reference category			Reference category
Age 55-64	-0.2827	-22.41		-0.4351	-11.14		0.0316	0.76		0.0337	3.34		-22.5519	-19.54		-23.6673	-19.54		-6.82
ISCED 0-2	Reference category			Reference category			Reference category			Reference category			Reference category			Reference category			Reference category
ISCED 3-4	0.1770	4.27		0.0552	1.61		-0.0495	-22.00		0.0075	1.06		11.6413	4.44		2.4761	4.44		1.10
ISCED 5-6	0.3085	16.23		0.1203	5.17		-0.0899	-45.77		0.0135	2.24		17.2200	14.89		4.0567	14.89		2.71
Number of persons (15-65) living in household	-0.0206	-3.65		-0.0099	-1.11		0.0055	5.00		0.0000	-0.02		-0.8590	-2.28		-0.1956	-2.28		-0.43
Number of children (<=4 years) in household	-0.0143	-1.31		0.0249	2.63		0.0472	3.19		0.0016	0.84		-2.5046	-2.59		0.9804	-2.59		2.35
Number of children (5-14 years) in household	0.0105	2.44		-0.0208	-12.63		0.0355	2.67		0.0021	3.40		-0.0932	-0.19		-1.4071	-0.19		-12.12

Table A.2.21, continued

	Participation				Part-time				Hours worked			
	Women		Men		Women		Men		Women		Men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Number of elderly persons living in household (age 65 and above)	0.0007	0.09	-0.0197	-5.00	-0.0063	-1.18	0.0003	0.17	0.6194	1.01	-0.6466	-2.44
No spouse in household	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Inactive/unemployed spouse in household	-0.2753	-40.73	0.1468	16.82	0.0134	2.97	-0.0251	-16.86	-22.7613	-23.03	7.5573	15.43
Employed spouse in household	0.1786	4.84	0.2039	19.50	0.0239	3.72	-0.0240	-12.43	9.5066	5.57	11.0170	21.79
Constant									20.8045	12.32	29.6101	10.16
Pseudo-R ²	0.22		0.1799		0.0344		0.041		0.0552		0.0345	
Number of obs.	2,621,138		2,309,134		1,173,274		1,482,817		2,605,606		2,277,982	

Source: EU-LFS, own calculations. – Notes: Reference categories: Portugal, Year 1998, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

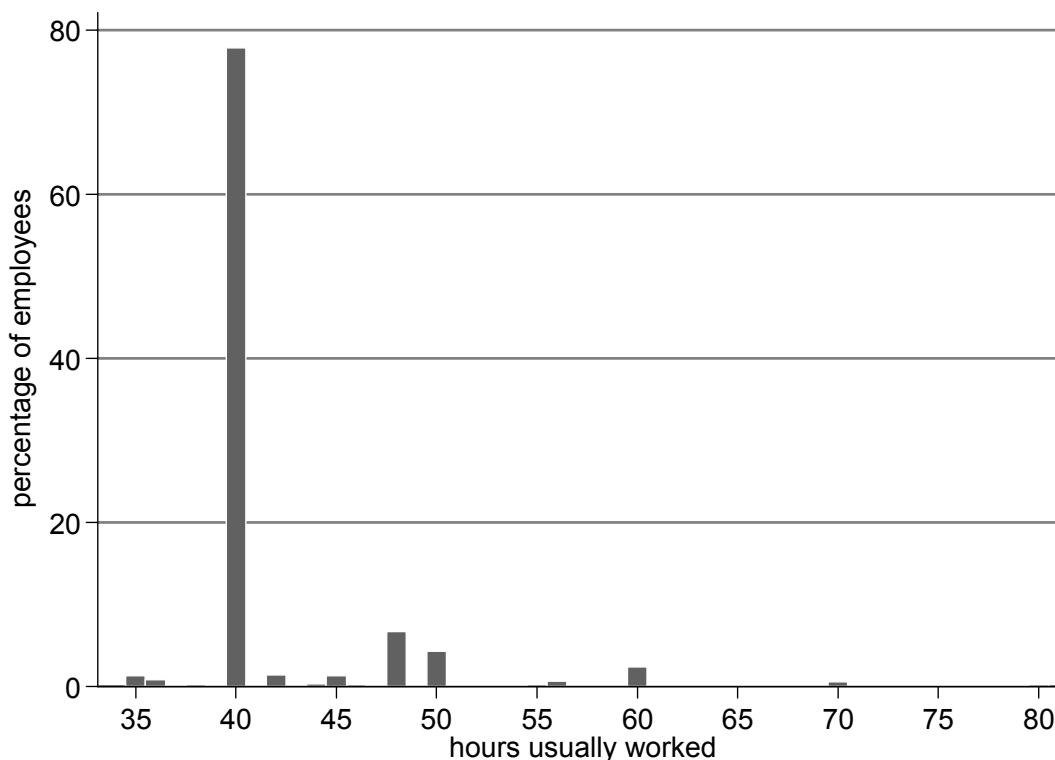
Table A.2.22
Labour supply in the United Kingdom

	Participation				Part-time				Hours worked			
	Women		Men		Women		Men		Women		Men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
1998	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
1999	0.0407	11.20	-0.0066	-1.70	0.0194	3.67	-0.0062	-2.22	1.5817	8.04	0.4062	1.78
2000	0.0453	12.47	-0.0012	-0.32	0.0256	4.79	-0.0044	-1.52	1.5900	8.05	0.4183	1.83
2001	0.0450	12.33	0.0020	0.51	0.0241	4.50	-0.0048	-1.66	1.7719	8.98	0.6247	2.72
2002	0.0463	12.78	-0.0010	-0.27	0.0206	3.89	-0.0028	-0.98	1.8217	9.30	0.2312	1.01
2003	0.0497	13.68	0.0011	0.29	0.0328	6.08	0.0045	1.48	1.6424	8.32	0.1540	0.67
2004	0.0417	11.37	-0.0003	-0.09	0.0290	5.44	0.0049	1.63	1.2538	6.39	-0.0126	-0.06
2005	0.0404	10.94	-0.0031	-0.81	0.0214	4.02	0.0055	1.80	1.2447	6.34	-0.3751	-1.64
2006	0.0423	11.41	-0.0054	-1.40	0.0170	3.20	0.0016	0.53	1.4488	7.34	-0.5607	-2.44
2007	0.0376	10.06	-0.0020	-0.52	0.0180	3.36	0.0038	1.26	1.2253	6.17	-0.3115	-1.37
Age 15-24	-0.1382	-48.88	-0.1577	-52.25	0.0741	20.59	0.1866	57.13	-9.1743	-68.42	-14.6013	-86.21
Age 25-54	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-64	-0.1011	-34.13	-0.2518	-93.84	0.2680	78.93	0.1637	59.60	-8.5743	-64.88	-14.7624	-105.07
ISCED 0-2	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
ISCED 3-4	0.2249	102.32	0.1838	81.83	-0.1246	-36.28	-0.0129	-6.44	13.8218	108.70	13.0337	77.32
ISCED 5-6	0.2750	163.30	0.2024	116.36	-0.2531	-80.24	-0.0006	-0.25	22.1661	160.56	15.8831	88.09
Number of persons (15-65) living in household	0.0113	11.91	0.0099	11.02	0.0440	33.67	0.0055	8.61	-0.2149	-4.31	0.5504	9.98
Number of children (<=4 years) in household	-0.1592	-66.58	-0.0311	-7.09	0.2426	55.00	0.0061	1.58	-12.1615	-84.82	-2.0870	-7.21
Number of children (5-14 years) in household	-0.0531	-38.68	-0.0303	-17.16	0.1799	74.16	0.0302	22.71	-5.7472	-70.93	-2.9940	-23.68
Number of elderly persons living in household (age 65 and above)	0.0384	11.00	-0.0086	-3.12	0.0103	2.21	0.0081	3.58	1.1094	6.04	-1.3747	-6.98
No spouse in household	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Inactive/unemployed spouse in household	-0.2333	-72.69	0.0225	8.98	0.1107	23.20	-0.0365	-22.22	-13.5026	-79.45	2.2683	12.44
Employed spouse in household	0.2142	112.25	0.2134	116.30	0.0523	20.15	-0.0594	-38.25	7.7761	79.04	13.1327	108.13
Constant												
Pseudo-R ²	0.2051		0.1558		0.0946		0.1229		0.0461		0.0297	
Number of obs.	301,808		270,090		214,167		202,122		298,062		264,658	

Source: EU-LFS, own calculations. – Notes: Reference categories: Year 1998, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Figure A.2.1

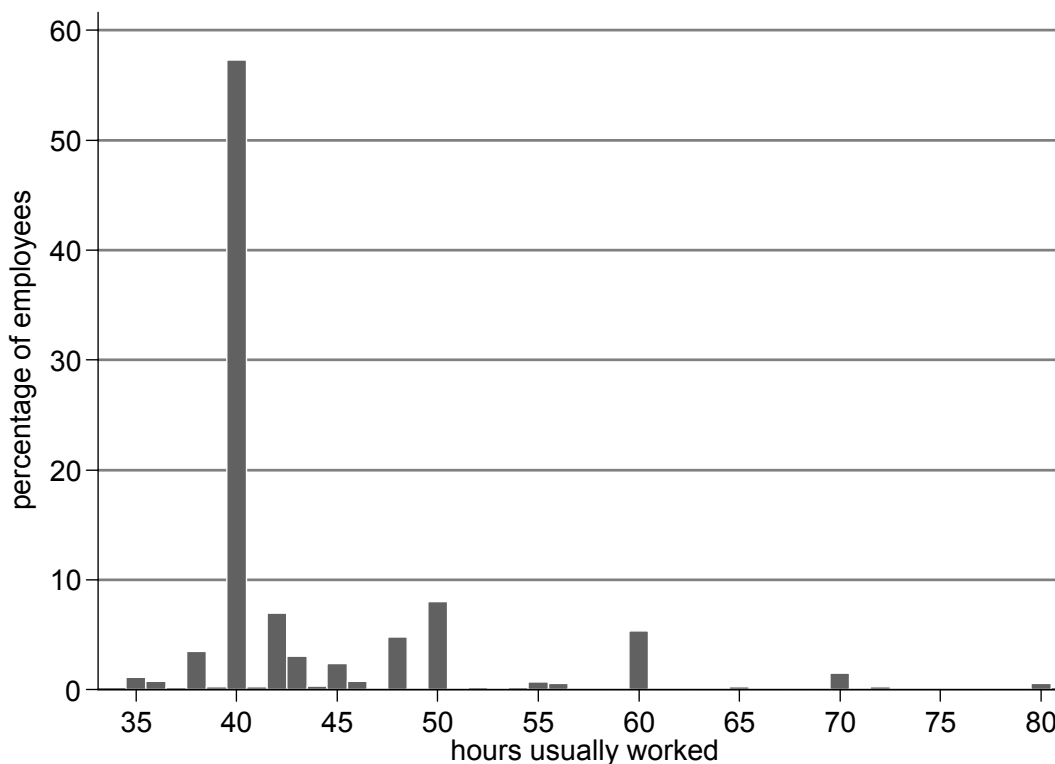
Distribution of hours usually worked in CEE I, for 35 and more hours



Source: EU-LFS, own calculations. – Notes: Definition of country groups as in Section 2.2.

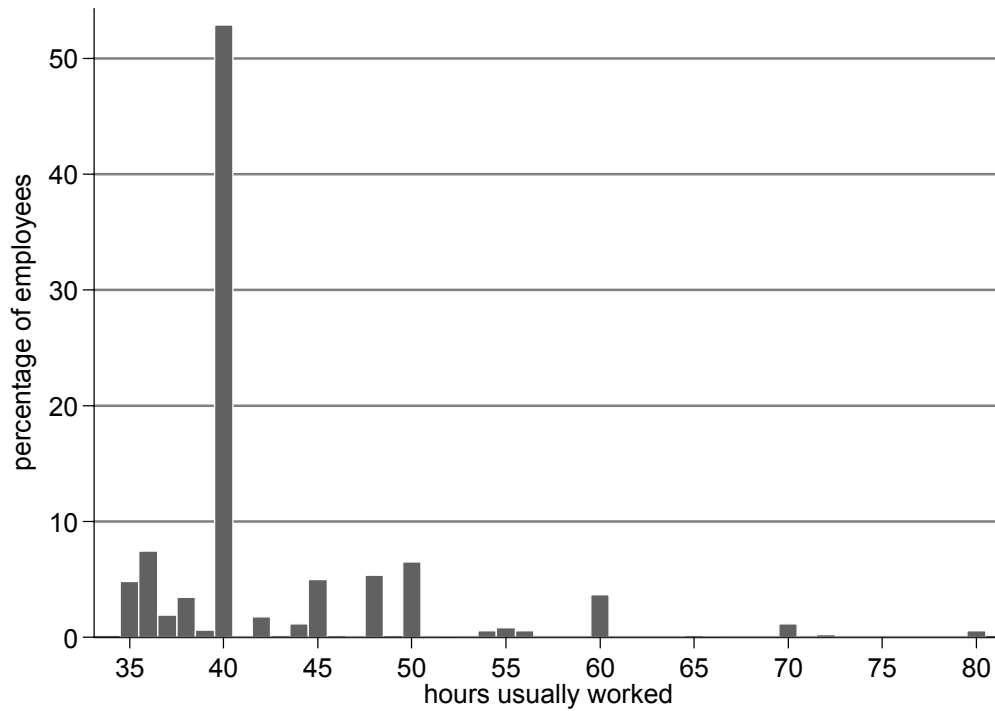
Figure A.2.2

Distribution of hours usually worked in CEE II, for 35 and more hours



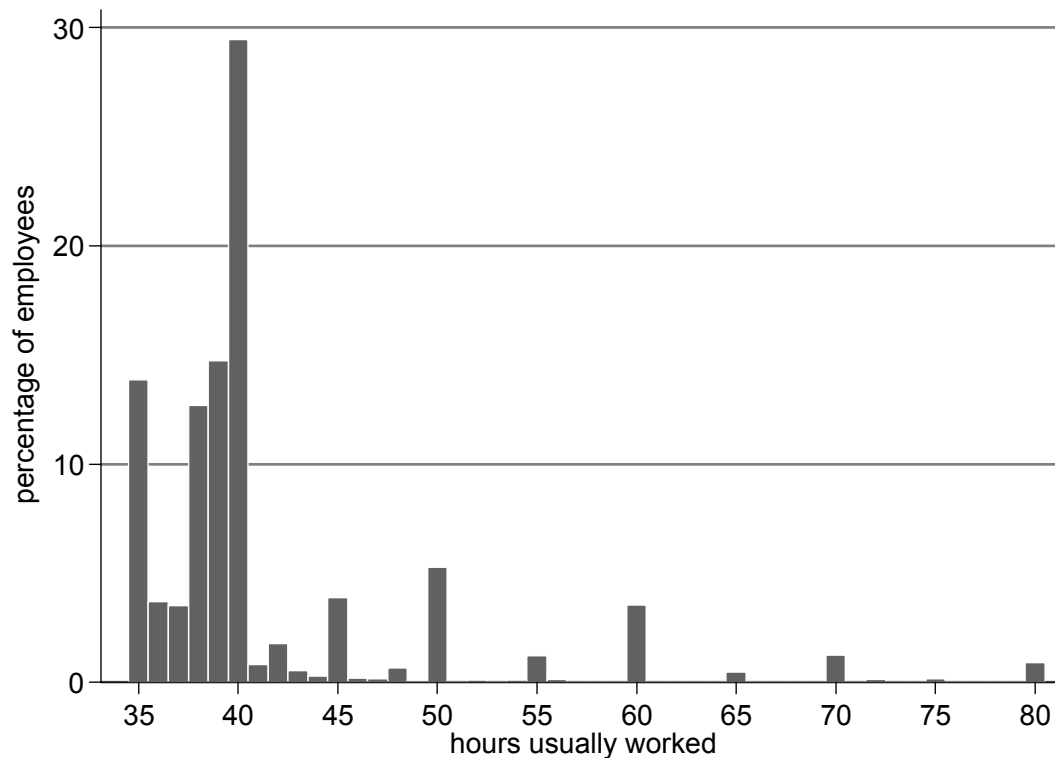
Source: EU-LFS, own calculations. – Notes: Definition of country groups as in Section 2.2.

Figure A.2.3
Distribution of hours usually worked in the Mediterranean Countries, for 35 and more hours



Source: EU-LFS, own calculations. – Notes: Definition of country groups as in Section 2.2.

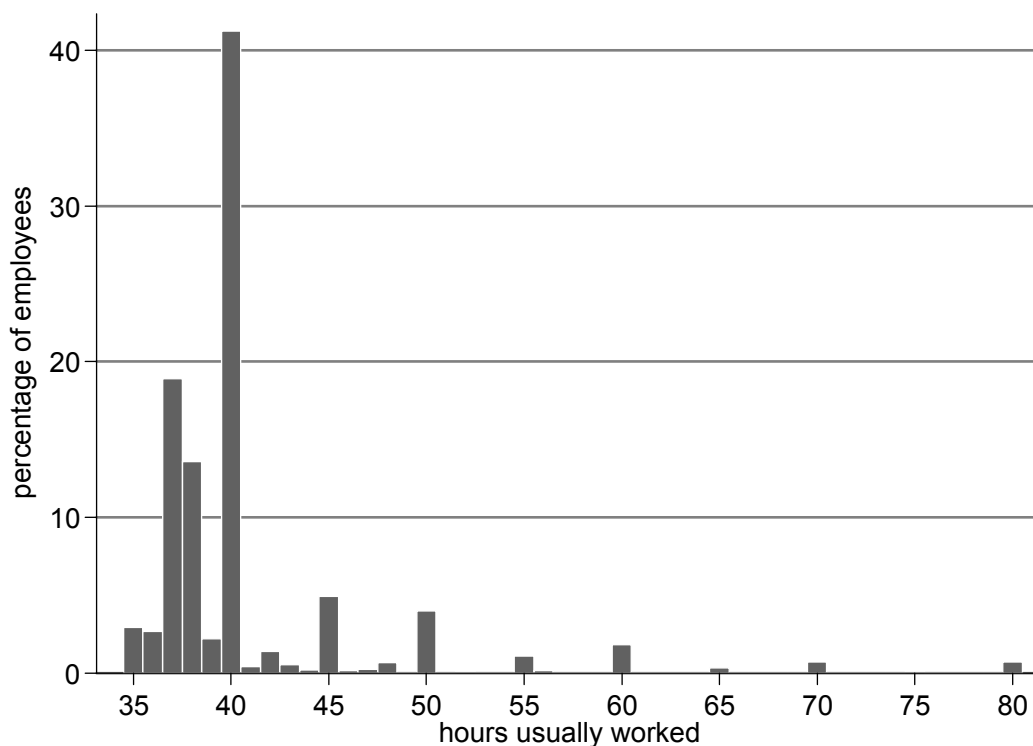
Figure A.2.4
Distribution of hours usually worked in Continental Europe and Ireland, for 35 and more hours



Source: EU-LFS, own calculations. – Notes: Definition of country groups as in Section 2.2.

Figure A.2.5

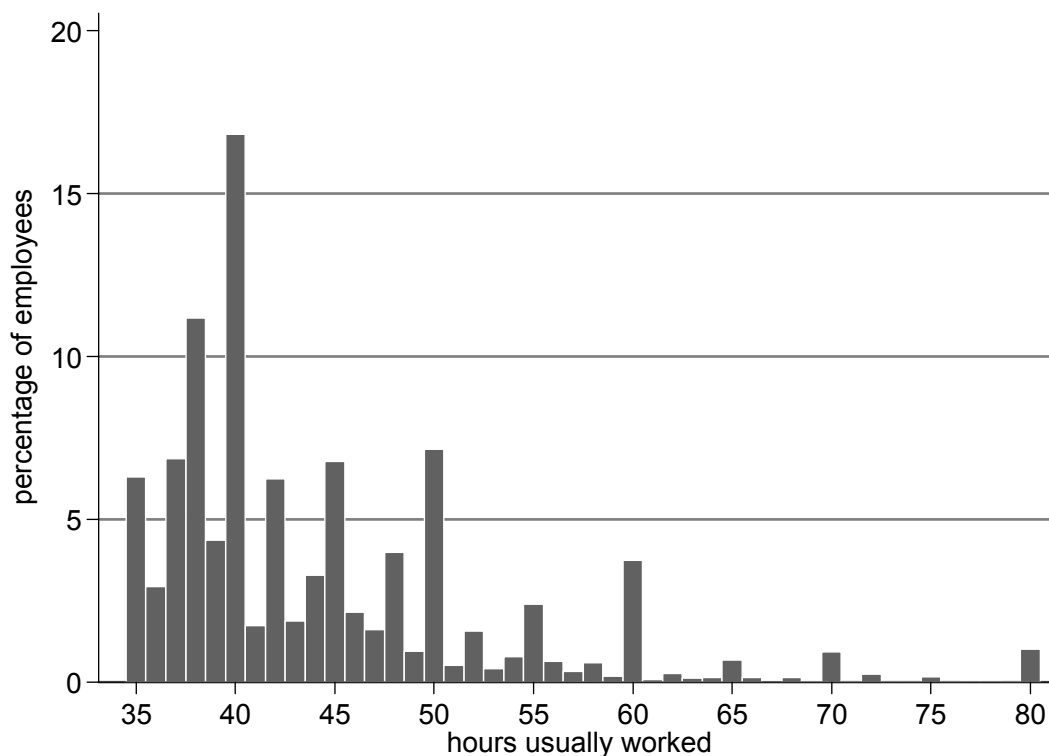
Distribution of hours usually worked in the Scandinavian Countries, for 35 and more hours



Source: EU-LFS, own calculations. – Notes: Definition of country groups as in Section 2.2.

Figure A.2.6

Distribution of hours usually worked in the UK, for 35 and more hours



Source: EU-LFS, own calculations. – Notes: Definition of country groups as in Section 2.2.

Table A.3.1
Share of long-term unemployment in total unemployment
 2006 to 2008

Country	1998	2008
FI	28.34	17.64
CY ¹	29.81	15.56
CZ	31.60	50.21
DK	32.14	16.38
AT	32.81	28.05
LU	33.13	36.69
UK	34.61	25.67
SE	37.45	13.37
EE	46.33	30.89
RO	46.82	41.99
PT	47.47	48.61
NL	47.90	37.70
SI	47.99	45.81
FR	48.23	42.19
PL	48.33	33.59
EU-LFS	50.04	39.95
DE ²	50.47	55.58
HU	50.71	47.63
IE	52.27	30.75
SK	52.68	70.37
ES	54.31	21.77
GR	57.75	49.46
LV	57.97	26.92
BG ¹	60.21	58.30
IT	62.70	51.12
LT	62.74	21.16
BE	64.90	51.07

Source: EU-LFS, own calculation. – ¹data refer to 2000 instead of 1998. – ²data refer to 2002 instead of 1998.

Table A.3.2

Share of long-term unemployment in total unemployment by gender

Country	Men	Women
CY	22.31	24.83
DK	24.69	24.87
SE	25.60	19.90
FI	25.95	20.87
AT	28.73	29.81
UK	31.86	19.43
ES	33.54	42.96
LU	33.99	26.29
NL	42.74	37.22
IE	43.41	24.91
PT	44.80	45.47
FR	45.97	45.42
EU-LFS	46.77	48.20
CZ	47.65	50.31
HU	48.17	45.65
EE	48.34	44.55
PL	48.36	54.45
GR	48.66	60.07
LV	50.67	46.45
LT	51.75	48.66
SI	54.97	51.68
BE	55.03	57.01
RO	55.11	54.65
DE	55.17	55.88
IT	58.43	59.37
BG	61.82	63.24
SK	63.24	65.34

Source: EU-LFS, own calculation.

Table A.3.3

Share of long-term unemployment in total unemployment by age

Age	
15-24	34.11
25-54	50.97
55-64	61.96

Source: EU-LFS, own calculation.

Table A.3.4

Share of long-term unemployment in total unemployment by education

ISCED 0-2	51.15
ISCED 3-4	46.30
ISCED 5-6	39.64

Source: EU-LFS, own calculation.

Table A.3.5
Ordered logit estimation of unemployment duration
 2006 to 2008

	Without household variables		With household variables	
	Odds ratio	t-value	Odds ratio	t-value
<i>Austria</i>	<i>Reference category</i>		<i>Reference category</i>	
Belgium	2.0636	197.66	3.2249	80.52
Bulgaria	2.4945	117.07	4.2860	63.37
Cyprus	1.0386	4.20	1.0939	5.63
Czech Republic	1.9126	60.93	2.8270	53.09
Germany	1.9954	27.62	3.1267	23.62
Denmark	0.8768	-10.20	-	-
Estonia	1.7142	29.56	2.4034	28.85
Spain	1.2963	22.68	1.4668	18.86
Finland	0.9024	-8.53	-	-
France	1.5031	63.69	1.9660	61.94
Greece	2.2349	55.61	3.5229	43.87
Hungary	1.8483	97.84	2.6468	68.83
Ireland	1.3593	32.65	1.6283	33.17
Italy	2.2876	91.21	3.6648	69.17
Lithuania	1.8854	25.53	2.6558	41.58
Luxembourg	1.1880	17.81	1.3677	26.56
Latvia	1.7864	35.23	2.4383	40.24
Netherlands	1.4957	45.87	1.7772	14.41
Poland	2.1540	50.90	3.7944	41.19
Portugal	1.6035	21.78	2.1548	26.87
Romania	2.1808	53.40	3.4460	42.36
Sweden	0.9236	-3.99	-	-
Slovenia	2.0664	61.62	3.1104	52.81
Slovakia	2.8320	68.45	5.1936	55.26
United Kingdom	1.0211	3.57	1.0309	3.18
<i>1998</i>	<i>Reference category</i>		<i>Reference category</i>	
1999	0.9112	-3.07	0.9069	-1.88
2000	0.9191	-2.05	0.9076	-1.25
2001	0.9010	-1.72	0.8071	-1.80
2002	0.8497	-1.89	0.7391	-2.23
2003	0.8662	-1.72	0.7666	-2.04
2004	0.8517	-1.94	0.7457	-2.21
2005	0.8576	-1.39	0.7514	-1.59
2006	0.8503	-1.40	0.7459	-1.50
2007	0.7956	-2.04	0.6726	-2.06
2008	0.6972	-3.01	0.5433	-2.83
Male	0.9486	-1.23	0.8724	-2.12

Table A.3.5, continued

	Without household variables		With household variables	
	Odds ratio	t-value	Odds ratio	t-value
<i>Age 15-24</i>	<i>Reference category</i>		<i>Reference category</i>	
Age 25-54	1.4570	7.38	1.9826	8.29
Age 55-64	2.0710	8.17	3.4674	8.81
<i>ISCED 0-2</i>	<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	0.8838	-3.10	0.8156	-3.33
ISCED 5-6	0.7691	-3.41	0.6412	-3.59
Number of persons living in household (15-64 years)	-	-	1.0279	2.48
Number of children (<=4 years) in household	-	-	0.8654	-10.73
Number of children (5-14 years) in household	-	-	1.0212	2.27
Elderly persons living in household (65+ years)	-	-	1.1476	8.33
<i>No spouse in household</i>	<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	-	-	0.9676	-0.90
Employed spouse in household	-	-	0.7956	-3.01
Pseudo-R ²		0.0462		0.0463
Number of obs.		972,115		896,259

Source: EU-LFS, own calculation. – Note: The table displays exponentiated coefficients that can be interpreted as effect on the odds ratio. – The regression also includes a full set of country and year dummies. – Reference categories: Age 15-24, ISCED 0-2, No spouse in household. – t-values greater than 1.96 (2.58) in absolute value denote statistical significance at the 5 (1) per cent level. – The model and interpretation of the coefficients is explained in Box 3.1.

Table A.3.6
Ordered logit estimation of unemployment duration by country groups
 2006 to 2008

	Continental Europe		UK, Ireland		Mediterranean		CEE	
	Odds ratio	t-value	Odds ratio	t-value	Odds ratio	t-value	Odds ratio	t-value
Male	0.9021	-7.19	1.6065	26.62	0.7722	-2.90	0.8498	-3.06
Age 15-24	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	2.7702	16.80	2.2500	86.96	1.5640	8.84	1.7975	12.63
Age 55-64	5.9050	44.58	3.3424	52.25	2.7583	3.97	2.2256	14.67
ISCED 0-2	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.7163	-11.83	0.6455	-78.23	1.0025	0.11	0.7215	-4.11
ISCED 5-6	0.5623	-16.93	0.4661	-32.51	0.8414	-1.07	0.4463	-6.48
Number of persons living in household (15-64 years)	1.0114	0.61	0.9585	-8.14	1.0650	3.75	1.0246	3.26
Number of children (<=4 years) in household	0.8519	-5.05	0.8606	-6.89	0.8761	-11.25	0.8513	-5.90
Number of children (5-14 years) in household	1.0235	2.09	1.0723	18.92	1.0029	0.16	1.0152	0.71
Elderly persons living in household (65+ years)	1.2036	4.20	1.2682	25.06	1.2288	21.23	1.0725	5.63
No spouse in household	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	1.0368	0.58	0.9830	-0.71	0.8708	-3.73	1.0276	0.75
Employed spouse in household	0.7248	-12.30	0.4624	-13.44	1.0676	0.68	0.8714	-2.26
Pseudo-R ²	0.0474		0.0542		0.0472		0.0237	
Number of obs.	206,421		54,344		325,316		310178	

Source: EU-LFS, own calculation. – Note: The table displays exponentiated coefficients that can be interpreted as effect on the odds ratio. – The regression also includes a full set of country and year dummies. – Reference categories: Age 15-24, ISCED 0-2, No spouse in household. – t-values greater than 1.96 (2.58) in absolute value denote statistical significance at the 5 (1) per cent level. – The model and interpretation of the coefficients is explained in Box 3.1.

Table A.3.7
Ordered logit estimation of unemployment duration by country groups, women
 2006 to 2008

	Continental Europe		UK, Ireland		Mediterranean		CEE	
	Odds ratio	t-value	Odds ratio	t-value	Odds ratio	t-value	Odds ratio	t-value
Age 15-24	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	2.8228	15.59	2.0643	30.71	1.6288	6.47	1.7939	10.86
Age 55-64	5.5914	32.01	2.6579	51.10	2.5154	3.07	2.0782	13.22
ISCED 0-2	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.7627	-3.89	0.7450	-42.88	0.9934	-0.70	0.7237	-4.78
ISCED 5-6	0.5331	-11.86	0.5647	-27.66	0.8206	-1.37	0.4414	-7.23
Number of persons living in household (15-64 years)	1.0231	1.85	0.9363	-8.51	1.0637	4.38	1.0384	4.27
Number of children (<=4 years) in household	0.8359	-5.72	0.7157	-8.77	0.8728	-23.77	0.7712	-3.26
Number of children (5-14 years) in household	1.0125	1.40	1.0457	71.04	1.0236	1.35	1.0401	1.39
Elderly persons living in household (65+ years)	1.0880	1.14	1.2714	14.59	1.2233	20.87	1.0453	2.99
No spouse in household	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	1.2212	2.04	1.0107	0.70	0.9902	-0.33	1.1368	3.64
Employed spouse in household	0.7787	-15.11	0.4927	-15.45	1.0890	0.92	0.9525	-0.67
Pseudo-R ²	0.0492		0.0387		0.041		0.0276	
Number of obs.	103053		21738		185363		147817	

Source: EU-LFS, own calculation. – Note: The table displays exponentiated coefficients that can be interpreted as effect on the odds ratio. – The regression also includes a full set of country and year dummies. – Reference categories: Age 15-24, ISCED 0-2, No spouse in household. – t-values greater than 1.96 (2.58) in absolute value denote statistical significance at the 5 (1) per cent level. – The model and interpretation of the coefficients is explained in Box 3.1.

Table A.3.8
Ordered logit estimation of unemployment duration by country groups, men
2006 to 2008

	Continental Europe		UK, Ireland		Mediterranean		CEE	
	Odds ratio	t-value	Odds ratio	t-value	Odds ratio	t-value	Odds ratio	t-value
Age 15-24	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	2.7764	19.95	2.3746	370.15	1.4942	12.82	1.8016	14.12
Age 55-64	6.3920	54.94	3.8274	51.96	2.9509	5.20	2.3819	13.91
ISCED 0-2	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.6769	-31.23	0.5978	-48.83	1.0200	0.38	0.7278	-3.53
ISCED 5-6	0.5983	-25.95	0.4167	-38.77	0.8803	-0.66	0.4669	-6.14
Number of persons living in household (15-64 years)	1.0030	0.12	0.9636	-9.65	1.0665	3.52	1.0146	2.05
Number of children (<=4 years) in household	0.8915	-4.12	0.9629	-5.41	0.8983	-3.97	0.9293	-1.38
Number of children (5-14 years) in household	1.0493	2.10	1.0934	15.91	0.9692	-1.18	0.9951	-0.35
Elderly persons living in household (65+ years)	1.2523	5.57	1.2552	31.18	1.2375	14.72	1.0799	6.62
No spouse in household	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	0.8995	-2.00	0.8946	-3.61	0.8061	-3.40	0.9370	-1.54
Employed spouse in household	0.6486	-13.35	0.4348	-11.93	0.9833	-0.16	0.7839	-3.53
Pseudo-R ²	0.0477		0.0500		0.0545		0.0216	
Number of obs.	103,368		32,606		139,953		162,361	

Source: EU-LFS, own calculation. – Note: The table displays exponentiated coefficients that can be interpreted as effect on the odds ratio. – The regression also includes a full set of country and year dummies. – Reference categories: Age 15-24, ISCED 0-2, No spouse in household. – t-values greater than 1.96 (2.58) in absolute value denote statistical significance at the 5 (1) per cent level. – The model and interpretation of the coefficients is explained in Box 3.1.

Table A.3.9
Ordered logit estimation of unemployment duration with household interactions
 2006 to 2008

	All		Male		Female	
	Odds ratio	t-value	Odds ratio	t-value	Odds ratio	t-value
Male	0.8758	-2.06	-	-	-	-
Age 15-24	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	2.0583	7.27	2.0377	7.32	2.1290	6.90
Age 55-64	3.5924	8.29	3.7970	9.31	3.5922	7.29
ISCED 0-2	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.8195	-3.29	0.7850	-3.62	0.8591	-2.63
ISCED 5-6	0.6444	-3.57	0.6488	-3.70	0.6416	-3.48
Number of persons living in household (15-64 years)	1.0285	2.60	1.0242	1.95	1.0372	3.40
Age 15-24 x Children 0-4	1.0938	2.21	1.1357	3.94	1.0920	1.39
Age 15-24 x Children 5-14	0.9986	-0.07	0.9963	-0.18	1.0011	0.05
Age 15-24 x Elderly 65+	1.1662	3.92	1.1529	3.52	1.1809	4.06
Age 25-54 x Children 0-4	0.8147	-9.16	0.8845	-6.21	0.7601	-7.21
Age 25-54 x Children 5-14	1.0266	2.63	1.0275	1.62	1.0393	3.09
Age 25-54 x Elderly 65+	1.1450	8.88	1.1678	8.18	1.1122	4.28
Age 55-64 x Children 0-4	0.8124	-4.47	0.8368	-2.39	0.7740	-2.67
Age 55-64 x Children 5-14	1.0826	1.47	1.1206	1.86	0.9522	-0.54
Age 55-64 x Elderly 65+	1.0313	0.55	1.0888	1.20	0.9537	-0.59
No spouse in household	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	0.9662	-0.93	0.8583	-4.37	1.0952	1.62
Employed spouse in household	0.7926	-3.05	0.6928	-4.40	0.8476	-2.23
Pseudo-R ²	0.0466		0.0443		0.0544	
Number of obs.	896,259		438,288		457,971	

Source: EU-LFS, own calculation. – Note: The table displays exponentiated coefficients that can be interpreted as effect on the odds ratio. – The regression also includes a full set of country and year dummies. – Reference categories: Age 15-24, ISCED 0-2, No spouse in household. – t-values greater than 1.96 (2.58) in absolute value denote statistical significance at the 5 (1) per cent level. – The model and interpretation of the coefficients is explained in Box 3.1.

Table A.3.10

Ordered logit estimation of unemployment duration, macro indicators

2006 to 2008

	Odds ratio	t-value
Male	0.9135	-0.90
Age 15-24	<i>Reference category</i>	
Age 25-54	1.8628	11.42
Age 55-64	3.1866	8.74
ISCED 0-2	<i>Reference category</i>	
ISCED 3-4	0.7613	-3.39
ISCED 5-6	0.6148	-2.79
GDP growth p.c.	1.0789	2.05
Unemployment rate	1.0596	2.17
Replacement Rate	1.0003	0.06
Employment protection	0.9606	-0.62
Minimum wage	0.0163	-1.61
Pseudo-R ²	0.0558	
Number of obs.	392,133	

Source: EU-LFS, own calculation. – Note: The table displays exponentiated coefficients that can be interpreted as effect on the odds ratio. – The regression also includes a full set of country and year dummies. – Variable definitions: Replacement Rate – UI/UB Percentage of net wage (OECD); Employment protection – OECD employment protection index; Minimum wage: Mean of minimum relative to average wages of full-time workers. – Reference categories: Age 15-24, ISCED 0-2. – t-values greater than 1.96 (2.58) in absolute value denote statistical significance at the 5 (1) per cent level. – The model and interpretation of the coefficients is explained in Box 3.1.

Table A.3.11
Search intensity by education
 2006 to 2008

	ISCED 0-2	ISCED 3-4	ISCED 5-6
Austria	4.25	4.50	4.57
Belgium	2.53	2.78	2.85
Bulgaria	1.98	2.49	2.92
Cyprus	2.65	2.75	2.99
Czech Republic	3.71	4.24	4.89
Germany	2.67	3.13	3.25
Denmark	3.08	3.52	3.78
Estonia	2.13	2.19	2.41
Spain	3.23	3.72	3.90
Finland	3.02	3.23	3.40
France	3.44	3.87	4.24
Greece	3.40	3.75	3.87
Hungary	3.57	4.00	4.34
Ireland	3.90	4.17	4.31
Italy	2.75	3.26	3.31
Lithuania	2.04	2.33	2.56
Luxembourg	3.25	3.29	3.01
Latvia	3.11	3.36	3.52
Netherlands	3.53	4.00	3.95
Poland	3.33	3.62	3.98
Portugal	1.93	2.28	2.62
Romania	2.19	2.46	2.80
Sweden ¹	2.01	2.33	2.43
Slovenia	4.23	4.81	5.07
Slovakia	2.10	2.60	2.79
United Kingdom	2.97	3.39	3.52
Total	2.95	3.36	3.64

Source: EU-LFS, own calculation. – ¹data refer to period 2007 to 2008 instead of 2006 to 2008.

Table A.3.12
Search intensity by age
 2006 to 2008

	15-24 years	25-54 years	55-64 years
Austria	4.418	4.444	4.093
Belgium	2.824	2.674	2.317
Bulgaria	2.327	2.340	2.200
Cyprus	2.696	2.874	2.576
Czech Republic	4.273	4.142	3.773
Germany	3.089	3.100	2.416
Denmark	2.687	3.717	3.749
Estonia	2.229	2.226	2.082
Spain	3.507	3.518	3.047
Finland	3.202	3.332	2.571
France	3.800	3.804	3.131
Greece	3.649	3.708	3.266
Hungary	3.961	3.864	3.857
Ireland	4.049	4.127	3.705
Italy	3.105	3.031	2.485
Lithuania	2.318	2.341	2.170
Luxembourg	3.201	3.245	3.097
Latvia	3.233	3.363	3.228
Netherlands	3.105	4.099	3.989
Poland	3.689	3.607	3.223
Portugal	2.120	2.105	1.759
Romania	2.542	2.354	2.316
Sweden ¹	2.017	2.342	2.301
Slovenia	4.527	4.842	4.036
Slovakia	2.481	2.477	2.289
United Kingdom	3.257	3.349	3.274
Total	3.284	3.299	2.771

Source: EU-LFS, own calculation. – ¹data refer to period 2007 to 2008 instead of 2006 to 2008.

Table A.3.13
Search intensity by unemployment duration
 2006 to 2008

	< 6 months	6-11 months	> 11 months
Austria	4.373	4.689	4.329
Belgium	2.719	2.815	2.633
Bulgaria	2.459	2.423	2.229
Cyprus	2.789	2.951	2.684
Czech Republic	4.195	4.270	4.038
Germany	3.215	3.034	2.874
Denmark	3.258	3.708	3.753
Estonia	2.195	2.278	2.211
Spain	3.530	3.512	3.307
Finland	3.266	3.265	2.899
France	3.938	3.900	3.495
Greece	3.465	3.747	3.776
Hungary	3.899	3.934	3.846
Ireland	4.017	4.219	4.089
Italy	3.158	3.152	2.904
Lithuania	2.275	2.403	2.340
Luxembourg	3.075	3.396	3.339
Latvia	3.334	3.612	3.136
Netherlands	3.646	3.796	3.934
Poland	3.564	3.635	3.622
Portugal	2.138	2.124	2.010
Romania	2.356	2.632	2.393
Sweden ¹	2.124	2.389	2.447
Slovenia	4.476	4.927	4.849
Slovakia	2.684	2.628	2.402
United Kingdom	3.260	3.501	3.291
Total	3.364	3.385	3.113

Source: EU-LFS, own calculation. – ¹data refer to period 2007 to 2008 instead of 2006 to 2008.

Table A.3.14
Ordered logit estimation of search intensity
 2006 to 2008

	Without household variables		With household variables	
	Odds ratio	t-value	Odds ratio	t-value
<i>Austria</i>	<i>Reference category</i>		<i>Reference category</i>	
Belgium	0.1249	-25.29	0.1238	-25.38
Bulgaria	0.0901	-24.93	0.0933	-23.44
Cyprus	0.1358	-29.66	0.1379	-27.70
Czech Republic	0.6796	-10.88	0.6875	-10.43
Germany	0.1890	-22.41	0.1870	-22.89
Denmark	0.3050	-27.10	NA	NA
Estonia	0.0740	-29.18	0.0737	-29.38
Spain	0.3404	-24.44	0.3452	-22.21
Finland	0.2260	-27.21	NA	NA
France	0.4552	-21.89	0.4558	-22.21
Greece	0.3888	-20.00	0.3875	-18.97
Hungary	0.5143	-19.35	0.5296	-16.67
Ireland	0.6401	-21.90	0.6642	-14.30
Italy	0.1963	-23.92	0.1961	-23.12
Lithuania	0.0802	-31.12	0.0813	-29.97
Luxembourg	0.2495	-26.68	0.2449	-28.01
Latvia	0.2646	-27.11	0.2694	-24.87
Netherlands	0.4957	-17.28	0.4891	-18.93
Poland	0.3409	-22.91	0.3513	-19.95
Portugal	0.0679	-26.47	0.0683	-26.40
Romania	0.0931	-29.98	0.0965	-27.22
Sweden	0.0718	-32.74	NA	NA
Slovenia	1.3902	35.51	1.3764	35.17
Slovakia	0.1025	-24.84	0.1072	-22.59
United Kingdom	0.2487	-32.96	0.2505	-32.16
<i>2006</i>	<i>Reference category</i>		<i>Reference category</i>	
2007	0.9469	-2.32	0.9475	-2.19
2008	0.9287	-1.60	0.9227	-1.71
Male	1.1763	5.61	1.1773	5.78
Age 15-24	<i>Reference category</i>		<i>Reference category</i>	
Age 25-54	0.9952	-0.13	1.0286	0.89
Age 55-64	0.5658	-3.60	0.5708	-3.92
<i>ISCED 0-2</i>	<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	1.6594	25.34	1.6204	32.51
ISCED 5-6	2.1604	19.48	2.0799	16.73

Table A.3.14, continued

	Without household variables		With household variables	
	Odds ratio	t-value	Odds ratio	t-value
<i>Unemployment duration < 6 months</i>	<i>Reference category</i>		<i>Reference category</i>	
Unemployment duration 6-11 months	1.0661	1.26	1.0614	1.13
Unemployment duration > 11 months	0.8953	-1.85	0.8928	-1.92
Number of adults (15-64 years) in household	-	-	0.9855	-1.73
Number of children (<=4 years) in household	-	-	0.9443	-2.03
Number of children (5-14 years) in household	-	-	0.9291	-5.03
Number of elderly (>= 65 years) in household	-	-	0.9205	-2.83
<i>No spouse in household</i>	<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	-	-	0.8400	-3.01
Employed spouse in household	-	-	0.9753	-0.68
Pseudo R ²	0.0364		0.0365	
Number of Obs.	315,538		290,237	

Source: EU-LFS, own calculation. –Notes: The table displays exponentiated coefficients that can be interpreted as effect on the odds ratio (cf. Box 3.1). – Reference categories: Austria, Year 2006, Female, Age 15-24, Low skilled (ISCED 0-2), Unemployment duration < 6 months, No spouse in household (only second specification). – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.3.15
Ordered logit estimation of search intensity by gender
 2006 to 2008

	Female		Male	
	Odds ratio	t-value	Odds ratio	t-value
Age 15-24	<i>Reference category</i>		<i>Reference category</i>	
Age 25-54	0.9804	-0.72	1.0725	1.56
Age 55-64	0.4879	-4.32	0.6151	-3.94
ISCED 0-2	<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	1.6419	27.11	1.5969	16.73
ISCED 5-6	2.0465	11.06	2.0778	20.78
Unemployment duration < 6 months	<i>Reference category</i>		<i>Reference category</i>	
Unemployment duration 6-11 months	1.0670	1.20	1.0548	1.00
Unemployment duration > 11 months	0.9161	-1.84	0.8720	-1.85
Number of adults (15-64 years) in household	0.9699	-2.58	0.9917	-0.63
Number of children (<=4 years) in household	0.8649	-3.43	1.0249	0.96
Number of children (5-14 years) in household	0.8925	-6.12	0.9613	-1.99
Number of elderly (>= 65 years) in household	0.9191	-2.51	0.9343	-1.96
No spouse in household	<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	0.7477	-9.65	0.8756	-1.42
Employed spouse in household	0.8567	-3.10	1.1656	3.36
Pseudo R ²	0.0391		0.0361	
Number of Obs.	150,866		139,371	

Source: EU-LFS, own calculation. – Notes: The table displays exponentiated coefficients that can be interpreted as effect on the odds ratio (cf. Box 3.1). The regression also includes a full set of country and year dummies. – Reference categories: Age 15-24, Low skilled (ISCED 0-2), Unemployment duration < 6 months, No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.3.16
Ordered logit estimation of search intensity by gender, age interactions
 2006 to 2008

	Female		Male	
	Odds ratio	t-value	Odds ratio	t-value
Age 15-24	<i>Reference category</i>		<i>Reference category</i>	
Age 25-54	1.0218	0.51	1.0992	1.92
Age 55-64	0.4716	-4.28	0.5904	-4.41
ISCED 0-2	<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	1.6404	28.05	1.5927	16.88
ISCED 5-6	2.0415	11.44	2.0716	20.32
Unemployment duration < 6 months	<i>Reference category</i>		<i>Reference category</i>	
Unemployment duration 6-11 months	1.0660	1.19	1.0557	1.02
Unemployment duration > 11 months	0.9163	-1.83	0.8736	-1.84
Number of adults (15-64 years) in household	0.9744	-2.34	0.9956	-0.30
Age 15-24 x Number of children (<=4 years) in household	0.8133	-4.74	0.9265	-1.00
Age 25-54 x Number of children (<=4 years) in household	0.8796	-2.94	1.0500	1.32
Age 55-64 x Number of children (<=4 years) in household	1.0149	0.11	0.9913	-0.06
Age 15-24 x Number of children (5-14 years) in household	0.8796	-2.42	0.9208	-5.08
Age 25-54 x Number of children (5-14 years) in household	0.9029	-5.22	0.9854	-0.62
Age 55-64 x Number of children (5-14 years) in household	0.7468	-1.45	1.0340	0.32
Age 15-24 x Number of elderly (>=65 years) in household	0.9693	-0.62	1.0475	0.81
Age 25-54 x Number of elderly (>=65 years) in household	0.9067	-2.16	0.9025	-2.38
Age 55-64 x Number of elderly (>=65 years) in household	0.8918	-0.91	1.0784	0.69
No spouse in household	<i>Reference category</i>		<i>Reference category</i>	
Age 15-24 x Inactive/unemployed spouse in household	0.8138	-2.50	1.0843	0.38
Age 25-54 x Inactive/unemployed spouse in household	0.7273	-8.10	0.8187	-2.26
Age 55-64 x Inactive/unemployed spouse in household	0.7763	-5.07	0.9335	-0.50
Age 15-24 x Employed spouse in household	1.0485	0.77	1.6198	3.70
Age 25-54 x Employed spouse in household	0.8119	-3.80	1.1152	2.00
Age 55-64 x Employed spouse in household	1.0530	0.71	1.1881	2.54
Pseudo R ²	0.0393		0.0363	
Number of Obs.	150,866		139,371	

Source: EU-LFS, own calculation. – Notes: The table displays exponentiated coefficients that can be interpreted as effect on the odds ratio (cf. Box 3.1). The regression also includes a full set of country and year dummies. – Reference categories: Age 15-24, Low skilled (ISCED 0-2), Unemployment duration < 6 months, No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.3.17
Ordered logit estimation of search intensity by country groups, women
 2006 to 2008

	Continental Europe		UK, Ireland		Mediterranean		CEE	
	Odds ratio	t-value	Odds ratio	t-value	Odds ratio	t-value	Odds ratio	t-value
Age 15-24	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 25-54	0.9719	-0.39	1.0130	0.84	1.0239	0.95	0.9096	-2.11
Age 55-64	0.4157	-4.93	0.9033	-10.35	0.6148	-8.11	0.5785	-4.15
Low skilled (ISCED 0-2)	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Medium skilled (ISCED 3-4)	1.6726	12.19	1.7378	58.33	1.5741	39.60	1.6715	7.96
High skilled (ISCED 5-6)	2.0895	6.60	1.9086	117.21	1.8493	12.04	2.5684	13.45
Unemployment duration < 6 months	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Unemployment duration 6-11 months	1.0161	0.16	1.3073	140.20	1.0159	0.77	1.1725	2.51
Unemployment duration > 11 months	0.8718	-3.89	1.0746	18.10	0.8778	-1.46	1.0658	1.37
Number of adults (15-64 years) in household	0.9612	-1.71	0.9712	-4.45	0.9394	-2.94	1.0102	0.89
Number of children (<=4 years) in household	0.8200	-2.39	0.9005	-65.78	0.9279	-2.22	0.8358	-7.56
Number of children (5-14 years) in household	0.8752	-8.34	0.8293	-81.93	0.8774	-8.90	0.9886	-0.65
Number of elderly (>= 65 years) in household	0.7794	-4.94	0.8309	-38.44	0.9247	-1.71	0.9738	-1.23
No spouse in household	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	0.7879	-4.96	0.8519	-87.70	0.6830	-13.72	0.7357	-7.08
Employed spouse in household	0.9459	-0.74	0.7376	-311.61	0.7474	-10.39	0.8680	-2.75
Pseudo R ²	0.0352		0.0151		0.0372		0.0718	
Number of Obs.	21,237		4,799		60,352		64,478	

Source: EU-LFS, own calculation. – Notes: The table displays exponentiated coefficients that can be interpreted as effect on the odds ratio (cf. Box 3.1). The regression also includes a full set of country and year dummies. – Reference categories: Age 15-24, Low skilled (ISCED 0-2), Unemployment duration < 6 months, No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.3.18
Ordered logit estimation of search intensity by country groups, men
 2006 to 2008

	Continental Europe		UK, Ireland		Mediterranean		CEE	
	Odds ratio	t-value	Odds ratio	t-value	Odds ratio	t-value	Odds ratio	t-value
Age 15-24	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 25-54	1.1014	1.19	1.2371	26.86	1.0463	1.04	0.9124	-2.13
Age 55-64	0.5285	-4.83	0.9548	-1.83	0.6582	-10.08	0.6960	-5.15
ISCED 0-2	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	1.5768	5.81	1.5531	613.73	1.7878	23.49	1.5602	8.59
ISCED 5-6	2.0772	7.44	1.8880	39.20	2.0030	12.86	2.6062	11.79
Unemployment duration < 6 months	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Unemployment duration 6-11 months	0.9369	-2.33	1.3383	30.57	1.0354	1.55	1.1714	3.81
Unemployment duration > 11 months	0.7451	-3.74	1.0249	1.37	0.9212	-1.54	1.0853	1.38
Number of adults (15-64 years) in household	1.0084	0.54	0.9638	-20.35	0.9529	-6.26	1.0332	2.90
Number of children (<=4 years) in household	1.0380	1.19	1.1493	9.61	0.9534	-1.93	0.9632	-2.30
Number of children (5-14 years) in household	0.9931	-0.20	0.9567	-5.20	0.8819	-5.46	0.9685	-2.14
Number of elderly (>= 65 years) in household	0.9126	-2.00	0.9942	-0.21	0.8925	-1.50	1.0083	0.21
No spouse in household	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	0.7715	-1.47	0.9539	-3.21	0.9560	-0.59	0.9457	-1.03
Employed spouse in household	1.1499	1.55	1.1854	610.74	1.2365	3.58	1.1580	8.33
Pseudo R ²	0.0319		0.0125		0.0362		0.0732	
Number of Obs.	19,588		6,561		46,060		67,162	

Source: EU-LFS, own calculation. – Notes: The table displays exponentiated coefficients that can be interpreted as effect on the odds ratio (cf. Box 3.1). The regression also includes a full set of country and year dummies. – Reference categories: Age 15-24, Low skilled (ISCED 0-2), Unemployment duration < 6 months, No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.3.19

**Ordered logit estimation of search intensity by gender, macroeconomic indicators
2006 to 2008**

	All		Women		Men	
	Odds ratio	t-value	Odds ratio	t-value	Odds ratio	t-value
Male	1.1756	5.52	NA	NA	NA	NA
Age 15-24	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 25-54	0.9952	-0.13	0.9004	-3.56	1.0888	1.56
Age 55-64	0.5663	-3.59	0.4863	-4.00	0.6384	-3.04
ISCED 0-2	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	1.6597	25.40	1.6845	30.86	1.6330	14.67
ISCED 5-6	2.1626	19.25	2.1733	13.35	2.1444	19.61
Unemployment duration < 6 months	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Unemployment duration 6-11 months	1.0655	1.24	1.0745	1.31	1.0561	1.07
Unemployment duration > 11 months	0.8942	-1.89	0.9212	-1.69	0.8645	-1.97
Unemployment rate	1.0162	1.24	1.0010	0.06	1.0312	2.27
GDP growth p.c.	1.0090	0.26	1.0015	0.05	1.0159	0.43
Pseudo R ²	0.0364		0.0375		0.0361	
Number of Obs.	315,538		163,661		151,877	

Source: EU-LFS, own calculation. – Notes: The table displays exponentiated coefficients that can be interpreted as effect on the odds ratio (cf. Box 3.1). The regression also includes a full set of country and year dummies. – Reference categories: Age 15-24, Low skilled (ISCED 0-2), Unemployment duration < 6 months, No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.3.20

Institutions and search intensity: Pairwise correlations with country fixed effects
2006 to 2008

	rho	p-value	Obs
Employment protection	-0.2029	0.4194	18
Minimum wage	0.3766	0.1665	15
ALMP expenditures	0.1198	0.5599	26
Net replacement rate	0.0629	0.7980	19

Source: EU-LFS, own calculations. – Notes: The table displays pairwise correlation coefficients (*rho*) between the explanatory variables and the country fixed effects obtained from Table A.3.14. – Variable definitions: Employment protection – OECD employment protection index; Minimum wage: Mean of minimum relative to average wages of full-time workers (source: OECD); ALMP expenditures – Expenditures on active labour market policy (ALMP) as percentage of GDP (Eurostat); Net replacement rate – Average net replacement rate of the unemployed (OECD). The *p*-value denotes the marginal level of statistical significance at which one would reject the null hypothesis of zero correlation.

Table A.3.21

Factor analysis of search methods: Proportion of total sample variance after Varimax rotation, Continental Europe

2006 to 2008

	Factor 1	Factor 2	Factor 3
Proportion of variance	0.3741	0.1715	0.1606
Cumulative	0.3741	0.5456	0.7062

Table A.3.22

Factor analysis of search methods: Factor loadings after Varimax rotation, Continental Europe

2006 to 2008

	Factor 1	Factor 2	Factor 3	Uniqueness
Public employment office	-0.0718	0.9264	-0.0146	0.1364
Private employment agency	0.1295	0.0048	0.9811	0.0207
Direct applications to employers	0.7324	-0.2057	0.2688	0.3491
Asking friends, relatives, and trade unions, etc.	0.6793	-0.2345	0.0900	0.4755
Inserting or answering advertisements	0.6970	0.4935	0.1412	0.2508
Studying advertisements	0.8144	-0.0308	0.0841	0.3288
Taking a test, interview or examination	0.6707	0.0251	0.2322	0.4956

Source: EU-LFS, own calculations. – Notes: Figures in bold denote factor loadings larger than 0.5 in absolute value. See Box 3.2 for detailed explanations.

Table A.3.23

Factor analysis of search methods: Proportion of total sample variance after Varimax rotation, Scandinavia
2006 to 2008

	Factor 1	Factor 2	Factor 3
Proportion of variance	0.3306	0.1938	0.1692
Cumulative	0.3306	0.5244	0.6936

Table A.3.24

Factor analysis of search methods: Factor loadings after Varimax rotation, Scandinavia
2006 to 2008

	Factor 1	Factor 2	Factor 3	Uniqueness
Public employment office	0.0850	0.8122	-0.0283	0.3323
Private employment agency	0.7270	0.1457	0.0616	0.4464
Direct applications to employers	0.2889	-0.6961	0.2338	0.3772
Asking friends, relatives, and trade unions, etc.	0.1243	-0.1023	0.9536	0.0647
Inserting or answering advertisements	0.7960	-0.1119	0.2367	0.2978
Studying advertisements	0.6479	0.3075	0.3977	0.3275
Taking a test, interview or examination	0.7911	-0.2706	0.0358	0.2997

Source: EU-LFS, own calculations. – Notes: Figures in bold denote factor loadings larger than 0.5 in absolute value. See Box 3.2 for detailed explanations.

Table A.3.25

Factor analysis of search methods: Proportion of total sample variance after Varimax rotation, UK and Ireland 2006 to 2008

	Factor 1	Factor 2	Factor 3
Proportion of variance	0.2966	0.281	0.1489
Cumulative	0.2966	0.5776	0.7265

Table A.3.26

Factor analysis of search methods: Factor loadings after Varimax rotation, UK and Ireland 2006 to 2008

	Factor 1	Factor 2	Factor 3	Uniqueness
Public employment office	0.0179	0.0992	0.9851	0.0195
Private employment agency	0.3413	0.4390	0.1708	0.6616
Direct applications to employers	0.7409	0.2929	0.0665	0.3608
Asking friends, relatives, and trade unions, etc.	0.7254	0.1964	0.1376	0.4162
Inserting or answering advertisements	-0.0441	0.9644	0.1227	0.0530
Studying advertisements	0.2810	0.8409	0.0336	0.2128
Taking a test, interview or examination	0.8964	-0.0549	-0.0555	0.1905

Source: EU-LFS, own calculations. – Notes: Figures in bold denote factor loadings larger than 0.5 in absolute value. See Box 3.2 for detailed explanations.

Table A.3.27

Factor analysis of search methods: Proportion of total sample variance after Varimax rotation, Mediterranean
2006 to 2008

	Factor 1	Factor 2	Factor 3
Proportion of variance	0.274	0.2247	0.1687
Cumulative	0.274	0.4987	0.6674

Table A.3.28

Factor analysis of search methods: Factor loadings after Varimax rotation, Mediterranean
2006 to 2008

	Factor 1	Factor 2	Factor 3	Uniqueness
Public employment office	0.0366	0.1974	0.7805	0.3505
Private employment agency	0.2016	0.6783	0.2988	0.4100
Direct applications to employers	0.2461	0.7305	-0.2064	0.3632
Asking friends, relatives, and trade unions, etc.	0.1621	0.3959	-0.6503	0.3941
Inserting or answering advertisements	0.9218	0.1579	0.0376	0.1239
Studying advertisements	0.9145	0.1567	-0.0801	0.1326
Taking a test, interview or examination	0.3211	0.5780	0.0969	0.5534

Source: EU-LFS, own calculations. – Notes: Figures in bold denote factor loadings larger than 0.5 in absolute value. See Box 3.2 for detailed explanations.

Table A.3.29

Factor analysis of search methods: Proportion of total sample variance after Varimax rotation, Central and Eastern Europe 2006 to 2008

	Factor 1	Factor 2	Factor 3
Proportion of variance	0.2543	0.2362	0.1619
Cumulative	0.2543	0.4905	0.6524

Table A.3.30

Factor analysis of search methods: Factor loadings after Varimax rotation, Central and Eastern Europe 2006 to 2008

	Factor 1	Factor 2	Factor 3	Uniqueness
Public employment office	0.0523	-0.0110	0.9015	0.1844
Private employment agency	0.0269	0.6789	0.3523	0.4142
Direct applications to employers	0.6308	0.2714	0.2637	0.4589
Asking friends, relatives, and trade unions, etc.	0.8655	0.0108	0.0785	0.2446
Inserting or answering advertisements	0.1036	0.7630	-0.3083	0.3121
Studying advertisements	0.7523	0.1872	-0.1259	0.3831
Taking a test, interview or examination	0.2303	0.7082	0.0992	0.4356

Source: EU-LFS, own calculations. – Notes: Figures in bold denote factor loadings larger than 0.5 in absolute value. See Box 3.2 for detailed explanations.

Table A.3.31
Use of specific search methods by country groups
 2006 to 2008

	Continental Europe	Scandinavia	UK and Ireland	Mediterranean	CEE	Total
Public employment office	80.5	63.8	66.7	41.2	63.2	64.8
Private employment agency	25.4	8.3	24.0	22.4	9.8	20.5
Direct applications	36.7	51.6	51.2	67.3	60.2	51.5
Friends, relatives, trade unions, etc.	46.9	34.6	51.9	78.5	75.2	61.2
Inserting/answering advertisements	54.1	35.1	56.9	27.0	33.0	42.3
Studying advertisements	68.4	70.1	82.6	57.0	72.0	67.9
Test, interview or examination	16.9	10.6	32.3 ^a	25.2	14.0	16.6

Source: EU-LFS, own calculation. – Note: The table displays the proportion of individuals using the specified search methods (in %) – ^aThe method "Test, interview or examination" is not surveyed in the UK so that the displayed figure exclusively refers to Ireland.

Table A.3.32
Probit estimation of specific search methods
 2006 to 2008

	Public employment office		Direct applications		Private employment agency		Answering/inserting adds	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Male	0.0195	1.13	0.0449	4.49	0.0345	2.24	0.0067	1.18
Age 15-24	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 25-54	0.0711	4.91	-0.0307	-7.36	0.0086	0.46	-0.0088	-0.75
Age 55-64	0.0434	1.57	-0.1380	-7.85	-0.0503	-2.03	-0.1243	-2.95
ISCED 0-2	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	0.0147	1.46	0.0817	5.16	0.0446	8.19	0.1055	19.29
ISCED 5-6	-0.0405	-2.02	0.1196	4.55	0.0872	4.13	0.1945	10.85
Unemployment duration < 6 months	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Unemployment duration 6-11 months	0.0228	1.08	-0.0050	-0.61	-0.0052	-1.22	0.0168	1.30
Unemployment duration > 11 months	0.0167	0.60	-0.0388	-3.25	-0.0300	-3.91	-0.0058	-0.48
Number of adults (15-64 years) in household	-0.0041	-0.61	0.0024	1.09	-0.0012	-0.38	-0.0051	-2.78
Number of children (<=4 years) in household	0.0043	0.64	-0.0036	-1.04	-0.0153	-2.22	-0.0107	-2.52
Number of children (5-14 years) in household	-0.0084	-1.32	-0.0056	-1.68	-0.0115	-2.75	-0.0209	-6.82
Number of elderly (>= 65 years) in household	0.0013	0.15	-0.0077	-0.95	-0.0123	-1.95	-0.0142	-3.04
No spouse in household	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	0.0328	2.80	-0.0376	-2.45	-0.0231	-3.26	-0.0294	-2.79
Employed spouse in household	-0.0381	-1.28	-0.0207	-1.48	-0.0010	-0.14	0.0100	1.02
Pseudo R ²	0.1945		0.136		0.0725		0.0881	
Number of Obs.	290,237		290,237		290,237		290,237	

Source: EU-LFS, own calculation. – Notes: The table display marginal effects obtained from probit regressions (cf. Box 2.2). The regression also includes a full set of country and year dummies. – Reference categories: Female, Age 15-24, Low skilled (ISCED 0-2), Unemployment duration < 6 months, No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.3.33
Probit estimation of specific search methods, macroeconomic indicators
 2006 to 2008

	Public employment office		Direct applications		Private employment agency		Answering/inserting adds	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Panel 1: All								
Unemployment rate	0.0062	2.03	0.0101	3.43	-0.0014	-0.42	-0.0023	-0.75
GDP growth p.c.	0.0054	0.65	0.0015	0.22	-0.0001	-0.05	0.0007	0.09
Pseudo R ²	0.189		0.133		0.0734		0.0878	
Number of Obs.	315,538		315,538		315,538		315,538	
Panel 2: Women								
Unemployment rate	0.0034	0.83	0.0056	1.63	-0.0029	-1.05	-0.003	-0.80
GDP growth p.c.	0.0035	0.44	-0.0011	-0.15	0.0003	0.12	0.0011	0.14
Pseudo R ²	0.1736		0.1343		0.068		0.087	
Number of Obs.	163,661		163,661		163,661		163,661	
Panel 3: Men								
Unemployment rate	0.0083	3.29	0.0143	2.85	0.0015	0.46	-0.0013	-0.52
GDP growth p.c.	0.0071	0.81	0.0038	0.55	-0.0001	-0.05	0.0005	0.05
Pseudo R ²	0.2119		0.1341		0.0818		0.0896	
Number of Obs.	151,877		151,877		151,877		151,877	

Source: EU-LFS, own calculation. – Notes: The three panels of the table contain separate regression results for the specified samples. Marginal effects obtained from probit regressions are displayed (cf. Box 2.2). – Additional variables included in the regressions: Gender (only Panel 1), age, education, unemployment duration, country and year. – *t*-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.4.1

Yearly transitions: State dependence

Year	EE	UU	II
1998	93.27	57.77	89.85
1999	93.27	58.18	89.08
2000	93.55	57.22	89.59
2001	93.46	56.67	89.68
2002	93.32	56.42	88.38
2003	93.62	57.28	88.64
2004	93.67	58.83	89.05
2005	94.02	63.72	90.83
2006	93.82	64.18	91.18
2007	93.89	60.09	90.45
2008	93.09	59.9	90.46

Source: EU-LFS, own calculations.

Table A.4.2

Yearly transition rates: Inflows into unemployment

Year	EU	IU
1998	3.34	3.87
1999	3.32	3.75
2000	3.09	3.44
2001	3.01	3.19
2002	3.23	3.1
2003	3.22	3.42
2004	3.26	3.42
2005	3.01	3.28
2006	2.61	2.8
2007	2.37	2.9
2008	2.59	2.83

Source: EU-LFS, own calculations.

Table A.4.3

Yearly transition rates: Inflows into employment

Year	UE	IE
1998	30.38	6.28
1999	32.08	7.17
2000	35.28	6.97
2001	32.26	7.12
2002	31.02	8.52
2003	29.85	7.94
2004	28.39	7.53
2005	25.88	5.89
2006	27.74	6.02
2007	30.47	6.65
2008	28.83	6.71

Source: EU-LFS, own calculations.

Table A.4.4
Multinomial logits for transitions from employment, including direct job-to-job transitions

	EE		EE'		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Austria</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Belgium	0.0080	6.14	-0.0040	-3.74	-0.0001	-0.11	-0.0039	-8.68
Cyprus	-0.0183	-14.26	0.0239	20.92	0.0007	2.03	-0.0062	-16.69
Czech Republic	0.0130	9.56	-0.0175	-12.95	0.0027	4.12	0.0018	2.73
Germany	0.0183	35.97	-0.0064	-13.56	0.0010	4.04	-0.0130	-37.84
Denmark	-0.0613	-39.43	0.0431	25.79	-0.0022	-3.20	0.0203	11.89
Estonia	-0.0237	-14.75	0.0193	11.78	0.0077	7.42	-0.0033	-5.79
Spain	-0.0359	-23.17	0.0311	20.63	0.0097	11.80	-0.0049	-9.27
Finland	-0.0451	-27.64	0.0231	13.65	0.0102	10.94	0.0117	9.37
France	-0.0053	-3.15	0.0015	0.92	0.0090	10.43	-0.0052	-10.54
Greece	0.0409	37.64	-0.0274	-33.14	-0.0007	-1.46	-0.0129	-34.73
Hungary	0.0142	11.88	-0.0164	-14.11	0.0031	4.47	-0.0009	-2.44
Italy	0.0368	28.55	-0.0192	-15.77	-0.0070	-15.96	-0.0106	-25.10
Lithuania	-0.0170	-6.25	0.0094	4.04	0.0171	17.48	-0.0096	-21.11
Luxembourg	0.0397	35.94	-0.0189	-23.32	-0.0154	-45.27	-0.0055	-13.86
Latvia	-0.0287	-22.75	0.0170	17.42	0.0186	41.97	-0.0069	-21.52
Poland	0.0064	4.65	-0.0171	-12.46	0.0122	18.03	-0.0015	-3.20
Portugal	0.0159	7.49	-0.0051	-2.44	-0.0003	-0.35	-0.0105	-23.39
Romania	0.0402	55.09	-0.0166	-23.43	-0.0148	-52.05	-0.0088	-40.28
Sweden	0.0238	20.93	-0.0113	-9.60	-0.0059	-9.14	-0.0067	-10.82
Slovenia	0.0034	3.83	-0.0160	-18.38	0.0032	8.20	0.0094	23.14
Slovakia	0.0170	8.90	-0.0284	-23.00	0.0124	11.59	-0.0010	6.29
United Kingdom	-0.0193	-9.16	0.0362	18.00	-0.0077	-16.25	-0.0092	-28.66
<i>1998</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
1999	0.0089	0.88	-0.0085	-0.81	-0.0001	-0.21	-0.0003	-0.16
2000	0.0074	0.70	-0.0083	-0.84	-0.0001	-0.05	0.0010	0.55
2001	0.0029	0.27	-0.0016	-0.14	-0.0020	-0.81	0.0007	0.32
2002	-0.0024	-0.22	0.0015	0.14	-0.0007	-0.24	0.0016	0.71
2003	0.0058	0.58	-0.0054	-0.55	0.0000	-0.01	-0.0003	-0.18
2004	0.0011	0.10	-0.0013	-0.12	0.0013	0.51	-0.0010	-0.48
2005	0.0044	0.47	-0.0023	-0.24	0.0002	0.10	-0.0023	-1.16
2006	0.0035	0.43	-0.0015	-0.18	-0.0017	-0.54	-0.0003	-0.14
2007	0.0026	0.29	0.0011	0.12	-0.0033	-1.27	-0.0003	-0.14
2008	0.0007	0.07	0.0030	0.29	-0.0034	-1.30	-0.0003	-0.18
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.1327	16.47	-0.0749	-16.91	-0.0181	-6.44	-0.0397	-6.72
Age 55-64	0.0816	13.90	-0.0731	-51.76	-0.0179	-9.17	0.0094	1.52
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0119	3.15	0.0062	2.61	-0.0013	-0.58	-0.0168	-11.06
Married	0.0428	16.03	-0.0295	-13.64	-0.0152	-18.78	0.0019	1.52
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0176	4.52	-0.0028	-0.78	-0.0083	-6.87	-0.0064	-4.43
ISCED 5-6	0.0322	5.75	-0.0021	-0.36	-0.0184	-15.14	-0.0117	-12.10

Table A.4.4, continued

	EE		EE'		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
UR Change	0.0006	0.38	-0.0035	-3.80	0.0022	4.17	0.0007	3.24
Transition Probability	87.95%		7.10%		2.62%		2.33%	
Pseudo-R ²					0.0578			
Number of obs.					8,706,608			

Source: EU-LFS, own calculation. – Notes: inactivity in $t+1$, respectively. – t -values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – EE, EE', EU, EI indicate employment in period t and employment in the same job, employment in a new job, unemployment, inactivity in $t+1$, respectively. – Netherlands and Bulgaria not included, due to missing information on job tenure. – Reference categories: Country Austria, year 1998, Age 15-24, Female, Low education.

Table A.4.5

Multinomial logits for transitions from employment, including direct job-to-job transitions with household variables

	EE		EE'		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.1275	14.60	-0.0780	-12.52	-0.0195	-6.71	-0.0300	-18.60
Age 55-64	0.0813	16.58	-0.0772	-43.45	-0.0204	-11.56	0.0163	3.07
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0078	1.94	0.0066	2.67	-0.0018	-0.77	-0.0125	-6.58
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0103	2.67	0.0008	0.24	-0.0059	-4.18	-0.0052	-4.85
ISCED 5-6	0.0205	3.58	0.0054	0.90	-0.0158	-11.12	-0.0100	-11.76
Number of persons living in household (15-64 years)	0.0017	1.18	0.0008	1.81	-0.0007	-1.46	-0.0018	-2.33
Number of children (<=4 years) in household	-0.0374	-16.06	0.0089	3.18	0.0088	8.90	0.0196	8.56
Number of children (5-14 years) in household	-0.0009	-0.88	0.0022	4.41	0.0003	0.57	-0.0016	-1.56
Elderly persons living in household (65+ years)	0.0157	5.86	-0.0086	-5.93	-0.0034	-3.46	-0.0037	-3.24
<i>No spouse in household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	0.0147	2.58	-0.0329	-10.21	-0.0006	-0.38	-0.0080	-3.42
Employed spouse in household	0.0481	15.83	-0.0163	-5.90	-0.0238	-37.61	0.0188	8.83
UR Change	0.0001	0.04	-0.0032	-3.99	0.0024	6.65	0.0008	4.12
Transition Probability	0.8806		0.0708		0.0264		0.0222	
Pseudo-R ²					0.0702			
Number of obs.					6,201,831			

Source: EU-LFS, own calculation. – Notes: inactivity in t+1, respectively. t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – EE, EE', EU, EI indicate employment in period t and employment in the same job, employment in a new job, unemployment, inactivity in t+1, respectively. – Country and year dummies included as further explanatory variables. – Netherlands and Bulgaria not included, due to missing information on job tenure. – Reference categories: Age 15-24, Female, Low education, No spouse in household.

Table A.4.6

Multinomial logit for transitions from employment with household variables, for men

	EE		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.0339	16.02	-0.0128	-6.63	-0.0211	-17.25
Age 55-64	-0.0162	-4.53	-0.0138	-8.86	0.0299	8.51
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0116	4.45	-0.0078	-5.00	-0.0037	-3.16
ISCED 5-6	0.0259	11.29	-0.0179	-12.46	-0.0080	-7.61
Number of persons (15-65) living in household	0.0011	1.50	-0.0004	-0.91	-0.0007	-1.75
Number of children (<=4 years) in household	-0.0077	-4.19	0.0076	7.66	0.0001	0.08
Number of children (5-14 years) in household	0.0011	1.17	0.0000	0.05	-0.0011	-1.28
Number of elderly persons living in household (age 65 and above)	0.0041	2.62	-0.0027	-2.32	-0.0014	-1.93
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	0.0295	10.53	-0.0225	-52.39	-0.0070	-2.65
Employed Spouse	0.0081	2.99	-0.0098	-5.33	0.0018	1.31
UR Change	-0.0043	-8.65	0.0032	7.07	0.0011	15.32
Transition Probability	95.52%		2.66%		1.82%	
Pseudo-R ²			0.0724			
Number of Obs.			3,361,953			

Source: EU-LFS, own calculation. – Notes: EE, EU, EI indicate employment in period t and employment, unemployment, inactivity in period $t+1$, respectively. – t -values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Reference categories: Country Austria, year 1998, Age 15-24, Female, Low education, No spouse in Household.

Table A.4.7

Multinomial logit for transitions from employment with household variables, for women

	EE		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.0542	12.72	-0.0210	-6.48	-0.0332	-21.31
Age 55-64	0.0072	1.09	-0.0206	-12.94	0.0134	2.12
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0118	5.48	-0.0042	-3.49	-0.0076	-6.23
ISCED 5-6	0.0258	13.81	-0.0126	-9.55	-0.0132	-9.42
Number of persons (15-65) living in household	-0.0381	-14.67	0.0085	7.04	0.0296	11.34
Number of children (<=4 years) in household	0.0001	0.06	0.0009	1.90	-0.0010	-0.74
Number of children (5-14 years) in household	0.0040	2.55	-0.0012	-2.10	-0.0028	-2.56
Number of elderly persons living in household (age 65 and above)	0.0112	5.72	-0.0050	-5.80	-0.0062	-3.97
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0563	-9.64	0.0124	5.21	0.0440	8.75
Employed Spouse	0.0324	14.91	-0.0221	-19.03	-0.0103	-4.69
UR Change	-0.0016	-2.80	0.0012	3.96	0.0004	1.23
Transition Probability	95.11%		2.31%		2.58%	
Pseudo-R ²			0.0997			
Number of Obs.			2,958,836			

Source: EU-LFS, own calculation. – Notes: EE, EU, EI indicate employment in period t and employment, unemployment, inactivity in period t+1, respectively. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Reference categories: Country Austria, year 1998, Age 15-24, Female, Low education, No spouse in Household.

Table A.4.8
Multinomial logit for transitions from employment, with household interactions

	EE		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Age 15-24 x Number of children (<=4 years)	-0.0285	-8.11	0.0102	7.23	0.0182	6.73
Age 25-54 x Number of children (<=4 years)	-0.0293	-13.69	0.0080	7.99	0.0212	10.09
Age 55-64 x Number of children (<=4 years)	-0.0030	-1.06	-0.0009	-0.33	0.0039	2.46
Age 15-24 x Number of children (5-14 years)	-0.0015	-1.04	0.0008	1.87	0.0006	0.48
Age 25-54 x Number of children (5-14 years)	0.0019	1.55	0.0000	-0.08	-0.0019	-1.43
Age 55-64 x Number of children (5-14 years)	-0.0002	-0.16	0.0010	0.66	-0.0008	-0.47
Age 15-24 x Number of elderly persons (>= 65 years)	0.0050	3.70	-0.0026	-3.10	-0.0024	-2.24
Age 25-54 x Number of elderly persons (>= 65 years)	0.0071	3.14	-0.0027	-2.54	-0.0044	-2.73
Age 55-64 x Number of elderly persons (>= 65 years)	0.0150	7.30	-0.0120	-8.65	-0.0030	-1.97
Transition Probability	95.23%		2.56%		2.21%	
Pseudo-R ²			0.079			
Number of Obs.			6,320,789			

Source: EU-LFS, own calculation. – Notes: EE, EU, EI indicate employment in period t and employment, unemployment, inactivity in period t+1, respectively. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Reference categories: Country Austria, year 1998, Age 15-24, Female, Low education, No spouse in Household.

Table A.4.9
Multinomial logits for transitions from employment with household variables, Continental Europe

All	EE		EE'		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.1505	10.64	-0.0974	-15.57	-0.0233	-2.81	-0.0298	-27.89
Age 55-64	0.0863	96.92	-0.0826	-180.09	-0.0219	-5.14	0.0182	3.57
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	-0.0007	-0.28	0.0064	1.41	-0.0008	-0.20	-0.0049	-3.45
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0016	0.36	0.0076	4.51	-0.0059	-3.52	-0.0034	-2.64
ISCED 5-6	0.0117	2.43	0.0156	10.07	-0.0185	-6.40	-0.0088	-11.04
Number of persons living in household (15-64 years)	0.0081	1.64	-0.0018	-0.94	-0.0032	-1.62	-0.0030	-2.80
Number of children (<=4 years) in household	-0.0363	-12.64	0.0067	3.53	0.0130	5.61	0.0165	6.94
Number of children (5-14 years) in household	-0.0010	-0.71	0.0015	1.27	0.0002	0.19	-0.0007	-1.27
Elderly persons living in household (65+ years)	0.0233	21.75	-0.0148	-9.73	-0.0066	-2.66	-0.0019	-8.48
<i>No spouse in household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	0.0437	21.81	-0.0266	-6.24	0.0047	0.87	0.0162	4.27
Employed spouse in household	0.0057	0.43	-0.0125	-10.34	-0.0245	-19.40	-0.0067	-8.52
UR Change	-0.0079	-5.11	0.0056	9.63	-0.0006	-0.28	0.0029	1.59
Transition Probability	88.54%		6.60%		3.00%		1.85%	
Pseudo-R ²					0.0733			
Number of obs.					1,357,330			

Male	EE		EE'		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.1338	14.46	-0.0903	-14.86	-0.0177	-3.98	-0.0258	-12.84
Age 55-64	0.0772	35.28	-0.0860	-176.46	-0.0170	-6.35	0.0259	5.08
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0031	0.53	0.0075	3.55	-0.0073	-3.17	-0.0033	-2.04
ISCED 5-6	0.0199	4.32	0.0105	11.28	-0.0214	-6.02	-0.0090	-11.25
Number of persons living in household (15-64 years)	0.0060	1.22	-0.0016	-0.83	-0.0022	-0.83	-0.0023	-4.24
Number of children (<=4 years) in household	-0.0319	-12.33	0.0175	9.95	0.0123	11.05	0.0021	4.36
Number of children (5-14 years) in household	0.0066	5.67	-0.0036	-6.62	-0.0015	-1.91	-0.0015	-1.85
Elderly persons living in household (65+ years)	0.0260	29.53	-0.0187	-10.05	-0.0063	-2.64	-0.0009	-1.86
<i>No spouse in household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	0.0311	2.20	-0.0277	-5.77	-0.0080	-0.92	0.0046	4.86
Employed spouse in household	0.0430	18.91	-0.0114	-9.56	-0.0259	-13.80	-0.0057	-3.28
UR Change	-0.0115	-7.23	0.0062	8.76	0.0022	1.28	0.0031	1.72
Transition Probability	88.56%		6.79%		3.07%		1.57%	
Pseudo-R ²					0.0751			
Number of obs.					710,426			

Table A.4.9, continued

Female	EE		EE'		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.1659	8.35	-0.1064	-15.57	-0.0281	-2.63	-0.0314	-20.08
Age 55-64	0.0919	50.94	-0.0785	-112.17	-0.0244	-5.71	0.0110	2.97
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0010	0.28	0.0073	5.33	-0.0044	-2.89	-0.0039	-3.99
ISCED 5-6	0.0023	0.40	0.0212	8.63	-0.0154	-5.96	-0.0081	-7.74
Number of persons living in household (15-64 years)	0.0095	1.87	-0.0018	-0.89	-0.0041	-2.82	-0.0035	-2.07
Number of children (<=4 years) in household	-0.0363	-7.53	0.0002	0.06	0.0128	3.54	0.0233	7.20
Number of children (5-14 years) in household	-0.0079	-2.42	0.0059	2.34	0.0018	1.87	0.0002	0.96
Elderly persons living in household (65+ years)	0.0214	11.34	-0.0087	-7.30	-0.0098	-4.53	-0.0029	-3.14
<i>No spouse in household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	-0.0287	-1.90	-0.0260	-6.54	0.0229	6.01	0.0319	4.02
Employed spouse in household	0.0446	16.92	-0.0132	-10.02	-0.0219	-22.05	-0.0095	-4.66
UR Change	-0.0030	-1.65	0.0043	6.68	-0.0040	-1.55	0.0026	1.41
Transition Probability	88.76%		6.38%		2.83%		2.03%	
Pseudo-R ²					0.0792			
Number of obs.					646,904			

Source: EU-LFS, own calculation. – Notes: inactivity in $t+1$, respectively. t -values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – EE, EE', EU, EI indicate employment in period t and employment in the same job, employment in a new job, unemployment, inactivity in $t+1$, respectively. – Country and year dummies included as further explanatory variables. – Netherlands and Bulgaria not included, due to missing information on job tenure. –Reference categories: Age 15-24, Female, Low education, No spouse in household.

Table A.4.10
Multinomial logits for transitions from employment with household variables, Central and Eastern Europe

All Observations	EE		EE'		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.1072	23.19	-0.0558	-30.57	-0.0171	-9.87	-0.0343	-7.65
Age 55-64	0.0438	6.75	-0.0525	-22.48	-0.0192	-9.54	0.0279	4.66
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0026	0.55	0.0157	5.40	0.0014	0.90	-0.0197	-16.96
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0203	3.41	-0.0033	-1.26	-0.0090	-2.09	-0.0080	-6.93
ISCED 5-6	0.0390	5.08	-0.0035	-0.52	-0.0216	-7.46	-0.0139	-6.97
Number of persons living in household (15-64 years)	0.0016	0.70	0.0001	0.77	-0.0003	-0.90	-0.0014	-0.73
Number of children (<=4 years) in household	-0.0377	-8.78	0.0103	7.01	0.0042	3.58	0.0233	4.69
Number of children (5-14 years) in household	-0.0005	-0.25	0.0042	7.13	0.0005	0.95	-0.0042	-2.08
Elderly persons living in household (65+ years)	0.0148	2.22	-0.0050	-1.41	-0.0051	-2.90	-0.0047	-2.43
<i>No spouse in household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	0.0041	0.82	-0.0215	-10.81	-0.0018	-1.29	0.0192	7.06
Employed spouse in household	0.0442	11.65	-0.0137	-9.75	-0.0223	-17.60	-0.0082	-2.76
UR Change	-0.0007	-0.31	-0.0013	-0.67	0.0015	2.45	0.0005	0.60
Transition Probability	89.52%		5.60%		2.53%		2.35%	
Pseudo-R ²					0.0757			
Number of obs.					2,111,935			
Male	EE		EE'		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.0877	15.02	-0.0523	-22.21	-0.0134	-8.10	-0.0220	-4.90
Age 55-64	0.0425	4.87	-0.0582	-26.62	-0.0163	-6.70	0.0320	3.83
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0249	3.87	-0.0065	-2.07	-0.0105	-2.47	-0.0079	-8.60
ISCED 5-6	0.0463	6.18	-0.0092	-1.24	-0.0243	-11.87	-0.0128	-9.68
Number of persons living in household (15-64 years)	0.0003	0.36	0.0001	0.33	-0.0003	-0.90	-0.0001	-0.26
Number of children (<=4 years) in household	-0.0204	-10.14	0.0166	10.12	0.0058	4.41	-0.0020	-2.47
Number of children (5-14 years) in household	-0.0020	-1.26	0.0024	5.02	-0.0003	-0.75	-0.0002	-0.09
Elderly persons living in household (65+ years)	0.0141	1.83	-0.0060	-1.47	-0.0054	-2.08	-0.0026	-1.82
<i>No spouse in household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	0.0296	13.05	-0.0232	-8.17	-0.0097	-9.69	0.0033	2.04
Employed spouse in household	0.0431	15.43	-0.0151	-7.45	-0.0222	-13.49	-0.0058	-3.84
UR Change	-0.0008	-0.37	-0.0016	-0.79	0.0016	2.71	0.0007	0.96
Transition Probability	88.89%		6.36%		2.85%		1.90%	
Pseudo-R ²					0.0601			
Number of obs.					1,076,054			

Table A.4.10, continued

Female	EE		EE'		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.1273	10.07	-0.0633	-12.90	-0.0214	-5.50	-0.0426	-6.49
Age 55-64	0.0337	3.64	-0.0471	-18.96	-0.0200	-9.84	0.0335	3.96
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0151	2.46	-0.0005	-0.19	-0.0068	-1.65	-0.0078	-3.75
ISCED 5-6	0.0305	3.78	0.0021	0.32	-0.0176	-5.00	-0.0151	-5.49
Number of persons living in household (15-64 years)	0.0033	0.90	0.0002	1.05	-0.0005	-0.83	-0.0030	-0.93
Number of children (<=4 years) in household	-0.0451	-6.86	0.0027	1.04	0.0026	3.16	0.0399	5.50
Number of children (5-14 years) in household	-0.0010	-0.38	0.0058	6.71	0.0015	2.24	-0.0063	-2.78
Elderly persons living in household (65+ years)	0.0169	2.61	-0.0044	-1.33	-0.0054	-5.71	-0.0071	-2.57
<i>No spouse in household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	-0.0246	-2.81	-0.0204	-11.27	0.0063	2.77	0.0387	6.79
Employed spouse in household	0.0453	9.44	-0.0127	-9.61	-0.0209	-17.02	-0.0117	-2.69
UR Change	-0.0005	-0.21	-0.0009	-0.52	0.0012	2.09	0.0002	0.22
Transition Probability	90.21%		4.85%		2.12%		2.82%	
Pseudo-R ²					0.0967			
Number of obs.					1,035,881			

Source: EU-LFS, own calculation. – Notes: inactivity in $t+1$, respectively. t -values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – EE, EE', EU, EI indicate employment in period t and employment in the same job, employment in a new job, unemployment, inactivity in $t+1$, respectively. – Country and year dummies included as further explanatory variables. – Netherlands and Bulgaria not included, due to missing information on job tenure. –Reference categories: Age 15-24, Female, Low education, No spouse in household.

Table A.4.11
Multinomial logits for transitions from employment with household variables, UK

All	EE		EE'		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.1611	69.68	-0.1176	-56.71	-0.0180	-21.58	-0.0256	-26.79
Age 55-64	0.1441	105.31	-0.1223	-110.66	-0.0156	-35.23	-0.0062	-9.33
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0005	0.41	0.0022	2.02	0.0073	17.03	-0.0100	-21.70
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	-0.0044	-2.20	0.0193	10.35	-0.0073	-12.11	-0.0077	-11.60
ISCED 5-6	-0.0101	-4.41	0.0313	14.14	-0.0121	-23.70	-0.0090	-14.77
Number of persons living in household (15-64 years)	0.0042	6.63	0.0016	2.84	-0.0019	-8.68	-0.0038	-14.94
Number of children (<=4 years) in household	-0.0250	-10.09	-0.0045	-1.93	0.0061	8.74	0.0234	42.88
Number of children (5-14 years) in household	-0.0033	-2.60	0.0029	2.57	-0.0004	-1.04	0.0008	1.75
Elderly persons living in household (65+ years)	0.0303	11.90	-0.0188	-8.00	-0.0017	-2.38	-0.0098	-10.17
<i>No spouse in household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	-0.0027	-1.22	-0.0363	-21.16	0.0035	4.54	0.0355	26.17
Employed spouse in household	0.0478	32.46	-0.0146	-11.30	-0.0173	-32.12	-0.0159	-27.06
UR Change	0.0139	2.53	-0.0146	-2.92	0.0005	0.31	0.0001	0.04
Transition Probability	84.52%		11.54%		1.69%		2.25%	
Pseudo-R ²					0.0615			
Number of obs.					370,696			

Male	EE		EE'		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.1473	43.99	-0.1103	-36.76	-0.0197	-15.06	-0.0173	-13.04
Age 55-64	0.1291	52.91	-0.1223	-70.85	-0.0164	-19.23	0.0096	6.50
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	-0.0031	-1.08	0.0215	8.03	-0.0115	-11.54	-0.0068	-7.60
ISCED 5-6	-0.0096	-2.86	0.0317	9.75	-0.0168	-20.52	-0.0053	-6.24
Number of persons living in household (15-64 years)	0.0015	1.67	0.0016	1.99	-0.0019	-5.18	-0.0012	-3.48
Number of children (<=4 years) in household	-0.0341	-7.07	0.0197	4.68	0.0093	6.27	0.0051	2.99
Number of children (5-14 years) in household	-0.0011	-0.51	0.0005	0.24	-0.0002	-0.26	0.0009	1.00
Elderly persons living in household (65+ years)	0.0210	6.18	-0.0177	-5.60	-0.0005	-0.51	-0.0028	-2.53
<i>No spouse in household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	0.0305	11.03	-0.0302	-12.25	-0.0041	-4.05	0.0038	3.67
Employed spouse in household	0.0487	22.15	-0.0101	-5.16	-0.0217	-25.63	-0.0169	-20.82
UR Change	0.0129	1.62	-0.0104	-1.45	0.0009	0.32	-0.0034	-1.26
Transition Probability	84.25%		11.59%		2.20%		1.96%	
Pseudo-R ²					0.0523			
Number of obs.					180,869			

Table A.4.11, continued

Female	EE		EE'		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.1743	53.76	-0.1269	-43.43	-0.0161	-15.59	-0.0313	-22.47
Age 55-64	0.1526	90.83	-0.1234	-87.26	-0.0138	-30.91	-0.0154	-20.96
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	-0.0039	-1.38	0.0162	6.23	-0.0032	-4.54	-0.0092	-9.58
ISCED 5-6	-0.0093	-2.97	0.0295	9.83	-0.0075	-11.86	-0.0127	-14.67
Number of persons living in household (15-64 years)	0.0066	7.43	0.0011	1.43	-0.0021	-7.96	-0.0056	-14.82
Number of children (<=4 years) in household	-0.0173	-6.00	-0.0143	-5.23	0.0034	5.21	0.0282	40.01
Number of children (5-14 years) in household	-0.0042	-2.68	0.0032	2.31	-0.0004	-1.07	0.0014	2.30
Elderly persons living in household (65+ years)	0.0409	10.55	-0.0191	-5.39	-0.0048	-4.21	-0.0169	-11.02
<i>No spouse in household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	-0.0528	-13.71	-0.0450	-18.68	0.0145	10.45	0.0833	27.29
Employed spouse in household	0.0488	24.52	-0.0193	-11.10	-0.0131	-19.78	-0.0165	-19.19
UR Change	0.0150	1.96	-0.0201	-2.87	0.0000	-0.01	0.0051	1.89
Transition Probability	84.88%		11.47%		1.22%		2.43%	
Pseudo-R ²					0.0756			
Number of obs.					189,827			

Source: EU-LFS, own calculation. – Notes: inactivity in $t+1$, respectively. t -values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – EE, EE', EU, EI indicate employment in period t and employment in the same job, employment in a new job, unemployment, inactivity in $t+1$, respectively. – Country and year dummies included as further explanatory variables. – Netherlands and Bulgaria not included, due to missing information on job tenure. –Reference categories: Age 15-24, Female, Low education, No spouse in household.

Table A.4.12
Multinomial logits for transitions from employment with household variables, Mediterranean

All	EE		EE'		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.1054	27.57	-0.0574	-20.96	-0.0205	-15.60	-0.0275	-4.87
Age 55-64	0.0767	6.15	-0.0706	-88.12	-0.0230	-14.08	0.0170	1.45
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0242	22.47	0.0021	0.75	-0.0098	-19.28	-0.0165	-6.13
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0195	13.00	-0.0064	-3.19	-0.0078	-4.56	-0.0052	-5.56
ISCED 5-6	0.0302	4.07	-0.0054	-0.62	-0.0139	-11.04	-0.0108	-17.12
Number of persons living in household (15-64 years)	-0.0004	-0.63	0.0012	1.56	0.0000	0.07	-0.0008	-2.13
Number of children (<=4 years) in household	-0.0368	-9.67	0.0138	7.06	0.0100	22.96	0.0129	4.49
Number of children (5-14 years) in household	-0.0009	-0.27	0.0021	2.55	0.0011	1.63	-0.0023	-1.21
Elderly persons living in household (65+ years)	0.0134	3.32	-0.0090	-3.89	-0.0021	-1.77	-0.0023	-2.35
<i>No spouse in household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	0.0257	7.48	-0.0424	-47.83	-0.0033	-2.10	0.0200	8.56
Employed spouse in household	0.0507	9.58	-0.0240	-11.76	-0.0249	-57.16	-0.0017	-0.48
UR Change	0.0012	0.42	-0.0039	-1.47	0.0010	1.09	0.0016	3.12
Transition Probability	88.27%		6.61%		2.76%		2.36%	
Pseudo-R ²					0.0689			
Number of obs.					2,361,870			
Male	EE		EE'		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.0855	31.04	-0.0498	-10.28	-0.0142	-7.52	-0.0216	-5.20
Age 55-64	0.0576	9.01	-0.0684	-56.08	-0.0157	-6.38	0.0265	4.45
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0185	11.80	-0.0080	-4.90	-0.0085	-6.06	-0.0020	-1.44
ISCED 5-6	0.0338	7.33	-0.0121	-1.66	-0.0147	-8.89	-0.0070	-5.90
Number of persons living in household (15-64 years)	-0.0012	-1.16	0.0011	1.69	0.0003	0.71	-0.0003	-1.70
Number of children (<=4 years) in household	-0.0290	-4.52	0.0226	13.29	0.0075	4.24	-0.0011	-0.38
Number of children (5-14 years) in household	-0.0009	-0.21	0.0020	1.09	0.0019	7.47	-0.0030	-1.39
Elderly persons living in household (65+ years)	0.0115	3.04	-0.0100	-4.47	-0.0010	-1.52	-0.0004	-0.80
<i>No spouse in household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	0.0560	8.46	-0.0436	-23.01	-0.0133	-16.81	0.0009	0.21
Employed spouse in household	0.0468	4.64	-0.0243	-7.76	-0.0206	-37.43	-0.0018	-0.28
UR Change	0.0007	0.21	-0.0042	-1.60	0.0017	1.56	0.0019	4.38
Transition Probability	89.03%		6.51%		2.58%		1.88%	
Pseudo-R ²					0.0716			
Number of obs.					1,328,080			

Table A.4.12, continued

Female	EE		EE'		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.1298	17.68	-0.0683	-40.81	-0.0280	-28.60	-0.0335	-4.89
Age 55-64	0.0947	6.49	-0.0731	-95.39	-0.0291	-20.18	0.0074	0.56
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0202	16.02	-0.0040	-1.59	-0.0067	-3.12	-0.0095	-9.14
ISCED 5-6	0.0254	2.74	0.0030	0.30	-0.0125	-9.98	-0.0158	-9.39
Number of persons living in household (15-64 years)	0.0014	2.75	0.0012	1.34	-0.0006	-1.90	-0.0019	-1.74
Number of children (<=4 years) in household	-0.0384	-19.37	0.0059	2.67	0.0118	33.12	0.0207	5.24
Number of children (5-14 years) in household	-0.0009	-0.27	0.0022	4.37	0.0008	0.63	-0.0021	-0.92
Elderly persons living in household (65+ years)	0.0176	3.59	-0.0077	-2.73	-0.0047	-3.63	-0.0052	-3.04
<i>No spouse in household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/unemployed spouse in household	-0.0275	-6.80	-0.0412	-56.89	0.0124	3.83	0.0563	9.17
Employed spouse in household	0.0582	23.91	-0.0237	-26.81	-0.0298	-28.16	-0.0046	-1.94
UR Change	0.0024	0.82	-0.0032	-1.23	0.0000	0.04	0.0007	1.37
Transition Probability	87.52%		6.73%		2.88%		2.87%	
Pseudo-R ²					0.0745			
Number of obs.					1,033,790			

Source: EU-LFS, own calculation. – Notes: inactivity in t+1, respectively. t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – EE, EE', EU, EI indicate employment in period t and employment in the same job, employment in a new job, unemployment, inactivity in t+1, respectively. – Country and year dummies included as further explanatory variables. – Netherlands and Bulgaria not included, due to missing information on job tenure. – Reference categories: Age 15-24, Female, Low education, No spouse in household.

Table A.4.13
Multinomial logit for transitions, including household variables, UK

	EE		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.0401	33.13	-0.0165	-20.42	-0.0236	-25.50
Age 55-64	0.0183	21.49	-0.0145	-31.63	-0.0038	-5.34
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0027	4.40	0.0071	17.00	-0.0098	-21.70
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0146	16.73	-0.0072	-12.18	-0.0075	-11.51
ISCED 5-6	0.0207	26.49	-0.0120	-23.81	-0.0088	-14.62
Number of persons (15-65) living in household	0.0057	17.25	-0.0019	-8.83	-0.0038	-15.10
Number of children (<=4 years) in household	-0.0291	-32.54	0.0061	8.83	0.0230	43.11
Number of children (5-14 years) in household	-0.0003	-0.56	-0.0004	-1.11	0.0008	1.70
Number of elderly persons living in household (age 65 and above)	0.0115	9.74	-0.0017	-2.38	-0.0098	-10.35
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0386	-25.48	0.0035	4.65	0.0351	26.11
Employed Spouse	0.0324	41.65	-0.0168	-31.83	-0.0155	-26.80
UR Change	-0.0008	-0.31	0.0006	0.38	0.0001	0.08
Transition Probability	96.14%		1.66%		2.20%	
Pseudo-R ²			0.075			
Number of Obs.			370,696			
	UE		UU		UI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	-0.0867	-7.89	0.0728	6.84	0.0139	1.70
Age 55-64	-0.2359	-16.85	0.0693	4.09	0.1666	10.32
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	-0.0693	-7.52	0.1345	15.85	-0.0652	-9.83
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.1804	18.41	-0.1072	-11.52	-0.0733	-10.74
ISCED 5-6	0.2989	24.27	-0.1913	-17.75	-0.1076	-16.52
Number of persons (15-65) living in household	0.0374	9.12	-0.0158	-3.98	-0.0216	-6.66
Number of children (<=4 years) in household	-0.0404	-2.47	-0.0715	-4.37	0.1119	12.62
Number of children (5-14 years) in household	-0.0124	-1.76	-0.0028	-0.40	0.0151	3.38
Number of elderly persons living in household (age 65 and above)	-0.0175	-1.27	0.0317	2.59	-0.0143	-1.42
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0951	-6.97	0.0170	1.28	0.0781	7.28
Employed Spouse	0.2898	25.19	-0.2218	-22.30	-0.0680	-9.13
UR Change	0.0266	0.69	0.0245	0.69	-0.0510	-1.84
Transition Probability	45.08%		38.16%		16.76%	
Pseudo-R ²			0.0858			
Number of Obs.			16,637			

Table A.4.13, continued

	IE		IU		II	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	-0.1141	-49.59	-0.0212	-14.37	0.1353	50.43
Age 55-64	-0.1845	-94.80	-0.0608	-44.55	0.2453	108.20
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	-0.0021	-1.12	0.0095	7.70	-0.0074	-3.30
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.1236	52.69	0.0177	13.28	-0.1413	-54.43
ISCED 5-6	0.3710	66.18	0.0175	7.30	-0.3885	-72.00
Number of persons (15-65) living in household	0.0059	7.52	-0.0040	-7.01	-0.0019	-1.98
Number of children (<=4 years) in household	-0.0332	-13.68	-0.0022	-1.64	0.0354	12.95
Number of children (5-14 years) in household	0.0006	0.52	0.0054	8.07	-0.0061	-4.32
Number of elderly persons living in household (age 65 and above)	-0.0180	-4.69	-0.0111	-4.52	0.0291	6.62
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0930	-37.73	-0.0184	-11.21	0.1115	38.56
Employed Spouse	0.1462	32.83	-0.0232	-13.96	-0.1230	-26.65
UR Change	-0.0179	-2.28	0.0177	3.70	0.0001	0.01
Transition Probability	13.34%		4.78%		81.89%	
Pseudo-R ²			0.1536			
Number of Obs.			143,109			

Source: EU-LFS, own calculation. – Notes: Country and year dummies included as further explanatory variables. – EE, EU, EI indicate employment in period t and employment, unemployment, inactivity in period $t+1$. – IE, IU, II indicate inactivity in period t and employment, unemployment, inactivity in period $t+1$. – UE, UU, UI indicate inactivity in period t and employment, unemployment, inactivity in period $t+1$, respectively. – Netherlands not included in unemployment transitions, due to missing information on unemployment status in t . – t -values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Reference categories: Age 15-24, Female, Low education, No spouse in Household.

Table A.4.14

Multinomial logit for transitions from unemployment, including household variables

	UE		UU		UI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Austria</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Belgium	-0.1179	-23.44	0.1690	19.55	-0.0420	-11.20
Bulgaria	-0.0520	-5.63	0.0940	4.16	-0.0434	-4.38
Cyprus	0.1699	26.42	-0.1598	-33.33	-0.0160	-4.68
Czech Republic	0.0337	9.20	-0.0276	-2.96	-0.0134	-1.91
Germany	-0.0598	-17.63	-0.0263	-6.96	0.0777	17.29
Estonia	-0.0127	-1.48	-0.0822	-6.32	0.1130	5.76
Spain	0.0978	12.65	-0.1698	-12.06	0.0625	5.24
France	-0.0016	-0.15	-0.0703	-3.77	0.0678	4.81
Greece	-0.0886	-22.61	0.1209	14.72	-0.0334	-5.24
Hungary	-0.0176	-5.98	0.0071	0.85	0.0087	1.45
Italy	-0.0535	-13.57	0.0866	8.63	-0.0474	-6.48
Lithuania	-0.0101	-1.70	0.0029	0.26	-0.0090	-1.03
Luxembourg	0.1421	32.35	-0.3040	-67.83	0.1652	18.30
Latvia	-0.0533	-17.26	0.0819	9.89	-0.0330	-5.97
Poland	-0.1101	-28.43	0.0491	5.80	0.0669	5.18
Portugal	0.1045	24.63	-0.0817	-10.24	-0.0195	-4.04
Romania	-0.0790	-17.18	-0.0841	-11.41	0.1924	16.09
Slovenia	-0.1464	-53.43	0.1963	35.34	-0.0391	-8.83
Slovakia	-0.0691	-16.71	0.1010	10.94	-0.0439	-6.39
United Kingdom	0.0842	31.58	-0.1965	-20.91	0.1144	11.27
<i>1998</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
1999	0.0144	0.66	-0.0203	-0.90	0.0062	0.74
2000	0.0629	3.91	-0.0726	-8.79	0.0073	0.43
2001	0.0553	2.40	-0.0934	-2.69	0.0436	2.33
2002	0.0545	2.17	-0.0803	-2.69	0.0333	1.78
2003	0.0440	1.61	-0.0847	-2.35	0.0503	1.62
2004	0.0286	0.78	-0.0606	-1.18	0.0416	1.37
2005	0.0247	0.80	-0.0641	-1.30	0.0483	1.35
2006	0.0337	1.07	-0.0843	-1.78	0.0568	1.36
2007	0.0512	1.61	-0.1065	-2.23	0.0640	1.41
2008	0.0497	1.62	-0.0897	-1.79	0.0509	1.12
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	-0.0621	-3.47	0.0763	3.95	-0.0038	-0.60
Age 55-64	-0.2151	-9.06	0.0665	3.14	0.1431	6.36
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0511	3.73	-0.0024	-0.16	-0.0360	-4.59
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0795	7.07	-0.0553	-5.06	-0.0214	-5.00
ISCED 5-6	0.1716	7.35	-0.1312	-7.00	-0.0290	-7.71

Table A.4.14, continued

	UE		UU		UI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Number of persons (15-65) living in household	0.0006	0.29	0.0033	1.56	-0.0039	-1.72
Number of children (<=4 years) in household	-0.0135	-2.17	-0.0351	-3.27	0.0362	5.69
Number of children (5-14 years) in household	0.0075	2.82	-0.0025	-1.00	-0.0013	-0.52
Number of elderly persons living in household (age 65 and above)	-0.0243	-6.28	0.0178	2.79	0.0027	0.93
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0965	-6.95	0.0415	3.57	0.0348	7.82
Employed Spouse	0.1863	12.30	-0.1653	-10.78	-0.0091	-2.02
UR Change	-0.0122	-5.27	-0.0062	-0.88	0.0123	2.04
Transition Probability	27.97%		58.46%		9.03%	
Pseudo-R ²			0.0819			
Number of Obs.			818,800			

Source: EU-LFS, own calculations. – Notes: IE, IU, II indicate inactivity in period t and employment, unemployment, inactivity in period $t+1$, respectively. – Netherlands not included in unemployment transitions, due to missing information on unemployment status in t . – t -values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Reference categories: Country Austria, year 1998, Age 15-24, Female, Low education, No spouse in Household.

Table A.4.15

Multinomial logit for transitions from unemployment with household variables, for women

	UE		UU		UI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	-0.0493	-3.37	0.0671	3.56	-0.0032	-0.43
Age 55-64	-0.1882	-8.65	0.0187	0.64	0.1557	6.18
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0765	8.65	-0.0439	-3.85	-0.0292	-5.64
ISCED 5-6	0.1786	7.32	-0.1295	-7.64	-0.0417	-9.49
Number of persons (15-65) living in household	-0.0235	-2.13	-0.0568	-3.78	0.0603	5.59
Number of children (<=4 years) in household	0.0098	2.63	-0.0065	-2.09	-0.0001	-0.04
Number of children (5-14 years) in household	0.0003	0.19	0.0038	1.53	-0.0037	-1.56
Number of elderly persons living in household (age 65 and above)	-0.0083	-1.70	0.0026	0.34	-0.0006	-0.15
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.1711	-14.43	0.0820	5.80	0.0614	6.36
Employed Spouse	0.1862	10.35	-0.1885	-9.91	-0.0121	-1.46
UR Change	-0.0069	-1.60	-0.0137	-2.04	0.0142	2.04
Transition Probability	25.37%		58.18%		10.94%	
Pseudo-R ²			0.09573			
Number of Obs.			411,112			

Source: EU-LFS, own calculation. – Notes: UE, UU, UI indicate inactivity in period *t* and employment, unemployment, inactivity in period *t+1*, respectively. – Netherlands not included in unemployment transitions, due to missing information on unemployment status in *t*. – *t*-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Reference categories: Country Austria, year 1998, Age 15-24, Female, Low education, No spouse in Household.

Table A.4.16

Multinomial logit for transitions from unemployment, with household interactions

	UE		UU		UI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Age 15-24 x Number of children (<=4 years)	-0.0434	-3.28	-0.0195	-1.18	0.0455	5.07
Age 25-54 x Number of children (<=4 years)	0.0024	0.59	-0.0448	-3.90	0.0330	5.59
Age 55-64 x Number of children (<=4 years)	-0.0089	-0.50	-0.0042	-0.15	0.0045	0.53
Age 15-24 x Number of children (5-14 years)	-0.0155	-4.79	0.0190	4.07	-0.0002	-0.06
Age 25-54 x Number of children (5-14 years)	0.0188	6.37	-0.0126	-4.02	-0.0015	-0.39
Age 55-64 x Number of children (5-14 years)	0.0183	1.01	0.0064	0.41	-0.0048	-1.25
Age 15-24 x Number of elderly persons (>= 65 years)	-0.0094	-1.42	0.0086	1.31	0.0016	0.53
Age 25-54 x Number of elderly persons (>= 65 years)	-0.0281	-5.36	0.0252	3.44	0.0023	0.53
Age 55-64 x Number of elderly persons (>= 65 years)	0.0032	0.25	-0.0502	-2.07	0.0048	0.90
Transition Probability	27.96%		63.02%		9.02%	
Pseudo-R ²			0.0822			
Number of Obs.			818,800			

Source: EU-LFS, own calculation. – Notes: UE, UU, UI indicate inactivity in period t and employment, unemployment, inactivity in period $t+1$, respectively. – Netherlands not included in unemployment transitions, due to missing information on unemployment status in t . – t -values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Reference categories: Country Austria, year 1998, Age 15-24, Female, Low education, No spouse in Household.

Table A.4.17

Multinomial logit for transitions, including household variables, Continental Europe

	EE		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.0485	7.98	-0.0196	-2.91	-0.0289	-23.91
Age 55-64	-0.0034	-1.34	-0.0189	-4.86	0.0223	3.68
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0079	1.88	-0.0008	-0.22	-0.0071	-2.36
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0094	3.35	-0.0058	-3.78	-0.0037	-2.81
ISCED 5-6	0.0272	8.30	-0.0175	-6.71	-0.0096	-8.56
Number of persons (15-65) living in household	0.0057	2.14	-0.0030	-1.70	-0.0027	-2.47
Number of children (<=4 years) in household	-0.0291	-16.73	0.0121	5.81	0.0170	7.26
Number of children (5-14 years) in household	-0.0003	-0.20	0.0002	0.18	0.0001	0.09
Number of elderly persons living in household (age 65 and above)	0.0080	3.54	-0.0061	-2.67	-0.0019	-5.93
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0215	-2.58	0.0045	0.94	0.0170	4.71
Employed Spouse	0.0294	27.24	-0.0230	-22.06	-0.0064	-6.32
UR Change	-0.0021	-1.71	-0.0008	-0.42	0.0029	1.76
Transition Probability	95.21%		2.81%		1.98%	
Pseudo-R ²			0.0887			
Number of Obs.			1,464,214			
	UE		UU		UI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	-0.1037	-5.46	0.1326	5.90	-0.0019	-0.24
Age 55-64	-0.2600	-19.20	0.0982	2.71	0.2097	3.88
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0154	1.48	0.0181	4.02	-0.0232	-3.51
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0835	25.29	-0.0500	-2.83	-0.0329	-5.17
ISCED 5-6	0.1850	17.47	-0.1249	-5.13	-0.0406	-10.80
Number of persons (15-65) living in household	0.0084	4.12	0.0021	0.39	-0.0105	-2.47
Number of children (<=4 years) in household	-0.0267	-8.45	-0.0469	-1.89	0.0709	9.87
Number of children (5-14 years) in household	0.0072	1.59	-0.0051	-0.72	0.0017	1.21
Number of elderly persons living in household (age 65 and above)	-0.0225	-2.93	-0.0014	-0.10	0.0094	2.58
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0982	-6.77	0.0345	2.42	0.0444	7.00
Employed Spouse	0.1589	15.17	-0.1525	-9.54	-0.0076	-5.32
UR Change	-0.0279	-3.41	-0.0762	-2.13	0.0980	4.10
Transition Probability	23.79%		56.96%		12.82%	
Pseudo-R ²			0.0913			
Number of Obs.			151,555			

Table A.4.17, continued

	IE		IU		II	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	-0.0135	-4.99	0.0160	8.33	-0.0024	-0.74
Age 55-64	-0.1016	-22.02	-0.0288	-43.96	0.1304	26.25
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0087	2.22	0.0022	2.06	-0.0109	-3.16
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0415	6.85	0.0082	1.53	-0.0497	-4.38
ISCED 5-6	0.1609	9.14	0.0192	7.54	-0.1801	-9.28
Number of persons (15-65) living in household	-0.0040	-3.22	-0.0009	-0.66	0.0049	1.97
Number of children (<=4 years) in household	0.0155	9.10	0.0098	4.65	-0.0253	-19.21
Number of children (5-14 years) in household	-0.0051	-7.45	0.0000	0.03	0.0051	7.22
Number of elderly persons living in household (age 65 and above)	-0.0099	-5.88	-0.0054	-1.98	0.0153	5.86
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0414	-3.94	-0.0061	-3.68	0.0474	5.32
Employed Spouse	0.0420	2.29	-0.0030	-4.85	-0.0391	-2.07
UR Change	-0.0008	-0.32	0.0004	0.17	0.0005	0.18
Transition Probability	5.45%		2.39%		92.17%	
Pseudo-R ²			0.1343			
Number of Obs.			830,390			

Source: EU-LFS, own calculations. – Notes: Country and year dummies included as further explanatory variables. – EE, EU, EI indicate employment in period t and employment, unemployment, inactivity in period $t+1$. – IE, IU, II indicate inactivity in period t and employment, unemployment, inactivity in period $t+1$. – UE, UU, UI indicate inactivity in period t and employment, unemployment, inactivity in period $t+1$, respectively. – Netherlands not included in unemployment transitions, due to missing information on unemployment status in t . – t -values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Reference categories: Age 15-24, Female, Low education, No spouse in Household.

Table A.4.18
Multinomial logit for transitions, including household variables, Central and Eastern Europe

	EE		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.0487	9.79	-0.0158	-9.18	-0.0330	-7.74
Age 55-64	-0.0122	-1.58	-0.0181	-8.59	0.0302	4.98
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0183	7.76	0.0012	0.78	-0.0195	-17.46
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0169	4.27	-0.0090	-2.13	-0.0078	-7.04
ISCED 5-6	0.0351	27.09	-0.0214	-7.60	-0.0136	-7.11
Number of persons (15-65) living in household	0.0017	0.78	-0.0003	-0.94	-0.0014	-0.74
Number of children (<=4 years) in household	-0.0269	-5.36	0.0040	3.50	0.0228	4.70
Number of children (5-14 years) in household	0.0037	1.89	0.0004	0.85	-0.0042	-2.16
Number of elderly persons living in household (age 65 and above)	0.0096	2.83	-0.0050	-2.95	-0.0046	-2.47
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0174	-5.09	-0.0016	-1.19	0.0190	7.26
Employed Spouse	0.0300	8.97	-0.0220	-18.18	-0.0080	-2.76
UR Change	-0.0019	-1.51	0.0014	2.47	0.0005	0.61
Transition Probability	95.18%		2.50%		2.31%	
Pseudo-R ²			0.1011			
Number of Obs.			2,124,009			
	UE		UU		UI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	-0.0481	-2.75	0.0648	3.46	-0.0139	-0.83
Age 55-64	-0.1524	-14.51	0.0210	0.59	0.1480	5.39
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0445	4.42	0.0128	3.49	-0.0471	-6.81
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.1105	9.49	-0.0701	-2.45	-0.0323	-3.74
ISCED 5-6	0.2689	7.88	-0.1733	-4.35	-0.0407	-6.58
Number of persons (15-65) living in household	0.0040	1.78	0.0002	0.14	-0.0054	-1.53
Number of children (<=4 years) in household	-0.0090	-1.08	-0.0408	-3.86	0.0363	4.67
Number of children (5-14 years) in household	0.0106	1.91	0.0029	0.52	-0.0082	-2.87
Number of elderly persons living in household (age 65 and above)	-0.0150	-1.69	0.0064	1.23	0.0057	1.93
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0778	-11.73	0.0302	3.94	0.0349	11.21
Employed Spouse	0.1768	16.70	-0.1760	-19.99	-0.0039	-0.39
UR Change	-0.0070	-3.49	-0.0093	-1.91	0.0139	4.05
Transition Probability	23.74%		62.37%		9.36%	
Pseudo-R ²			0.0715			
Number of Obs.			271,798			

Table A.4.18, continued

	IE		IU		II	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	-0.0012	-0.14	0.0008	0.46	0.0004	0.04
Age 55-64	-0.0373	-3.02	-0.0264	-8.66	0.0637	5.02
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0045	1.70	0.0007	1.56	-0.0051	-1.79
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0404	3.74	0.0327	7.00	-0.0731	-5.11
ISCED 5-6	0.2455	3.33	0.1218	4.82	-0.3673	-4.37
Number of persons (15-65) living in household	0.0010	2.04	0.0006	2.71	-0.0016	-2.27
Number of children (<=4 years) in household	0.0130	4.59	0.0036	5.78	-0.0166	-5.75
Number of children (5-14 years) in household	0.0039	4.64	0.0030	5.70	-0.0068	-5.91
Number of elderly persons living in household (age 65 and above)	0.0050	1.44	-0.0023	-9.87	-0.0028	-0.80
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0304	-10.84	-0.0057	-9.76	0.0361	12.89
Employed Spouse	0.0479	2.53	-0.0082	-36.08	-0.0397	-2.09
UR Change	-0.0002	-0.07	0.0027	7.92	-0.0025	-0.84
Transition Probability	4.00%		1.76%		94.24%	
Pseudo-R ²			0.1325			
Number of Obs.			1,546,006			

Source: EU-LFS, own calculations. – Notes: Country and year dummies included as further explanatory variables. – EE, EU, EI indicate employment in period *t* and employment, unemployment, inactivity in period *t*+1. – IE, IU, II indicate inactivity in period *t* and employment, unemployment, inactivity in period *t*+1. – UE, UU, UI indicate inactivity in period *t* and employment, unemployment, inactivity in period *t*+1, respectively. – Netherlands not included in unemployment transitions, due to missing information on unemployment status in *t*. – *t*-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Reference categories: Age 15-24, Female, Low education, No spouse in Household.

Table A.4.19

Multinomial logit for transitions, including household variables, Mediterranean

	EE		EU		EI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.0425	12.97	-0.0178	-12.11	-0.0247	-5.88
Age 55-64	0.0008	0.07	-0.0215	-14.65	0.0207	1.90
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0259	10.44	-0.0097	-22.33	-0.0162	-6.19
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0126	4.46	-0.0075	-4.22	-0.0051	-4.93
ISCED 5-6	0.0243	14.12	-0.0136	-9.87	-0.0107	-16.86
Number of persons (15-65) living in household	0.0009	7.09	-0.0001	-0.26	-0.0009	-2.39
Number of children (<=4 years) in household	-0.0220	-8.01	0.0095	39.48	0.0125	4.63
Number of children (5-14 years) in household	0.0014	0.61	0.0009	1.56	-0.0023	-1.28
Number of elderly persons living in household (age 65 and above)	0.0043	2.67	-0.0020	-1.85	-0.0023	-2.51
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0173	-9.64	-0.0027	-2.03	0.0199	9.91
Employed Spouse	0.0256	9.15	-0.0241	-43.56	-0.0015	-0.45
UR Change	-0.0026	-4.96	0.0011	1.20	0.0015	3.16
Transition Probability	94.98%		2.71%		2.31%	
Pseudo-R ²			0.0676			
Number of Obs.			2,361,870			
	UE		UU		UI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	-0.0352	-1.52	0.0398	1.77	-0.0008	-0.12
Age 55-64	-0.1769	-2.82	0.0912	2.35	0.0681	2.88
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0872	18.06	-0.0465	-7.37	-0.0326	-3.15
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0573	3.99	-0.0511	-2.94	-0.0059	-3.62
ISCED 5-6	0.1402	4.51	-0.1179	-3.18	-0.0158	-9.17
Number of persons (15-65) living in household	-0.0033	-0.93	0.0047	1.13	-0.0008	-1.22
Number of children (<=4 years) in household	0.0018	0.25	-0.0094	-1.13	0.0054	1.74
Number of children (5-14 years) in household	0.0077	6.62	-0.0020	-1.61	-0.0028	-8.16
Number of elderly persons living in household (age 65 and above)	-0.0360	-18.32	0.0335	4.86	0.0024	0.72
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.1222	-3.09	0.0617	1.99	0.0406	9.07
Employed Spouse	0.1651	4.53	-0.1691	-4.29	0.0048	0.84
UR Change	-0.0015	-1.07	-0.0179	-3.20	0.0088	5.64
Transition Probability	31.60%		60.22%		5.47%	
Pseudo-R ²			0.0793			
Number of Obs.			378,810			

Table A.4.19, continued

	IE		IU		II	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	0.0116	2.05	0.0071	2.43	-0.0187	-3.56
Age 55-64	-0.0351	-10.96	-0.0265	-6.11	0.0616	13.16
<i>Female</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0110	2.51	0.0004	0.13	-0.0114	-1.70
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0181	3.37	0.0108	2.15	-0.0289	-2.80
ISCED 5-6	0.0935	5.12	0.0722	3.01	-0.1657	-3.92
Number of persons (15-65) living in household	-0.0007	-1.36	0.0003	0.89	0.0004	1.30
Number of children (<=4 years) in household	0.0143	36.60	0.0104	3.99	-0.0248	-10.93
Number of children (5-14 years) in household	0.0017	7.10	0.0013	5.34	-0.0030	-6.63
Number of elderly persons living in household (age 65 and above)	-0.0033	-2.08	-0.0009	-0.50	0.0042	1.24
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0289	-10.11	-0.0152	-42.00	0.0441	15.17
Employed Spouse	0.0105	2.14	-0.0119	-14.46	0.0014	0.25
UR Change	0.0025	4.73	0.0014	1.75	-0.0038	-5.18
Transition Probability	2.63%		2.35%		95.03%	
Pseudo-R ²			0.1353			
Number of Obs.			1,794,974			

Source: EU-LFS, own calculations. – Notes: Country and year dummies included as further explanatory variables. – EE, EU, EI indicate employment in period *t* and employment, unemployment, inactivity in period *t*+1. – IE, IU, II indicate inactivity in period *t* and employment, unemployment, inactivity in period *t*+1. – UE, UU, UI indicate inactivity in period *t* and employment, unemployment, inactivity in period *t*+1, respectively. – Netherlands not included in unemployment transitions, due to missing information on unemployment status in *t*. – *t*-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Reference categories: Age 15-24, Female, Low education, No spouse in Household.

Table A.4.20

Multinomial logit for transitions from inactivity, including household variables

	IE		IU		II	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Austria</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Belgium	-0.0082	-5.50	0.0121	7.19	-0.0039	-1.70
Bulgaria	-0.0126	-5.08	0.0213	3.29	-0.0087	-1.10
Cyprus	0.0021	1.13	0.0028	3.02	-0.0050	-2.68
Czech Republic	-0.0104	-9.66	0.0085	7.71	0.0019	1.28
Germany	0.0394	13.06	0.0304	16.96	-0.0698	-27.17
Estonia	-0.0008	-0.22	0.0231	7.75	-0.0223	-4.87
Spain	0.0015	0.61	0.0458	10.89	-0.0473	-10.40
France	0.0012	0.39	0.0268	8.41	-0.0280	-6.48
Greece	-0.0304	-21.76	0.0137	10.09	0.0168	8.20
Hungary	-0.0130	-16.63	0.0053	7.20	0.0078	6.72
Italy	-0.0135	-11.26	0.0211	14.30	-0.0076	-4.25
Lithuania	0.0263	4.62	0.0501	9.76	-0.0763	-10.21
Luxembourg	-0.0141	-11.70	-0.0210	-16.30	0.0351	20.24
Latvia	-0.0011	-0.51	0.0026	2.38	-0.0016	-0.63
Netherlands	0.0102	2.62	-0.0121	-8.63	0.0019	0.37
Poland	-0.0120	-7.12	0.0475	12.12	-0.0356	-8.32
Portugal	0.0042	2.05	0.0673	15.99	-0.0715	-17.54
Romania	0.0086	3.68	0.0180	13.11	-0.0265	-10.31
Slovenia	-0.0227	-14.83	0.0154	6.33	0.0073	2.23
Slovakia	-0.0179	-13.10	0.0318	9.82	-0.0140	-3.84
United Kingdom	0.0529	11.57	0.0421	9.55	-0.0949	-18.20
<i>1998</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
1999	0.0061	1.25	0.0005	0.30	-0.0066	-1.40
2000	0.0084	1.31	0.0001	0.05	-0.0085	-1.48
2001	0.0104	2.75	-0.0034	-1.28	-0.0070	-2.91
2002	0.0117	2.43	-0.0057	-2.03	-0.0060	-1.23
2003	0.0079	2.11	-0.0026	-0.91	-0.0053	-1.39
2004	0.0036	0.53	-0.0031	-1.27	-0.0004	-0.07
2005	0.0049	0.68	-0.0006	-0.27	-0.0042	-0.71
2006	0.0100	1.24	0.0014	0.57	-0.0114	-1.60
2007	0.0122	1.38	0.0007	0.30	-0.0130	-1.61
2008	0.0106	1.48	-0.0031	-0.89	-0.0075	-1.05
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	-0.0083	-0.94	0.0062	1.80	0.0021	0.18
Age 55-64	-0.0645	-13.75	-0.0314	-15.81	0.0959	16.14
Female	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Male	0.0081	2.75	0.0017	1.38	-0.0098	-3.32
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0389	6.46	0.0194	4.41	-0.0583	-6.07
ISCED 5-6	0.1669	7.97	0.0561	4.26	-0.2230	-7.60

Table A.4.20, continued

	IE		IU		II	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Number of persons (15-65) living in household	0.0000	0.04	0.0003	1.31	-0.0003	-0.37
Number of children (<=4 years) in household	0.0090	1.45	0.0068	3.53	-0.0158	-2.03
Number of children (5-14 years) in household	-0.0006	-0.46	0.0017	3.49	-0.0011	-0.76
Number of elderly persons living in household (age 65 and above)	-0.0011	-0.51	-0.0019	-1.73	0.0031	1.04
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0357	-9.08	-0.0103	-5.70	0.0460	10.09
Employed Spouse	0.0391	4.09	-0.0091	-5.82	-0.0300	-3.03
UR Change	0.0010	0.66	0.0038	4.00	-0.0048	-2.24
Transition Probability	4.37%		2.50%		93.13%	
Pseudo-R ²			0.1448			
Number of Obs.			4,314,479			

Source: EU-LFS, own calculations. – Notes: IE, IU, II indicate inactivity in period t and employment, unemployment, inactivity in period $t+1$, respectively. – t -values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Reference categories: Country Austria, year 1998, Age 15-24, Female, Low education, No spouse in Household.

Table A.4.21

Multinomial logit for transitions from inactivity, with household interactions

	IE		IU		II	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Age 15-24 x Number of children (<=4 years)	0.0008	0.10	0.0094	5.63	-0.0101	-1.12
Age 25-54 x Number of children (<=4 years)	0.0153	3.22	0.0048	1.88	-0.0201	-2.91
Age 55-64 x Number of children (<=4 years)	0.0211	2.85	0.0002	0.08	-0.0213	-2.85
Age 15-24 x Number of children (5-14 years)	-0.0013	-0.57	-0.0001	-0.05	0.0014	0.40
Age 25-54 x Number of children (5-14 years)	0.0005	0.13	0.0040	3.41	-0.0045	-1.00
Age 55-64 x Number of children (5-14 years)	0.0184	3.46	0.0025	0.69	-0.0209	-3.11
Age 15-24 x Number of elderly persons (>= 65 years)	-0.0036	-1.84	-0.0007	-0.69	0.0043	1.69
Age 25-54 x Number of elderly persons (>= 65 years)	-0.0013	-0.38	-0.0017	-1.03	0.0030	0.62
Age 55-64 x Number of elderly persons (>= 65 years)	0.0133	2.35	-0.0120	-3.97	-0.0012	-0.20
Transition Probability	4.38%		2.47%		93.14%	
Pseudo-R ²			0.1456			
Number of Obs.			4,314,479			

Source: EU-LFS, own calculation. – Notes: IE, IU, II indicate inactivity in period t and employment, unemployment, inactivity in period t+1, respectively. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Reference categories: Country Austria, year 1998, Age 15-24, Female, Low education, No spouse in Household.

Table A.4.22

Multinomial logit for transitions from inactivity with household variables, for men

	IE		IU		II	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	-0.0062	-0.47	0.0083	1.78	-0.0021	-0.13
Age 55-64	-0.0928	-14.84	-0.0324	-11.36	0.1251	15.32
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0455	4.44	0.0195	3.39	-0.0650	-4.43
ISCED 5-6	0.1878	7.01	0.0533	3.88	-0.2411	-7.16
Number of persons (15-65) living in household	0.0101	2.74	0.0080	8.14	-0.0181	-5.48
Number of children (<=4 years) in household	-0.0005	-0.21	0.0015	1.86	-0.0011	-0.39
Number of children (5-14 years) in household	0.0009	1.27	0.0006	1.84	-0.0016	-1.83
Number of elderly persons living in household (age 65 and above)	-0.0053	-1.58	-0.0016	-1.32	0.0068	1.69
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0143	-2.18	-0.0089	-5.61	0.0232	3.74
Employed Spouse	0.0375	4.25	-0.0087	-2.87	-0.0287	-3.30
UR Change	0.0000	-0.01	0.0043	4.64	-0.0043	-1.47
Transition Probability	5.93%		2.71%		91.36%	
Pseudo-R ²			0.1246			
Number of Obs.			1,632,995			

Source: EU-LFS, own calculation. – Notes: IE, IU, II indicate inactivity in period *t* and employment, unemployment, inactivity in period *t+1*, respectively. – *t*-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Reference categories: Country Austria, year 1998, Age 15-24, Female, Low education, No spouse in Household.

Table A.4.23

Multinomial logit for transitions from inactivity with household variables, for women

	IE		IU		II	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
<i>Age 15-24</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Age 25-54	-0.0082	-1.19	0.0053	1.88	0.0030	0.33
Age 55-64	-0.0497	-12.70	-0.0312	-19.87	0.0809	16.95
<i>ISCED 0-2</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
ISCED 3-4	0.0340	8.41	0.0188	5.32	-0.0528	-7.64
ISCED 5-6	0.1501	8.31	0.0565	4.43	-0.2066	-7.83
Number of persons (15-65) living in household	0.0081	1.40	0.0066	2.93	-0.0148	-1.91
Number of children (<=4 years) in household	-0.0003	-0.31	0.0019	3.95	-0.0016	-1.37
Number of children (5-14 years) in household	-0.0003	-0.36	0.0001	0.31	0.0003	0.27
Number of elderly persons living in household (age 65 and above)	0.0009	0.54	-0.0021	-1.74	0.0012	0.52
<i>No spouse in Household</i>	<i>Reference Category</i>		<i>Reference Category</i>		<i>Reference Category</i>	
Inactive/Unemployed Spouse	-0.0389	-9.83	-0.0106	-5.23	0.0495	9.67
Employed Spouse	0.0367	3.90	-0.0089	-5.53	-0.0277	-2.74
UR Change	0.0014	1.15	0.0035	3.65	-0.0049	-2.75
Transition Probability	3.48%		2.34%		94.19%	
Pseudo-R ²			0.1622			
Number of Obs.			2,681,484			

Source: EU-LFS, own calculation. – Notes: IE, IU, II indicate inactivity in period *t* and employment, unemployment, inactivity in period *t+1*, respectively. – *t*-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Reference categories: Country Austria, year 1998, Age 15-24, Female, Low education, No spouse in Household.

Table A.4.24

Multinomial logit for transitions from unemployment with household variables, for men

	UE		UU		UI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Austria	Reference Category		Reference Category		Reference Category	
Belgium	-0.0993	-15.83	0.1207	13.55	-0.0189	-5.05
Bulgaria	-0.0291	-2.95	0.0383	1.57	-0.0245	-2.21
Cyprus	0.2131	80.30	-0.2096	-45.10	-0.0027	-1.03
Czech Republic	0.0485	12.48	-0.0578	-7.64	-0.0033	-0.60
Germany	-0.0585	-18.35	-0.0535	-16.43	0.1069	23.19
Estonia	-0.0202	-3.88	-0.0682	-6.76	0.1143	6.88
Spain	0.1603	27.82	-0.2373	-18.27	0.0810	7.96
France	0.0078	0.86	-0.1000	-6.25	0.1037	8.03
Greece	-0.0347	-9.41	0.0364	3.96	-0.0122	-1.99
Hungary	-0.0170	-5.10	-0.0088	-1.21	0.0240	4.45
Italy	-0.0214	-4.06	0.0403	3.97	-0.0440	-7.16
Lithuania	-0.0008	-0.28	-0.0406	-2.83	0.0287	2.58
Luxembourg	0.1496	23.87	-0.3373	-91.30	0.2375	24.03
Latvia	-0.0603	-22.70	0.0711	7.91	-0.0215	-4.24
Poland	-0.1015	-27.52	0.0318	3.31	0.0814	6.88
Portugal	0.1310	24.70	-0.1213	-15.90	-0.0100	-2.86
Romania	-0.0760	-10.97	-0.1098	-15.03	0.2369	22.16
Slovenia	-0.1506	-121.93	0.1763	37.22	-0.0170	-4.30
Slovakia	-0.0668	-12.83	0.0785	7.57	-0.0329	-5.38
United Kingdom	0.0766	23.79	-0.1780	-24.21	0.1174	13.52
1998	Reference Category		Reference Category		Reference Category	
1999	0.0084	0.42	-0.0167	-0.73	0.0105	1.35
2000	0.0590	4.58	-0.0706	-8.04	0.0115	0.93
2001	0.0464	1.93	-0.0801	-2.34	0.0435	3.30
2002	0.0455	1.80	-0.0752	-2.52	0.0408	2.72
2003	0.0364	1.52	-0.0786	-2.42	0.0573	2.47
2004	0.0146	0.42	-0.0498	-1.03	0.0492	2.21
2005	0.0159	0.55	-0.0545	-1.21	0.0521	1.94
2006	0.0206	0.76	-0.0672	-1.59	0.0578	1.79
2007	0.0360	1.30	-0.0855	-2.00	0.0639	1.87
2008	0.0327	1.27	-0.0690	-1.51	0.0530	1.51
Age 15-24	Reference Category		Reference Category		Reference Category	
Age 25-54	-0.0782	-3.69	0.0865	4.32	-0.0027	-0.52
Age 55-64	-0.2439	-9.72	0.1055	5.39	0.1377	7.39
ISCED 0-2	Reference Category		Reference Category		Reference Category	
ISCED 3-4	0.0852	6.44	-0.0690	-5.91	-0.0152	-3.49
ISCED 5-6	0.1640	7.19	-0.1386	-6.38	-0.0179	-4.48
Number of persons (15-65) living in household	0.0122	1.67	-0.0077	-1.47	-0.0045	-1.45
Number of children (<=4 years) in household	-0.0064	-1.64	0.0062	2.34	0.0012	0.50
Number of children (5-14 years) in household	0.0008	0.32	0.0018	0.77	-0.0028	-2.05
Number of elderly persons living in household (age 65 and above)	-0.0350	-8.05	0.0281	4.67	0.0057	2.62

Table A.4.24, continued

	UE		UU		UI	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
No spouse in Household	Reference Category		Reference Category		Reference Category	
Inactive/Unemployed Spouse	0.0011	0.06	-0.0118	-0.98	0.0071	1.76
Employed Spouse	0.1728	12.41	-0.1438	-10.94	-0.0072	-1.62
UR Change	-0.0171	-10.11	0.0010	0.13	0.0102	2.02
Transition Probability	29.92%		58.75%		7.03%	
Pseudo-R ²			0.0783			
Number of Obs.			407,688			

Source: EU-LFS, own calculations. – Notes: UE, UU, UI indicate inactivity in period t and employment, unemployment, inactivity in period t+1, respectively. – Netherlands not included in unemployment transitions, due to missing information on unemployment status in t. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Reference categories: Country Austria, year 1998, Age 15-24, Female, Low education, No spouse in Household.

Table A.5.1
Share of temporary employment
 1998 and 2008; in per cent

Country	1998	2008
ES	32.90	29.00
FI	17.70	14.60
PT	17.20	22.90
FR	13.90	14.50
GR	13.40	11.50
SE	12.70	15.80
NL	12.60	16.60
DE ¹	12.20	14.60
SI	11.50	17.30
EU-LFS	11.10	13.90
CY ²	10.30	14.00
DK	10.10	8.30
IE	8.80	8.00
IT	8.50	13.30
LV	8.00	3.30
BE	7.80	8.30
AT	7.80	9.00
BG ¹	7.60	4.00
UK	6.90	4.60
HU	6.60	7.80
LT	6.50	2.40
CZ	5.70	7.20
PL	5.20	26.90
SK	4.00	4.50
RO	3.00	1.30
LU	2.90	6.20
EE	1.60	2.40

Source: EU-LFS, own calculation. – ¹data refer to 2000 instead of 1998. – ²data refer to 2002 instead of 1998.

Table A.5.2

Temporary employment by gender

1998 to 2008; in per cent

Sex	Female	Male
ES	34.1	30.4
FI	20.9	13.7
SE	17.6	13.1
CY	17.1	7.8
NL	17.0	12.6
PL	16.9	18.2
SI	16.6	13.7
FR	15.6	13.0
GR	14.3	10.7
EU-LFS	13.8	12.4
DE	13.5	13.7
IT	13.5	9.4
BE	11.3	6.5
DK	10.7	8.2
CZ	8.9	6.2
AT	8.4	8.4
UK	6.7	5.2
IE	6.5	4.5
HU	6.4	7.7
BG	5.7	6.2
LU	5.5	4.1
LV	5.5	9.3
SK	4.5	4.6
LT	3.5	7.5
RO	2.1	2.4
EE	1.7	3.2

Source: EU-LFS, own calculation.

Table A.5.3
Temporary employment by age group
 1998 to 2008; in per cent

	Age 15-24	Age 25-54	Age 55-64
all			
Continental	50.5	8.8	4.7
Mediterranean	48.1	17.5	9.5
UK and Ireland	12.1	4.6	5.4
CEE	28.1	8.2	9.2
EU-LFS	36.2	10.2	6.8
not in education			
Scandinavian	38.0	9.4	6.0
Continental	30.5	8.1	4.7
Mediterranean	49.5	18.9	9.7
UK and Ireland	9.0	3.7	4.8
CEE	26.5	9.8	-
EU-LFS	30.7	10.5	6.5

Source: EU-LFS, own calculation.

Table A.5.4

Temporary employment by industry

1998 to 2008; in per cent

Agriculture, Forestry and Hunting	27.70
Hotels and restaurants	21.20
Construction	19.00
Other community, social and personal service activities	18.00
Fishing	17.00
Education	15.80
Extra-territorial organizations and bodies	13.50
Health and social work	12.90
Real estate, renting and business activities	12.70
All industries	12.60
Wholesale and retail trade, repair	11.10
Public administration and defence, compulsory social security	10.70
Manufacturing	9.30
Transport, storage, and communication	8.30
Mining and quarrying	6.10
Financial intermediation	6.00
Electricity, gas and water supply	5.70

Source: EU-LFS, own calculations.

Table A.5.5
Duration of temporary contracts
 1998 to 2008; in per cent

	0-3 months	4-6 months	7-12 months	1-2 years	2-3 years	> 3 years
Bulgaria	15.53	36.47	41.21	2.82	2.54	1.43
Slovakia	28.44	22.49	30.02	13.38	3.94	1.73
Spain	39.49	29.71	22.04	3.77	2.50	2.50
Hungary	40.29	23.11	26.74	5.12	1.34	3.40
Slovenia	28.53	24.40	33.15	7.58	2.54	3.81
Romania	19.68	23.85	40.27	8.23	3.30	4.67
Latvia	36.81	20.72	30.43	5.07	1.95	5.03
Luxembourg	12.61	17.00	34.44	14.75	15.58	5.61
Estonia	29.36	27.24	18.58	14.08	4.91	5.82
Lithuania	45.50	16.55	18.01	8.45	5.06	6.43
Italy	17.54	21.32	34.90	12.65	7.10	6.48
France	30.92	17.99	27.89	12.68	4.01	6.52
Netherlands	18.04	24.45	37.13	9.76	3.78	6.84
EU-LFS	22.21	19.89	26.96	10.55	9.78	10.61
Finland	28.00	17.37	20.73	16.11	6.77	11.03
Austria	10.59	14.30	17.91	6.26	39.77	11.17
Poland	19.72	16.94	31.38	12.55	7.63	11.78
Belgium	32.60	13.53	30.94	6.48	4.63	11.82
United Kingdom	15.36	15.88	27.40	20.70	8.01	12.64
Czech Republic	9.23	13.69	42.60	14.45	6.54	13.49
Germany	5.15	12.18	23.94	13.84	31.34	13.56
Greece	10.80	21.81	32.73	14.97	4.62	15.07
Denmark	17.87	16.35	20.73	17.21	7.48	20.36
Sweden	29.65	21.79	14.87	5.38	2.14	26.16
Portugal	4.06	24.28	28.29	2.39	1.85	39.14
Cyprus	5.08	15.35	22.64	7.91	6.65	42.37
Ireland	6.97	8.92	14.36	13.07	7.06	49.62

Source: EU-LFS, own calculations.

Table A.5.6

Share of renewed temporary contracts

1998 to 2008; by country; in per cent

Country	Share
Estonia	2.16
Finland	3.32
Ireland	5.21
Denmark	17.96
Czech Republic	18.69
Lithuania	19.64
Slovakia	21.70
Luxembourg	24.20
Cyprus	24.58
Bulgaria	26.67
Germany	27.07
United Kingdom	28.18
Sweden	29.87
Romania	31.74
France	34.36
EU-LFS	36.20
Latvia	38.64
Italy	41.21
Poland	41.33
Greece	42.78
Spain	43.01
Netherlands	43.64
Belgium	44.17
Austria	46.20
Slovenia	50.13
Portugal	50.95
Hungary	51.92

Source: EU-LFS, own calculations.

Table A.5.7

Reason for temporary employment

	Could not find permanent job	Contract covering period of training	Did not want permanent job	Contract for probationary period
Austria	12.42	65.74	9.04	12.80
Germany	21.04	62.42	2.96	13.58
Ireland	35.44	11.17	52.37	1.01
Luxembourg	37.99	31.06	5.84	25.10
Netherlands	38.24	1.57	23.95	36.25
Denmark	44.11	32.73	22.48	0.67
United Kingdom	46.41	9.56	42.70	1.33
France	47.61	25.85	18.09	8.45
Sweden	57.93	1.22	29.51	11.33
EU-LFS	58.90	20.10	12.45	8.55
Italy	59.40	28.00	6.50	6.10
Estonia	60.98	5.02	21.04	12.97
Poland	63.36	16.73	9.44	10.47
Hungary	64.27	3.14	11.08	21.52
Finland	64.76	6.89	26.21	2.14
Czech Republic	66.20	1.66	26.34	5.80
Bulgaria	68.22	7.40	5.92	18.45
Romania	72.29	4.09	6.37	17.25
Portugal	74.22	5.90	11.16	8.72
Latvia	75.28	4.55	8.96	11.20
Slovakia	77.37	0.39	22.24	-
Belgium	79.95	9.23	9.93	0.89
Lithuania	81.56	3.86	5.76	8.82
Greece	83.00	8.18	3.98	4.84
Cyprus	88.57	5.07	3.39	2.96
Spain	90.81	4.26	3.37	1.56
Slovenia	NA	NA	NA	NA

Source: EU-LFS, own calculations.

Table A.5.8

Temporary employment by labour market status of the preceding year, development in per cent

	Employed	Unemployed	Pupil/student	Retired	Other Inactivity
1998	8.34	52.29	46.88	39.31	33.44
1999	8.68	54.86	49.40	36.18	34.92
2000	9.63	52.81	49.60	50.46	34.43
2001	9.33	53.47	49.91	45.92	33.71
2002	9.26	51.54	53.87	27.42	31.29
2003	9.36	54.04	52.52	30.19	31.13
2004	10.00	54.84	52.52	40.79	32.30
2005	8.67	49.79	50.11	38.67	27.12
2006	10.67	55.34	55.41	25.43	31.04
2007	10.82	54.98	56.50	37.67	32.11
2008	10.38	53.95	53.58	42.56	31.45

Source: EU-LFS, own calculations.

Table A.5.9

Temporary employment by labour market status of the preceding year, by country
in per cent

	Employed	Unemployed	Pupil/student	Retired	Other Inactivity
Estonia	1.50	13.64	17.05	16.61	10.75
Romania	1.54	14.09	11.85	4.19	11.77
Slovakia	2.48	28.94	23.03	60.42	12.96
Bulgaria	2.68	27.56	11.19	18.53	8.39
Luxembourg	3.11	37.23	45.27	NA	24.05
Lithuania	3.70	36.98	19.00	23.13	19.18
United Kingdom	4.54	18.25	23.65	39.82	15.49
Czech Republic	4.78	31.86	32.32	95.15	21.03
Hungary	4.90	38.48	26.07	27.21	20.10
Latvia	5.73	28.65	24.08	18.80	15.73
Belgium	6.10	48.34	49.74	37.93	31.48
Denmark	6.39	35.35	32.57	26.11	33.50
Austria	6.70	20.29	49.18	5.38	9.98
Italy	8.27	42.32	50.68	12.97	29.59
Sweden	8.91	64.47	69.55	48.97	52.39
Netherlands	9.43	43.78	49.33	42.98	31.21
EU-LFS	9.69	53.56	52.63	36.12	31.96
Germany	9.85	48.08	63.23	11.49	29.31
Greece	9.96	44.14	50.13	40.12	37.25
France	10.02	58.85	69.87	29.86	42.34
Cyprus	10.31	32.32	31.44	48.81	35.70
Slovenia	11.08	74.45	86.05	89.19	62.56
Finland	11.41	65.86	60.05	41.82	37.42
Poland	15.01	71.95	74.43	61.32	53.82
Portugal	16.20	76.09	74.79	72.00	66.05
Spain	24.73	82.80	85.61	49.83	72.19

Source: EU-LFS, own calculations.

Table A.5.10
Development of temporary employment by cohort
 1998 to 2008; in per cent

Cohort	Age group			
	15 - 19	20 - 24	25 - 29	30 - 34
1968 - 1972	-	-	-	9.43
1969 - 1973	-	-	12.70	9.88
1970 - 1974	-	-	13.07	10.30
1971 - 1975	-	-	13.31	10.32
1972 - 1976	-	-	13.93	10.26
1973 - 1977	-	-	14.33	10.59
1974 - 1978	-	22.67	15.03	10.19
1975 - 1979	-	22.86	15.96	-
1976 - 1980	-	23.07	16.48	-
1977 - 1981	-	24.05	16.50	-
1978 - 1982	-	24.86	16.50	-
1979 - 1983	37.32	25.29	16.18	-
1980 - 1984	38.91	27.21	-	-
1981 - 1985	39.35	28.26	-	-
1982 - 1986	41.34	28.40	-	-
1983 - 1987	43.29	28.64	-	-
1984 - 1988	47.15	28.01	-	-

Source: EU-LFS, own calculations. – Notes: The cells display the share of part-time employment if the cohort is exactly in the age range. For example the probability of temporary employment of those born between 1969 and 1973 is 12.7% in that year when they are 25 to 29 years old which is the year 1998.

Table A.5.11

Type of employment by country

1998 to 2008; in per cent

	Full-time permanent	Part-time permanent	Full-time temporary	Part-time temporary
Romania	97.0	0.7	2.0	0.2
Bulgaria	93.3	1.0	5.3	0.4
Estonia	92.0	5.6	1.9	0.5
Slovakia	93.7	1.7	3.9	0.7
Hungary	90.2	2.8	6.2	0.8
Lithuania	89.2	5.3	4.6	0.9
Luxembourg	82.0	13.4	3.5	1.2
Cyprus	84.3	3.5	11.1	1.2
Austria	73.3	18.4	7.1	1.3
Latvia	88.2	4.3	6.0	1.5
Czech Republic	89.6	3.0	5.8	1.7
Greece	85.8	2.1	9.9	2.3
Portugal	77.0	2.7	17.9	2.4
United Kingdom	72.1	22.0	3.2	2.7
Germany	65.5	20.9	10.8	2.8
Denmark	71.0	19.6	6.5	2.9
Italy	80.7	8.2	8.2	2.9
Slovenia	82.8	2.2	12.0	3.0
Poland	78.8	3.5	14.7	3.0
Ireland	79.1	14.9	2.8	3.2
EU-LFS	73.8	13.2	9.7	3.4
Belgium	72.5	18.8	5.3	3.4
Finland	74.4	8.3	13.3	4.0
France	72.4	13.4	10.1	4.2
Spain	63.3	4.8	26.6	5.3
Sweden	68.4	17.0	8.0	6.6
Netherlands	50.7	34.8	5.1	9.5

Source: EU-LFS, own calculations.

Table A.5.12
Probit estimation of temporary employment

	all		women		men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
<i>Austria</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Belgium	0.0210	4.88	0.0564	9.25	-0.0104	-3.47
Bulgaria	-0.0130	-2.41	-0.0177	-3.00	-0.0097	-1.94
Cyprus	0.0807	14.94	0.1436	19.94	0.0077	2.26
Czech Republic	0.0121	2.75	0.0333	5.95	-0.0091	-2.60
Germany	0.0751	16.69	0.0760	18.54	0.0745	15.85
Estonia	-0.0719	-25.68	-0.0844	-25.58	-0.0586	-27.90
Spain	0.2874	33.81	0.3060	30.60	0.2703	38.61
Finland	0.1819	13.09	0.2393	14.50	0.1197	9.89
France	0.1049	18.73	0.1199	16.20	0.0883	22.64
Greece	0.0732	14.35	0.0949	14.60	0.0534	12.71
Hungary	-0.0056	-1.51	-0.0123	-2.67	-0.0001	-0.03
Ireland	-0.0623	-56.64	-0.0530	-40.77	-0.0693	-69.30
Italy	0.0575	12.78	0.0877	15.12	0.0301	8.14
Lithuania	-0.0281	-6.39	-0.0590	-14.39	0.0033	0.75
Luxembourg	-0.0275	-7.43	-0.0186	-4.65	-0.0335	-9.85
Latvia	-0.0063	-1.80	-0.0276	-7.08	0.0141	4.70
Netherlands	0.0863	30.82	0.1092	42.00	0.0668	24.74
Poland	0.1945	27.01	0.1793	22.99	0.2079	29.70
Portugal	0.1669	33.38	0.1883	27.29	0.1435	41.00
Romania	-0.0776	-32.33	-0.0816	-31.38	-0.0734	-31.91
Slovenia	0.1162	21.52	0.1444	19.51	0.0886	21.61
Slovakia	-0.0449	-22.45	-0.0449	-19.52	-0.0454	-23.89
United Kingdom	-0.0345	-12.32	-0.0285	-9.83	-0.0395	-14.11
<i>1998</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
1999	0.0098	1.58	0.0122	1.79	0.0078	1.37
2000	0.0117	1.92	0.0166	2.77	0.0071	1.11
2001	-0.0058	-0.53	-0.0004	-0.04	-0.0111	-0.98
2002	-0.0064	-0.70	0.0001	0.01	-0.0128	-1.35
2003	-0.0035	-0.43	0.0020	0.26	-0.0091	-1.07
2004	0.0039	0.36	0.0093	0.92	-0.0019	-0.17
2005	0.0118	1.07	0.0147	1.40	0.0083	0.73
2006	0.0139	1.13	0.0189	1.66	0.0082	0.63
2007	0.0142	1.03	0.0206	1.60	0.0072	0.51
2008	0.0105	0.72	0.0165	1.20	0.0038	0.26
Age 15-24	0.2124	6.00	0.2208	6.05	0.2005	5.71
<i>Age 25-54</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 55-64	-0.0246	-1.63	-0.0243	-1.40	-0.0195	-1.36
<i>ISCED 0-2</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	-0.0228	-2.89	-0.0208	-3.06	-0.0256	-2.98
ISCED 5-6	0.0048	0.41	0.0139	1.19	-0.0067	-0.56

Table A.5.12, continued

	all		women		men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Number of persons living in household	0.0051	3.40	0.0065	3.42	0.0042	3.00
Number of children (<=4 years) in household	0.0177	4.32	0.0117	2.85	0.0228	4.96
Number of children (5-14 years) in household	0.0134	8.38	0.0152	9.50	0.0107	3.45
Number of elderly persons living in household (age 65 and above)	-0.0029	-1.32	-0.0008	-0.28	-0.0057	-3.17
<i>No spouse in household</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	-0.0618	-14.71	-0.048	-13.33	-0.0716	-13.51
Employed spouse in household	-0.0552	-12.55	-0.0472	-8.43	-0.0667	-20.84
Pseudo-R ²	0.1545		0.1422		0.1710	
Number of obs.	6,501,516		3,208,599		3,292,917	

Source: EU-LFS, own calculations. – Notes: Reference categories: Austria, Year 1998, Female, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.5.13

The correlation between the field of education and temporary employment

	all		women		men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
<i>General Programmes</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Teacher training, education science	0.0019	0.10	-0.0006	-0.03	-0.0003	-0.02
Humanities, languages, arts	-0.0050	-0.30	-0.0106	-0.64	-0.0008	-0.05
Social sciences, business and law	-0.0297	-2.18	-0.0356	-2.25	-0.0255	-2.52
Natural and computer sciences, mathematics	-0.0151	-1.39	-0.0135	-1.02	-0.0137	-1.52
Engineering, manufacturing, construction	-0.0284	-2.09	-0.0173	-1.31	-0.0280	-1.71
Agricultural, veterinary	-0.0153	-1.31	-0.0123	-0.92	-0.0141	-1.29
Health, welfare	-0.0107	-0.69	-0.0174	-1.07	0.0019	0.15
Services	-0.0213	-1.66	-0.0229	-1.56	-0.0199	-1.93
Pseudo-R ²	0.3393		0.3334		0.3489	
Number of obs.	3,032,688		1,551,002		1,481,686	

Source: EU-LFS, own calculations. – Notes: Reference category: General Programmes – Critical values of the t-distribution for 95% (99%) significance level: 1.96 (2.58).

Table A.5.14
The correlation between occupation and industry, and temporary employment

	all		women		men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
OCCUPATION						
<i>Legislators, Senior officials and Managers</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Professionals	0.0732	9.89	0.0836	7.74	0.0587	8.15
Technicians and Associate Professionals	0.0595	6.61	0.0669	7.69	0.0508	5.46
Clerks	0.0800	5.00	0.0801	5.64	0.0745	4.60
Service workers and shop and market sales workers	0.0858	3.88	0.0992	4.77	0.0554	2.93
Skilled agricultural and fishery workers	0.1057	3.29	0.1369	2.95	0.0894	3.53
Craft and related trades workers	0.0922	5.80	0.1149	5.00	0.0773	5.09
Plant and machine operators and assemblers	0.0968	3.89	0.1476	5.22	0.0775	3.26
Elementary occupations	0.1634	5.12	0.1574	5.25	0.1615	4.86
INDUSTRY						
<i>Agriculture, Forestry and Hunting</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Fishing	-0.0631	-6.57	-0.0653	-4.19	-0.0528	-5.18
Mining and quarrying	-0.0769	-9.86	-0.0842	-8.51	-0.0680	-8.95
Manufacturing	-0.0930	-6.12	-0.1036	-7.24	-0.0859	-5.54
Electricity, gas and water supply	-0.0788	-9.97	-0.0830	-8.56	-0.0721	-10.45
Construction	-0.0517	-3.17	-0.0834	-9.59	-0.0368	-2.29
Wholesale and retail trade, repair	-0.0856	-7.51	-0.1026	-7.95	-0.0754	-7.47
Hotels and restaurants	-0.0526	-4.83	-0.0713	-6.15	-0.0352	-3.35
Transport, storage, and communication	-0.0800	-9.09	-0.0872	-9.69	-0.0726	-8.75
Financial intermediation	-0.0835	-10.71	-0.0950	-13.19	-0.0742	-9.05
Real estate, renting and business activities	-0.0668	-5.22	-0.0844	-6.44	-0.0531	-4.32
Public administration and defence, compulsory social security	-0.0650	-4.19	-0.0784	-5.30	-0.0563	-3.66
Education	-0.0316	-1.45	-0.0603	-2.96	-0.0093	-0.36
Health and social work	-0.0583	-3.41	-0.0860	-4.62	-0.0342	-1.74
Other community, social and personal service activities	-0.0439	-2.23	-0.0673	-3.87	-0.0255	-1.16
Activities of household	-0.0636	-5.17	-0.0784	-6.03	-0.0533	-2.36
Extra-territorial organizations and bodies	-0.0240	-0.93	-0.0419	-1.81	-0.0159	-0.57
Pseudo-R ²	0.1798		0.163		0.202	
Number of obs.	6,201,671		3,060,716		3,140,955	

Source: EU-LFS, own calculations. – Notes: Reference categories: Legislators, Senior officials and Managers, and Agriculture, Forestry and Hunting. – Critical values of the t-distribution for 95% (99%) significance level: 1.96 (2.58).

Table A.5.15

Correlation between country fixed effects and institutional indicators

	all		women		men	
	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
GDP growth	2.5259	0.51	3.6773	0.84	0.6356	0.12
Population growth	-19.6068	-1.33	-22.8470	-1.81	-12.6979	-0.77
Unemployment rate	6.5247	0.86	8.6703	1.33	2.8090	0.33
Tax Rate (single)	3.1052	0.17	3.7922	0.24	2.1106	0.11
Ratio Tax Rate one-earner family/ Tax Rate two earner family	0.2303	0.31	0.1941	0.30	0.3188	0.39
Fertility	0.0858	0.16	-0.0893	-0.19	0.3295	0.57
Income inequality	-0.2880	-0.12	-0.5505	-0.26	0.2573	0.10
Pensions as share of GDP	-1.4482	-0.33	-0.6991	-0.18	-2.4158	-0.51
Mean retirement age	-3.7358	-1.02	-4.2071	-1.31	-2.5602	-0.63
Child care < 3	-45.3161	-1.16	-54.5837	-1.62	-24.5868	-0.56
Employment protection	2.0507	1.10	1.6069	0.95	2.3819	1.19
Amount of child benefits (% of GDP)	-0.0318	-0.03	-0.1075	-0.10	0.0711	0.05
Income replacement at birth (% of GDP)	-0.0711	-0.20	-0.1042	-0.34	-0.0058	-0.02
Parental leave expenditures (% GDP)	0.6252	1.63	0.6859	2.11	0.4400	1.01

Source: EU-LFS, own calculations. – Notes: Critical values of the t-distribution for 95% (99%) significance level: 1.96 (2.58).

Table A.5.16
Probit estimation of temporary employment in Continental Europe

	all		women		men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
<i>Austria</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Belgium	0.0312	8.21	0.0728	13.74	-0.0048	-1.78
Germany	0.0849	14.64	0.0882	17.29	0.0820	12.42
France	0.1110	18.20	0.1293	19.59	0.0921	15.88
Luxembourg	-0.0203	-5.97	-0.0105	-2.69	-0.0274	-8.84
Netherlands	0.0931	22.71	0.1191	31.34	0.0707	16.44
<i>1998</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
1999	0.0036	0.67	0.0042	0.69	0.0028	0.58
2000	0.0061	1.15	0.0108	4.32	0.0012	0.14
2001	-0.0041	-0.47	0.0056	1.08	-0.0136	-1.16
2002	-0.0170	-2.02	-0.0067	-0.72	-0.0270	-3.70
2003	-0.0162	-3.12	-0.0085	-1.77	-0.0240	-4.44
2004	-0.0143	-3.97	-0.0078	-1.59	-0.0211	-6.39
2005	-0.0010	-	0.0024	0.80	-0.0051	-0.98
2006	0.0018	0.39	0.0070	1.84	-0.0042	-0.76
2007	0.0039	0.85	0.0116	3.31	-0.0042	-0.72
2008	0.0025	0.58	0.0093	2.82	-0.0049	-0.94
Male	-0.0145	-1.73	-	-	-	-
Age 15-24	0.3268	11.35	0.3286	11.37	0.3226	9.96
<i>Age 25-54</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 55-64	-0.0463	-20.13	-0.0529	-31.12	-0.0378	-13.03
<i>ISCED 0-2</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	-0.0241	-1.08	-0.0202	-1.03	-0.0279	-1.15
ISCED 5-6	0.0105	1.81	0.0145	1.71	0.0056	1.65
Number of persons (15-65) living in household	0.0059	2.03	0.0072	2.77	0.0043	1.39
Number of children (<=4 years) in household	0.0165	4.58	0.0136	2.89	0.0218	5.07
Number of children (5-14 years) in household	0.0126	5.73	0.0168	7.64	0.0079	1.76
Number of elderly persons living in household (age 65 and above)	-0.0113	-1.43	-0.0047	-0.55	-0.0172	-2.92
<i>No spouse in household</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	-0.0690	-23.79	-0.0582	-11.88	-0.0763	-14.40
Employed spouse in household	-0.0687	-10.10	-0.0632	-5.50	-0.0738	-21.71
Pseudo-R ²	0.1715		0.1466		0.2001	
Number of obs.	1,940,841		957,105		983,736	

Source: EU-LFS, own calculations. – Notes: Reference categories: Austria, Year 1998, Female, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.5.17

Probit estimation of temporary employment in Mediterranean Countries

	all		women		men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
<i>Cyprus</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Spain	0.1926	53.50	0.1467	122.25	0.2569	69.43
Greece	-0.0063	-1.13	-0.0433	-14.93	0.0524	7.94
Italy	-0.0241	-2.65	-0.0515	-7.36	0.0210	2.31
Portugal	0.0845	7.75	0.0413	5.04	0.1564	12.12
<i>1998</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
1999	0.0122	1.39	0.0182	1.90	0.0082	1.06
2000	0.0144	1.13	0.0238	2.00	0.0078	0.60
2001	0.0041	0.25	0.0144	1.01	-0.0026	-0.15
2002	0.0076	0.38	0.0223	1.26	-0.0025	-0.12
2003	0.0046	0.26	0.0204	1.25	-0.0064	-0.37
2004	0.0225	0.79	0.0412	1.53	0.0088	0.31
2005	0.0314	1.14	0.0466	1.82	0.0206	0.73
2006	0.0330	0.95	0.0543	1.75	0.0170	0.46
2007	0.0266	0.63	0.0422	0.99	0.0152	0.37
2008	0.0261	0.57	0.0407	0.91	0.0157	0.34
Male	-0.0308	-2.99	-	-	-	-
Age 15-24	0.1985	25.78	0.2135	18.09	0.1806	17.71
<i>Age 25-54</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 55-64	-0.0815	-3.59	-0.0980	-6.71	-0.0616	-2.15
<i>ISCED 0-2</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	-0.0296	-1.42	-0.0237	-1.37	-0.0324	-1.41
ISCED 5-6	-0.0134	-0.43	0.0086	0.30	-0.0340	-1.13
Number of persons (15-65) living in household	0.0150	4.55	0.0210	7.00	0.0101	2.89
Number of children (<=4 years) in household	0.0366	4.58	0.0279	7.34	0.0486	3.92
Number of children (5-14 years) in household	0.0212	4.82	0.0219	7.55	0.0233	3.28
Number of elderly persons living in household (age 65 and above)	-0.0006	-0.12	0.0041	0.73	-0.0064	-1.25
<i>No spouse in household</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	-0.1072	-8.38	-0.0896	-13.78	-0.1213	-7.68
Employed spouse in household	-0.0849	-12.13	-0.0674	-13.48	-0.1035	-17.84
Pseudo-R ²	0.1293		0.1089		0.1501	
Number of obs.	1,945,209		910,797		1,034,412	

Source: EU-LFS, own calculations. – Notes: Reference categories: Cyprus, Year 1998, Female, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.5.18
Probit estimation of temporary employment in the UK and Ireland

	all		women		men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
<i>Ireland</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
United Kingdom	0.0164	164.00	0.0136	136.00	0.0190	95.00
<i>1998</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
1999	0.0214	2.52	0.0212	2.41	0.0218	2.69
2000	0.0193	2.51	0.0225	2.71	0.0160	2.25
2001	0.0181	1.95	0.0197	1.95	0.0167	1.96
2002	0.0127	1.59	0.0135	1.53	0.0118	1.64
2003	0.0083	1.11	0.0099	1.18	0.0066	1.03
2004	0.0080	0.87	0.0082	0.82	0.0079	0.95
2005	0.0061	0.62	0.0044	0.41	0.0079	0.89
2006	0.0072	0.86	0.0080	0.84	0.0065	0.89
2007	0.0087	1.16	0.0100	1.22	0.0075	1.12
Male	-0.0070	-10.00	-	-	-	-
Age 15-24	0.0633	14.72	0.0616	11.85	0.0638	19.33
Age 25-54	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 55-64	0.0206	103.00	0.0163	32.60	0.0267	38.14
<i>ISCED 0-2</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	0.0004	0.18	0.0023	0.77	-0.0012	-0.86
ISCED 5-6	0.0387	9.68	0.0477	9.17	0.0286	10.21
Number of persons (15-65) living in household	0.0041	10.25	0.0049	12.25	0.0031	7.75
Number of children (<=4 years) in household	-0.0043	-14.33	-0.0058	-131.90	0.0006	0.50
Number of children (5-14 years) in household	0.0061	4.69	0.0077	5.13	0.0040	3.08
Number of elderly persons living in household (age 65 and above)	0.0021	1.11	0.0029	1.12	0.0001	0.08
<i>No spouse in household</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	-0.0163	-680.11	-0.0086	300.56	-0.0221	-110.50
Employed spouse in household	-0.0254	-127.00	-0.0224	-37.33	-0.0291	0.07
Pseudo-R ²	0.0447		0.0426		0.0492	
Number of obs.	596,395		309,367		287,028	

Source: EU-LFS, own calculations. – Notes: Reference categories: Ireland, Year 1998, Female, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.5.19
Probit estimation of temporary employment in Central and Eastern Europe

	all		women		men	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
<i>Bulgaria</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Czech Republic	0.0139	4.48	0.0268	8.12	0.0002	0.07
Estonia	-0.0464	-22.10	-0.0512	-20.48	-0.0386	-17.55
Hungary	0.0063	2.63	0.0024	1.09	0.0113	4.35
Lithuania	-0.0133	-8.31	-0.0334	-37.11	0.0112	4.31
Latvia	0.0055	6.88	-0.0105	-7.00	0.0236	12.42
Poland	0.1461	40.58	0.1344	32.78	0.1589	49.66
Romania	-0.0556	-21.38	-0.0533	-18.38	-0.0563	-20.85
Slovenia	0.1110	20.56	0.1378	22.97	0.0889	17.10
Slovakia	-0.0239	-8.85	-0.0213	-6.66	-0.0255	-10.63
1998	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
1999	-0.0008	-0.14	0.0007	0.10	-0.0025	-0.53
2000	0.0030	0.33	0.0017	0.18	0.0044	0.52
2001	-0.0369	-2.44	-0.0355	-2.52	-0.0374	-2.28
2002	-0.0295	-1.92	-0.0302	-2.14	-0.0278	-1.64
2003	-0.0167	-1.19	-0.0196	-1.46	-0.0123	-0.81
2004	-0.0045	-0.30	-0.0070	-0.50	-0.0011	-0.07
2005	-0.0013	-0.08	-0.0028	-0.18	0.0008	0.04
2006	0.0003	0.02	-0.0012	-0.07	0.0025	0.12
2007	0.0006	0.03	0.0031	0.16	-0.0015	-0.07
2008	-0.0052	-0.27	-0.0009	-0.05	-0.0094	-0.47
Male	0.0040	0.71	-	-	-	-
Age 15-24	0.1233	5.18	0.1472	4.46	0.1017	6.09
Age 25-54	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 55-64	0.0385	1.25	0.0705	1.49	0.0189	1.01
ISCED 0-2	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	-0.0287	-2.71	-0.0258	-2.84	-0.0307	-2.52
ISCED 5-6	-0.0285	-13.57	-0.0217	-12.06	-0.0344	-9.30
Number of persons (15-65) living in household	0.0008	0.40	0.0015	0.58	-0.0001	-0.08
Number of children (<=4 years) in household	0.0156	7.09	0.0141	6.13	0.0171	6.11
Number of children (5-14 years) in household	0.0120	10.91	0.0153	17.00	0.0098	5.16
Number of elderly persons living in household (age 65 and above)	-0.0040	-1.74	-0.0029	-1.07	-0.0075	-3.26
No spouse in household	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	-0.0393	-7.15	-0.0276	-5.63	-0.0506	-6.84
Employed spouse in household	-0.0360	-17.14	-0.0282	-12.82	-0.0432	-14.90
Pseudo-R ²	0.1644		0.1684		0.1659	
Number of obs.	2,014,575		1,028,972		985,603	

Source: EU-LFS, own calculations. – Notes: Reference categories: Bulgaria, Year 1998, Female, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.5.20
Multinomial logit of reason for temporary employment

	Contract covering period of training		Could not find permanent job		Did not want permanent job		Contract for probationary period	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
1998	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
1999	-0.0007	-0.19	-0.0039	-0.72	0.0170	4.15	-0.0124	-4.96
2000	0.0019	0.53	-0.0073	-1.35	0.0251	5.98	-0.0197	-8.95
2001	-0.0050	-1.35	0.0267	5.13	-0.0028	-0.78	-0.0189	-8.59
2002	-0.0183	-5.72	0.0351	7.02	-0.0007	-0.19	-0.0161	-7.32
2003	-0.0616	-24.64	0.0722	14.44	0.0233	5.55	-0.0339	-18.83
2004	-0.0710	-30.87	0.0930	19.38	0.0164	4.10	-0.0384	-22.59
2005	-0.0761	-38.05	0.0942	21.41	0.0224	5.89	-0.0405	-27.00
2006	-0.0796	-33.17	0.0847	15.98	0.0356	7.74	-0.0407	-23.94
2007	-0.0787	-32.79	0.0825	15.87	0.0367	8.16	-0.0406	-23.88
2008	-0.0802	-33.42	0.0782	14.75	0.0400	8.70	-0.0380	-21.11
<i>Austria</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Belgium	-0.1378	-125.27	0.2890	152.11	-0.0753	-50.20	-0.0759	-94.88
Bulgaria	-0.1291	-117.36	0.2485	95.58	-0.0819	-58.50	-0.0375	-22.06
Cyprus	-0.1317	-119.73	0.2921	182.56	-0.0910	-82.73	-0.0694	-86.75
Czech Republic	-0.1425	-129.55	0.2374	81.86	-0.0312	-13.00	-0.0637	-70.78
Germany	-0.0262	-8.73	0.1346	24.47	-0.0991	-55.06	-0.0093	-3.88
Estonia	-0.1310	-109.17	0.2212	29.49	-0.0370	-5.69	-0.0532	-24.18
Spain	-0.2659	-147.72	0.4980	199.20	-0.1140	-76.00	-0.1181	-98.42
Finland	-0.1307	-108.92	0.2433	35.26	-0.0421	-6.38	-0.0705	-78.33
France	-0.1375	-91.67	0.2285	57.13	-0.0289	-10.70	-0.0621	-47.77
Greece	-0.1367	-124.27	0.2969	185.56	-0.0915	-91.50	-0.0686	-85.75
Hungary	-0.1371	-124.64	0.2372	91.23	-0.0641	-40.06	-0.0360	-24.00
Ireland	-0.1306	-130.60	0.0566	7.16	0.1441	18.47	-0.0702	-87.75
Italy	-0.1243	-82.87	0.2775	102.78	-0.0837	-55.80	-0.0695	-63.18
Lithuania	-0.1325	-120.45	0.2700	96.43	-0.0781	-37.19	-0.0594	-42.43
Luxembourg	-0.1053	-52.65	0.1938	31.77	-0.0779	-32.46	-0.0106	-2.59
Latvia	-0.1307	-118.82	0.2427	55.16	-0.0642	-19.45	-0.0478	-19.92
Netherlands	-0.1582	-131.83	0.1464	29.88	-0.0146	-5.21	0.0264	8.52
Poland	-0.1604	-114.57	0.2949	109.22	-0.0797	-53.13	-0.0547	-45.58
Portugal	-0.1525	-127.08	0.2861	136.24	-0.0701	-46.73	-0.0635	-70.56
Romania	-0.1362	-123.82	0.2686	103.31	-0.0812	-47.76	-0.0512	-34.13
Slovakia	-0.1369	-124.45	0.2591	95.96	-0.0425	-17.71	-0.0797	-88.56
United Kingdom	-0.1485	-135.00	0.1767	33.98	0.0527	11.21	-0.0810	-90.00
Male	0.0100	6.25	-0.0087	-3.95	-0.0103	-7.36	0.0090	8.18
<i>Female</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 15-24	0.2044	85.17	-0.2388	-85.29	0.0355	20.88	-0.0011	-0.85
Age 25-54	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 55-64	-0.0891	-27.84	-0.0689	-13.00	0.2018	42.04	-0.0437	-29.13
<i>ISCED 0-2</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	-0.0354	-13.62	0.0093	2.07	0.0150	4.84	0.0112	4.31
ISCED 5-6	0.0444	17.08	-0.0608	-19.00	0.0037	2.06	0.0127	8.47
Number of persons (15-65) living in household	0.0135	19.29	-0.0071	-7.10	-0.0033	-5.50	-0.0031	-6.20
Number of children (<=4 years) in household	-0.0020	-0.74	0.0082	2.10	-0.0109	-4.19	0.0047	2.76
Number of children (5-14 years) in household	0.0093	6.64	-0.0057	-2.85	-0.0015	-1.25	-0.0022	-2.20

Table A.5.20, continued

	Contract covering period of training		Could not find permanent job		Did not want permanent job		Contract for probationary period	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Number of elderly persons living in household (age 65 and above)	-0.0053	-2.65	0.0219	8.42	-0.0118	-6.56	-0.0048	-3.43
<i>No spouse in household</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	-0.0862	-41.05	0.0819	24.09	0.0144	5.76	-0.0102	-6.00
Employed spouse in household	-0.0561	-28.05	0.0499	17.21	-0.0048	-2.82	0.0109	7.79
Pseudo-R ²					0.2704			
Number of obs.					661,976			

Source: EU-LFS, own calculations. – Notes: Reference categories: Austria, Year 1998, Female, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.5.21
Multinomial logit of type of employment

	Full-time permanent		Full-time temporary		Part-time permanent		Part-time temporary	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
<i>1998</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
1999	-0.0130	-10.00	0.0064	7.11	0.0046	5.11	0.0019	3.80
2000	-0.0161	-12.38	0.0092	10.22	0.0060	7.50	0.0009	1.80
2001	0.0057	4.75	-0.0051	-6.38	0.0015	1.88	-0.0021	-5.25
2002	0.0070	5.83	-0.0035	-4.38	0.0000	0.00	-0.0035	-8.75
2003	0.0010	0.83	-0.0013	-1.63	0.0028	3.50	-0.0026	-6.50
2004	-0.0102	-7.85	0.0042	4.67	0.0066	7.33	-0.0006	-1.20
2005	-0.0228	-19.00	0.0105	13.13	0.0104	13.00	0.0018	4.50
2006	-0.0259	-17.27	0.0120	12.00	0.0115	11.50	0.0024	4.00
2007	-0.0267	-19.07	0.0115	11.50	0.0120	12.00	0.0032	5.33
2008	-0.0228	-16.29	0.0090	9.00	0.0115	11.50	0.0023	4.60
<i>Austria</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Belgium	-0.0616	-28.00	-0.0162	-16.20	0.0155	19.38	0.0623	29.67
Bulgaria	0.1089	108.90	-0.0235	-26.11	-0.0679	-339.50	-0.0174	-34.80
Cyprus	0.0124	5.17	0.0453	22.65	-0.0576	-192.00	-0.0001	-0.08
Czech Republic	0.0707	64.27	-0.0176	-25.14	-0.0636	-318.00	0.0106	11.78
Germany	-0.1008	-59.29	0.0490	44.55	0.0138	23.00	0.0380	27.14
Estonia	0.1235	77.19	-0.0592	-53.82	-0.0494	-82.33	-0.0149	-14.90
Spain	-0.2208	-100.36	0.1858	103.22	-0.0567	-189.00	0.0918	43.71
Finland	-0.1474	-14.59	0.1021	12.30	-0.0392	-20.63	0.0845	10.30
France	-0.0906	-50.33	0.0451	41.00	-0.0229	-57.25	0.0685	40.29
Greece	0.0065	4.06	0.0260	23.64	-0.0621	-310.50	0.0297	22.85
Hungary	0.0913	101.44	-0.0185	-26.43	-0.0621	-310.50	-0.0107	-21.40
Ireland	0.0498	35.57	-0.0619	-154.75	-0.0160	-32.00	0.0281	21.62
Italy	-0.0092	-6.57	0.0131	16.38	-0.0433	-144.33	0.0394	32.83
Lithuania	0.0983	51.74	-0.0336	-24.00	-0.0556	-139.00	-0.0091	-7.58
Luxembourg	0.0461	21.95	-0.0299	-23.00	-0.0199	-24.88	0.0037	2.47
Latvia	0.0827	35.96	-0.0219	-12.88	-0.0571	-142.75	-0.0037	-2.64
Netherlands	-0.3063	-102.10	-0.0217	-31.00	0.1100	78.57	0.2180	57.37
Poland	-0.1038	-47.18	0.1160	68.24	-0.0644	-214.67	0.0521	30.65
Portugal	-0.0678	-33.90	0.1039	61.12	-0.0631	-210.33	0.0270	20.77
Romania	0.1607	229.57	-0.0618	-123.60	-0.0760	-380.00	-0.0229	-57.25
Slovenia	-0.0473	-18.92	0.0463	28.94	-0.0613	-204.33	0.0622	28.27
Slovakia	0.1240	155.00	-0.0445	-74.17	-0.0656	-328.00	-0.0140	-28.00
United Kingdom	0.0053	4.08	-0.0541	-108.20	0.0196	32.67	0.0293	26.64
Male	0.1601	320.20	0.0061	20.33	-0.1403	-350.75	-0.0260	-130.00
<i>Female</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 15-24	-0.2187	-198.82	0.1602	160.20	0.0089	17.80	0.0495	82.50
Age 25-54	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 55-64	-0.0377	-41.89	-0.0371	-74.20	0.0636	90.86	0.0112	28.00
<i>ISCED 0-2</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
ISCED 3-4	0.0369	41.00	-0.0191	-31.83	-0.0138	-27.60	-0.0039	-9.75
ISCED 5-6	0.0401	66.83	0.0013	3.25	-0.0373	-124.33	-0.0041	-20.50
Number of persons (15-65) living in household	-0.0497	-55.22	0.0133	22.17	0.0301	60.20	0.0063	21.00
Number of children (<=4 years) in household	-0.0467	-93.40	0.0089	29.67	0.0302	100.67	0.0076	38.00

Table A.5.21, continued

	Full-time permanent		Full-time temporary		Part-time permanent		Part-time temporary	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Number of children (5-14 years) in household	-0.0002	-0.33	-0.0007	-1.75	0.0021	4.20	-0.0011	-3.67
Number of elderly persons living in household (age 65 and above)	-0.0141	-70.50	0.0052	26.00	0.0079	39.50	0.0009	9.00
<i>No spouse in household</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Inactive/unemployed spouse in household	0.0422	60.29	-0.0450	-112.50	0.0139	27.80	-0.0111	-37.00
Employed spouse in household	0.0411	68.50	-0.0397	-99.25	0.0115	28.75	-0.0129	-64.50
Pseudo-R ²					0.1868			
Number of obs.					6,445,200			

Source: EU-LFS, own calculations. – Notes: Reference categories: Austria, Year 1998, Female, Age 25-54, Low skilled (ISCED 0-2), No spouse in household. – t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively.

Table A.5.22
The correlation between the field of education and the type of employment

	Full-time permanent		Full-time temporary		Part-time permanent		Part-time temporary	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
<i>General Programmes</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Teacher training, education science	0.0509	33.93	-0.0265	-26.50	-0.0186	-18.60	-0.0058	-11.60
Humanities, languages, arts	0.0313	18.41	-0.0174	-15.82	-0.0116	-9.67	-0.0024	-4.00
Social sciences, business and law	0.0749	57.62	-0.0365	-40.56	-0.0227	-25.22	-0.0157	-39.25
Natural and computer sciences, mathematics	0.0480	30.00	-0.0202	-18.36	-0.0199	-18.09	-0.0079	-15.80
Engineering, manufacturing, construction	0.0833	59.50	-0.0217	-24.11	-0.0425	-42.50	-0.0192	-38.40
Agricultural, veterinary	0.0469	23.45	-0.0111	-7.40	-0.0251	-20.92	-0.0107	-17.83
Health, welfare	0.0433	28.87	-0.0224	-22.40	-0.0093	-8.45	-0.0116	-29.00
Services	0.0476	34.00	-0.0198	-19.80	-0.0170	-17.00	-0.0108	-27.00
Pseudo-R ²					0.1937			
Number of obs.					3,059,636			

Source: EU-LFS, own calculations. – Notes: Reference Category: General Programmes – Critical values of the t-distribution for 95% (99%) significance level: 1.96 (2.58).

Table A.5.23

The correlation between occupation and industry, and temporary employment

	Full-time permanent		Full-time temporary		Part-time permanent		Part-time temporary	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
OCCUPATION								
<i>Legislators, Senior officials and Managers</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Professionals	-0.1441	-53.37	0.0494	24.70	0.0528	35.20	0.0418	19.90
Technicians and Associate Professionals	-0.1408	-56.32	0.0387	21.50	0.0670	44.67	0.0352	19.56
Clerks	-0.1964	-70.14	0.0406	21.37	0.1044	54.95	0.0515	22.39
Service workers and shop and market sales workers	-0.2460	-84.83	0.0405	21.32	0.1434	65.18	0.0621	24.84
Skilled agricultural and fishery workers	-0.2455	-40.92	0.0459	14.34	0.1154	23.55	0.0842	16.51
Craft and related trades workers	-0.1508	-53.86	0.0708	32.18	0.0445	26.18	0.0355	17.75
Plant and machine operators and assemblers	-0.1701	-54.87	0.0741	30.88	0.0588	30.95	0.0372	16.91
Elementary occupations	-0.3902	-118.24	0.0799	33.29	0.2087	69.57	0.1016	26.74
INDUSTRY								
<i>Agriculture, Forestry and Hunting</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Fishing	0.0437	4.16	-0.0421	-21.05	0.0104	0.99	-0.0119	-10.82
Mining and quarrying	0.1034	47.00	-0.0519	-51.90	-0.0347	-17.35	-0.0168	-42.00
Manufacturing	0.0989	65.93	-0.0638	-106.33	-0.0147	-12.25	-0.0204	-68.00
Electricity, gas and water supply	0.0932	49.05	-0.0538	-76.86	-0.0245	-14.41	-0.0148	-37.00
Construction	0.0575	35.94	-0.0321	-45.86	-0.0101	-7.21	-0.0153	-51.00
Wholesale and retail trade, repair	0.0205	8.91	-0.0622	-124.40	0.0514	23.36	-0.0097	-24.25
Hotels and restaurants	-0.0280	-9.33	-0.0412	-58.86	0.0689	24.61	0.0003	0.50
Transport, storage, and communication	0.0699	43.69	-0.0569	-113.80	-0.0011	-0.73	-0.0120	-40.00
Financial intermediation	0.0803	53.53	-0.0572	-114.40	-0.0071	-5.07	-0.0160	-80.00
Real estate, renting and business activities	0.0284	13.52	-0.0503	-83.83	0.0285	15.00	-0.0067	-16.75
Public administration and defence, compulsory social security	0.0643	42.87	-0.0494	-82.33	-0.0069	-5.31	-0.0080	-20.00
Education	0.0009	0.41	-0.0389	-55.57	0.0279	14.68	0.0101	12.63
Health and social work	0.0140	6.36	-0.0445	-63.57	0.0358	17.90	-0.0053	-10.60
Other community, social and personal service activities	-0.0209	-7.74	-0.0398	-56.86	0.0552	22.08	0.0055	6.88
Activities of household	-0.1255	-25.10	-0.0551	-91.83	0.1735	35.41	0.0072	8.00
Extra-territorial organizations and bodies	0.0420	6.77	-0.0152	-3.38	-0.0185	-4.74	-0.0083	-3.95
Pseudo-R ²					0.2311			
Number of obs.					6,152,790			

Source: EU-LFS, own calculations. – Notes: Reference categories: Legislators, Senior officials and Managers, and Agriculture, Forestry and Hunting. – Critical values of the t-distribution for 95% (99%) significance level: 1.96 (2.58).

Table A.6.1
Estimation results for participation in formal and/or non-formal training – Baseline specification

	any kind of training		Outcome: Participation in			
	Marg. Effect	t-value	formal training		non-formal training	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Austria	-0,0540	-14,24	-0,0111	-4,15	-0,0414	-38,12
Belgium	-0,0788	-30,15	-0,0158	-12,22	-0,0524	-93,91
Bulgaria	-0,0934	-44,40	-0,0141	-15,90	-0,0619	-85,09
Cyprus	-0,0700	-20,21	-0,0139	-10,15	-0,0481	-47,85
Czech Republic	-0,0767	-31,99	-0,0154	-12,53	-0,0517	-31,11
Germany	-0,0921	-16,53	-0,0139	-3,72	-0,0744	-78,16
Estonia	-0,0690	-27,74	-0,0008	-0,61	-0,0546	-74,77
Spain	-0,0792	-8,82	-0,0182	-4,75	-0,0523	-36,81
Finland	-0,0066	-1,51	0,0051	2,02	-0,0255	-13,88
France	-0,0852	-17,86	-0,0223	-7,51	-0,0554	-42,64
Greece	-0,0929	-27,15	-0,0165	-8,98	-0,0608	-75,06
Hungary	-0,0881	-42,46	-0,0116	-9,52	-0,0606	-152,98
Ireland	-0,0642	-10,36	-0,0052	-2,19	-0,0502	-21,32
Italy	-0,0928	-20,05	-0,0172	-6,79	-0,0638	-72,06
Lithuania	-0,0752	-34,09	0,0000	0,01	-0,0574	-99,81
Luxembourg	-0,0760	-35,13	-0,0177	-11,86	-0,0478	-48,61
Latvia	-0,0632	-18,17	0,0047	2,27	-0,0544	-61,83
Netherlands	-0,0492	-13,39	-0,0055	-2,83	-0,0459	-60,89
Poland	-0,0815	-17,17	-0,0072	-2,67	-0,0631	-91,61
Portugal	-0,0880	-11,89	-0,0139	-3,65	-0,0600	-92,78
Romania	-0,0988	-48,51	-0,0136	-14,18	-0,0691	-108,52
Sweden	-	-	-	-	-	-
Slovenia	-0,0336	-6,09	0,0078	2,78	-0,0408	-23,96
Slovakia	-0,0833	-37,32	-0,0147	-18,41	-0,0559	-49,12
<i>United Kingdom</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
2003	-0,0101	-0,82	-0,0026	-1,65	-0,0045	-0,44
2004	0,0086	0,48	0,0001	0,04	0,0103	0,75
2005	0,0031	0,33	0,0004	0,31	0,0034	0,47
2006	0,0025	0,30	-0,0002	-0,12	0,0034	0,56
2007	-0,0016	-0,71	0,0004	0,69	-0,0019	-1,22
2008	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	0,0025	0,54	0,0041	3,10	-0,0068	-2,33
Age 17-21	0,3645	6,45	0,1784	8,60	0,0394	3,41
Age 22-26	0,0745	4,04	0,0314	5,51	-0,0001	-0,05
Age 27-31	0,0080	1,40	0,0052	2,31	-0,0033	-2,09
Age 32-36	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 37-41	0,0016	0,51	-0,0016	-1,17	0,0042	2,80

Table A.6.1, continued

	any kind of training		Outcome: Participation in			
	Marg. Effect	t-value	formal training		non-formal training	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Age 42-46	0.0015	0.42	-0.0027	-1.63	0.0055	2.78
Age 47-51	-0.0008	-0.18	-0.0044	-3.06	0.0050	1.78
Age 52-56	-0.0059	-0.87	-0.0080	-4.40	0.0027	0.76
Age 57-61	-0.0220	-2.27	-0.0115	-5.66	-0.0078	-1.82
Age 62+	-0.0365	-3.20	-0.0142	-8.14	-0.0152	-3.42
ISCED 1	-0.0534	-5.30	-0.0065	-1.20	-0.0414	-13.00
ISCED 2	-0.0125	-0.64	0.0183	1.35	-0.0329	-6.15
ISCED 3	-0.0147	-2.87	0.0066	1.89	-0.0222	-6.71
ISCED 4	-0.0079	-1.95	0.0060	1.38	-0.0070	-3.06
ISCED 5-6	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Years since compl. educ.	-0.0046	-7.05	-0.0023	-8.13	-0.0013	-6.28
Years since compl. educ. sq.	0.0000	2.28	0.0000	3.71	0.0000	0.44
Divorced or widowed	0.0117	13.30	0.0047	5.29	0.0046	5.04
Single	0.0098	2.97	0.0064	3.95	-0.0005	-0.39
Married	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of persons living in household	-0.0037	-4.16	-0.0008	-1.72	-0.0032	-5.70
Number of employed in household	0.0025	2.37	0.0008	1.93	0.0008	1.24
Number of children (<=4 years) in household	-0.0166	-8.12	-0.0075	-9.73	-0.0068	-3.79
ISCO0	0.0910	6.11	0.0156	1.87	0.0740	6.88
ISCO1	0.1368	6.56	0.0426	4.53	0.0643	7.31
ISCO2	0.1552	10.22	0.0523	6.64	0.0802	14.37
ISCO3	0.1307	11.34	0.0424	7.22	0.0669	18.14
ISCO4	0.0912	6.18	0.0322	4.16	0.0404	11.80
ISCO5	0.0662	8.19	0.0231	7.65	0.0311	6.53
ISCO6	0.0551	4.15	0.0258	4.59	0.0178	4.81
ISCO7	0.0361	3.24	0.0133	2.96	0.0164	5.18
ISCO8	0.0177	3.50	0.0016	0.71	0.0095	4.62
ISCO9	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
LABOUR MARKET EXPERIENCE						
max. 0.5 years	-0.0298	-1.63	0.0000	-0.01	-0.0080	-1.30
0.5-1 years	-0.0224	-1.75	0.0033	0.71	-0.0071	-1.23
1-2 years	-0.0116	-1.19	0.0095	2.31	-0.0065	-1.31
2-3 years	-0.0164	-1.96	0.0089	2.14	-0.0122	-3.33
3-5 years	-0.0125	-1.47	0.0104	2.65	-0.0075	-2.05
5-10 years	-0.0175	-1.93	0.0058	1.56	-0.0078	-2.58

Table A.6.1, continued

	any kind of training		Outcome: Participation in			
	Marg. Effect	t-value	formal training		non-formal training	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
10-15 years	-0.0110	-1.52	0.0083	3.10	-0.0063	-1.73
15-20 years	0.0005	0.07	0.0109	4.11	-0.0002	-0.05
20-25 years	0.0031	0.72	0.0118	5.71	0.0003	0.10
25-30 years	0.0080	1.69	0.0101	5.30	0.0040	1.11
30-35 years	0.0104	4.80	0.0056	4.65	0.0053	2.87
35+ years	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Part-time employment	0.0361	5.62	0.0326	13.75	-0.0012	-0.37
Temporary job or limited duration contract	0.0817	3.21	0.0436	3.54	0.0109	2.10
SECTOR						
Agriculture	-0.0363	-8.81	-0.0084	-4.96	-0.0177	-8.89
Industry	-0.0231	-7.16	-0.0060	-5.00	-0.0119	-7.03
Services	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of obs.	5,658,368		5,682,493		5,655,408	
Pseudo-R2	0.1935		0.3420		0.1459	

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. The reference person is a married female of 32-36 years living in the UK, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.6.2

Estimation results for participation in formal and/or non-formal training – Anglo-Saxon countries

	Outcome: Participation in					
	any kind of training		formal training		non-formal training	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Ireland	-0.1844	-23.39	-0.0177	-2.47	-0.2223	-61.34
2003	0.1117	148.43	0.0188	11.03	0.1512	2030.33
2004	0.1550	40.38	0.0213	169.39	0.1441	61.32
2005	0.0917	52.14	0.0161	128.58	0.0850	77.68
2006	0.0795	47.32	0.0156	745.05	0.0703	69.21
2007	0.0093	5.45	0.0072	131.38	0.0035	3.51
2008	<i>Reference category</i>					
Male	-0.0408	-17.23	0.0022	2.81	-0.0567	-98.73
Age 17-21	0.3348	89.57	0.2589	879.13	0.1094	135.88
Age 22-26	0.0647	16.75	0.0514	33.20	0.0247	18.07
Age 27-31	0.0074	12.59	0.0024	265.33	0.0045	4.12
Age 32-36	<i>Reference category</i>					
Age 37-41	0.0171	22.18	0.0010	2.66	0.0203	60.66
Age 42-46	0.0115	10.23	-0.0011	-1.85	0.0160	36.96
Age 47-51	-0.0052	-3.21	-0.0104	-12.34	0.0068	11.44
Age 52-56	-0.0192	-10.92	-0.0242	-31.89	-0.0026	-4.72
Age 57-61	-0.0618	-43.51	-0.0430	-113.39	-0.0359	-130.38
Age 62+	-0.1084	-146.10	-0.0622	-248.17	-0.0647	-325.56
ISCED 1	-0.1674	-18.95	-0.0518	-8.78	-0.0945	-15.83
ISCED 2	-0.0978	-6.36	-0.0128	-2.42	-0.0969	-12.43
ISCED 3	-0.0650	-88.12	-0.0128	-24.78	-0.0618	-192.23
ISCED 4	-0.0391	-0.35	-0.0004	-0.01	-0.0084	-0.16
ISCED 5-6	<i>Reference category</i>					
Years since compl. educ.	-0.0072	-62.04	-0.0053	-62.88	-0.0044	-220.98
Years since compl. educ. sq.	0.0001	92.99	0.0001	78.59	0.0001	185.28
Divorced or widowed	0.0187	23.94	0.0189	48.08	0.0087	13.34
Single	0.0073	88.30	0.0115	172.01	-0.0004	-0.54
Married	<i>Reference category</i>					
Number of persons living in household	-0.0059	-30.51	0.0012	9.95	-0.0059	-13.78
Number of employed in household	0.0065	114.84	0.0005	2.41	0.0044	17.64
Number of children (<=4 years) in household	-0.0512	-438.95	-0.0327	-180.18	-0.0356	-34.09
ISCO0	0.2850	564.96	0.1104	71.97	0.2779	146.33
ISCO1	0.1192	63.24	0.0302	23.69	0.1099	106.67
ISCO2	0.1878	499.86	0.0598	59.17	0.1770	118.40
ISCO3	0.1695	171.78	0.0559	55.88	0.1626	112.60
ISCO4	0.0809	87.30	0.0188	25.79	0.0816	239.97
ISCO5	0.1238	236.44	0.0512	108.98	0.1002	67.40
ISCO6	0.0353	44.76	0.0059	5.29	0.0615	329.67
ISCO7	0.0724	13.25	0.0337	8.19	0.0794	42.68
ISCO8	-0.0073	-10.87	-0.0207	-1735.44	0.0044	35.33
ISCO9	<i>Reference category</i>					

Table A.6.2, continued

	Outcome: Participation in					
	any kind of training		formal training		non-formal training	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
LABOUR MARKET EXPERIENCE						
max. 0.5 years	0.0171	8.33	0.0112	10.06	0.0338	21.78
0.5-1 years	0.0222	19.14	0.0334	26.35	0.0262	18.45
1-2 years	0.0246	54.87	0.0389	34.60	0.0244	31.02
2-3 years	0.0004	0.41	0.0307	25.68	0.0038	4.65
3-5 years	0.0132	580.91	0.0394	48.47	0.0154	11.53
5-10 years	0.0001	0.12	0.0223	21.57	0.0050	4.39
10-15 years	0.0062	12.11	0.0190	29.13	0.0084	6.08
15-20 years	0.0188	26.54	0.0190	26.33	0.0210	10.58
20-25 years	0.0118	39.48	0.0186	19.82	0.0134	17.40
25-30 years	0.0249	75.35	0.0247	30.23	0.0248	58.15
30-35 years	0.0129	23.66	0.0074	67.47	0.0122	10.69
35+ years	<i>Reference category</i>					
Part-time employment	0.0899	19.46	0.1054	43.52	0.0148	48.56
Temporary job or limited duration contract	0.0506	7.36	0.0454	19.95	0.0173	70.03
SECTOR						
Agriculture	-0.0640	-32.34	-0.0109	-364.74	-0.0479	-51.31
Industry	-0.0394	-567.19	-0.0101	-76.21	-0.0324	-223.86
Services	<i>Reference category</i>					
Number of obs.	241,345		265,263		238,526	
Pseudo-R ²	0.0869		0.1876		0.0542	

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. The reference person is a married female of 32-36 years living in the UK, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.6.3

Estimation results for participation in formal and/or non-formal training – Continental countries

	Outcome: Participation in					
	any kind of training		formal training		non-formal training	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
<i>Austria</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Belgium	-0.0520	-21.36	-0.0050	-13.30	-0.0339	-7.78
Germany	-0.0551	-13.96	-0.0016	-2.45	-0.0554	-25.18
France	-0.0475	-20.69	-0.0123	-11.00	-0.0198	-8.09
Luxembourg	-0.0478	-55.81	-0.0082	-23.66	-0.0236	-5.80
Netherlands	0.0143	3.19	0.0102	9.27	-0.0106	-3.38
2003	-0.0085	-1.80	-0.0005	-0.42	-0.0047	-0.90
2004	0.0007	0.19	-0.0006	-0.78	0.0047	0.83
2005	-0.0050	-1.48	0.0000	0.05	-0.0039	-0.88
2006	-0.0055	-2.50	-0.0004	-1.25	-0.0035	-2.02
2007	-0.0038	-2.79	0.0003	0.57	-0.0045	-2.50
2008	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	0.0110	2.16	0.0046	9.11	-0.0028	-2.55
Female	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 17-21	0.5430	15.61	0.2386	27.58	0.0301	1.03
Age 22-26	0.1167	3.79	0.0364	10.00	-0.0019	-1.59
Age 27-31	0.0185	1.19	0.0080	3.12	-0.0039	-1.15
Age 32-36	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 37-41	-0.0081	-3.16	-0.0032	-2.26	0.0008	0.49
Age 42-46	-0.0094	-2.18	-0.0036	-2.14	0.0018	0.75
Age 47-51	-0.0111	-1.32	-0.0037	-1.75	0.0005	0.14
Age 52-56	-0.0144	-0.79	-0.0045	-1.82	-0.0022	-0.31
Age 57-61	-0.0338	-1.27	-0.0061	-2.29	-0.0152	-1.66
Age 62+	-0.0489	-1.49	-0.0070	-2.09	-0.0228	-2.40
ISCED 1	-0.0503	-3.85	-0.0040	-1.19	-0.0463	-8.27
ISCED 2	0.0046	0.21	0.0176	1.89	-0.0332	-4.26
ISCED 3	-0.0210	-3.69	0.0030	1.68	-0.0247	-3.06
ISCED 4	-0.0003	-0.18	0.0080	2.62	-0.0058	-0.94
ISCED 5-6	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Years since compl. educ.	-0.0029	-1.80	-0.0009	-2.07	-0.0010	-2.08
Years since compl. educ. sq.	0.0000	0.16	0.0000	0.47	0.0000	-0.80
Divorced or widowed	0.0140	5.69	0.0025	19.97	0.0053	3.36
Single	0.0112	1.28	0.0055	2.74	-0.0028	-1.19
Married	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of persons living in household	-0.0013	-2.99	-0.0002	-1.29	-0.0029	-8.02
Number of employed in household	-0.0006	-2.20	0.0001	0.55	-0.0011	-2.03
Number of children (<=4 years) in household	-0.0174	-4.49	-0.0041	-5.79	-0.0074	-2.86

Table A.6.3, continued

	Outcome: Participation in					
	any kind of training		formal training		non-formal training	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
ISCO0	0.0523	2.68	-0.0038	-0.99	0.0764	3.85
ISCO1	0.1615	5.99	0.0351	8.78	0.0828	7.41
ISCO2	0.1617	5.70	0.0344	30.83	0.0864	4.90
ISCO3	0.1323	6.36	0.0228	6.82	0.0742	9.11
ISCO4	0.0981	3.63	0.0217	4.44	0.0486	4.36
ISCO5	0.0685	3.54	0.0153	7.23	0.0323	3.44
ISCO6	0.0437	1.62	0.0135	3.66	0.0153	1.29
ISCO7	0.0502	2.82	0.0124	7.87	0.0214	3.33
ISCO8	0.0238	2.93	0.0016	0.99	0.0162	4.23
ISCO9	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
LABOUR MARKET EXPERIENCE						
max. 0.5 years	-0.0589	-3.77	-0.0048	-1.61	-0.0216	-4.96
0.5-1 years	-0.0418	-5.11	-0.0030	-1.55	-0.0183	-3.76
1-2 years	-0.0257	-4.18	0.0007	0.33	-0.0147	-2.55
2-3 years	-0.0251	-3.33	0.0016	0.74	-0.0194	-4.45
3-5 years	-0.0271	-3.79	0.0004	0.19	-0.0146	-4.42
5-10 years	-0.0330	-3.49	-0.0024	-0.79	-0.0123	-4.60
10-15 years	-0.0242	-3.28	-0.0007	-0.40	-0.0117	-2.66
15-20 years	-0.0129	-1.58	-0.0006	-0.35	-0.0047	-1.00
20-25 years	-0.0059	-0.91	0.0024	2.50	-0.0033	-0.86
25-30 years	0.0023	0.26	0.0008	0.45	0.0024	0.46
30-35 years	0.0089	2.57	0.0013	1.05	0.0054	3.21
35+ years	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Part-time employment	0.0284	5.10	0.0207	5.59	-0.0069	-2.57
Temporary job or limited duration contract	0.1411	4.58	0.0533	6.41	0.0236	4.28
SECTOR						
Agriculture	-0.0259	-3.49	-0.0018	-0.86	-0.0167	-6.46
Industry	-0.0179	-4.35	-0.0015	-3.56	-0.0113	-2.73
Services	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of obs.	1,844,848		1,844,849		1,844,861	
Pseudo-R ²	0.1935		0.5110		0.0566	

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. The reference person is a married female of 32-36 years living in Austria, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.6.4

Estimation results for participation in formal and/or non-formal training – Central and Eastern European countries

	Outcome: Participation in					
	any kind of training		formal training		non-formal training	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Bulgaria	-0.0245	-24.01	0.0043	10.58	-0.0145	-47.05
Czech Republic	0.0155	15.93	-0.0010	-3.11	0.0087	17.93
Estonia	0.0286	15.89	0.0384	43.17	-0.0016	-3.97
Hungary	-0.0087	-14.05	0.0095	12.23	-0.0091	-30.45
Lithuania	0.0212	8.73	0.0424	24.35	-0.0059	-12.27
Latvia	0.0420	30.25	0.0524	53.24	0.0005	1.59
Poland	0.0177	22.10	0.0241	20.16	-0.0046	-15.90
Romania	-0.0255	-32.39	0.0054	17.24	-0.0207	-75.14
Slovenia	0.1062	52.98	0.0668	30.77	0.0289	31.96
<i>Slovakia</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
2003	-0.0035	-0.60	-0.0046	-2.78	0.0031	0.70
2004	0.0045	0.95	-0.0001	-0.08	0.0051	1.62
2005	-0.0017	-0.37	-0.0005	-0.46	-0.0005	-0.16
2006	-0.0045	-0.98	-0.0013	-1.34	-0.0017	-0.60
2007	-0.0030	-0.67	-0.0006	-0.71	-0.0013	-0.49
<i>2008</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	-0.0001	-0.05	-0.0005	-0.80	-0.0006	-1.29
Age 17-21	0.1369	4.04	0.0538	3.65	0.0063	3.05
Age 22-26	0.0506	4.57	0.0220	4.57	-0.0027	-6.77
Age 27-31	0.0045	2.18	0.0028	3.29	-0.0017	-2.07
Age 32-36	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 37-41	-0.0009	-0.82	-0.0009	-1.04	0.0005	0.76
Age 42-46	-0.0024	-1.24	-0.0027	-2.33	0.0011	2.83
Age 47-51	-0.0047	-2.35	-0.0057	-5.70	0.0011	1.90
Age 52-56	-0.0037	-1.16	-0.0085	-6.21	0.0023	2.88
Age 57-61	-0.0037	-0.79	-0.0108	-4.95	0.0023	1.68
Age 62+	-0.0058	-0.76	-0.0113	-8.08	0.0026	1.00
ISCED 1	0.0013	0.22	0.0205	5.67	-0.0065	-2.37
ISCED 2	0.0081	1.00	0.0265	5.36	-0.0084	-9.74
ISCED 3	0.0089	1.48	0.0124	7.60	-0.0085	-8.08
ISCED 4	0.0040	1.18	0.0126	7.55	-0.0043	-4.64
ISCED 5-6	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Years since compl. educ.	-0.0021	-4.62	-0.0014	-4.41	-0.0001	-2.70
Years since compl. educ. sq.	0.0000	0.21	0.0000	1.28	0.0000	-5.84
Divorced or widowed	0.0034	2.32	0.0021	4.57	0.0002	0.37
Single	0.0095	4.19	0.0053	6.16	0.0003	0.62
Married	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of persons living in household	-0.0030	-4.61	-0.0011	-4.51	-0.0016	-5.40
Number of employed in household	0.0018	1.46	0.0011	3.35	0.0000	-0.17
Number of children (<=4 years) in household	-0.0063	-4.61	-0.0036	-4.06	0.0000	-0.05

Table A.6.4, continued

	Outcome: Participation in					
	any kind of training		formal training		non-formal training	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
ISCO0	0.0924	12.44	0.0308	4.93	0.0458	11.79
ISCO1	0.1401	25.70	0.0586	10.45	0.0551	15.75
ISCO2	0.1180	29.72	0.0533	12.58	0.0438	14.23
ISCO3	0.1000	23.75	0.0465	12.63	0.0343	19.22
ISCO4	0.0816	25.81	0.0382	14.41	0.0248	12.08
ISCO5	0.0251	11.54	0.0091	4.94	0.0082	5.71
ISCO6	0.0043	0.73	-0.0017	-0.60	0.0089	2.81
ISCO7	0.0043	2.44	-0.0004	-0.29	0.0046	3.58
ISCO8	0.0077	4.48	0.0003	0.26	0.0070	3.93
ISCO9	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
LABOUR MARKET EXPERIENCE						
max. 0.5 years	0.0011	0.36	0.0080	2.15	0.0057	2.02
0.5-1 years	-0.0020	-0.63	0.0083	1.99	0.0015	0.74
1-2 years	-0.0025	-0.75	0.0094	1.94	-0.0011	-1.03
2-3 years	-0.0056	-1.95	0.0078	1.66	-0.0018	-2.04
3-5 years	-0.0045	-1.12	0.0084	1.67	-0.0010	-0.70
5-10 years	-0.0047	-1.40	0.0078	1.78	-0.0012	-1.01
10-15 years	-0.0003	-0.09	0.0111	2.39	-0.0004	-0.39
15-20 years	0.0055	1.29	0.0175	2.71	0.0007	0.63
20-25 years	0.0012	0.43	0.0121	2.36	0.0003	0.26
25-30 years	0.0004	0.14	0.0103	2.12	0.0004	0.43
30-35 years	0.0007	0.33	0.0062	1.21	0.0008	1.16
35+ years	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Part-time employment	0.0400	9.94	0.0289	7.10	-0.0001	-0.17
Temporary job or limited duration contract	0.0137	5.49	0.0068	4.82	0.0001	0.19
SECTOR						
Agriculture	-0.0166	-9.28	-0.0067	-7.25	-0.0054	-6.00
Industry	-0.0134	-11.36	-0.0055	-12.20	-0.0037	-6.41
Services	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of obs.	1,768,989		1,769,076		1,768,991	
Pseudo-R ²	0.2124		0.2903		0.1644	

Source: EU-LFS, own calculation. – Notes: *t*-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. The reference person is a married female of 32-36 years living in Slovakia, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.6.5
Estimation results for participation in formal and/or non-formal training – Mediterranean countries

	Outcome: Participation in					
	any kind of training		formal training		non-formal training	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
Italy	0.0068	16.25	-0.0074	-11.72	0.0337	26.53
Greece	-0.0285	-17.21	-0.0078	-12.53	-0.0072	-3.62
Cyprus	0.0467	19.42	-0.0046	-6.72	0.0949	25.99
Spain	0.0471	42.82	-0.0042	-7.53	0.0691	42.36
<i>Portugal</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
2003	-0.0315	-2.34	-0.0035	-9.41	-0.0245	-1.92
2004	-0.0229	-0.99	-0.0025	-1.82	-0.0184	-0.89
2005	-0.0089	-4.48	-0.0011	-1.43	-0.0064	-4.83
2006	-0.0054	-2.65	-0.0014	-2.13	-0.0029	-2.97
2007	-0.0013	-0.53	-0.0005	-0.81	-0.0001	-0.07
<i>2008</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	0.0044	3.48	0.0040	5.44	-0.0044	-10.76
Age 17-21	0.0978	11.43	0.0331	6.14	0.0137	2.53
Age 22-26	0.0237	16.25	0.0070	2.60	-0.0015	-2.99
Age 27-31	0.0020	3.47	0.0016	2.23	-0.0025	-2.50
Age 32-36	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 37-41	0.0103	4.95	0.0018	1.70	0.0076	15.29
Age 42-46	0.0152	8.10	0.0017	1.62	0.0121	3.17
Age 47-51	0.0209	5.22	0.0017	1.69	0.0175	3.50
Age 52-56	0.0167	2.30	-0.0019	-1.88	0.0169	2.87
Age 57-61	0.0066	0.61	-0.0044	-4.39	0.0106	1.38
Age 62+	-0.0075	-0.54	-0.0052	-4.34	0.0023	0.28
ISCED 1	-0.0378	-8.09	-0.0008	-0.40	-0.0300	-17.96
ISCED 2	-0.0301	-7.43	-0.0021	-0.76	-0.0238	-9.07
ISCED 3	0.0006	0.23	0.0096	12.27	-0.0114	-21.77
ISCED 4	-0.0051	-0.52	-0.0004	-0.09	-0.0007	-0.36
ISCED 5-6	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Years since compl. educ.	-0.0041	-5.44	-0.0017	-5.47	-0.0011	-4.38
Years since compl. educ. sq.	0.0000	1.97	0.0000	2.43	0.0000	-0.49
Divorced or widowed	0.0116	15.04	0.0037	4.42	0.0062	9.83
Single	0.0125	13.94	0.0069	12.15	0.0022	1.48
Married	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of persons living in household	-0.0039	-5.24	-0.0006	-2.55	-0.0033	-5.38
Number of employed in household	0.0027	2.09	0.0006	4.21	0.0017	1.63
Number of children (<=4 years) in household	-0.0105	-4.72	-0.0039	-3.95	-0.0036	-2.77

Table A.6.5, continued

	Outcome: Participation in					
	any kind of training		formal training		non-formal training	
	Marg. Effect	t-value	Marg. Effect	t-value	Marg. Effect	t-value
ISCO0	0.0543	9.50	0.0166	5.13	0.0297	3.42
ISCO1	0.1035	7.31	0.0186	18.35	0.0649	4.68
ISCO2	0.1079	60.56	0.0323	15.44	0.0612	17.69
ISCO3	0.0785	13.62	0.0217	12.54	0.0456	5.18
ISCO4	0.0504	8.33	0.0167	6.26	0.0235	14.39
ISCO5	0.0374	36.94	0.0121	10.57	0.0153	9.10
ISCO6	0.0348	5.47	0.0063	2.64	0.0224	9.01
ISCO7	0.0085	2.28	-0.0005	-0.48	0.0058	10.35
ISCO8	0.0112	1.78	0.0017	1.39	0.0041	1.46
ISCO9	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
LABOUR MARKET EXPERIENCE						
max. 0.5 years	-0.0081	-1.91	0.0015	0.41	-0.0065	-4.18
0.5-1 years	-0.0147	-2.84	-0.0013	-0.40	-0.0079	-2.93
1-2 years	-0.0135	-3.27	-0.0012	-0.38	-0.0060	-3.17
2-3 years	-0.0176	-11.37	-0.0025	-0.95	-0.0091	-7.77
3-5 years	-0.0115	-3.06	-0.0004	-0.14	-0.0053	-3.02
5-10 years	-0.0111	-2.72	0.0006	0.22	-0.0062	-2.68
10-15 years	-0.0060	-1.46	0.0023	1.29	-0.0038	-1.18
15-20 years	0.0017	0.52	0.0043	2.01	0.0010	0.44
20-25 years	0.0035	0.92	0.0053	2.55	0.0022	0.75
25-30 years	0.0047	1.42	0.0055	2.92	0.0031	1.27
30-35 years	0.0055	1.89	0.0028	1.60	0.0039	1.73
35+ years	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Part-time employment	0.0547	5.79	0.0381	7.24	-0.0007	-0.26
Temporary job or limited duration contract	0.0197	18.08	0.0048	4.11	0.0110	3.55
SECTOR						
Agriculture	-0.0279	-7.80	-0.0064	-9.99	-0.0172	-8.23
Industry	-0.0210	-5.51	-0.0060	-6.12	-0.0113	-5.00
Services	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of obs.	1,751,349		1,751,422		1,751,191	
Pseudo-R ²	0.1435		0.2460		0.1066	

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. The reference person is a married female of 32-36 years living in Portugal, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.6.6

Estimation results for level of formal education – Baseline specification

	Outcome: Level of formal training					
	Ordered Probit		Marginal Effect		Marginal Effect	
	Coefficient	t-value	Pr(Y=1)	t-value	Pr(Y=3)	t-value
Austria	0.9137	8.33	-0.0427	-2.28	0.2155	11.05
Belgium	0.5350	12.14	-0.0250	-2.49	0.1262	14.79
Bulgaria	2.4063	23.18	-0.1123	-3.09	0.5677	21.20
Cyprus	1.7592	19.23	-0.0821	-3.20	0.4150	17.26
Czech Republic	0.8470	8.75	-0.0395	-3.65	0.1998	8.51
Germany	0.5098	4.43	-0.0238	-2.23	0.1203	5.00
Estonia	1.0682	24.26	-0.0499	-2.92	0.2520	20.94
Spain	1.1673	13.44	-0.0545	-3.08	0.2754	15.18
Finland	0.8321	14.60	-0.0389	-2.97	0.1963	16.99
France	0.6033	6.66	-0.0282	-2.98	0.1423	7.72
Greece	1.1252	12.32	-0.0525	-3.33	0.2655	12.61
Hungary	1.2998	15.33	-0.0607	-3.25	0.3066	13.89
Ireland	0.7774	11.90	-0.0363	-2.44	0.1834	17.93
Italy	1.5542	18.12	-0.0726	-3.06	0.3667	19.28
Lithuania	1.8998	24.54	-0.0887	-3.00	0.4482	24.28
Luxembourg	0.5453	4.04	-0.0255	-2.11	0.1286	4.58
Latvia	1.8700	20.89	-0.0873	-3.03	0.4412	22.04
Netherlands	0.0063	0.07	-0.0003	-0.07	0.0015	0.07
Poland	1.2931	6.64	-0.0604	-3.96	0.3051	6.72
Portugal	1.2108	11.27	-0.0565	-2.94	0.2856	13.14
Romania	1.7960	17.33	-0.0839	-3.15	0.4237	16.39
Sweden	-	-	-	-	-	-
Slovenia	1.3876	10.27	-0.0648	-3.48	0.3274	10.29
Slovakia	1.6745	12.94	-0.0782	-3.36	0.3950	11.84
<i>United Kingdom</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
2003	-0.0599	-1.96	0.0028	1.31	-0.0141	-1.96
2004	-0.0196	-1.01	0.0009	0.99	-0.0046	-1.00
2005	-0.0235	-2.59	0.0011	1.85	-0.0055	-2.54
2006	-0.0497	-2.90	0.0023	2.17	-0.0117	-2.69
2007	-0.0271	-3.54	0.0013	2.17	-0.0064	-3.30
2008	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	0.1237	3.69	-0.0058	-2.00	0.0292	3.33
Age 17-21	-0.4019	-2.19	0.0188	1.54	-0.0948	-2.14
Age 22-26	0.1353	1.24	-0.0063	-0.90	0.0319	1.24
Age 27-31	0.1310	2.85	-0.0061	-2.03	0.0309	2.94
Age 32-36	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 37-41	-0.1158	-2.16	0.0054	2.08	-0.0273	-2.19
Age 42-46	-0.2197	-4.61	0.0103	2.83	-0.0518	-4.65
Age 47-51	-0.2680	-4.14	0.0125	2.08	-0.0632	-4.20
Age 52-56	-0.3984	-4.17	0.0186	2.23	-0.0940	-4.14
Age 57-61	-0.5527	-3.25	0.0258	1.99	-0.1304	-3.24
Age 62+	-0.6743	-7.79	0.0315	2.30	-0.1591	-7.01

Table A.6.6, continued

	Outcome: Level of formal training					
	Ordered Probit		Marginal Effect		Marginal Effect	
	Coefficient	t-value	Pr(Y=1)	t-value	Pr(Y=3)	t-value
ISCED 1	-4.7315	-9.00	0.2209	3.34	-1.1162	-9.20
ISCED 2	-2.0764	-8.39	0.0969	2.36	-0.4899	-11.10
ISCED 3	-0.7634	-4.67	0.0356	2.90	-0.1801	-4.98
ISCED 4	-0.2329	-1.19	0.0109	0.93	-0.0549	-1.22
ISCED 5-6	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Years since compl. educ.	0.0071	0.39	-0.0003	-0.42	0.0017	0.39
Years since compl. educ. sq.	-0.0005	-0.98	0.0000	1.22	-0.0001	-0.99
Divorced or widowed	-0.0580	-1.45	0.0027	1.30	-0.0137	-1.51
Single	0.0919	4.54	-0.0043	-2.59	0.0217	4.75
Married	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of persons living in household	-0.0329	-1.52	0.0015	1.82	-0.0078	-1.53
Number of employed in household	0.0034	0.28	-0.0002	-0.28	0.0008	0.28
Number of children (<=4 years) in household	-0.0897	-3.79	0.0042	1.83	-0.0212	-4.01
ISCO0	0.3390	2.32	-0.0158	-3.43	0.0800	2.29
ISCO1	0.6242	11.55	-0.0291	-2.74	0.1473	10.14
ISCO2	0.8092	14.28	-0.0378	-2.75	0.1909	13.95
ISCO3	0.4324	4.99	-0.0202	-1.97	0.1020	5.08
ISCO4	0.3906	6.33	-0.0182	-2.41	0.0922	7.25
ISCO5	0.2115	3.26	-0.0099	-3.09	0.0499	3.05
ISCO6	0.0326	0.24	-0.0015	-0.26	0.0077	0.24
ISCO7	-0.0276	-0.17	0.0013	0.16	-0.0065	-0.17
ISCO8	-0.0381	-0.36	0.0018	0.32	-0.0090	-0.36
ISCO9	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
LABOUR MARKET EXPERIENCE						
max. 0.5 years	-0.0577	-0.30	0.0027	0.31	-0.0136	-0.30
0.5-1 years	-0.1171	-0.64	0.0055	0.69	-0.0276	-0.64
1-2 years	-0.0989	-0.49	0.0046	0.54	-0.0233	-0.50
2-3 years	-0.0547	-0.28	0.0026	0.30	-0.0129	-0.28
3-5 years	0.0044	0.02	-0.0002	-0.02	0.0010	0.02
5-10 years	0.0552	0.33	-0.0026	-0.32	0.0130	0.33
10-15 years	0.0818	0.54	-0.0038	-0.49	0.0193	0.53
15-20 years	0.1158	0.73	-0.0054	-0.66	0.0273	0.73
20-25 years	0.1821	1.36	-0.0085	-1.14	0.0430	1.34
25-30 years	0.0986	0.59	-0.0046	-0.56	0.0233	0.59
30-35 years	0.2417	1.32	-0.0113	-1.29	0.0570	1.32
35+ years	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	

Table A.6.6, continued

	Outcome: Level of formal training					
	Ordered Probit		Marginal Effect		Marginal Effect	
	Coefficient	t-value	Pr(Y=1)	t-value	Pr(Y=3)	t-value
Part-time employment	0.5858	3.36	-0.0274	-7.08	0.1382	3.29
Temporary job or limited duration contract	-0.1967	-1.00	0.0092	1.37	-0.0464	-1.00
SECTOR						
Agriculture	0.0057	0.19	-0.0003	-0.19	0.0014	0.19
Industry	-0.0543	-1.69	0.0025	1.13	-0.0128	-1.66
Services	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of obs.			251,483			
Pseudo-R ²			0.3894			

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. The reference person is a married female of 32-36 years living in the UK, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.6.7

Estimation results for the intensity of non-formal training – Baseline specification

Outcome: Intensity of non-formal training				
	Participants only (OLS)		All persons (Tobit)	
	Coefficient	t-value	Coefficient	t-value
Austria	3.4083	13.20	17.9355	10.71
Belgium	4.2255	43.80	3.5432	4.56
Bulgaria	12.4796	56.38	-54.0769	-12.04
Cyprus	0.5528	2.74	9.2626	4.29
Czech Republic	-0.6451	-2.55	3.2581	2.84
Germany	5.9486	23.38	0.2826	0.29
Estonia	2.7242	18.73	-4.9990	-4.75
Spain	11.0402	15.27	5.9619	5.06
Finland	-0.6442	-2.18	24.1875	13.50
France	17.5055	96.02	-2.9120	-2.87
Greece	10.3654	18.99	-23.0843	-9.88
Hungary	9.0882	45.21	-22.3867	-9.91
Ireland	0.1917	0.38	10.1827	1.95
Italy	3.5046	36.11	-3.7126	-4.43
Lithuania	7.0618	32.93	-15.4152	-10.84
Luxembourg	4.0891	20.37	10.2620	4.67
Latvia	5.6787	30.76	-8.0666	-9.56
Netherlands	5.7089	25.62	11.5301	7.32
Poland	3.8311	10.60	-11.9641	-12.27
Portugal	8.0781	12.63	-18.9695	-8.52
Romania	15.8255	57.50	-48.5761	-10.74
Sweden
Slovenia	2.9392	11.17	20.5271	5.52
Slovakia	1.8309	6.81	-4.1583	-3.49
<i>United Kingdom</i>	<i>Reference category</i>		<i>Reference category</i>	
2003	3.5570	3.65	-17.6134	-1.46
2004	1.6579	4.11	-6.8459	-0.78
2005	1.0470	1.65	-5.2969	-0.81
2006	0.5782	1.41	-0.5523	-0.42
2007	0.7293	1.94	-0.6967	-0.82
2008	<i>Reference category</i>		<i>Reference category</i>	
Male	2.3418	3.01	-1.2928	-2.67
Age 17-21	3.5725	2.60	4.2745	1.97
Age 22-26	2.6974	2.66	-2.5028	-1.67
Age 27-31	-0.0622	-0.10	-2.0600	-1.78
Age 32-36	<i>Reference category</i>		<i>Reference category</i>	
Age 37-41	-0.9831	-1.86	1.8637	2.19
Age 42-46	-1.0065	-1.55	2.6685	2.64
Age 47-51	-1.4037	-2.04	3.1180	2.39
Age 52-56	-1.4431	-1.99	2.7462	2.07
Age 57-61	-1.7146	-2.18	-0.6579	-0.36
Age 62+	-1.2354	-1.21	-3.2077	-1.72

Table A.6.7, continued

	Outcome: Intensity of non-formal training			
	Participants only (OLS)		All persons (Tobit)	
	Coefficient	t-value	Coefficient	t-value
ISCED 1	-1.0671	-0.66	-21.1539	-7.46
ISCED 2	0.9636	1.75	-14.0988	-8.86
ISCED 3	0.5754	0.83	-8.5045	-6.79
ISCED 4	1.9471	1.55	-2.6409	-4.19
ISCED 5-6	<i>Reference category</i>		<i>Reference category</i>	
Years since compl. educ.	-0.0172	-0.21	-0.4780	-5.67
Years since compl. educ. sq.	-0.0019	-0.75	-0.0018	-0.90
Divorced or widowed	0.8763	3.90	1.6288	3.79
Single	0.9056	2.41	-0.7303	-1.91
Married	<i>Reference category</i>		<i>Reference category</i>	
Number of persons living in household	0.2079	2.28	-1.5537	-5.85
Number of employed in household	-0.4989	-1.88	0.1004	0.24
Number of children (<=4 years) in household	-0.3545	-1.02	-1.9076	-3.58
ISCO0	23.8041	8.24	23.4166	5.76
ISCO1	-2.1543	-1.97	20.4029	5.97
ISCO2	-1.8615	-1.77	22.8402	9.36
ISCO3	-1.5495	-1.22	20.2092	10.90
ISCO4	-2.6912	-1.67	12.8583	7.15
ISCO5	0.5547	0.38	9.4621	10.04
ISCO6	0.7134	0.29	5.9358	3.96
ISCO7	-0.5652	-0.52	4.2115	3.81
ISCO8	-1.0296	-0.85	3.0804	4.17
ISCO9	<i>Reference category</i>		<i>Reference category</i>	
LABOUR MARKET EXPERIENCE				
max. 0.5 years	6.2925	3.85	-2.9892	-1.00
0.5-1 years	2.8069	3.27	-3.0956	-1.21
1-2 years	1.9463	5.97	-3.7330	-1.91
2-3 years	1.7192	4.18	-5.3755	-3.15
3-5 years	1.0764	3.29	-3.5877	-2.47
5-10 years	1.4453	2.50	-3.1959	-2.34
10-15 years	1.0150	1.74	-2.9991	-2.03
15-20 years	0.8689	4.01	-0.3829	-0.24
20-25 years	1.1129	2.74	-0.1976	-0.15
25-30 years	1.6911	3.65	1.4521	1.05
30-35 years	0.1206	0.26	1.9610	3.31
35+ years	<i>Reference category</i>		<i>Reference category</i>	
Part-time employment	-0.2505	-0.54	-1.7516	-1.74
Temporary job or limited duration contract	5.5201	3.21	3.7024	2.33
SECTOR				
Agriculture	-0.9481	-0.70	-9.2387	-7.62
Industry	-0.4731	-0.68	-5.0004	-8.64
Services	<i>Reference category</i>		<i>Reference category</i>	
Constant	10.8966	9.93	-63.2803	-17.59
Number of obs.	290,469		5,572,387	
(Pseudo-) R ²	0.1040		0.0426	

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. The reference person is a married female of 32-36 years living in the UK, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.6.8
Estimation results for field of training (base outcome: social sciences business and law)

Outcome: Field of non-formal training (Multinomial Logit)								
	Educ& Lang.		Science & Engen.		Health		Services	
	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
Austria	0.1149	4.03	-0.0967	-4.29	-0.1650	-2.56	0.2787	7.35
Belgium	-0.0441	-1.15	0.2997	17.55	-0.2208	-2.95	-0.5017	-19.03
Bulgaria	0.5580	12.86	0.4108	14.05	-0.5390	-8.71	-0.0231	-0.61
Cyprus	0.1063	3.50	-0.1955	-7.30	-0.9824	-20.10	-0.2195	-6.24
Czech Republic	1.3119	12.62	-0.2813	-5.19	-0.5309	-2.62	0.0857	0.77
Germany	-0.4521	-8.70	-0.3081	-9.83	-0.2195	-2.74	-1.0651	-22.15
Estonia	-0.3046	-7.98	-0.3490	-13.77	-0.7430	-17.26	-0.3403	-7.82
Spain	0.4536	20.36	0.2035	4.80	-0.0615	-1.40	-0.2649	-4.68
France	-0.7993	-22.77	-0.1442	-6.87	-0.5023	-7.62	-0.5388	-13.64
Greece	0.3559	11.32	0.4474	13.80	-0.0370	-0.67	0.2916	6.47
Hungary	0.7545	15.78	-0.2236	-5.86	-0.3455	-5.56	-0.3184	-4.40
Italy	0.1543	2.83	-0.1088	-4.44	0.1386	2.18	-0.5279	-10.39
Lithuania	-0.2161	-4.15	0.0804	2.49	-0.4109	-7.57	-0.6751	-16.15
Luxembourg	0.1087	2.38	-0.0517	-2.24	-0.2234	-2.90	-0.2282	-5.32
Latvia	-0.1699	-3.59	-0.4911	-20.48	-0.6479	-13.65	-0.0669	-1.57
Netherlands	-1.0162	-38.55	-0.4599	-22.41	-0.7642	-10.72	-0.9694	-35.04
Poland	0.2756	4.97	0.1042	3.35	-0.5127	-9.24	-0.3958	-10.33
Romania	0.0935	1.48	0.6155	16.93	-0.2129	-3.78	-0.3361	-5.12
Slovakia	0.9533	15.95	0.0942	2.75	-0.3820	-4.64	0.3619	5.83
<i>United Kingdom</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
2003	-0.0074	-0.07	0.3046	4.44	-0.0466	-0.28	-0.0863	-0.69
2004	-0.0487	-0.45	0.1310	2.42	-0.0188	-0.30	-0.1722	-2.00
2005	0.0132	0.17	0.0784	2.31	-0.0218	-0.48	-0.1298	-3.12
2006	0.0322	0.47	0.1085	2.64	0.0379	1.12	-0.0625	-2.39
2007	0.0113	0.29	0.0620	2.98	-0.0009	-0.03	-0.0552	-2.98
2008	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	-0.5040	-4.52	0.4157	6.81	-0.6271	-7.25	0.3132	1.78
Age 17-21	0.0551	0.28	0.3669	3.27	-0.8068	-4.83	0.4144	2.85
Age 22-26	-0.0816	-0.74	0.0548	1.33	-0.3156	-3.84	0.1434	1.41
Age 27-31	0.0622	1.67	0.0362	1.19	-0.1332	-2.35	0.0754	2.09
Age 32-36	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 37-41	-0.0616	-1.58	0.0096	0.41	0.0603	2.25	-0.0638	-2.27
Age 42-46	-0.0780	-1.32	0.0592	1.59	0.1926	5.75	-0.0255	-0.56
Age 47-51	-0.0164	-0.19	0.0848	1.77	0.4611	7.37	-0.0261	-0.61
Age 52-56	0.0109	0.09	0.1875	2.44	0.7016	5.56	0.0681	1.10
Age 57-61	0.2686	1.69	0.2823	2.62	0.9866	6.29	0.1746	1.76
Age 62+	0.3884	2.52	0.3598	2.85	1.3257	5.54	0.1463	1.14
Max. ISCED 1	0.2521	0.74	0.4910	3.06	0.7042	1.81	1.1176	5.94
ISCED 2	-0.2752	-2.83	0.3234	5.27	0.3327	2.58	0.6904	6.52
ISCED 3	-0.2180	-2.81	0.1453	4.42	-0.1133	-1.10	0.3199	4.60
ISCED 4	-0.1422	-1.55	0.0564	0.72	0.2411	1.39	0.2973	2.63
ISCED 5-6	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	

Table A.6.8, continued

Outcome: Field of non-formal training (Multinomial Logit)								
	Educ& Lang.		Science & Engen.		Health		Services	
	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
Years since compl. educ.	0.0200	1.82	0.0182	2.50	0.0098	0.98	0.0213	3.33
Years since compl. educ. sq.	-0.0004	-2.21	-0.0003	-1.78	-0.0008	-2.51	-0.0004	-2.87
Marital status: Divorced	0.0395	0.75	0.0331	0.77	0.0076	0.10	0.0937	2.21
Marital status: Single	0.1345	2.79	0.0928	3.61	-0.0443	-1.30	0.1013	3.90
<i>Marital status: Married</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of persons living in household	0.0001	0.00	0.0081	0.70	0.0644	3.92	0.0287	1.28
Number of employed in household	0.0043	0.25	0.0068	0.46	-0.0584	-2.89	0.0094	0.48
Number of children (<=4 years) in household	-0.2200	-9.70	-0.0137	-0.47	-0.0588	-2.24	-0.0351	-1.06
ISCO0	0.2778	1.34	0.0702	0.49	-0.6585	-2.61	0.5652	2.72
ISCO1	-1.2573	-7.50	-1.3547	-8.98	-1.8263	-5.46	-2.1250	-11.48
ISCO2	-0.0589	-0.28	-0.3139	-2.22	-0.4016	-1.78	-1.5548	-8.10
ISCO3	-0.7715	-4.83	-0.5892	-3.83	-0.4459	-2.69	-1.4966	-17.76
ISCO4	-1.3006	-12.46	-0.9789	-6.74	-2.2879	-8.30	-1.8262	-16.52
ISCO5	-0.5863	-4.79	-0.6985	-12.81	0.1041	0.98	-0.3887	-5.83
ISCO6	0.2593	1.87	0.9499	3.33	0.2479	0.59	0.1974	1.46
ISCO7	-0.0450	-0.24	1.0749	5.27	0.3251	1.11	0.1649	1.47
ISCO8	-0.1478	-1.20	0.4120	3.05	0.2683	0.96	0.4679	5.37
<i>ISCO9</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
LABOUR MARKET EXP.								
max. 0.5 years	-0.3282	-2.94	-0.1916	-1.93	-0.1314	-0.95	0.0025	0.03
0.5-1 years	-0.1419	-1.49	-0.1067	-1.32	0.0458	0.36	0.0288	0.24
1-2 years	-0.1349	-1.65	-0.1432	-1.60	0.1897	1.16	0.0332	0.31
2-3 years	-0.1139	-1.18	-0.1015	-1.22	0.2344	1.34	0.1027	0.85
3-5 years	-0.0797	-1.17	-0.1348	-1.81	0.2586	1.55	0.1184	0.85
5-10 years	-0.0546	-0.66	-0.0232	-0.28	0.2294	1.54	0.1068	0.84
10-15 years	-0.0214	-0.22	0.0032	0.04	0.2762	2.00	0.0989	0.91
15-20 years	-0.0063	-0.08	-0.0084	-0.11	0.3368	2.16	0.1814	1.77
20-25 years	-0.0586	-0.61	0.0163	0.16	0.1858	1.68	0.1063	1.78
25-30 years	-0.1136	-1.52	-0.0759	-0.72	0.1400	1.36	0.1047	1.28
30-35 years	0.0153	0.24	0.0245	0.28	0.0962	0.90	0.0992	1.47
<i>35+ years</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Part-time job	0.4127	4.29	0.2217	2.13	0.3229	3.43	0.2511	2.11
Temporary contract	0.3106	4.39	0.1509	2.46	0.4285	3.54	0.1460	1.66
Sector: Agriculture	0.0438	0.34	0.7903	4.74	-0.5155	-2.23	0.3486	2.59
Sector: Industry	0.5008	8.68	0.5637	10.78	-0.6072	-3.70	0.2659	5.05
<i>Sector: Services</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Constant	0.6871	4.57	-0.2974	-2.05	0.3037	1.85	0.2763	2.02
Number of obs.				282,547				
Pseudo-R ²				0.1827				

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. – Results for unknown and general programs not reported. The reference person is a married female of 32-36 years living in the UK, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.6.9

Estimation results for level of formal education – Anglo-Saxon countries

	Outcome: Level of formal training (Probit)	
	Marg. Effect	t-value
Ireland	0.3677	7.56
2003	-0.0706	-6.68
2004	0.0034	9.05
2005	-0.0144	-2.95
2006	-0.0291	-11.34
2007	-0.0022	-0.78
2008	<i>Reference category</i>	
Male	0.0596	29.61
Age 17-21	-0.3223	-7.06
Age 22-26	0.1762	3.48
Age 27-31	0.0046	2.41
Age 32-36	<i>Reference category</i>	
Age 37-41	-0.0148	-2.12
Age 42-46	-0.0594	-9.72
Age 47-51	-0.0667	-5.96
Age 52-56	-0.1106	-6.56
Age 57-61	-0.1655	-8.06
Age 62+	-0.2757	-6.51
ISCED 1	-0.4525	-13.21
ISCED 2	-0.4552	-14.19
ISCED 3	-0.1933	-18.51
ISCED 4	-0.2957	-2.10
ISCED 5-6	<i>Reference category</i>	
Years since compl. educ.	-0.0080	-20.59
Years since compl. educ. sq.	0.0001	58.99
Divorced or widowed	-0.0022	-0.31
Single	0.0160	1.26
Married	<i>Reference category</i>	
Number of persons living in household	0.0015	0.17
Number of employed in household	-0.0034	-2.08
Number of children (<=4 years) in household	-0.0382	-4.62

Table A.6.9, continued

	Outcome: Level of formal training (Probit)	
	Marg. Effect	t-value
ISCO0	0.1443	6.11
ISCO1	0.2043	36.36
ISCO2	0.2380	43.52
ISCO3	0.2092	106.72
ISCO4	0.0738	2.27
ISCO5	0.0907	42.19
ISCO6	-0.0916	-1.05
ISCO7	-0.2314	-1.99
ISCO8	-0.0249	-0.56
ISCO9	<i>Reference category</i>	
LABOUR MARKET EXPERIENCE		
max. 0.5 years	-0.1716	-4.00
0.5-1 years	-0.1654	-4.32
1-2 years	-0.1780	-3.53
2-3 years	-0.1264	-3.01
3-5 years	-0.1022	-1.65
5-10 years	-0.1089	-2.43
10-15 years	-0.0692	-1.35
15-20 years	-0.0950	-1.59
20-25 years	-0.0742	-1.17
25-30 years	-0.0977	-8.36
30-35 years	-0.0586	-2.64
35+ years	<i>Reference category</i>	
Part-time employment	0.1503	82.46
Temporary job or limited duration contract	0.0821	2.14
SECTOR		
Agriculture	-0.1441	-3.00
Industry	-0.0472	-4.20
Services	<i>Reference category</i>	
Number of obs.	26,788	
Pseudo-R ²	0.2169	

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. The reference person is a married female of 32-36 years living in the UK, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.6.10

Estimation results for the intensity of non-formal training – Anglo-Saxon countries

	Outcome: Intensity of non-formal training			
	Participants only (OLS)		All persons (Tobit)	
	Coefficient	t-value	Coefficient	t-value
Ireland	1.1835	1.93	-1.3023	-1.79
2003	0.2347	1.87	11.4322	105.93
2004	-0.2327	-2.32	9.4199	34.03
2005	-0.5948	-16.29	7.8980	68.80
2006	-0.1833	-4.19	5.7622	46.03
2007	-1.0959	-18.60	2.4795	17.88
2008	<i>Reference category</i>		<i>Reference category</i>	
Male	3.1979	193.97	-3.1056	-149.45
Age 17-21	4.9797	30.07	7.4169	43.40
Age 22-26	2.6751	104.10	-1.5038	-34.60
Age 27-31	0.3968	13.14	-0.3206	-1.53
Age 32-36	<i>Reference category</i>		<i>Reference category</i>	
Age 37-41	-0.3990	-8.19	3.1476	49.30
Age 42-46	-1.0056	-9.90	2.9185	29.86
Age 47-51	-2.0908	-11.94	2.9042	20.73
Age 52-56	-1.7246	-13.12	2.6216	19.51
Age 57-61	-3.0375	-26.05	0.3677	4.17
Age 62+	-3.6249	-16.62	-2.2633	-25.78
ISCED 1	-1.5850	-3.33	-13.1878	-13.66
ISCED 2	-1.1799	-0.30	-8.1164	-4.33
ISCED 3	-0.0805	-0.58	-5.9730	-116.54
ISCED 4	2.3636	0.72	-1.2608	-0.23
ISCED 5-6	<i>Reference category</i>		<i>Reference category</i>	
Years since compl. educ.	-0.0815	-23.93	-0.3659	-82.08
Years since compl. educ. sq.	0.0020	10.13	0.0041	81.99
Divorced or widowed	1.5611	51.92	0.5953	28.15
Single	0.2059	9.35	-1.7037	-83.30
Married	<i>Reference category</i>		<i>Reference category</i>	
Number of persons living in household	0.2437	47.84	-0.8112	-11.52
Number of employed in household	0.0568	7.65	0.2662	44.71
Number of children (<=4 years) in household	0.2757	17.72	-1.8955	-16.25
ISCO0	24.7183	81.49	23.6801	875.96
ISCO1	-1.5795	-21.89	6.2834	544.84
ISCO2	-2.1033	-12.65	10.5296	205.34
ISCO3	-1.0806	-46.83	10.6512	91.96
ISCO4	-1.2705	-92.88	3.1135	38.45
ISCO5	1.6989	10.91	6.1591	25.19
ISCO6	-3.0040	-3.83	2.4626	10.07
ISCO7	1.7958	4.13	3.1557	34.67
ISCO8	-1.9746	-19.05	0.3486	12.15
ISCO9	<i>Reference category</i>		<i>Reference category</i>	

Table A.6.10, continued

	Outcome: Intensity of non-formal training			
	Participants only (OLS)		All persons (Tobit)	
	Coefficient	t-value	Coefficient	t-value
LABOUR MARKET EXPERIENCE				
max. 0.5 years	2.9608	21.15	3.1634	105.70
0.5-1 years	-0.2081	-0.80	2.1550	2117.72
1-2 years	-1.3754	-4.25	-0.1460	-0.56
2-3 years	-1.4440	-3.71	-2.1276	-7.81
3-5 years	-1.1969	-5.15	-0.9206	-9.51
5-10 years	-0.9299	-5.58	-0.3546	-11.06
10-15 years	-1.1264	-4.52	-0.5008	-25.75
15-20 years	-1.3349	-5.79	0.0731	1.21
20-25 years	-1.0392	-6.49	1.4857	168.96
25-30 years	-0.8425	-3.37	1.7644	12.96
30-35 years	-1.6877	-5.45	0.6748	10.87
35+ years	<i>Reference category</i>		<i>Reference category</i>	
Part-time employment	-0.8608	-19.78	-0.2415	-47.90
Temporary job or limited duration contract	0.0065	0.10	0.0240	0.23
SECTOR				
Agriculture	-2.3750	-3.59	-8.7081	-25.05
Industry	0.4929	147.78	-3.1558	-156.00
Services	<i>Reference category</i>		<i>Reference category</i>	
Constant	13.0044	29.03	-47.0000	-938.20
Number of obs.	14,441		193,875	
(Pseudo-) R ²	0.0626		0.0382	

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. The reference person is a married female of 32-36 years living in the UK, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.6.11

Estimation results for level of formal education – Continental countries

	Outcome: Level of formal training					
	Ordered Probit		Marginal Effect		Marginal Effect	
	Coefficient	t-value	Pr(Y=1)	t-value	Pr(Y=3)	t-value
<i>Austria</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Belgium	-0.4051	-3.46	0.0313	1.78	-0.0827	-3.98
Germany	-0.2926	-4.40	0.0226	1.56	-0.0598	-3.49
France	-0.2497	-1.94	0.0193	1.07	-0.0510	-1.71
Luxembourg	-0.3360	-5.81	0.0260	1.99	-0.0686	-4.44
Netherlands	-0.8958	-7.45	0.0693	2.83	-0.1830	-30.99
2003	-0.0723	-3.19	0.0056	1.41	-0.0148	-2.82
2004	-0.0303	-1.28	0.0023	1.19	-0.0062	-1.27
2005	-0.0244	-1.75	0.0019	2.77	-0.0050	-1.79
2006	-0.0240	-0.83	0.0019	1.09	-0.0049	-0.83
2007	-0.0243	-2.75	0.0019	2.29	-0.0050	-3.56
<i>2008</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	0.1182	1.45	-0.0091	-1.16	0.0241	1.29
Age 17-21	0.0566	0.90	-0.0044	-0.85	0.0116	0.92
Age 22-26	0.2666	1.35	-0.0206	-0.90	0.0544	1.32
Age 27-31	0.2090	3.06	-0.0162	-1.34	0.0427	2.50
Age 32-36	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 37-41	-0.3392	-4.24	0.0262	2.16	-0.0693	-5.72
Age 42-46	-0.4775	-4.18	0.0369	2.36	-0.0975	-6.14
Age 47-51	-0.5537	-6.74	0.0428	1.85	-0.1131	-5.32
Age 52-56	-0.8908	-5.88	0.0689	2.46	-0.1820	-8.73
Age 57-61	-1.3390	-7.89	0.1036	2.63	-0.2735	-10.91
Age 62+	-1.3229	-5.54	0.1023	1.80	-0.2702	-3.92
ISCED 1	-4.5161	-7.12	0.3494	2.42	-0.9224	-6.38
ISCED 2	-2.1886	-7.40	0.1693	1.97	-0.4470	-6.66
ISCED 3	-1.1710	-5.54	0.0906	2.05	-0.2392	-6.77
ISCED 4	-0.4655	-1.80	0.0360	1.08	-0.0951	-1.73
ISCED 5-6	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Years since compl. educ.	0.0517	1.81	-0.0040	-1.85	0.0106	2.18
Years since compl. educ. sq.	-0.0016	-2.23	0.0001	2.50	-0.0003	-2.85
Divorced or widowed	-0.0013	-0.06	0.0001	0.06	-0.0003	-0.06
Single	0.1378	4.35	-0.0107	-1.66	0.0281	3.55
Married	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of persons living in household	-0.0609	-8.22	0.0047	2.94	-0.0124	-11.13
Number of employed in household	-0.0044	-0.55	0.0003	0.46	-0.0009	-0.54
Number of children (<=4 years) in household	-0.0536	-1.23	0.0041	0.95	-0.0109	-1.28
ISCO0	0.4883	1.70	-0.0378	-4.76	0.0997	2.00
ISCO1	0.5098	3.13	-0.0394	-1.81	0.1041	2.49
ISCO2	0.7479	6.51	-0.0579	-2.94	0.1528	5.37
ISCO3	0.2476	4.21	-0.0192	-3.15	0.0506	3.85
ISCO4	0.2800	6.33	-0.0217	-3.51	0.0572	6.84
ISCO5	0.1080	0.58	-0.0084	-0.70	0.0221	0.58
ISCO6	-0.0523	-0.20	0.0040	0.18	-0.0107	-0.20
ISCO7	-0.0816	-0.30	0.0063	0.27	-0.0167	-0.30
ISCO8	0.0075	0.03	-0.0006	-0.03	0.0015	0.03
ISCO9	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	

Table A.6.11, continued

	Outcome: Level of formal training					
	Ordered Probit		Marginal Effect		Marginal Effect	
	Coefficient	t-value	Pr(Y=1)	t-value	Pr(Y=3)	t-value
LABOUR MARKET EXPERIENCE						
max. 0.5 years	-0.0788	-0.26	0.0061	0.29	-0.0161	-0.27
0.5-1 years	-0.2157	-0.76	0.0167	0.97	-0.0441	-0.82
1-2 years	-0.1653	-0.51	0.0128	0.63	-0.0338	-0.54
2-3 years	-0.1858	-0.59	0.0144	0.73	-0.0380	-0.63
3-5 years	-0.1446	-0.49	0.0112	0.58	-0.0295	-0.51
5-10 years	0.0044	0.02	-0.0003	-0.02	0.0009	0.02
10-15 years	-0.1145	-0.49	0.0089	0.58	-0.0234	-0.51
15-20 years	-0.0243	-0.17	0.0019	0.18	-0.0050	-0.17
20-25 years	0.1120	1.03	-0.0087	-0.88	0.0229	0.96
25-30 years	0.0253	0.23	-0.0020	-0.22	0.0052	0.23
30-35 years	0.3397	2.49	-0.0263	-4.38	0.0694	3.07
35+ years	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Part-time employment	0.8620	3.23	-0.0667	-8.33	0.1761	4.10
Temporary job or limited duration contract	-0.4612	-2.14	0.0357	9.30	-0.0942	-2.60
SECTOR						
Agriculture	-0.0182	-0.19	0.0014	0.20	-0.0037	-0.19
Industry	-0.0205	-0.64	0.0016	0.55	-0.0042	-0.60
Services	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of obs.			108,589			
Pseudo-R ²			0.4119			

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. The reference person is a married female of 32-36 years living in Austria, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.6.12

Estimation results for the intensity of non-formal training – Continental countries

	Outcome: Intensity of non-formal training			
	Participants only (OLS)		All persons (Tobit)	
	Coefficient	t-value	Coefficient	t-value
<i>Austria</i>	<i>Reference category</i>		<i>Reference category</i>	
Belgium	1.2694	3.47	-16.0909	-11.20
Germany	2.6379	12.27	-19.4613	-10.69
France	14.3008	45.74	-24.1553	-7.26
Luxembourg	1.0125	2.37	-8.7501	-4.70
Netherlands	2.4830	6.21	-6.8955	-4.92
2003	4.2392	4.64	-21.3545	-1.10
2004	1.8821	5.86	-12.7071	-0.75
2005	2.0155	3.60	-12.8997	-0.85
2006	0.6745	0.97	-1.5175	-3.24
2007	1.3750	6.76	-1.5518	-2.79
<i>2008</i>	<i>Reference category</i>		<i>Reference category</i>	
Male	2.3947	1.38	-0.5464	-1.01
Age 17-21	4.5247	1.54	-2.0807	-1.06
Age 22-26	3.7695	2.56	-2.6215	-0.96
Age 27-31	-0.5493	-0.47	-2.4887	-0.90
Age 32-36	<i>Reference category</i>		<i>Reference category</i>	
Age 37-41	-2.1595	-3.16	-0.4176	-0.40
Age 42-46	-2.3956	-2.41	-0.3045	-0.19
Age 47-51	-2.6259	-2.04	-0.8041	-0.39
Age 52-56	-2.5802	-1.83	-1.2621	-0.39
Age 57-61	-2.4759	-3.31	-6.5111	-1.45
Age 62+	-1.0050	-1.09	-9.8307	-2.01
ISCED 1	2.1700	1.70	-22.2918	-3.83
ISCED 2	1.7115	9.69	-13.3925	-4.39
ISCED 3	1.4419	1.37	-9.9110	-4.46
ISCED 4	2.8188	2.10	-2.9002	-2.72
ISCED 5-6	<i>Reference category</i>		<i>Reference category</i>	
Years since compl. educ.	0.1414	0.94	-0.3420	-2.01
Years since compl. educ. sq.	-0.0068	-1.68	-0.0054	-2.29
Divorced or widowed	0.9102	2.87	1.8792	2.62
Single	0.7698	2.14	-0.6993	-0.90
Married	<i>Reference category</i>		<i>Reference category</i>	
Number of persons living in household	0.3598	1.50	-0.9320	-7.72
Number of employed in household	-1.0724	-4.72	-0.9150	-2.34
Number of children (<=4 years) in household	-0.7674	-0.95	-3.2334	-5.00

Table A.6.12, continued

	Outcome: Intensity of non-formal training			
	Participants only (OLS)		All persons (Tobit)	
	Coefficient	t-value	Coefficient	t-value
ISCO0	26.8160	8.75	29.6488	6.00
ISCO1	-5.3031	-2.45	23.2840	13.76
ISCO2	-4.7470	-2.16	25.1625	7.98
ISCO3	-4.1253	-1.37	22.9066	26.00
ISCO4	-6.2545	-2.31	15.7223	9.36
ISCO5	-1.8713	-0.55	11.2676	5.74
ISCO6	-3.5277	-1.52	5.1962	1.39
ISCO7	-3.8905	-2.27	6.5389	3.03
ISCO8	-3.0647	-1.14	4.6100	5.35
ISCO9	<i>Reference category</i>		<i>Reference category</i>	
LABOUR MARKET EXPERIENCE				
max. 0.5 years	8.4226	3.39	-9.0064	-3.13
0.5-1 years	2.7065	2.36	-6.8407	-2.81
1-2 years	1.5688	2.02	-6.8168	-2.73
2-3 years	0.5726	0.97	-7.7504	-2.90
3-5 years	0.2413	0.67	-5.9369	-3.25
5-10 years	1.0468	1.54	-5.2816	-4.69
10-15 years	0.2616	0.38	-5.5067	-5.36
15-20 years	-0.2397	-0.39	-2.6455	-1.70
20-25 years	0.4734	1.15	-2.6748	-3.76
25-30 years	1.2857	8.60	0.7637	0.39
30-35 years	-0.4648	-0.77	1.7101	2.71
35+ years	<i>Reference category</i>		<i>Reference category</i>	
Part-time employment	0.0273	0.03	-3.2963	-3.93
Temporary job or limited duration contract	8.0391	2.35	6.0124	3.93
SECTOR				
Agriculture	1.0538	0.43	-7.0207	-7.46
Industry	0.7024	0.72	-4.6549	-4.20
Services	<i>Reference category</i>		<i>Reference category</i>	
Constant	16.5103	8.20	-46.7748	-17.96
Number of obs.	144,124		1,819,859	
(Pseudo-) R ²	0.1078		0.0309	

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. The reference person is a married female of 32-36 years living in Austria, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.6.13

Estimation results for level of formal education – Central and Eastern European countries

	Outcome: Level of formal training					
	Ordered Probit		Marginal Effect		Marginal Effect	
	Coefficient	t-value	Pr(Y=1)	t-value	Pr(Y=3)	t-value
Bulgaria	1.1062	14.10	-0.0094	-2.14	0.1710	24.59
Czech Republic	-0.8780	-31.52	0.0074	2.00	-0.1357	-43.02
Estonia	-0.5230	-3.91	0.0044	3.77	-0.0808	-4.36
Hungary	-0.3119	-19.31	0.0026	2.02	-0.0482	-18.84
Lithuania	0.4600	10.07	-0.0039	-1.83	0.0711	10.70
Latvia	0.4565	8.74	-0.0039	-2.06	0.0706	10.97
Poland	-0.2881	-9.57	0.0024	1.95	-0.0445	-8.76
Romania	0.3199	10.48	-0.0027	-1.99	0.0494	12.94
Slovenia	-0.1344	-4.76	0.0011	1.46	-0.0208	-4.30
<i>Slovakia</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
2003	-0.3289	-2.68	0.0028	2.15	-0.0508	-2.77
2004	-0.2031	-5.08	0.0017	2.16	-0.0314	-5.65
2005	-0.1466	-3.24	0.0012	1.99	-0.0227	-3.36
2006	-0.1362	-2.86	0.0012	2.12	-0.0211	-3.00
2007	-0.0889	-2.53	0.0008	2.01	-0.0137	-2.63
2008	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	-0.0232	-0.48	0.0002	0.59	-0.0036	-0.49
Age 17-21	-0.4251	-4.09	0.0036	1.90	-0.0657	-4.31
Age 22-26	0.1123	1.13	-0.0010	-1.25	0.0174	1.13
Age 27-31	0.2203	1.96	-0.0019	-2.15	0.0340	1.98
Age 32-36	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 37-41	0.1937	2.67	-0.0016	-2.42	0.0299	2.73
Age 42-46	0.3581	3.07	-0.0030	-2.97	0.0553	3.18
Age 47-51	0.5802	2.25	-0.0049	-4.48	0.0897	2.35
Age 52-56	1.0072	2.32	-0.0085	-3.99	0.1557	2.42
Age 57-61	0.6137	0.90	-0.0052	-1.54	0.0949	0.92
Age 62+	7.4663	8.10	-0.0632	-2.36	1.1540	8.92
ISCED 1	-4.1219	-5.65	0.0349	2.35	-0.6371	-6.71
ISCED 2	-3.1250	-5.72	0.0264	2.65	-0.4830	-6.91
ISCED 3	-1.0365	-4.55	0.0088	2.86	-0.1602	-4.94
ISCED 4	-0.6765	-4.09	0.0057	2.67	-0.1046	-4.34
ISCED 5-6	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Years since compl. educ.	0.0271	1.26	-0.0002	-1.86	0.0042	1.29
Years since compl. educ. sq.	-0.0021	-2.30	0.0000	3.11	-0.0003	-2.38
Divorced or widowed	-0.2698	-2.81	0.0023	2.51	-0.0417	-2.86
Single	0.1247	3.01	-0.0011	-2.00	0.0193	3.07
Married	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of persons living in household	-0.0454	-2.63	0.0004	1.28	-0.0070	-2.58
Number of employed in household	0.0741	7.23	-0.0006	-2.25	0.0115	7.87
Number of children (<=4 years) in household	-0.1105	-2.28	0.0009	1.59	-0.0171	-2.28

Table A.6.13, continued

	Outcome: Level of formal training					
	Ordered Probit		Marginal Effect		Marginal Effect	
	Coefficient	t-value	Pr(Y=1)	t-value	Pr(Y=3)	t-value
ISCO0	0.5295	7.94	-0.0045	-1.80	0.0818	7.54
ISCO1	1.2350	17.91	-0.0104	-1.88	0.1909	15.20
ISCO2	1.4820	18.17	-0.0125	-2.01	0.2290	15.80
ISCO3	1.0656	18.48	-0.0090	-2.10	0.1647	21.58
ISCO4	0.8411	19.67	-0.0071	-2.10	0.1300	23.36
ISCO5	0.2104	7.29	-0.0018	-1.82	0.0325	6.91
ISCO6	0.1014	0.61	-0.0009	-0.78	0.0157	0.62
ISCO7	-0.0994	-2.65	0.0008	1.96	-0.0154	-2.71
ISCO8	-0.0368	-0.75	0.0003	0.60	-0.0057	-0.74
ISCO9	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
LABOUR MARKET EXPERIENCE						
max. 0.5 years	-0.7149	-0.77	0.0060	0.65	-0.1105	-0.77
0.5-1 years	-0.6378	-0.70	0.0054	0.60	-0.0986	-0.69
1-2 years	-0.6378	-0.70	0.0054	0.61	-0.0986	-0.70
2-3 years	-0.5363	-0.59	0.0045	0.53	-0.0829	-0.59
3-5 years	-0.5926	-0.65	0.0050	0.58	-0.0916	-0.65
5-10 years	-0.6498	-0.72	0.0055	0.64	-0.1004	-0.72
10-15 years	-0.5557	-0.60	0.0047	0.55	-0.0859	-0.60
15-20 years	-0.4508	-0.50	0.0038	0.46	-0.0697	-0.49
20-25 years	-0.5000	-0.53	0.0042	0.49	-0.0773	-0.53
25-30 years	-0.4251	-0.49	0.0036	0.45	-0.0657	-0.48
30-35 years	-0.3953	-0.46	0.0033	0.45	-0.0611	-0.46
35+ years	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Part-time employment	0.2275	2.52	-0.0019	-1.29	0.0352	2.49
Temporary job or limited duration contract	0.0191	0.25	-0.0002	-0.23	0.0029	0.25
SECTOR						
Agriculture	-0.0460	-0.43	0.0004	0.37	-0.0071	-0.43
Industry	-0.0844	-4.66	0.0007	1.56	-0.0130	-4.58
Services	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of obs.	60,078					
Pseudo-R ²	0.4166					

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. The reference person is a married female of 32-36 years living in Slovakia, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.6.14

Estimation results for the intensity of non-formal training – Central and Eastern European countries

	Outcome: Intensity of non-formal training			
	Participants only (OLS)		All persons (Tobit)	
	Coefficient	t-value	Coefficient	t-value
Bulgaria	10.6703	18.38	-44.8121	-9.71
Czech Republic	-2.1612	-4.56	8.1285	6.94
Estonia	0.6060	1.78	-2.1481	-3.60
Hungary	7.4634	16.35	-14.5476	-10.05
Lithuania	4.1321	6.10	-8.7881	-8.91
Latvia	3.4074	7.41	-3.4322	-5.59
Poland	2.4341	4.03	-6.0495	-5.43
Romania	14.0451	94.61	-38.4992	-10.71
Slovenia	1.2940	7.54	19.9469	14.36
<i>Slovakia</i>	<i>Reference category</i>		<i>Reference category</i>	
2003	3.7407	1.84	1.4759	0.33
2004	3.1903	2.10	6.7985	1.84
2005	2.3048	1.88	0.4646	0.13
2006	1.9795	3.05	-1.3062	-0.40
2007	0.9466	2.24	-1.0650	-0.33
2008	<i>Reference category</i>		<i>Reference category</i>	
Male	2.1375	8.68	-0.2096	-0.35
Age 17-21	-0.5811	-0.46	5.6767	2.80
Age 22-26	0.5285	0.32	-3.7367	-4.70
Age 27-31	0.2205	0.56	-2.1382	-1.77
Age 32-36	<i>Reference category</i>		<i>Reference category</i>	
Age 37-41	0.8678	2.33	0.8799	1.08
Age 42-46	1.5365	4.76	1.7107	3.51
Age 47-51	1.5897	2.70	1.8440	2.33
Age 52-56	2.2608	3.79	3.2230	2.73
Age 57-61	2.4389	3.17	3.1706	1.90
Age 62+	1.0038	0.87	3.2478	1.09
ISCED 1	2.6816	0.58	-12.4987	-3.38
ISCED 2	1.0948	0.91	-14.0241	-12.73
ISCED 3	0.1675	0.39	-9.1425	-7.02
ISCED 4	0.3561	0.49	-6.2180	-4.42
ISCED 5-6	<i>Reference category</i>		<i>Reference category</i>	
Years since compl. educ.	-0.1074	-2.37	-0.1866	-2.87
Years since compl. educ. sq.	-0.0005	-0.43	-0.0095	-4.36
Divorced or widowed	0.6278	1.34	0.3820	0.54
Single	0.1820	0.39	0.3324	0.57
Married	<i>Reference category</i>		<i>Reference category</i>	
Number of persons living in household	-0.1697	-0.79	-2.1003	-5.05
Number of employed in household	0.4201	1.34	0.1159	0.33
Number of children (<=4 years) in household	0.4076	1.07	0.0386	0.06

Table A.6.14, continued

	Outcome: Intensity of non-formal training			
	Participants only (OLS)		All persons (Tobit)	
	Coefficient	t-value	Coefficient	t-value
ISCO0	15.6029	5.40	30.6412	12.05
ISCO1	0.0891	0.06	30.8630	12.08
ISCO2	1.2861	0.70	29.6061	11.02
ISCO3	1.3164	0.72	25.6325	13.03
ISCO4	0.0160	0.01	19.7176	9.18
ISCO5	1.7428	0.85	9.3131	5.09
ISCO6	-1.0142	-0.70	8.0474	2.32
ISCO7	3.2813	1.22	5.9475	3.36
ISCO8	2.1846	0.98	8.2732	3.59
ISCO9	<i>Reference category</i>		<i>Reference category</i>	
LABOUR MARKET EXPERIENCE				
max. 0.5 years	3.7219	4.75	7.2368	2.43
0.5-1 years	1.5949	1.60	1.9654	0.75
1-2 years	-0.0330	-0.05	-1.4510	-1.06
2-3 years	-0.6746	-0.92	-2.8106	-2.07
3-5 years	-1.8694	-2.01	-1.7078	-0.95
5-10 years	-1.1132	-1.45	-1.7735	-1.09
10-15 years	-1.1023	-1.49	-0.7153	-0.56
15-20 years	-1.4517	-2.08	0.3973	0.29
20-25 years	-2.4347	-2.57	-0.3511	-0.26
25-30 years	-2.1939	-1.67	-0.0058	-0.01
30-35 years	-1.1791	-1.62	0.6328	0.69
35+ years	<i>Reference category</i>		<i>Reference category</i>	
Part-time employment	1.2096	1.45	0.1237	0.12
Temporary job or limited duration contract	-0.9975	-1.88	-0.1756	-0.22
SECTOR				
Agriculture	-2.1274	-1.67	-8.2520	-4.10
Industry	-1.1413	-2.94	-4.8248	-5.36
Services	<i>Reference category</i>		<i>Reference category</i>	
Constant	11.6517	5.31	-67.7753	-7.96
Number of obs.	52,648		1,768,627	
(Pseudo-) R ²	0.0695		0.0848	

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. The reference person is a married female of 32-36 years living in Slovakia, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.6.15
Estimation results for level of formal education – Mediterranean countries

	Outcome: Level of formal training					
	Ordered Probit		Marginal Effect		Marginal Effect	
	Coefficient	t-value	Pr(Y=1)	t-value	Pr(Y=3)	t-value
Italy	0.0377	0.57	-0.0012	-0.50	0.0043	0.55
Greece	-0.4461	-5.56	0.0141	4.59	-0.0513	-8.16
Cyprus	0.2167	4.26	-0.0068	-2.10	0.0249	3.54
Spain	-0.1819	-2.38	0.0057	4.61	-0.0209	-2.77
<i>Portugal</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
2003	0.0450	0.73	-0.0014	-0.60	0.0052	0.71
2004	-0.0198	-0.20	0.0006	0.21	-0.0023	-0.20
2005	-0.0230	-2.95	0.0007	1.83	-0.0026	-2.63
2006	-0.0213	-1.10	0.0007	1.24	-0.0024	-1.11
2007	-0.0349	-1.72	0.0011	1.75	-0.0040	-1.75
2008	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	0.2001	6.19	-0.0063	-2.05	0.0230	4.63
Age 17-21	-0.5169	-15.00	0.0163	2.51	-0.0595	-8.54
Age 22-26	-0.0404	-0.35	0.0013	0.32	-0.0046	-0.34
Age 27-31	0.0189	0.17	-0.0006	-0.17	0.0022	0.17
Age 32-36	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 37-41	-0.0928	-1.12	0.0029	1.69	-0.0107	-1.16
Age 42-46	-0.0775	-0.67	0.0024	0.84	-0.0089	-0.69
Age 47-51	-0.2380	-4.02	0.0075	1.77	-0.0274	-3.25
Age 52-56	-0.0196	-0.12	0.0006	0.11	-0.0023	-0.12
Age 57-61	-0.4205	-3.68	0.0133	1.66	-0.0484	-3.04
Age 62+	0.0001	0.00	0.0000	0.00	0.0000	0.00
ISCED1	-5.5537	-6.07	0.1753	5.31	-0.6388	-9.13
ISCED2	-3.0950	-12.03	0.0977	3.86	-0.3560	-33.62
ISCED3	-0.6340	-6.11	0.0200	2.06	-0.0729	-4.77
ISCED4	-0.6868	-1.74	0.0217	1.19	-0.0790	-1.65
ISCED5 or ISCED6	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Years since compl. educ.	0.0222	2.08	-0.0007	-6.80	0.0026	2.32
Years since compl. educ. sq.	-0.0009	-2.50	0.0000	13.27	-0.0001	-2.87
Divorced or widowed	-0.2217	-1.52	0.0070	1.03	-0.0255	-1.43
Single	0.0740	1.18	-0.0023	-1.48	0.0085	1.21
Married	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of persons living in household	-0.0249	-4.54	0.0008	2.36	-0.0029	-3.90
Number of employed in household	0.0466	3.00	-0.0015	-1.50	0.0054	2.58
Number of children (<=4 years) in household	-0.2232	-1.29	0.0070	0.91	-0.0257	-1.22
ISCO0	0.0369	0.12	-0.0012	-0.12	0.0042	0.12
ISCO1	0.8758	5.07	-0.0276	-4.61	0.1007	5.63
ISCO2	0.8383	16.22	-0.0265	-2.53	0.0964	8.73
ISCO3	0.5767	12.68	-0.0182	-2.43	0.0663	7.39
ISCO4	0.5944	8.15	-0.0188	-3.16	0.0684	7.32
ISCO5	0.2547	15.00	-0.0080	-2.61	0.0293	8.53
ISCO6	-0.1295	-3.47	0.0041	2.40	-0.0149	-3.22
ISCO7	-0.0990	-1.22	0.0031	1.81	-0.0114	-1.28
ISCO8	0.1213	1.93	-0.0038	-1.18	0.0140	1.77
ISCO9	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	

Table A.6.15, continued

	Outcome: Level of formal training					
	Ordered Probit		Marginal Effect		Marginal Effect	
	Coefficient	t-value	Pr(Y=1)	t-value	Pr(Y=3)	t-value
LABOUR MARKET EXPERIENCE						
max. 0.5 years	-0.2550	-2.27	0.0081	2.22	-0.0293	-2.21
0.5-1 years	-0.2758	-2.48	0.0087	2.08	-0.0317	-2.37
1-2 years	-0.1581	-1.32	0.0050	1.49	-0.0182	-1.32
2-3 years	-0.1247	-0.65	0.0039	0.76	-0.0143	-0.66
3-5 years	-0.2729	-2.65	0.0086	2.21	-0.0314	-2.52
5-10 years	-0.2416	-2.42	0.0076	1.54	-0.0278	-2.17
10-15 years	-0.0716	-0.86	0.0023	0.69	-0.0082	-0.82
15-20 years	-0.1062	-1.20	0.0034	1.33	-0.0122	-1.20
20-25 years	-0.0357	-0.50	0.0011	0.52	-0.0041	-0.50
25-30 years	0.1013	1.89	-0.0032	-1.39	0.0117	1.89
30-35 years	0.2044	1.41	-0.0065	-2.08	0.0235	1.53
35+ years	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Part-time employment	0.1330	2.28	-0.0042	-5.58	0.0153	2.52
Temporary job or limited duration contract	-0.0487	-1.31	0.0015	0.95	-0.0056	-1.27
SECTOR						
Agriculture	0.2470	5.41	-0.0078	-1.93	0.0284	4.16
Industry	-0.1076	-3.23	0.0034	3.51	-0.0124	-3.30
Services	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Number of obs.	49,022					
Pseudo-R ²	0.5662					

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. The reference person is a married female of 32-36 years living in Portugal, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.6.16

Estimation results for the intensity of non-formal training – Mediterranean countries

Outcome: Intensity of non-formal training				
	Participants only (OLS)		All persons (Tobit)	
	Coefficient	t-value	Coefficient	t-value
Italy	-5.2992	-27.84	15.2762	6.36
Greece	2.5229	3.64	-1.8977	-0.68
Cyprus	-7.9810	-47.43	31.5151	5.49
Spain	2.5716	8.40	26.5551	11.94
<i>Portugal</i>	<i>Reference category</i>		<i>Reference category</i>	
2003	1.7021	1.92	-40.0361	-1.23
2004	1.7132	3.40	-16.6156	-0.78
2005	0.0844	0.08	-3.3888	-3.00
2006	0.1612	0.26	-1.8736	-2.50
2007	0.3856	1.19	0.0514	0.05
2008	<i>Reference category</i>		<i>Reference category</i>	
Male	2.1960	14.40	-2.2024	-6.09
Age 17-21	-2.2130	-6.39	7.0905	5.56
Age 22-26	0.1260	0.53	-1.1745	-2.99
Age 27-31	0.3191	0.69	-1.6334	-2.02
Age 32-36	<i>Reference category</i>		<i>Reference category</i>	
Age 37-41	0.2540	2.83	4.7760	5.20
Age 42-46	0.6800	3.20	6.8975	8.06
Age 47-51	0.1633	2.32	9.4718	11.81
Age 52-56	-0.2925	-2.71	8.7991	7.03
Age 57-61	-0.2540	-0.38	6.1282	2.50
Age 62+	-0.1973	-1.32	2.1249	0.62
ISCED 1	-3.4439	-8.56	-22.0085	-18.35
ISCED 2	-0.1041	-0.34	-14.7039	-48.68
ISCED 3	-0.7026	-1.39	-6.3597	-17.11
ISCED 4	-1.2768	-0.97	-0.0634	-0.06
ISCED 5-6	<i>Reference category</i>		<i>Reference category</i>	
Years since compl. educ.	-0.1328	-1.69	-0.5320	-5.96
Years since compl. educ. sq.	0.0012	0.59	-0.0035	-8.80
Divorced or widowed	0.9727	2.13	3.0173	6.21
Single	2.0742	3.00	0.1343	0.25
Married	<i>Reference category</i>		<i>Reference category</i>	
Number of persons living in household	0.3773	4.56	-2.3861	-14.46
Number of employed in household	-0.0801	-0.66	1.2644	3.88
Number of children (<=4 years) in household	-0.3710	-8.79	-1.0344	-2.59
ISCO0	15.3179	3.92	10.6109	2.73
ISCO1	-0.7197	-0.92	23.8875	8.90
ISCO2	-0.4353	-1.33	23.5538	17.77
ISCO3	-0.0842	-0.21	19.8043	13.69
ISCO4	0.4226	0.48	11.3417	5.97
ISCO5	3.0251	5.36	8.3186	13.89
ISCO6	6.6133	7.49	10.4223	6.24
ISCO7	1.6890	4.05	3.4728	9.57
ISCO8	0.7277	0.83	2.9644	1.38
ISCO9	<i>Reference category</i>		<i>Reference category</i>	

Table A.6.16, continued

	Outcome: Intensity of non-formal training			
	Participants only (OLS)		All persons (Tobit)	
	Coefficient	t-value	Coefficient	t-value
LABOUR MARKET EXPERIENCE				
max. 0.5 years	3.4658	4.91	-2.7069	-2.83
0.5-1 years	1.5037	2.76	-4.6125	-2.20
1-2 years	1.5592	1.96	-3.1278	-2.16
2-3 years	2.8749	4.59	-5.1445	-6.56
3-5 years	1.4844	3.19	-2.3869	-2.06
5-10 years	0.5883	0.82	-3.2481	-2.12
10-15 years	0.5820	0.55	-2.1831	-0.98
15-20 years	1.2168	2.75	1.0213	1.04
20-25 years	0.7151	0.51	1.3954	0.95
25-30 years	2.0755	2.27	1.5739	0.98
30-35 years	0.2714	0.20	2.1106	2.09
35+ years	<i>Reference category</i>		<i>Reference category</i>	
Part-time employment	1.6321	1.43	-0.2430	-0.19
Temporary job or limited duration contract	5.0083	5.46	5.0507	2.73
SECTOR				
Agriculture	-2.7213	-2.07	-12.8872	-24.76
Industry	-2.7022	-2.51	-6.6611	-11.15
Services	<i>Reference category</i>		<i>Reference category</i>	
Constant	17.9805	30.17	-86.3213	-14.31
Number of obs.	69,052		1,738,257	
(Pseudo-) R ²	0.0832		0.0511	

Source: EU-LFS, own calculation. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. The reference person is a married female of 32-36 years living in Portugal, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job with 35 or more years of labour market experience in the services sector.

Table A.7.1
Estimation results for foreigners

	All foreigners				All employed foreigners	
	Specification 1		Specification 2		Specification 3	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Austria	-0.0283	-102.61	-0.0245	-31.43	-0.0247	-23.45
Belgium	-0.0287	-101.34	-0.0257	-52.60	-0.0259	-67.56
Bulgaria	-0.0335	-36.07	-0.0301	-42.92	-0.0289	-49.31
Cyprus	-0.0270	-950.18	-0.0241	-130.40	-0.0239	-48.99
Czech Republic	-0.0323	-339.08	-0.0287	-80.68	-0.0285	-42.57
Germany	-0.0320	-31.60	-0.0281	-19.80	-0.0296	-17.73
Denmark	-0.0302	-21.74	-	-	-	-
Estonia	-0.0270	-13.87	-0.0234	-12.97	-0.0238	-18.25
Spain	-0.0391	-242.34	-0.0365	-38.81	-0.0353	-72.10
Finland	-0.0316	-33.00	-0.0267	-21.72	-0.0264	-25.48
France	-0.0372	-53.29	-0.0338	-38.71	-0.0359	-53.89
Greece	-0.0308	-176.36	-0.0276	-43.13	-0.0258	-52.65
Hungary	-0.0319	-22.15	-0.0285	-25.24	-0.0278	-30.92
Ireland	-0.0295	-23.05	-0.0263	-25.97	-0.0253	-34.81
Italy	-0.0390	-13.91	-0.0360	-16.17	-0.0332	-18.35
Lithuania	-0.0297	-237.72	-0.0257	-48.35	-0.0250	-26.06
Latvia	-0.0293	-20.66	-0.0260	-23.01	-0.0255	-28.71
<i>Luxembourg</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Netherlands	-0.0360	-26.97	-0.0312	-24.53	-0.0337	-28.99
Poland	-0.0477	-27.65	-0.0441	-33.91	-0.0403	-38.53
Portugal	-0.0304	-243.08	-0.0274	-32.12	-0.0269	-33.91
Romania	-0.0380	-27.08	-0.0344	-32.34	-0.0317	-41.23
Sweden	-0.0286	-25.12	-	-	-	-
Slovenia	-0.0293	-22.15	-0.0259	-24.31	-0.0254	-27.42
Slovakia	-0.0329	-38.03	-0.0294	-47.40	-0.0288	-55.12
United Kingdom	-0.0544	-21.76	-0.0486	-19.39	-0.0618	-22.63
1998	-0.0185	-2.87	-0.0198	-4.25	-0.0199	-4.13
1999	-0.0195	-3.33	-0.0202	-5.43	-0.0208	-5.61
2000	-0.0189	-3.43	-0.0190	-4.72	-0.0200	-4.98
2001	-0.0175	-3.16	-0.0177	-4.32	-0.0187	-4.41
2002	-0.0159	-2.59	-0.0161	-3.39	-0.0171	-3.49
2003	-0.0134	-1.92	-0.0140	-2.49	-0.0152	-2.67
2004	-0.0094	-5.84	-0.0092	-7.05	-0.0106	-6.74
2005	-0.0091	-8.34	-0.0088	-7.63	-0.0097	-12.60
2006	-0.0076	-4.37	-0.0073	-4.21	-0.0069	-10.88
2007	-0.0038	-3.22	-0.0037	-3.08	-0.0037	-4.27
2008	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	-	-	0.0016	1.94	0.0004	0.36
Age 15-24	-	-	0.0258	5.02	0.0150	3.54
Age 25-49	-	-	0.0221	6.97	0.0154	4.78
Age 50-64	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	

Table A.7.1, continued

	All foreigners				All employed foreigners	
	Specification 1		Specification 2		Specification 3	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
ISCED 1	-	-	0.0344	2.93	0.0226	1.54
ISCED 2	-	-	0.0073	1.55	-0.0023	-0.35
ISCED 3-4	-	-	-0.0059	-3.31	-0.0116	-5.96
<i>ISCED 5-6</i>	-	-	<i>Reference category</i>		<i>Reference category</i>	
Employed	-	-	-0.0013	-0.40	-	-
Unemployed	-	-	0.0114	3.25	-	-
<i>Inactive</i>	-	-	<i>Reference category</i>		-	-
Married	-	-	0.0089	4.15	0.0074	3.93
Number of persons living in household.	-	-	0.0005	0.26	-0.0017	-0.86
Number of employed in household	-	-	-0.0045	-1.88	-0.0017	-0.64
Number of children (<= 4 years) in household	-	-	0.0085	3.88	0.0082	4.56
ISCO1	-	-	-	-	-0.0206	-5.24
ISCO2	-	-	-	-	-0.0224	-2.93
ISCO3	-	-	-	-	-0.0252	-3.47
ISCO4	-	-	-	-	-0.0247	-4.89
ISCO5	-	-	-	-	-0.0148	-3.59
ISCO6	-	-	-	-	-0.0126	-6.46
ISCO7	-	-	-	-	-0.0130	-6.20
ISCO8	-	-	-	-	-0.0143	-5.60
<i>ISCO9</i>	-	-	-	-	<i>Reference category</i>	
Temporary contract	-	-	-	-	0.0198	3.92
Part-time job	-	-	-	-	-0.0044	-1.63
Pseudo-R ²	0.074		0.107		0.118	
Number of obs.	10,982,792		10,386,205		5,053,383	

Source: EU-LFS, own calculations. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. In specification 3 the reference person is a non-married female of 50-64 years living in Luxembourg, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job.

Table A.7.2
Estimation results for individuals not born in their country of residence

	Specification 1		Specification 2		Specification 3	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Austria	-0.0407	-82.71	-0.0375	-27.45	-0.039	-22.64
Belgium	-0.0423	-94.18	-0.0406	-60.91	-0.043	-77.86
Bulgaria	-0.0486	-31.86	-0.0462	-30.28	-0.046	-39.32
Cyprus	-0.0403	-231.01	-0.0386	-113.62	-0.040	-51.40
Denmark	-0.0471	-26.78	-0.0445	-21.33	-0.046	-27.21
Estonia	-0.0420	-14.82	-0.0391	-12.72	-0.040	-17.02
Spain	-0.0617	-237.76	-0.0600	-61.78	-0.059	-117.25
Finland	-0.0499	-41.63	-0.0474	-38.61	-0.048	-42.88
France	-0.0634	-72.30	-0.0607	-64.31	-0.064	-100.69
Greece	-0.0473	-141.12	-0.0454	-57.96	-0.043	-74.71
Hungary	-0.0502	-26.01	-0.0477	-23.97	-0.047	-30.36
Ireland	-0.0450	-26.69	-0.0429	-24.10	-0.042	-28.18
Italy	-0.0581	-15.80	-0.0557	-15.15	-0.053	-17.51
<i>Luxembourg</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Lithuania	-0.0450	-117.20	-0.0427	-68.60	-0.043	-25.68
Latvia	-0.0432	-13.89	-0.0405	-12.42	-0.041	-16.16
Netherlands	-0.0477	-24.08	-0.0448	-20.45	-0.050	-23.80
Poland	-0.0708	-32.42	-0.0674	-31.19	-0.065	-40.52
Portugal	-0.0464	-144.43	-0.0448	-29.71	-0.045	-30.89
Romania	-0.0584	-37.17	-0.0557	-36.17	-0.053	-45.61
Sweden	-0.0412	-17.97	-0.0383	-19.17	-0.042	-28.43
Slovenia	-0.0449	-16.89	-0.0424	-15.33	-0.043	-18.91
Slovakia	-0.0486	-29.77	-0.0462	-29.25	-0.046	-36.80
United Kingdom	-0.0699	-23.90	-0.0641	-18.06	-0.081	-22.40
1998	-0.0265	-3.45	-0.0274	-4.03	-0.027	-3.82
1999	-0.0257	-3.96	-0.0263	-4.62	-0.027	-4.65
2000	-0.0258	-3.71	-0.0260	-4.13	-0.027	-4.21
2001	-0.0215	-3.13	-0.0217	-3.47	-0.023	-3.40
2002	-0.0189	-2.47	-0.0191	-2.68	-0.020	-2.72
2003	-0.0156	-1.69	-0.0158	-1.82	-0.017	-1.91
2004	-0.0103	-2.97	-0.0106	-3.62	-0.013	-4.04
2005	-0.0098	-4.66	-0.0100	-5.49	-0.012	-5.49
2006	-0.0089	-3.94	-0.0089	-4.19	-0.008	-10.19
2007	-0.0050	-5.09	-0.0049	-5.13	-0.005	-7.51
<i>2008</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	-	-	0.0005	0.42	-0.001	-0.51
Age 15-24	-	-	0.0111	2.22	-0.002	-0.47
Age 25-49	-	-	0.0282	7.68	0.018	6.04
<i>Age 50-64</i>	-	-	<i>Reference category</i>		<i>Reference category</i>	

Table A.7.2, continued

	Specification 1		Specification 2		Specification 3	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Max. ISCED 1	-	-	0.0149	1.21	0.006	0.43
ISCED 2	-	-	-0.0017	-0.65	-0.012	-1.78
ISCED 3-4	-	-	-0.0121	-2.87	-0.019	-6.51
<i>ISCED 5-6</i>	-	-	<i>Reference category</i>		<i>Reference category</i>	
Married	-	-	0.0126	5.09	0.010	4.72
Employed	-	-	-0.0165	-2.58	-	-
Unemployed	-	-	0.0144	3.11	-	-
<i>Inactive</i>	-	-	<i>Reference category</i>		-	-
ISCO1	-	-	-	-	-0.031	-4.08
ISCO2	-	-	-	-	-0.032	-2.53
ISCO3	-	-	-	-	-0.034	-2.84
ISCO4	-	-	-	-	-0.034	-3.61
ISCO5	-	-	-	-	-0.021	-2.67
ISCO6	-	-	-	-	-0.021	-6.40
ISCO7	-	-	-	-	-0.021	-6.76
ISCO8	-	-	-	-	-0.021	-4.60
<i>ISCO9</i>	-	-	<i>Reference category</i>		<i>Reference category</i>	
Part-time	-	-	-	-	-0.008	-2.03
Temporary contract	-	-	-	-	0.031	4.90
Number of obs.	9,699,965		9,699,965		4,755,898	
Pseudo-R ²	0.0746		0.0903		0.0934	

Source: EU-LFS, own calculations. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. In specification 3 the reference person is a non-married female of 50-64 years living in Luxembourg, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job.

Table A.7.3
Estimation results for foreigners with residence up to two years

	Foreigners with residence up to 2 years				Employed only	
	Specification 1		Specification 2		Specification 3	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Austria	-0.0090	-1.69	-0.0097	-1.95	-0.0472	-6.78
Belgium	-0.0086	-1.67	-0.0011	-0.20	-0.0177	-4.76
Bulgaria	0.0527	1.44	-0.0148	-1.03	-0.0761	-9.16
Cyprus	0.3807	730.83	0.3585	102.39	0.2725	27.28
Czech Republic	0.0139	2.35	0.0135	2.09	0.0380	4.06
Germany	0.0077	1.31	-0.0015	-0.32	-0.0357	-4.76
Denmark	0.0092	0.44	-	-	-	-
Estonia	-0.1203	-15.54	-0.1068	-22.70	-0.0944	-17.37
Spain	0.2185	114.40	0.2072	51.38	0.0890	8.63
Finland	-0.0360	-2.29	-0.0378	-3.41	-0.0628	-6.78
France	-0.0025	-0.33	0.0092	1.44	-0.0417	-11.07
Greece	0.0774	14.15	0.0589	10.65	0.0077	0.72
Hungary	0.0487	1.41	0.0220	1.37	-0.0123	-0.71
Ireland	0.2820	9.51	0.2266	16.19	0.1650	10.65
Italy	-0.0506	-1.85	-0.0577	-3.94	-0.0935	-6.52
Lithuania	-0.0665	-13.23	-0.0580	-12.35	-0.0586	-9.33
Latvia	-0.0757	-3.36	-0.0698	-7.43	-0.0773	-8.10
<i>Luxembourg</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Netherlands	-0.0137	-1.01	-0.0561	-8.38	-0.0779	-11.52
Poland	0.0744	2.07	0.0365	2.58	-0.0034	-0.27
Portugal	0.2833	60.53	0.2608	35.99	0.1969	14.78
Romania	-0.0815	-3.69	-0.0796	-8.27	-0.0838	-13.38
Sweden	-0.0404	-1.71	-	-	-	-
Slovenia	0.0100	0.31	-0.0023	-0.12	-0.0710	-4.79
Slovakia	0.0237	0.73	0.0257	1.46	-0.0343	-2.35
United Kingdom	0.1236	4.70	0.0887	7.34	0.0419	3.59
1998	-0.0482	-1.10	-0.0644	-2.60	-0.0582	-2.55
1999	-0.0619	-1.57	-0.0707	-4.07	-0.0687	-4.46
2000	-0.0642	-2.43	-0.0593	-3.46	-0.0555	-3.75
2001	-0.0450	-1.38	-0.0442	-2.20	-0.0443	-1.97
2002	-0.0374	-1.21	-0.0403	-2.25	-0.0483	-2.93
2003	-0.0418	-1.45	-0.0429	-2.61	-0.0560	-3.70
2004	-0.0236	-3.40	-0.0221	-4.42	-0.0215	-4.18
2005	0.0028	0.22	0.0013	0.10	-0.0064	-0.59
2006	0.0015	0.43	-0.0010	-0.31	-0.0039	-0.75
2007	0.0083	1.28	0.0081	1.02	0.0047	0.46
2008	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	-	-	0.0050	0.75	0.0167	4.17
Age 15-24	-	-	0.2780	8.01	0.2319	6.33
Age 25-49	-	-	0.1077	5.96	0.0785	4.65
Age 50-64	-	-	<i>Reference category</i>		<i>Reference category</i>	

Table A.7.3, continued

	Foreigners with residence up to 2 years				Employed only	
	Specification 1		Specification 2		Specification 3	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
ISCED 1	-	-	-0.0422	-2.23	-0.0417	-4.79
ISCED 2	-	-	-0.0452	-1.96	-0.0334	-1.89
ISCED 3-4	-	-	-0.0139	-0.82	0.0009	0.06
<i>ISCED 5-6</i>	-	-	<i>Reference category</i>		<i>Reference category</i>	
Employed	-	-	-0.0992	-9.12	-	-
Unemployed	-	-	-0.0107	-1.06	-	-
<i>Inactive</i>	-	-	<i>Reference category</i>		-	-
Marital status: Married	-	-	0.0049	0.50	-0.0148	-2.16
Number of persons living in household.	-	-	-0.0213	-4.67	-0.0179	-4.20
Number of employed in household	-	-	0.0322	7.16	0.0320	7.71
Number of children (<= 4 years) in household	-	-	-0.0055	-1.08	-0.0010	-0.20
ISCO1	-	-	-	-	-0.0330	-1.63
ISCO2	-	-	-	-	-0.0247	-1.66
ISCO3	-	-	-	-	-0.0354	-6.18
ISCO4	-	-	-	-	-0.0492	-7.10
ISCO5	-	-	-	-	-0.0300	-5.66
ISCO6	-	-	-	-	-0.0361	-3.71
ISCO7	-	-	-	-	-0.0425	-5.85
ISCO8	-	-	-	-	-0.0352	-5.02
<i>ISCO9</i>	-	-	-	-	<i>Reference category</i>	
Temporary contract	-	-	-	-	0.0882	14.73
Part-time job	-	-	-	-	-0.0130	-1.25
Pseudo-R ²	0.077		0.139		0.187	
Number of obs.	293,733		278,810		147,033	

Source: EU-LFS, own calculations. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. In specification 3 the reference person is a non-married female of 50-64 years living in Luxembourg, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job.

Table A.7.4
Estimation results for foreigners with residence between three and ten years

	Foreigners with residence between 3 and 10 years				Employed only	
	Specification 1		Specification 2		Specification 3	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Austria	0.1066	37.57	0.1046	22.78	0.0852	6.69
Belgium	-0.1451	-57.66	-0.1440	-24.70	-0.1690	-25.94
Bulgaria	-0.1280	-9.11	-0.1409	-9.45	-0.2293	-12.91
Cyprus	0.1083	432.95	0.0981	17.18	0.0430	2.02
Czech Republic	0.0497	2.52	0.0717	3.47	0.0257	0.97
Germany	-0.0954	-5.70	-0.0936	-5.31	-0.1295	-6.26
Denmark	0.1606	15.67	-	-	-	-
Estonia	-0.3582	-69.54	-0.3451	-59.14	-0.3690	-43.12
Spain	0.1889	37.85	0.1927	36.18	0.1825	9.46
Finland	0.1894	24.13	0.1111	7.35	0.0110	0.69
France	-0.1204	-16.26	-0.1153	-12.02	-0.1756	-14.57
Greece	0.3461	251.95	0.3434	162.00	0.3469	21.07
Hungary	0.0434	2.96	0.0468	3.21	0.0117	0.71
Ireland	0.0588	4.92	0.0435	3.95	0.0059	0.54
Italy	0.2240	14.08	0.2121	12.97	0.1778	12.61
Lithuania	-0.0541	-14.90	-0.1876	-12.39	-0.2043	-9.58
Latvia	-0.2935	-25.33	-0.2736	-23.61	-0.3213	-28.53
<i>Luxembourg</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Netherlands	0.0551	7.85	0.0407	4.62	-0.0272	-2.46
Poland	0.0173	1.22	-0.0036	-0.23	-0.0631	-3.40
Portugal	-0.0080	-1.38	-0.0285	-4.50	-0.0935	-6.00
Romania	-0.2590	-20.41	-0.2569	-19.60	-0.3044	-22.79
Sweden	0.1522	11.08	-	-	-	-
Slovenia	-0.0690	-4.22	-0.0589	-3.29	-0.1014	-9.16
Slovakia	-0.1470	-11.18	-0.1066	-7.86	-0.1982	-12.59
United Kingdom	0.0569	5.26	0.0341	2.91	-0.0051	-0.35
1998	-0.0403	-1.62	-0.0362	-1.26	-0.0522	-1.43
1999	-0.0745	-2.54	-0.0728	-2.48	-0.0840	-2.07
2000	-0.0910	-3.11	-0.0823	-2.77	-0.1050	-2.57
2001	-0.0974	-3.62	-0.0954	-3.69	-0.1302	-3.69
2002	-0.0811	-3.42	-0.0807	-3.74	-0.1167	-4.30
2003	-0.0784	-2.35	-0.0775	-2.39	-0.1081	-2.54
2004	-0.0153	-1.02	-0.0165	-1.37	-0.0206	-1.16
2005	-0.0042	-0.22	-0.0048	-0.26	-0.0094	-0.30
2006	0.0069	0.34	0.0032	0.15	-0.0035	-0.11
2007	0.0045	0.43	0.0028	0.27	0.0026	0.15
<i>2008</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	-	-	-0.0190	-1.38	-0.0060	-0.31
Age 15-24	-	-	0.2991	8.44	0.2985	10.94
Age 25-49	-	-	0.2574	7.43	0.2657	8.04
Age 50-64	-	-	<i>Reference category</i>		<i>Reference category</i>	

Table A.7.4, continued

	Foreigners with residence between 3 and 10 years				Employed only	
	Specification 1		Specification 2		Specification 3	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
ISCED 1	-	-	-0.0425	-1.55	-0.0635	-1.79
ISCED 2	-	-	-0.0514	-2.46	-0.0775	-2.69
ISCED 3-4	-	-	-0.0364	-1.87	-0.0598	-2.64
<i>ISCED 5-6</i>	-	-	<i>Reference category</i>		<i>Reference category</i>	
Employed	-	-	-0.0314	-2.79	-	-
Unemployed	-	-	-0.0113	-1.35	-	-
<i>Inactive</i>	-	-	<i>Reference category</i>		-	-
Marital status: Married	-	-	0.0147	1.11	0.0316	2.10
Number of persons living in household.	-	-	-0.0354	-6.59	-0.0473	-6.22
Number of employed in household	-	-	0.0012	0.13	0.0112	1.19
Number of children (<= 4 years) in household	-	-	0.1079	11.92	0.1008	8.04
ISCO1	-	-	-	-	-0.0632	-2.69
ISCO2	-	-	-	-	-0.0345	-1.07
ISCO3	-	-	-	-	-0.0435	-1.07
ISCO4	-	-	-	-	-0.0606	-1.76
ISCO5	-	-	-	-	-0.0004	-0.02
ISCO6	-	-	-	-	0.0143	0.58
ISCO7	-	-	-	-	-0.0205	-0.80
ISCO8	-	-	-	-	-0.0597	-4.84
<i>ISCO9</i>	-	-	-	-	<i>Reference category</i>	
Temporary contract	-	-	-	-	0.0287	1.31
Part-time job	-	-	-	-	0.0072	0.64
Pseudo-R ²	0.070		0.113		0.121	
Number of obs.	293,733		278,810		147,033	

Source: EU-LFS, own calculations. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. In specification 3 the reference person is a non-married female of 50-64 years living in Luxembourg, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job.

Table A.7.5

Estimation results for foreigners with residence of eleven and more years

	Foreigners with residence of 11 and more years				Employed only	
	Specification 1		Specification 2		Specification 3	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Austria	-0.0957	-15.11	-0.0988	-13.81	-0.0246	-3.16
Belgium	0.1494	23.64	0.1440	10.75	0.1928	16.23
Bulgaria	0.1192	1.87	0.2026	4.38	0.3928	10.38
Cyprus	-0.3517	-442.54	-0.3567	-46.57	-0.3269	-34.82
Czech Republic	-0.0507	-2.01	-0.0778	-2.85	-0.0554	-1.89
Germany	0.0919	3.89	0.1025	4.22	0.1810	6.46
Denmark	-0.1395	-3.79	-	-	-	-
Estonia	0.4991	22.24	0.4999	26.37	0.5302	31.72
Spain	-0.3289	-74.11	-0.3450	-52.85	-0.2877	-23.17
Finland	-0.1367	-4.78	-0.0260	-0.66	0.1467	3.50
France	0.1183	9.11	0.0988	5.69	0.2240	14.66
Greece	-0.3495	-176.63	-0.3500	-115.47	-0.3184	-35.68
Hungary	-0.0540	-0.92	-0.0347	-0.78	0.0488	0.98
Ireland	-0.2792	-8.75	-0.2648	-12.40	-0.2370	-10.44
Italy	-0.1402	-2.30	-0.1158	-2.32	0.0079	0.15
Lithuania	0.0975	10.66	0.2630	10.55	0.2903	10.02
Latvia	0.4036	7.71	0.4010	10.48	0.4790	11.90
<i>Luxembourg</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Netherlands	-0.0258	-0.99	0.0408	1.69	0.1769	6.42
Poland	-0.0511	-0.87	-0.0015	-0.04	0.1001	2.32
Portugal	-0.2071	-27.59	-0.1868	-15.40	-0.1175	-6.63
Romania	0.3774	6.74	0.4052	9.62	0.4763	12.59
Sweden	-0.1257	-4.26	-	-	-	-
Slovenia	0.0983	1.54	0.1075	1.97	0.2923	5.04
Slovakia	0.1605	2.74	0.1220	2.77	0.2950	6.09
United Kingdom	-0.1624	-3.98	-0.1281	-4.37	-0.0514	-1.58
1998	0.1278	1.51	0.1720	2.46	0.1966	2.52
1999	0.1814	2.06	0.2224	3.44	0.2557	3.25
2000	0.1994	2.59	0.2072	2.98	0.2438	2.96
2001	0.1789	2.45	0.1958	3.23	0.2480	3.27
2002	0.1494	2.09	0.1700	2.88	0.2367	3.50
2003	0.1514	2.02	0.1696	2.61	0.2411	3.29
2004	0.0596	2.01	0.0683	2.86	0.0830	2.58
2005	0.0047	0.13	0.0084	0.21	0.0290	0.51
2006	-0.0081	-0.35	-0.0005	-0.02	0.0101	0.27
2007	-0.0139	-0.86	-0.0122	-0.63	-0.0063	-0.20
<i>2008</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	-	-	0.0136	0.54	-0.0221	-0.72
Age 15-24	-	-	-0.4470	-7.61	-0.4090	-6.94
Age 25-49	-	-	-0.3795	-6.69	-0.3760	-6.15
Age 50-64	-	-	<i>Reference category</i>		<i>Reference category</i>	

Table A.7.5, continued

	Foreigners with residence of 11 and more years				Employed only	
	Specification 1		Specification 2		Specification 3	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
ISCED 1	-	-	0.0933	1.90	0.1286	2.78
ISCED 2	-	-	0.1149	2.60	0.1374	2.88
ISCED 3-4	-	-	0.0519	1.21	0.0604	1.26
<i>ISCED 5-6</i>	-	-	<i>Reference category</i>		-	-
Employed	-	-	0.1468	11.44	-	-
Unemployed	-	-	0.0187	0.96	-	-
<i>Inactive</i>	-	-	<i>Reference category</i>		-	-
Marital status: Married	-	-	-0.0298	-1.59	-0.0164	-0.87
Number of persons living in household.	-	-	0.0653	12.64	0.0757	12.56
Number of employed in household	-	-	-0.0448	-2.82	-0.0657	-5.02
Number of children (<= 4 years) in household	-	-	-0.1139	-14.60	-0.1087	-8.51
ISCO 1	-	-	-	-	0.1637	4.55
ISCO 2	-	-	-	-	0.1071	4.73
ISCO 3	-	-	-	-	0.1335	3.56
ISCO 4	-	-	-	-	0.1775	7.54
ISCO 5	-	-	-	-	0.0643	4.73
ISCO 6	-	-	-	-	0.0636	1.85
ISCO 7	-	-	-	-	0.1005	2.21
ISCO 8	-	-	-	-	0.1246	6.62
<i>ISCO 9</i>	-	-	-	-	<i>Reference category</i>	
Temporary contract	-	-	-	-	-0.1542	-10.90
Part-time job	-	-	-	-	0.0156	0.67
Pseudo-R ²	0.113		0.199		0.225	
Number of obs.	293,733		278,810		147,033	

Source: EU-LFS, own calculations. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. In specification 3 the reference person is a non-married female of 50-64 years living in Luxembourg, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is full-time employed with an unlimited contract in an elementary occupations job.

Table A.7.6
Estimation results for employment

	Employment			
	Specification 1		Specification 2	
	Marg. effect	t-value	Marg. effect	t-value
Austria	-0.0294	-3.60	-0.0264	-3.96
Belgium	-0.0210	-3.20	-0.0188	-3.98
Bulgaria	-0.0837	-10.18	-0.0830	-11.98
Cyprus	0.0304	4.58	0.0384	5.46
Germany	-0.0195	-1.89	-0.0179	-2.18
Estonia	-0.0078	-0.75	-0.0103	-1.15
Spain	-0.0312	-5.21	-0.0249	-3.97
Finland	0.0579	5.27	0.0574	7.59
France	0.0062	0.90	0.0034	0.59
Greece	-0.0317	-5.06	-0.0259	-4.28
Hungary	-0.0827	-10.97	-0.0812	-13.55
Ireland	0.0011	0.16	0.0061	0.89
Italy	-0.0445	-7.80	-0.0421	-9.03
Lithuania	-0.0585	-5.57	-0.0550	-5.40
Latvia	-0.0276	-2.75	-0.0262	-2.85
<i>Luxembourg</i>	<i>Reference category</i>		<i>Reference category</i>	
Netherlands	0.0238	2.77	0.0255	3.39
Poland	-0.0662	-8.32	-0.0644	-9.69
Portugal	0.0249	1.99	0.0303	2.33
Romania	-0.0780	-10.59	-0.0776	-11.69
Slovenia	-0.1007	-9.49	-0.0995	-9.54
Slovakia	-0.1058	-10.54	-0.1041	-10.54
United Kingdom	0.0347	3.82	0.0367	5.00
1998	0.0005	0.06	-0.0016	-0.20
1999	-0.0001	-0.02	-0.0023	-0.56
2000	0.0016	0.29	-0.0003	-0.07
2001	0.0004	0.06	-0.0018	-0.33
2002	-0.0014	-0.25	-0.0035	-0.67
2003	-0.0044	-0.62	-0.0064	-0.97
2004	-0.0013	-0.24	-0.0026	-0.44
2005	-0.0006	-0.12	-0.0007	-0.16
2006	0.0005	0.13	0.0003	0.08
2007	0.0008	0.25	0.0008	0.27
2008	<i>Reference category</i>		<i>Reference category</i>	
Male	0.2099	7.03	0.2092	6.93
Age 15-24	-0.2756	-9.03	-0.2689	-9.37
Age 25-49	0.2528	19.23	0.2544	19.33
Age 50-64	<i>Reference category</i>		<i>Reference category</i>	

Table A.7.6, continued

	Employment			
	Specification 1		Specification 2	
	Marg. effect	t-value	Marg. effect	t-value
ISCED 1	-0.2717	-10.98	-0.2771	-11.45
ISCED 2	-0.2197	-10.29	-0.2213	-10.41
ISCED 3-4	-0.0859	-12.75	-0.0864	-12.92
<i>ISCED 5-6</i>	<i>Reference category</i>		<i>Reference category</i>	
Marital status: Married	0.0296	2.94	0.0305	3.22
Number of persons living in household	-0.1457	-19.59	-0.1471	-18.79
Number of employed in household	0.4419	18.10	0.4409	17.87
Number of children (<= 4 years) in household	0.0920	9.78	0.0934	9.49
Foreigner	-0.0269	-1.44	0.0197	1.08
Foreigner born in country	0.0425	1.68	-0.0013	-0.05
<i>Nationals</i>	<i>Reference category</i>		<i>Reference category</i>	
Years resid.: up to 2	-	-	-0.1809	-6.07
Years resid.: 3 to 10	-	-	-0.0740	-6.45
<i>Years resid.: 11 and more</i>	-	-	<i>Reference category</i>	
Pseudo-R ²	0.476		0.478	
Number of obs.	9,707,584		9,597,570	

Source: EU-LFS, own calculations. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. In specification 2 the reference person is a non-married female of 50-64 years living in Luxembourg, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is a national with 11 or more years of residence.

Table A.7.7
Estimation results for unemployment

	Unemployment			
	Specification 1		Specification 2	
	Marg. effect	t-value	Marg. effect	t-value
Austria	0.0393	23.15	0.0398	21.97
Belgium	0.0486	31.17	0.0493	29.02
Bulgaria	0.0685	13.46	0.0689	12.91
Cyprus	0.0397	26.58	0.0395	22.87
Germany	0.0895	32.62	0.0897	30.34
Estonia	0.0584	20.09	0.0592	20.86
Spain	0.1118	41.14	0.1113	37.21
Finland	0.0823	20.58	0.0831	19.45
France	0.0772	40.84	0.0765	32.21
Greece	0.0885	35.29	0.0885	33.16
Hungary	0.0420	12.63	0.0424	12.65
Ireland	0.0322	16.51	0.0322	15.28
Italy	0.0450	13.29	0.0453	13.04
Lithuania	0.1503	40.82	0.1502	39.54
Latvia	0.0821	19.50	0.0824	19.34
<i>Luxembourg</i>	<i>Reference category</i>		<i>Reference category</i>	
Netherlands	0.0384	20.14	0.0388	19.30
Poland	0.0947	21.15	0.0948	21.03
Portugal	0.0794	20.58	0.0795	19.14
Romania	0.0446	12.52	0.0451	11.92
Slovenia	0.0652	16.48	0.0656	16.39
Slovakia	0.1333	24.48	0.1335	24.43
United Kingdom	0.0412	25.41	0.0413	24.49
1998	0.0127	2.70	0.0127	2.65
1999	0.0108	2.56	0.0109	2.53
2000	0.0063	1.48	0.0062	1.42
2001	-0.0013	-0.32	-0.0012	-0.30
2002	0.0012	0.31	0.0013	0.34
2003	0.0044	1.08	0.0045	1.08
2004	0.0108	1.27	0.0108	1.17
2005	0.0088	1.29	0.0088	1.29
2006	0.0060	1.52	0.0060	1.52
2007	0.0004	0.18	0.0004	0.18
2008	<i>Reference category</i>		<i>Reference category</i>	
Male	0.0026	0.67	0.0024	0.62
Age 15-24	0.0430	7.82	0.0426	7.68
Age 25-49	0.0301	7.78	0.0298	7.53
Age 50-64	<i>Reference category</i>		<i>Reference category</i>	

Table A.7.7, continued

	Unemployment			
	Specification 1		Specification 2	
	Marg. effect	t-value	Marg. effect	t-value
ISCED 1	-0.0055	-1.78	-0.0055	-1.78
ISCED 2	0.0022	0.98	0.0023	1.07
ISCED 3-4	0.0091	3.62	0.0090	3.61
<i>ISCED 5-6</i>	<i>Reference category</i>		<i>Reference category</i>	
Marital status: Married	-0.0148	-9.11	-0.0148	-8.79
Number of persons living in household	0.0105	15.34	0.0105	15.37
Number of employed in household	-0.0424	-24.21	-0.0420	-24.65
Number of children (<= 4 years) in household	-0.0126	-8.23	-0.0128	-8.63
Foreigner	0.0158	4.73	0.0110	2.74
Foreigner born in country	-0.0079	-2.48	-0.0049	-1.15
<i>Nationals</i>	<i>Reference category</i>		<i>Reference category</i>	
Years resid.: up to 2	-	-	0.0110	1.48
Years resid.: 3 to 10	-	-	0.0034	0.92
<i>Years resid.: 11 and more</i>	-	-	<i>Reference category</i>	
Pseudo-R ²	0.161		0.161	
Number of obs.	9,707,584		9,597,570	

Source: EU-LFS, own calculations. – Notes: t-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. In specification 2 the reference person is a non-married female of 50-64 years living in Luxembourg, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and is a national with 11 or more years of residence.

Table A.7.8
Estimation results for internal migration

	Specification 1		Specification 2		Specification 3	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Austria	-0.0011	-1.56	-0.0047	-13.90	-0.0041	-16.34
Belgium	-0.0013	-1.90	-0.0001	-0.23	<i>Reference category</i>	
Bulgaria	-0.0058	-19.71	-0.0047	-11.63	-0.0041	-7.28
Czech Republic	-0.0038	-4.95	-0.0029	-4.09	-0.0021	-5.13
Germany	-0.0032	-3.88	-0.0023	-2.79	-0.0023	-3.82
Spain	-0.0071	-16.04	-0.0056	-16.63	-0.0046	-27.33
Finland	-0.0035	-2.41	-0.0026	-2.30	-	-
France	0.0001	0.21	0.0011	2.22	0.0009	3.69
Greece	-0.0061	-18.02	-0.0048	-15.79	-0.0042	-35.51
Hungary	-0.0053	-13.22	-0.0040	-9.48	-0.0034	-16.45
Italy	-0.0059	-10.77	-0.0039	-8.83	-0.0030	-12.90
Poland	-0.0066	-14.41	-0.0054	-9.92	-0.0044	-14.56
Portugal	-0.0055	-14.26	-0.0039	-10.33	-0.0031	-9.02
Romania	-0.0019	-2.30	-0.0007	-0.82	0.0010	1.55
Slovenia	-0.0061	-20.81	-0.0049	-16.12	-0.0043	-9.85
Slovakia	-0.0061	-19.60	-0.0049	-14.99	-0.0043	-9.07
<i>Sweden</i>	<i>Reference category</i>		<i>Reference category</i>		-	-
1998	0.0010	0.32	0.0003	0.11	0.0004	0.15
1999	-0.0001	-0.05	-0.0007	-0.35	-0.0005	-0.27
2000	-0.0012	-0.64	-0.0017	-1.17	-0.0014	-1.05
2001	-0.0006	-0.29	-0.0013	-0.91	-0.0011	-0.80
2002	-0.0014	-0.84	-0.0010	-0.73	-0.0010	-0.72
2003	-0.0016	-0.99	-0.0011	-0.83	-0.0010	-0.73
2004	-0.0031	-1.45	-0.0025	-1.37	-0.0022	-1.31
2005	-0.0026	-1.13	-0.0025	-1.23	-0.0022	-1.20
2006	-0.0024	-1.20	-0.0021	-1.23	-0.0019	-1.19
2007	-0.0024	-1.26	-0.0021	-1.26	-0.0019	-1.24
<i>2008</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	-	-	0.0005	2.34	0.0004	1.95
Age 15-24	-	-	0.0096	4.65	0.0132	5.04
Age 25-49	-	-	0.0040	4.54	0.0044	4.39
Age 50-64	-	-	<i>Reference category</i>		<i>Reference category</i>	
Max. ISCED 1	-	-	-0.0042	-3.95	-0.0033	-3.85
ISCED 2	-	-	-0.0048	-5.22	-0.0038	-6.15
ISCED 3-4	-	-	-0.0033	-6.43	-0.0027	-7.12
<i>ISCED 5-6</i>	-	-	<i>Reference category</i>		<i>Reference category</i>	
Employed	-	-	0.0006	0.88	0.0016	3.48
Unemployed	-	-	0.0044	7.42	0.0039	6.52
<i>Inactive</i>	-	-	<i>Reference category</i>		<i>Reference category</i>	

Table A.7.8, continued

	Specification 1		Specification 2		Specification 3	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Employed year before	-	-	-0.0029	-5.25	-0.0027	-5.45
Unemployed year before	-	-	-0.0011	-2.32	-0.0014	-3.20
<i>Inactive year before</i>	-	-	<i>Reference category</i>		<i>Reference category</i>	
Number of persons living in household	-	-	-	-	-0.0015	-5.80
Number of employed in household	-	-	-	-	-0.0012	-2.07
Number of children (<=4 years) in household	-	-	-	-	0.0017	4.99
Number of obs.	12,120,683		11,082,303		10,867,951	
Pseudo-R ²	0.0470		0.0773		0.0964	

Source: EU-LFS, own calculations. – Notes: *t*-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. In specification 3 the reference person is an inactive female of 50-64 years living in Belgium, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6 and was inactive in the year before the interview.

Table A.7.9
Estimation results for cross-border commuting

	Specification 1		Specification 2		Specification 3	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Austria	-0.0027	-87.68	-0.0026	-70.64	-0.0027	-58.97
Belgium	-0.0019	-20.66	-0.0020	-27.75	-0.0018	-18.49
Bulgaria	-0.0031	-78.33	-0.0029	-29.41	-0.0031	-27.14
Czech Republic	-0.0031	-397.39	-0.0031	-88.03	-0.0034	-110.94
Germany	-0.0042	-39.02	-0.0043	-89.33	-0.0047	-61.59
Denmark	-0.0032	-95.43	-0.0031	-123.35	-0.0034	-102.04
Estonia	-0.0026	-48.33	-0.0026	-72.70	-0.0028	-82.25
Spain	-0.0041	-53.50	-0.0041	-69.86	-0.0045	-29.57
Finland	-0.0032	-72.95	-0.0031	-98.60	-0.0034	-54.04
France	-0.0030	-40.74	-0.0030	-43.56	-0.0031	-45.10
Greece	-0.0038	-159.98	-0.0038	-249.83	-0.0039	-134.60
Hungary	-0.0031	-166.25	-0.0031	-137.25	-0.0033	-178.46
Italy	-0.0041	-77.59	-0.0043	-94.86	-0.0043	-81.37
Luxembourg	-0.0027	-43.70	-0.0027	-65.80	-0.0029	-42.31
Netherlands	-0.0034	-70.40	-0.0031	-53.45	-0.0033	-45.50
Poland	-0.0040	-296.68	-0.0038	-172.96	-0.0040	-50.14
Portugal	-0.0034	-61.92	-0.0033	-72.35	-0.0036	-40.07
Romania	-0.0034	-248.83	-0.0032	-133.66	-0.0035	-86.67
<i>Slovakia</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Sweden	-0.0031	-51.69	-0.0030	-75.73	-0.0033	-52.41
United Kingdom	-0.0047	-66.61	-0.0049	-118.47	-0.0053	-91.27
1998	-0.0017	-2.51	-0.0014	-2.22	-0.0015	-2.23
1999	-0.0017	-2.67	-0.0014	-2.47	-0.0014	-2.45
2000	-0.0012	-2.20	-0.0007	-1.90	-0.0007	-1.77
2001	-0.0011	-1.73	-0.0009	-1.49	-0.0008	-1.38
2002	-0.0011	-1.71	-0.0010	-1.54	-0.0011	-1.54
2003	-0.0013	-2.79	-0.0013	-2.55	-0.0014	-2.38
2004	-0.0011	-2.95	-0.0010	-2.62	-0.0011	-2.54
2005	-0.0007	-3.23	-0.0004	-1.29	-0.0005	-1.25
2006	-0.0004	-1.80	-0.0004	-1.95	-0.0005	-2.17
2007	-0.0001	-0.58	-0.0001	-0.45	-0.0002	-0.89
2008	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	0.0021	8.63	0.0021	8.19	0.0019	8.25
Age 15-24	0.0011	2.09	0.0010	1.94	0.0001	0.14
Age 25-49	0.0009	4.07	0.0009	3.84	0.0008	2.86
<i>Age 50-64</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Max. ISCED1	-0.0009	-2.75	-0.0009	-2.84	-0.0012	-4.15
ISCED2	-0.0012	-2.69	-0.0013	-3.01	-0.0017	-5.34
ISCED3 or 4	-0.0003	-0.88	-0.0004	-1.09	-0.0007	-3.18
<i>ISCED5 or 6</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	

Table A.7.9, continued

	Specification 1		Specification 2		Specification 3	
	Marg. effect	t-value	Marg. effect	t-value	Marg. effect	t-value
Married	-0.0004	-0.88	-0.0004	-0.95	-0.0001	-0.26
Employed year before	-	-	-0.0005	-1.05	-0.0001	-0.29
Unemployed year before	-	-	0.0010	1.34	0.0004	0.55
<i>Inactive year before</i>	-	-	<i>Reference category</i>		<i>Reference category</i>	
ISCO1	-	-	-	-	0.0007	0.86
ISCO2	-	-	-	-	0.0001	0.15
ISCO3	-	-	-	-	0.0000	-0.06
ISCO4	-	-	-	-	-0.0003	-0.51
ISCO5	-	-	-	-	0.0005	0.88
ISCO6	-	-	-	-	-0.0006	-0.73
ISCO7	-	-	-	-	0.0017	3.08
ISCO8	-	-	-	-	0.0013	1.94
<i>ISCO9</i>	-	-	-	-	<i>Reference category</i>	
Part-time	-	-	-	-	-0.0012	-2.65
Temporary contract	-	-	-	-	0.0031	2.81
Number of observations	10,727,557		8,722,951		7,003,101	
Pseudo-R ²	0.0817		0.0866		0.0934	

Source: EU-LFS, own calculations. – Notes: *t*-values greater than 1.96 (2.58) in absolute terms denote statistical significance at the 5 (1) per cent level, respectively. In specification 3 the reference person is a non-married female of 50-64 years living in Slovakia, who is surveyed in 2008, has a completed education at the level of ISCED5 or 6, was inactive in the year before the interview and is now working full-time in an elementary occupations job with an unlimited contract.



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