

## **Fixed-term contracts, economic conjuncture and training opportunities: a comparative analysis across European labour markets.**

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### **Abstract**

Our work aims to bring together two research fields: the debate concerning different labour market flexibilization strategies and the determinants of training chances. The purpose of our work is therefore to assess the trade-off between temporary employment and training opportunities in a comparative analysis of three groups of countries characterized by different levels of labour market segmentation and training coverage. Particular attention is paid to the potential impact of the 2008 economic downturn in shaping training opportunities for contingent workers. Our research questions are investigated using three pooled rounds of the European Social Survey (2004, 2006 and 2008). While regression analyses partially confirm the negative effects of fixed-term contracts (FTCs) on training opportunities, counterfactual analyses show a retrenchment in training provisions among temporary workers only in strongly segmented labour markets, where FTCs constitute a more homogeneous marginal group, highly stratified in terms of age, gender, unemployment experience and social class.

**Key words:** Economic crisis / Fixed-term contracts / Labour market segmentation / Training

### **Theoretical framework and purpose of the study**

The crisis of the fordist model during the 1980s led to a structural incapability of jobs creation in Europe and a dramatic increase of unemployment rates, especially among young first job seekers, while the US showed successful occupational outcomes. The latter were imputed to the “flexibility” of the North American labour market, while European ones were accused to be too “rigid”, i.e. protecting excessively permanent jobs (Grubb and Wells, 1993; Nickell, 1997; Saint-Paul, 1996; Siebert, 1997). In the same period, however, the North-American (and British) economy showed a sharp increase in economic inequalities compared to Europe (Gallie and Paugam, 2000; Smeeding, 2002). The comparison supported neo-liberist labour economics, which claimed the existence of an “employment/equality trade-off” (Esping-Andersen, 1999; Esping-Andersen and Regini, 2000). This trade-off implied that more jobs could be created only by means of a reduction in social security measures and an increase in (numerical) flexibility. Since the early 1980s, such a believe fostered a supply-side perspective of reforming European labour markets (Blanchard, 2005). Anyway, global pressures toward increasing labour market liberalizations have been filtered by

country-specific institutions (Blossfeld et al., 2005). In this respect, a useful theoretical lens used in this study to grasp these processes is represented by the Esping-Andersen's welfare regimes theory (1990, 1999).

Labour market regulative systems constitute a complex institutional domain, therefore some European countries, especially those ones belonging to the "Mediterranean" version of the conservative welfare regime (Ferrera, 1996)<sup>1</sup>, chose to operate "at the margins". Precisely, these countries adopted a "partial and targeted" deregulation process (Esping-Andersen and Regini, 2000) – or "partial reform strategy" (OECD, 2006) – entailing the preservation of the social protection system for the insiders and burdening younger cohorts with all the demands for flexibility (*ibidem*). The process generated a strong labour market segmentation and in the literature are by now well-known the consequences of "atypical" employment on economic security and prospects (Barbieri, 2009; for Italy see Barbieri and Scherer, 2009; Gagliarducci, 2005; for Germany see Gebel, 2009; Giesecke, 2009; Giesecke and Groß, 2003; for Spain see Polavieja, 2003; Sala and Silva, 2009).

The liberal and social-democratic welfare regimes adopted rather different strategies, on the one hand implementing a "non-targeted" flexibility, on the other hand developing a so called "flexicurity" system (Madsen, 2006). Scandinavian countries have indeed much higher levels of "decommodification", comparing with liberal countries, in terms of unemployment benefits and minimum wages (Esping-Andersen, 1990 and 1999). At the same time, these countries, and especially Denmark that represents the paradigmatic example of the flexicurity model, were able in the last 20 years to reach the fundamental aims of a flexible labour market, in terms of low job-tenure and high labour market mobility, job creation and competitiveness (*ibidem*; Madsen, 2006). The basic idea of the flexicurity model is that public policies should not focus on the protection of current job but of income (unemployment benefits) and "employability", through training provisions and active labour market policies (ALMPs, see OECD, 2002). So, the flexicurity model proposes a non-targeted and protected flexibility, avoiding the precarious careers and spread of inequalities typical of the countries inscribable in the conservative model.

This discussion implies that European countries can be ordered according to labour market segmentation caused by flexibilization reforms as well as their capability of jointly reaching flexibility and security (Muffels and Luijkx, 2008). Labour market segmentation is especially found in Southern European countries, followed by Central European countries and Northern countries. Central European countries perform better than Southern ones concerning the flexibility/security trade-off as in those countries much higher levels of "employability" are reached by means of stronger unemployment benefits and higher percentage of GDP invested in ALMPs. Moreover, several empirical analyses show how the entrapment-effect of temporary work is particularly strong in Southern European countries (see above). On the other hand, UK can be included in the last group made by Scandinavian countries as here segmentation is avoided by means of high labour market fluidity (Muffels and Luijkx, 2008), even if it does not reach the same results in terms of ALMPs and benefits.

As briefly summarized, there is clear evidence of the effects of these different labour market structures on employment prospects of FTCs. In our work we want to

understand whether alternative patterns of labour market flexibilization strategies produce heterogeneous effects on Life-Long Learning (LLL) chances in different economic conjunctures. It is interesting to notice indeed that the above specified threefold labour market typology largely parallels on-the-job training coverage. According to OECD (2008), Northern countries have overall participation rates in training programmes between 30-40%, followed by Central European countries with a participation rate between 10 and 20%, and by Mediterranean countries in which participation rates do not exceed 5%.

### **Empirical background on training determinants and research hypotheses**

Regardless of regional disparities in coverage rates of LLL programmes, we can underline some stylized facts concerning the highly selective process of allocating individuals in training activities. Not surprisingly, employed individuals receive more training than unemployed, while there is a huge variation in training probabilities among different categories of workers. Firstly, those with higher levels of formal education enjoy greater training opportunities (O'Connell and Byrne, 2010). Therefore, stratification mechanisms shaping educational attainment are still at work if we shift to LLL chances. Other individual factors highly relevant in this respect are age and type of occupation: young people and those in highly skilled positions are much more likely to participate in training programmes (*ibidem*).

While the relation between gender and training opportunities is not as clear as other traditional labour market cleavages (Arulampalam et al., 2004; Drewes, 2008; Jenkins et al., 2002; Pischke, 2001), other job-related characteristics strongly affect the probability to get access to LLL. A stable result regards the positive relation between firm size and training provisions, given the lower marginal costs paid by the employer. Another usual finding is the positive association between union coverage (and membership) and the decision to invest in on-the-job training made by employers. Different possible mechanisms could explain such correlation. On the one hand, employers are more willing to invest in training provisions the more the compression of the wage distribution between trained and untrained employees (Acemoglu and Pischke, 1999). On the other hand, unions can push employers to include training programmes both as a part of contractual agreements and as a consequence of lower turnover rates.

In this study, we do not distinguish neither the type of training carried out (specific vs. general), which depends on the (in)transferability of the acquired skills for a subsequent job, nor between firm-sponsored and self-funded training. Anyway, the distinction between alternative forms of training is rarely well operationalisable and our data do not exempt; moreover, the empirical evidence indicates that specific training is far less common than the general one and that, in most cases, training activities of both types are paid by employers (Bishop, 1996; Booth and Bryan, 2002; Evertsson, 2004; Loewenstein and Spletzer, 1999; O'Connell and Byrne, 2010; OECD, 2003). If not provided by the firm, the human capital investment paid directly by employees does not compensate the lacking of financed LLL opportunities (Sauer mann, 2006).

We assume that the decision to invest in training is inscribable in a utility maximizing framework both for the employers and the employees, in terms of expected returns (productivity on one side, wage and career prospects on the other). In such a cost-benefit framework, if the payback period is short, firms will have poor incentives to invest in the workforce training. Consequently, there is empirical evidence of underinvestment in training activities for part-time and even more for temporary workers (Atkinson, 1998; Lucidi, 2010; O'Connell and Byrne, 2010; Steijn et al., 2006), with likely negative implications in terms of productivity and career prospects for that part of the workforce less attached to the labour market. There is indeed enough empirical evidence of a negative relation between FTCs and training in different labour markets (for Spain, see Albert et al., 2005; Dolado et al., 2002; Sala and Silva, 2009; for Belgium, see Forrier and Sels, 2003; for Germany see Sauermann, 2006; for UK, see Arulampalam and Booth, 1998; for Denmark see Arulampalam et al., 2004).

Based on these considerations, our first hypothesis can be presented as follows:

*H1: Countries with a flexicurity setting could reduce the effects of FTCs on labour market uncertainty, hence on training opportunities, comparing with Central and especially Southern European countries.*

We argue that, in highly segmented labour markets, the short payback mechanism affecting FTCs training chances could be reinforced as a consequence of higher job instability, often leading to repeated temporary employment and unemployment spells<sup>ii</sup>.

A not widely discussed issue, although theoretically relevant to understand the relation between temporary work arrangements and LLL chances, is the impact of flexible contracts in different economic conjunctures. We argue that the more FTCs are used as a "buffer" in order to cope with short-term demand-side needs (and the less as a screening process for future permanent workers), the more holding a FTC during economic downturns could have a negative impact on training chances.

Based on these considerations, our second hypothesis can be presented as follows:

*H2: The insider-outsider setting of Central and especially Southern European countries could make temporary workers most likely candidates for a reduction in training opportunities during economic downturns.*

In other words, our hypothesis is that when firms' training resources tend to reduce, employers' provisions will mainly focus on the core-workforce. This could be the case especially in Southern European countries. In this regard, Polavieja argued how the particularly high level of temporary workers in Spain is mainly explained by "the unique combination of economic uncertainty and institutional rigidities found in Spain at the time of the introduction of temporary contracts" (2006: 74). This situation created incentives for employment-rent optimisation strategies of core-employees, thus bringing to a high-segmentation equilibrium (Polavieja, 2003). These dynamics

have already been confirmed about the use of temporary workers as a shield protecting permanent workers from the risk of unemployment. Concerning the ongoing crisis, Bentolila et al. (2010) found that, although labour market institutions in the two economies are rather similar, large part of the increase in the unemployment rate would have been avoided if Spain had adopted French employment protection institutions before the economic downturn. Following suggestions by Brunello (2009), we claim that a similar mechanism is at work concerning the distribution of training programmes' retrenchment during the economic crisis.

Therefore, our last hypothesis can be specified as follows:

H3: Although Conservative and Mediterranean countries shared a common partial and targeted deregulation strategy, *the more FTC holders face high risks of entrapment in the secondary labour market and give rise to a well defined social group of marginal workers within workplaces, the more their training costs can be shrunk by employers to rapidly adjust firms' investments according to the economic conjuncture.*

Therefore, we argue that the stratification of FTCs in different labour markets, in terms of previous unemployment experiences, age and class position, as a consequence of targeting and entrapment dynamics, largely parallels the cross-country distribution of the retrenchment in training provisions between temporary and permanent workers.

## Data and methods

As outlined in the previous section, our specific research questions concern the effects of FTC on training provision and the role played by different labour market regulations in shaping LLL opportunities, especially in response to a negative economic conjuncture. We address these questions pooling three distinct waves of the European Social Survey (namely 2004, 2006 and 2008)<sup>iii</sup>. We selected eleven countries representative of distinct labour market regulations and that we labeled consequently: Denmark, Sweden, Finland, Norway and the UK, i.e. the "flexicurity" group; Belgium, the Netherlands, Germany and France, i.e. the "conservative" group; Spain and Greece, i.e. the "Mediterranean" group<sup>iv</sup>.

Our main dependent variable concerns whether employees have taken "any course or attended any lecture or conference to improve [their] knowledge or skills for work" during the last 12 months. The type of contract (limited vs. permanent) is our main independent variable. It should be borne in mind that we can not disentangle apprenticeships from the broader group of temporary workers, thus possibly underestimating training penalties for contingent workers (Albert et al., 2005).

The analysis covers about 17500 employees (jointly male and female), aged between 20 and 50 and working between 15 and 48 hours a week. The control variables in our models are: gender, age, years of formal education, previous unemployment spells lasting more than three or twelve months, total contracted working hours (recoded into four dummy variables), trade union membership, firm size (recoded into five categories), the ISEI scale of socio-economic status (Ganzeboom

et al., 1992)<sup>v</sup> and two dummy variables (based on the NACE classification) for public and qualified sectors<sup>vi</sup>. All variables means and training rates are shown in Tab. 1.

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In our model we include round dummy variables as a proxy of economic conjuncture. Most of the interviews for the fourth round were indeed realized in the last 4 months of 2008, when the global economic crisis already raged in all the countries considered in our analysis, as it is possible to see in Fig. 1 (gray areas show the observational windows of each round).

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In order to cope with our research hypotheses, we made use of two techniques. First of all, we assessed the magnitude of the negative effect of FTCs on training by means of Average Marginal Effects (AMEs) based on logistic regression estimates.

Then we focused on the effect of FTCs during economic downturns, shifting to a causal approach (Rubin, 1974). We ran indeed a fully non-parametrical counterfactual analysis which enabled us to detect the different impact of the economic crisis within the permanent and FTC groups across countries. The matching procedure was performed on the same covariates of previous logit models and the estimation technique we used is known as “genetic matching” (Sekhon, forthcoming)<sup>vii</sup>. Not needing parametric formulation or distributional assumptions is no guarantee against the risk of distortion in the estimate of the causal effect. In this respect, we used the Rosenbaum sensitivity test as a measure of the robustness of our estimation in presence of unobserved heterogeneity, by means of the “*rbounds*” package by Keele (2010).

Lastly, an analysis of temporary workers’ characteristics across different labour markets has been carried out by means of simulated probabilities based on logistic regression estimates, using the “*clarify*” software (King et al., 2000; Tomz et al., 2003;).

## Empirical results

In Tab. 2 we present logit models assessing the effects of FTCs on training reporting AMEs. In Model 1, FTCs are found to be penalized, on average, by 8 percentage points comparing with their permanent counterpart<sup>viii</sup>. In Model 2, personal characteristics are included. Age has the expected negative but non-linear effects, while education has strong positive effects, although moderated by (long) unemployment experiences. We suggest that this result could be explained by human capital losses making less profitable formal education obtained. Anyway, in Model 2 the FTC penalty remains stable. A significant drop of 1.5 percentage points has been found with the introduction of the ISEI social standing scale in Model 3, indicating the over-representation of temporary workers among lower socio-economic positions. Model 4 shows that other job characteristics contribute to an additional 1.5

percentage points drop in the FTC penalty: having received training is much more likely for employees working at least 25 hours a week, members of trade unions, working in large firms and in the public or qualified sectors<sup>ix</sup>. Models from 1 to 4 clearly show how the type of job and characteristics of the firm have a crucial impact explaining the FTC penalty in training chances, as already found elsewhere (Albert et al., 2005; O'Connell and Byrne, 2010). Finally, Model 5 indicates that also institutional and labour market arrangements are strong predictors of training opportunities, through investments in ALMPs and R&D. An additional percentage point of reduction in the FTC penalty shows that Southern European countries have both higher proportions of FTCs and fewer investments in LLL by policy makers and firms. The country dummies effects precisely mirror OECD data (2008) concerning the cross-country distribution of on-the-job training coverage rates.

In Model 6 we start addressing the issue of the economic conjuncture. As the interaction effect between FTC and round dummies indicate, a clearly significant FTC penalty is found only in 2008. As during negative economic conjuncture unemployment risks among temporary workers strongly increase (Bentolila et al., 2010; Brunello, 2009), we argue that in 2008 the short payback mechanism behind the negative correlation between FTC and training chances could be much more effective.

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In Tab. 3 the last model of Tab. 2 is estimated separately for our three groups of countries. Among control variables, it is worth to underline the higher stratification of the allocation process in training activities in Southern countries in terms of socio-economic position, years of education, trade union membership and firm size. The higher overall structuration of training chances in Southern countries is also confirmed by the much larger Pseudo-R2 comparing with Central and Northern countries. Therefore, it seems possible to argue that the lower the participation rate to training programmes, the higher its structuration in terms of traditional sources of social inequality, possibly explaining the minor association between the type of contract and LLL chances in 2004 and 2006 in Southern countries. Indeed, the main result of this analysis is that, irrespectively of the countries taken into account, no significant effects of FTCs are detected in 2004 while only marginally significant effects are found among Northern and Central European countries in 2006. Thus, we are not able to confirm our first hypothesis, since there is no the expected cross-country heterogeneity in the FTC training gap. On the opposite, our second hypothesis seems to be supported, since the interaction effects between FTC and 2008 dummies are statistically significant only in Central and Southern countries.

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To check whether the training differential between rounds is confirmed also after a radical change of model specification, we ran a fully non-parametrical analysis by means of genetic matching. Apart from usual advantages of matching procedures – e.g. no need to assume additive and linear effects of control variables – we focused on

the impact of the economic conjuncture considered as the treatment of our counterfactual analysis. This allowed us to estimate Average Treatment Effects on the Treated (ATT) separately for temporary and permanent workers, taking into account possible differences in the mechanisms regarding all other control variables within the two groups. Moreover, a Rosenbaum sensitivity test has been implemented providing a measure of the robustness of our estimation in case of possible unobserved heterogeneity<sup>x</sup>. The results of these analyses, shown in Tab. 4 and 5, are threefold. First, there is no evidence of any changes in the probabilities of having received training neither for permanent nor for temporary workers between 2004 and 2006 irrespectively from the country group, excluding any significant trends in training chances before the 2008 economic crisis across type of workers and countries. Second, a strong and significant reduction in the probability of having received training is detected only among Southern temporary workers in 2008, confirming previous regression results<sup>xi</sup>. Third, the penalty found among Southern temporary workers is robust even in presence of significant sources of unobserved heterogeneity<sup>xii</sup>.

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The last empirical part of our work will focus on an attempt to assess the reasons of these different dynamics between Mediterranean and all other countries.

Our third hypothesis claimed that the reason why Southern temporary workers have been burdened of all the costs of the negative economic conjuncture lies on the fact that they constitute a well defined social group of marginal workers within workplaces. Therefore, our aim is to test to what extent Southern temporary workers, comparing with their Central and Northern counterparts, share some specific features – in terms of age, unemployment experiences and socio-economic condition – as a consequence of the flexibilization reform targeting and entrapment in “job carousels” (Barbieri, 2009). In this respect, we compared the predicting power of some relevant characteristics in determining the probability of holding a FTC in our three groups of countries. For a better understanding of the results, in Fig. 2 we plotted simulated expected probabilities and 10% confidence intervals based on logit models, separately for each level of education. The graphs refer to a specific profile of temporary worker, depicting the ideal-type of the flexibilization reforms target: a young (aged 20-25) working class woman with past experience of unemployment lasting more than 3 months<sup>xiii</sup>.

Graphs indicate that, regardless of educational levels, the probability of holding a FTC for the above-mentioned profile is much higher in Southern countries comparing with Central and Northern ones, giving a first evidence of segmentation dynamics. Moreover, it is well-known in the literature how entrapment risks are stratified in terms of individuals’ and their job qualification. Therefore, the existence of a dual segment of marginal workers in Mediterranean labour markets is confirmed looking at the persistence of relevant share of temporary employment among working class members. In this respect, as shown in Fig. 3, high rates of temporary employment for individuals aged more than 30 are found only among Southern working class members<sup>xiv</sup>, while, with the exception of Northern countries, the huge decline in the



share of temporary workers after 25 years old for service class members could be interpreted as a signal of the use of FTCs as a screening device.

...ABOUT HERE FIGG. 2 AND 3...

## Conclusions and discussion

Our work aimed to bring together two research fields: the debate concerning different labour market flexibilization strategies and the determinants of training chances. An additional specific contribution of this study is to address the issue of the distribution of training provisions during an economic downturn.

More precisely, we tested three main hypotheses, which were only partially confirmed. First, we predicted a heterogeneous negative impact of FTCs on training chances in different labour market settings, being stronger in those countries that undertook a partial and targeted labour market deregulation. Our analysis did not support this theoretical expectation, since in 2004 and 2006, after controlling for individual, job-related and firm-level characteristics, only minor effects of FTCs have been found, being virtually zero in Southern countries.

Our second hypothesis dealt with the distribution of (possible) training retrenchments during the 2008 economic crisis. We expected an increase in the FTC training gap, being stronger in Central and Southern countries. While logit models supported this hypothesis, more cogent counterfactual analyses confirmed regression results only among Southern countries.

Lastly, we argued that training costs could be shrunk by employers, to rapidly adjust firms' investments according to the economic conjuncture, where FTC holders constitute a well defined social group of marginal workers within workplaces. In other words, we predicted that the cross-country distribution of training retrenchments among temporary workers mirrors the stratification of FTCs in different labour markets due to policy targeting and entrapment dynamics. Our results underline signals of higher homogeneity of Southern temporary workers in terms of marginal labour market position, addressing this issue from two perspectives. First, the homogeneity in terms of factors guiding the partial and targeted reform strategy (age, unemployment experience and gender); second, the persistence of relevant shares of temporary employment at older ages mainly for the working class, as a result of entrapment dynamics.

The overall pattern of results of our paper seems to confirm how the Mediterranean route toward labour market flexibility produced specific social risks not only in terms of employment prospects (Barbieri and Scherer, 2009; Sala and Silva, 2009), postponement of the transition to adulthood and fertility decisions (Aassve et al., 2001; Baizan, 2005; Barbieri and Bozzon, forthcoming), but also in LLL opportunities. Thus, our work goes in the direction of an ongoing debate concerning the existence of a "Latin model" of institutional environment (*ibidem*) reinforcing traditional factors of social inequality.

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<sup>i</sup> In this study the labels "Northern/flexicurity", "Central/conservative" and "Southern/Mediterranean" are used as synonyms.

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<sup>ii</sup> Despite in our study we make use of cross-sectional data, it could be also useful to rely on longitudinal data. Indeed, if we consider the iterativity of unemployment and FTC experiences, it seems reasonable to hypothesize a process of cumulative risks of human capital depreciation, especially in those countries where the shift from a single episode of temporary employment to a precarious career is more likely.

<sup>iii</sup> ESS rounds 2, 3 and 4 have been analysed and in all our analyses we made use of both design and population weights, as recommended in data documentation, when countries have been jointly considered (see <http://ess.nsd.uib.no/ess/doc/weighting.pdf>).

<sup>iv</sup> Greece is present only in 2004 and 2008, while France only in 2006 and 2008. We miss information about Italy, that should have been included in the Mediterranean cluster, but that has not been added in the ESS integrated sample, given problems with sampling procedures. Except Tab. 1, all other results concerning the Southern group rely only on the Spanish sample.

<sup>v</sup> We preferred to use a social standing scale instead of a social class schema in order to maximize the balancing power of genetic matching. The same holds concerning years of education. Results do not change using educational levels and the Eurosec class schema.

<sup>vi</sup> This dummy variable has been computed selecting those employees working in activities of membership organizations, recreation and cultural activities, air transports, research and development, financial or other business activities, international organizations, health – if not routine or low skilled workers – and education - for individuals belonging to the service class.

<sup>vii</sup> The estimation is based on an iterative algorithm designed to detect the best covariates balance between the control and treated groups, the one that minimizes the distances in means and distributions of covariates between the two groups.

<sup>viii</sup> As a merely exploratory attempt, we estimated all models also controlling for an anticipatory item dealing with the perceived risk of unemployment 12 months after the interview. The item is only available in 2006 and 2008. The results of this exercise, not presented here, show massive negative effects of perceived labour market uncertainty and a relevant reduction in the FTC impact on receiving training. Since Giesecke (2009) showed a strong correlation between perceived and actual risks of unemployment among temporary workers, the mentioned test could be cautiously interpreted as an indirect hint confirming the validity of the short payback mechanism.

<sup>ix</sup> The overall pattern of coefficients for control variables confirms the expected results based on previous research on the topic, thus suggesting the validity of our dependent variable as a measure of firm provided on-the-job training.

<sup>x</sup> For instance, a possible source of unobserved heterogeneity could rise from higher endowments (ability, tenure, etc.) of the workforce employed in 2008 despite increasing unemployment risks.

<sup>xi</sup> The pattern of results does not change using propensity score and kernel matching procedures.

<sup>xii</sup> The ATT among Mediterranean FTCs that we obtained appears robust over a 1.6 gamma value, meaning that even if the odds of one person being employed in 2008 were 1.5 times higher because of different values on an unobserved covariate, our inference would remain statistically significant at the 5% level.

<sup>xiii</sup> We considered part of the working class those individuals belonging to classes 6 to 9 of the Eurosec class schema, while part of the service class those in classes 1 and 2.

<sup>xiv</sup> We held constant the profile in terms of gender and unemployment experience used above while education has been set at its intermediate level (higher secondary education).

## References

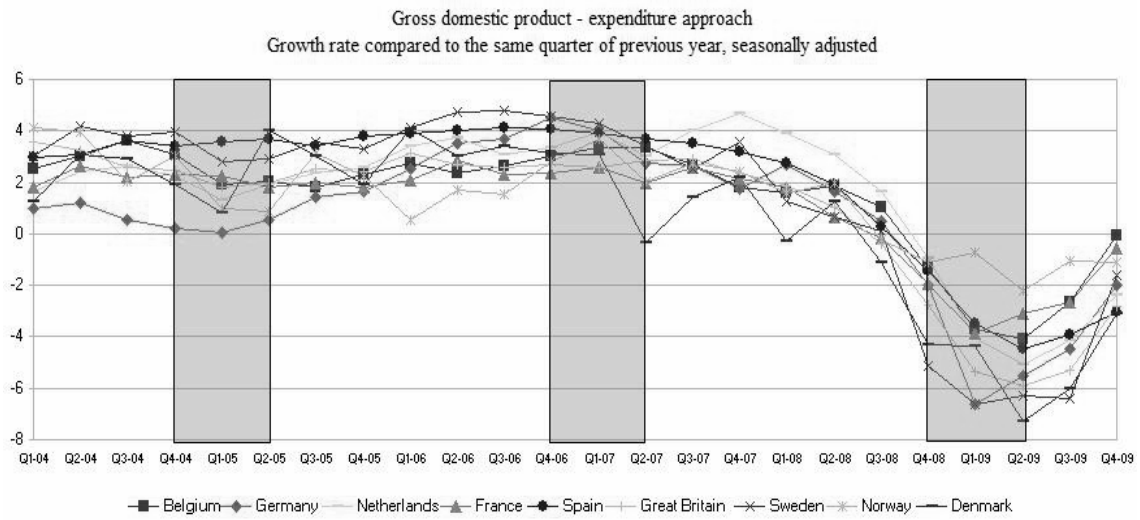
- Acemoglu D. and Pischke, J.S. (1999) 'Beyond Becker: Training in Imperfect Labour Markets', *The Economic Journal*, 109(453): F112-142.
- Albert, C., Serrano, C., and Hernanz, V. (2005) 'Firm-provided training and temporary contracts', *Spanish Economic Review*, 7(1): 67–88.
- Arulampalam, W. Booth, A. and Bryan, M. (2004) 'Training in Europe', *Journal of the European Economic Association*, 2 (2-3): 346-360.
- Arulampalam, W., and Booth, A.L., (1998) 'Training and Labour Market Flexibility : Is There a Trade-off?', *British Journal of Industrial Relations*, 36(4): 521-536.
- Aassve, A., Billari, A., Mazzucco, S. and Ongaro, F. (2001) 'Leaving Home Ain't Easy. A comparative longitudinal analysis of ECHP data', MPIDR WP 038.
- Atkinson, A.B. (1998) 'Exclusion, Employment and Opportunity', CASEpaper, Centre for Analysis of Social Exclusion', CASE/4 London School of Economics
- Baizan, P. (2005). 'The impact of labour market status on second and higher-order births. A comparative study of Denmark, Italy, Spain and United Kingdom', DemoSoc Working Paper 11.
- Barbieri, P. (2009) 'Flexible Employment and Inequality in Europe', *European Sociological Review*, advanced access: doi: 10.1093/esr/jcp020.
- Barbieri, P. and Bozzon, R. (forthcoming) 'Labour market and fertility decisions in the 'Latin model'. The relation between partial and targeted labour market deregulation and fertility postponement in Italy and Spain'.
- Barbieri, P. and Scherer, S. (2009) 'Labour Market Flexibilisation and its Consequences in Italy', *European Sociological Review*, advanced access: DOI:10.1093/esr/jcp009.
- Bentolila, S., Cahuc, P., Dolado, J.J. and Le Barbanchon, T. (2010) 'Two-Tier Labor Markets in the Great Recession: France vs. Spain', IZA DP No. 5340.
- Blanchard, O. (2005) 'European unemployment: the evolution of facts and ideas', NBER Working Paper 11750.
- Booth, A. and Bryan, M. (2002). 'Who Pays for General Training? New Evidence for British Men and Women', IZA DP no. 486.
- Brunello, G. (2009) 'The Effect of Economic Downturns on Apprenticeships and Initial Workplace Training: a review of the evidence'. *Empirical Research in Vocational Education and Training* 1(2).
- Dolado J., Serrano, C. and Jimeno, J. (2002) 'Drawing Lessons From The Boom Of Temporary Jobs In Spain', *The Economic Journal*, 112(480): F270-F295.
- Drewes, T. (2008) 'Adult Education and Training from a Longitudinal Perspective', Trent University.
- Esping-Andersen, G. and Regini, M. (Eds.) (2000) 'Why Deregulate Labor Markets?' Oxford: Oxford University Press.
- Esping-Andersen, G. et al. (1999) 'Why We Need a New Welfare State', Oxford, 1999.
- Esping-Andersen, G. (1990) 'The Three Worlds of Welfare Capitalism', Cambridge: Polity Press.
- Evertsson, M. (2004) 'Formal On-the-Job Training: A Gender-Typed Experience and Wage-Related Advantage?', *European Sociological Review* 20(1):79-94.
- Ferrera, M. (1996) 'The "Southern Model" of Welfare in Social Europe', *Journal of European Social Policy* 6(1): 17–37.
- Forrier, A. and Sels, L. (2003) 'Temporary employment and employability: training opportunities and efforts of temporary and permanent employees in Belgium', *Work, employment and society*, 17(4): 641-666.

- Gagliarducci, S. (2005) 'The Dynamics of Repeated Temporary Jobs', *Labour Economics*, 12 (4): 429-448.
- Gallie, D. and Paugam, S. (2000) (ed.) 'Welfare Regimes and the Experience of Unemployment in Europe', Oxford, Oxford university press.
- Gebel M. (2009) 'Fixed-Term Contracts at Labour Market Entry in West Germany: Implications for Job Search and First Job Quality', *European Sociological Review*, 25(6): 661-675.
- Giesecke, J. and Groß, M. (2003) 'Temporary Employment: Chance or Risk?', *European Sociological Review*, 19(2): 161-177.
- Giesecke, J. (2009) 'Socio-economic risks of atypical employment relationships: evidence from the German labour market', *European Sociological Review*, 25 (6): 629-646.
- Grubb, D. and Wells, W. (1993) 'Employment Regulation and Patterns of Work in EC Countries'. OECD Economic Studies, n. 21.
- Jenkins, A., Vignoles, A., Wolf, A., Galindo-Rueda, F. (2002) 'The determinants and effects of lifelong learning', CEEDP, 19. Centre for the Economics of Education, London School of Economics and Political Science, London, UK.
- Keele, L. J. (2010) 'Rbounds: An R Package For Sensitivity Analysis with Matched Data', <http://www.polisci.ohiostate.edu/faculty/lkeele/rbounds%20vignette.pdf>
- King, G., Tomz, M. and Wittenberg, J. (2000) 'Making the Most of Statistical Analyses: Improving Interpretation and Presentation.' *American Journal of Political Science* 44(2): 347-61.
- Loewenstein, M. and Spletzer, J. (1999) 'General and Specific Training: Evidence and Implications', *Journal of Human Resources*, 34(4):710-33.
- Lucidi, F. (2010) 'Little innovation, many jobs: An econometric analysis of the Italian labour productivity crisis' *Cambridge Journal of Economics*, 34, 525-546, doi:10.1093/cje/bep011
- Madsen, P. K. (2006) 'How can it possibly fly? The paradox of a dynamic labour market in a Scandinavian welfare state', in John A. Campbell, John A. Hall and Ove K. Pedersen (eds.): *National Identity and the varieties of Capitalism: THE DANISH EXPERIENCE*, McGill-Queen's University Press, Montreal: 321-355
- Muffels R and Luijkx R. (2008) 'Labour market mobility and employment security of male employees in Europe: 'trade-off' or 'flexicurity'?', *Work, Employment & Society*, 22(2): 221-242.
- Nickell, S. (1997) 'Unemployment and labor market rigidities: Europe versus North America', *Journal of Economic Perspectives*, 11(3): 55-74.
- O'Connell and Byrne, D. (2010) 'The Determinants and Effects of Training at Work: Bringing the Workplace Back in', *European Sociological Review*, advanced access: doi:10.1093/esr/jcq063
- OECD (2008) *Education at a glance*, Paris.
- OECD (2006) *Employment Outlook*, Paris.
- OECD (2003) *Employment Outlook*, Paris.
- OECD (2002) *Education at a glance*, Paris.
- Pischke, J.-S. (2001) 'Continuous Training in Germany', *Journal of Population Economics*, 14(3): 523-548.
- Polavieja, J. (2006) 'The incidence of temporary employment in advanced economies: why is Spain different?', *European Sociological Review*, 22(1): 61-78.
- Polavieja, J. (2003) 'Temporary Contracts and Labour Market Segmentation in Spain: An Employment-Rent Approach', *European Sociological Review*, 19(5): 501-517.

- Rubin, D.B. (1974) 'Estimating causal effects of treatments in randomized and nonrandomized studies', *Journal of Educational Psychology* 66: 688–701.
- Saint-Paul, G. (1996) 'Exploring the Political Economy of Labor Market Institutions', *Economic Policy*, 11(23): pp. 263-315.
- Sala, H. and Silva, J. (2009) 'Flexibility At The Margin And Labour Market Volatility: The Case Of Spain', *Investigaciones Económicas*. 33 (2): 145-178.
- Sauermann, J. (2006) 'Who invests in training if contracts are temporary? Empirical evidence for Germany using selection correction', IWH-DP, no. 14
- Sekhon, J. (2009) 'Multivariate and Propensity Score Matching Software with Automated Balance Optimization: The Matching package for R', *Journal of Statistical Software*, Forthcoming.
- Siebert, H. (1997) 'Labor Market Rigidities: at the Root of Unemployment in Europe', *Journal of Economic Perspectives*, 11(4): 37-54.
- Smeeding, T.M. (2002) 'Globalization, Inequality and the Rich Countries of the G-20: Evidence from the Luxembourg Income Study (LIS)', SPRC Discussion Paper No. 12.
- Steijn, B., Need, A. and Gesthuizen, M. (2006) 'Well begun, half done? Long-term effects of labour market entry in the Netherlands, 1950-2000', *Work, Employment and Society* 20(3): 453-472.
- Tomz, M., Wittenberg, J. and King, G. (2003). 'CLARIFY: Software for Interpreting and Presenting Statistical Results.' Version 2.1. Stanford University, University of Wisconsin, and Harvard University. January 5. Available at <http://gking.harvard.edu/>

## Appendix

**Fig. 1** Period of interviews across rounds and economic conjunctures for selected countries



Source: <http://stats.oecd.org/Index.aspx>

**Tab. 1** Sample means (unweighted cases) and training rates for independent variables

	<b>Northern group</b>		<b>Central group</b>		<b>Southern group</b>	
	<i>Variable mean</i>	<i>Training rate</i>	<i>Variable mean</i>	<i>Training rate</i>	<i>Variable mean</i>	<i>Training rate</i>
<b>Overall training rate</b>	.69	69.5	.53	53.1	.33	32.7
<b>Contract and period</b>						
FTC	.12	65.4	.12	53.3	.24	34.0
2004	.32	68.9	.26	54.1	.34	33.5
2006	.33	70.6	.37	52.4	.22	39.7
2008	.34	68.9	.36	53.2	.44	28.6
<b>Personal characteristics</b>						
Age	36.9	37.1	37.2	36.9	35.4	35.0
Woman	.49	72.4	.47	53.1	.47	34.0
No previous unempl.	.70	71.8	.69	56.4	.59	33.3
Unempl. > 3 months	.22	66.1	.22	49.1	.30	31.2
Unemp. > 12 months	.8	58.0	.11	40.1	.11	34.4
Eduyrs	14.5	15.0	14.2	15.1	13.9	16.0
<b>Socio-economic status</b>						
Isei	46.7	49.5	47.1	51.5	43.2	50.4
<b>Other Job characteristics</b>						
Work hours 15-24	.6	59.0	.11	46.8	.5	38.9
Work hours 25-29	.3	67.2	.5	55.6	.2	56.1
Work hours 30-39	.62	72.2	.56	54.5	.19	45.9
Work hours >=40	.29	66.0	.28	52.5	.75	28.5
Up to 10 employees	.17	60.0	.18	40.6	.35	24.8
10-24 employees	.19	67.8	.17	45.4	.27	29.5
25-99 employees	.28	71.5	.26	52.9	.22	40.4
100-499 employees	.20	70.4	.22	59.4	.10	45.0
>=500 employees	.15	77.6	.16	67.6	.6	47.2
Member of union	.64	73.9	.26	55.8	.15	42.4
Qualified sector	.31	82.9	.32	66.1	.22	48.6
Public sector	.34	81.9	.30	66.6	.24	47.4
<b>Country</b>						
Belgium	-	-	.24	55.9	-	-
Germany	-	-	.32	48.0	-	-
The Netherlands	-	-	.24	61.6	-	-
France	-	-	.19	47.8	-	-
Spain	-	-	-	-	.72	37.1
Greece	-	-	-	-	.28	21.8
G.B.	.20	60.9	-	-	-	-
Sweden	.23	72.7	-	-	-	-
Finland	.21	72.4	-	-	-	-
Norway	.20	68.8	-	-	-	-
Denmark	.16	72.6	-	-	-	-

Source: European Social Survey (Rounds 2-4)

**Tab. 2** Determinants of training – AMEs from logit models

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	AMEs	Sig.	AMEs	Sig.	AMEs	Sig.	AMEs	Sig.	AMEs	Sig.	AMEs	Sig.
<b><i>Contract and period</i></b>												
2006	0.009		-0.013		0.008		-0.006		-0.001		0.004	
2008	-0.004	***	-0.027	***	-0.025	***	-0.020	**	-0.012		-0.003	
FTC	-0.081	***	-0.077	***	-0.062	***	-0.047	***	-0.036	***	0.000	
FTC*2006											-0.033	
FTC*2008											-0.066	***
<b><i>Personal characteristics</i></b>												
Age			0.000		-0.001	**	-0.003	***	-0.002	***	-0.002	***
Age2			0.000	***	0.000	***	0.000	**	0.000	**	0.000	**
Woman			0.024	***	0.023	***	-0.006		-0.004		-0.004	
Unemp.>3m.			-0.035	***	-0.024	***	-0.015	*	-0.005		-0.005	
Unemp.>12m.			-0.082	***	-0.055	***	-0.036	***	-0.021	*	-0.021	*
Eduyrs			0.046	***	0.034	***	0.027	***	0.028	***	0.027	***
Unemp.>3m.*Eduyrs			-0.003		-0.002		-0.001		-0.001		-0.001	
Unemp.>12m.*Eduyrs			-0.008	**	-0.008	**	-0.009	***	-0.009	***	-0.008	***
<b><i>Socio-economic status</i></b>												
Isei					0.005	***	0.004	***	0.004	***	0.004	***
<b><i>Other Job characteristics</i></b>												
Work hours 25-29							0.062	***	0.070	***	0.069	***
Work hours 30-39							0.079	***	0.085	***	0.085	***
Work hours>=40							0.051	***	0.077	***	0.077	***
10-24 employees							0.015		0.011		0.011	
25-99 employees							0.056	***	0.045	***	0.044	***
100-499 employees							0.083	***	0.069	***	0.069	***
>=500 employees							0.133	***	0.121	***	0.121	***
Member of union							0.112	***	0.060	***	0.060	***
Qualified sector							0.052	***	0.048	***	0.048	***
Public sector							0.138	***	0.141	***	0.141	***
<b><i>Institutional effects</i></b>												
Germany									-0.044	**	-0.044	**
The Netherlands									0.044	**	0.044	**
France									-0.062	***	-0.062	***
Spain									-0.107	***	-0.108	***
Greece									-0.275	***	-0.275	***
G.B.									0.035	*	0.034	*
Sweden									0.154	***	0.155	***
Finland									0.133	***	0.132	***
Norway									0.100	***	0.101	***
Denmark									0.114	***	0.113	***
N	17837		17817		17620		17497		17497		17497	
R2	0.002		0.077		0.092		0.132		0.148		0.148	

Source: European Social Survey (Rounds 2-4)



**Tab. 3** Determinants of training across different labour markets – AMEs from logit models

	Northern group		Central group		Southern group	
	Model 1		Model 2		Model 3	
	AMEs	Sig.	AMEs	Sig.	AMEs	Sig.
<b><i>Contract and period</i></b>						
2006	0.005		0.011		0.000	
2008	-0.022		0.017		-0.009	
FTC	-0.006		0.001		0.005	
FTC*2006	-0.048		-0.049		-0.008	
FTC*2008	-0.020		-0.080	**	-0.092	*
<b><i>Personal characteristics</i></b>						
Age	-0.001	*	-0.003	***	-0.003	**
Age2	0.000		0.000	***	0.000	
Woman	0.010		-0.010		-0.019	
Unemp.>3m.	0.010		-0.016		0.004	
Unemp.>12m.	-0.047	*	-0.039	***	0.085	**
Eduyrs	0.027	***	0.026	***	0.030	***
Unemp.>3m.*Eduyrs	-0.011	**	0.008	**	-0.008	
Unemp.>12m.*Eduyrs	-0.012		-0.008	*	-0.012	
<b><i>Socio-economic status</i></b>						
Isei	0.003	***	0.004	***	0.005	***
<b><i>Other Job characteristics</i></b>						
Work hours 25-29	0.066	*	0.060	**	0.338	***
Work hours 30-39	0.088	***	0.098	***	0.042	
Work hours>=40	0.064	***	0.106	***	0.024	
10-24 employees	0.049	**	-0.006		-0.002	
25-99 employees	0.047	**	0.029	**	0.075	**
100-499 employees	0.027		0.090	***	0.077	**
>=500 employees	0.078	***	0.146	***	0.125	**
Member of union	0.045	***	0.053	***	0.079	**
Qualified sector	0.055	***	0.053	***	0.029	
Public sector	0.183	***	0.126	***	0.090	***
<b><i>Institutional effects</i></b>						
Germany			-0.051	***		
The Netherlands			0.038	*		
France			-0.068	***		
Sweden	0.121	***				
Finland	0.098	***				
Norway	0.055	**				
Denmark	0.075	***				
N	8433		6719		1652	
R2	0.127		0.121		0.192	

Source: European Social Survey (Rounds 2-4)

**Tab. 4** ATT on training of economic crisis within FTC and permanent workers across countries (genetic matching)

	<i>FTC</i>		<i>Permanent</i>	
Flexicurity 2004-2006	-5.00	N (treated) = 688 (356)	5.00	N (treated) = 5044 (2592)
Conservative 2004-2006	-0.30	N (treated) = 513 (316)	-1.00	N (treated) = 4313 (2152)
Mediterranean 2004-2006	1.00	N (treated) = 264 (149)	0.00	N (treated) = 1190 (812)
Flexicurity 2006-2008	0.00	N (treated) = 668 (312)	-2.00	N (treated) = 5044 (2592)
Conservative 2006-2008	-5.00	N (treated) = 589 (289)	0.00	N (treated) = 4313 (2152)
Mediterranean 2006-2008	-14.20 **	N (treated) = 325 (182)	-0.01	N (treated) = 865 (483)

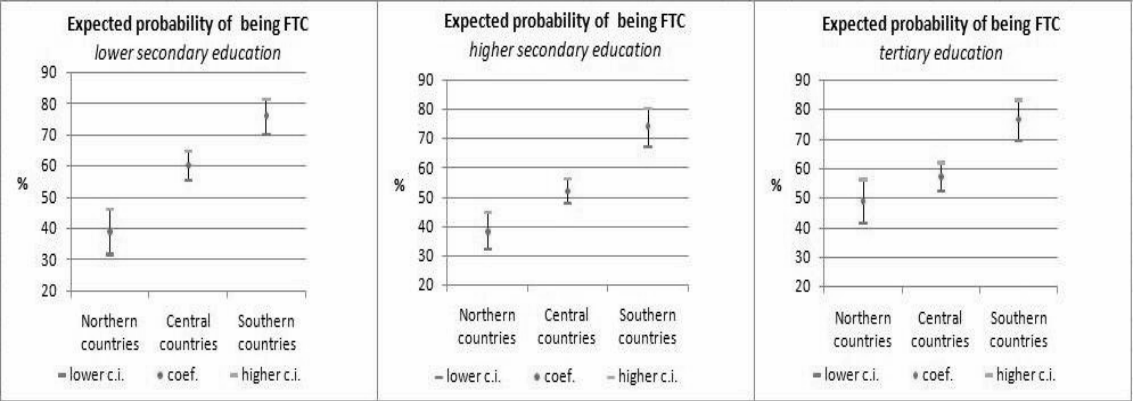
*Source:* European Social Survey (Rounds 2-4)

**Tab. 5** Rosebaum sensitivity test for Mediterranean FTC 2006-2008 ATT.

<i>Gamma value</i>	<i>Lower bound P-Value.</i>	<i>Upper bound P-Value.</i>
1	0,00	0,00
1,1	0,00	0,00
1,2	0,00	0,00
1,3	0,00	0,01
1,4	0,00	0,02
1,5	0,00	0,04
1,6	0,00	0,07
1,7	0,00	0,11

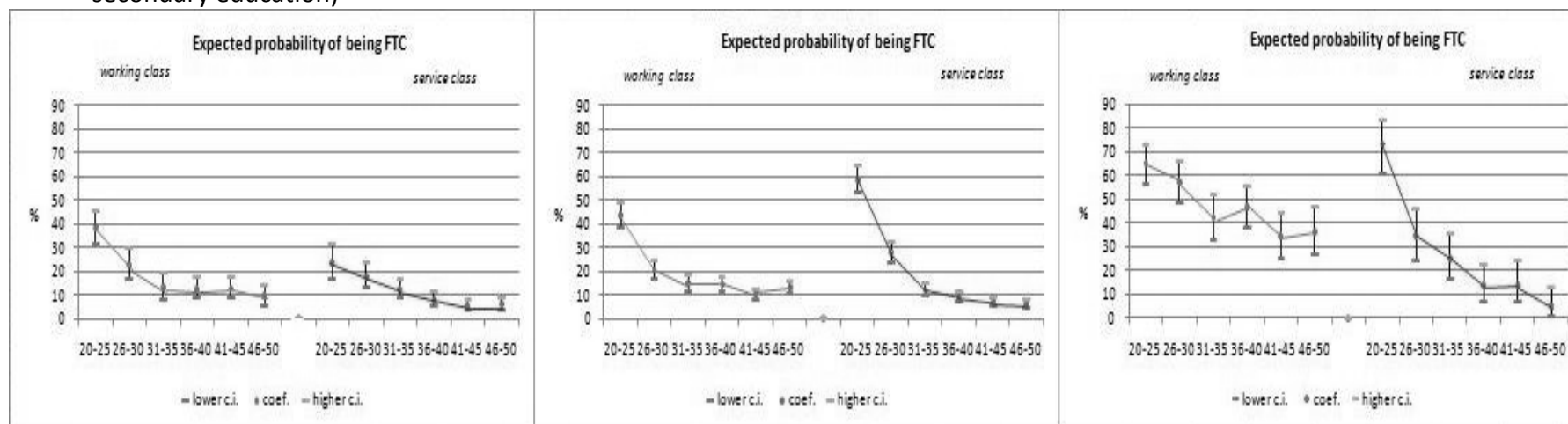
*Source:* European Social Survey (Rounds 2-4)

**Fig. 2** Expected probability of holding a FTC for a woman, aged 20-25 with previous unemployment experience longer than 3 months



Source: European Social Survey (Rounds 2-4)

**Fig. 3** Expected probability of holding a FTC in Northern, Central and Southern countries (same social profile of Fig. 2, higher secondary education)



Source: European Social Survey (Rounds 2-4)