Off-the-job training and the shifting role of part-time and temporary employment across institutional models. Comparing Italian and British firms[1].

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Abstract

This article investigates intensity and composition of off-the-job training investments of Italian and British firms in relation to their workforce heterogeneity with respect to the presence of non-standard workers. The main purpose is to assess the relationship between off-the-job training volumes and composition and the recourse to the main types of non-standard employment, i.e. temporary and part-time contracts, at firm level. Empirical evidence drawn from national surveys of the two countries shows more similarities than expected in terms of the correlation between non-standard employment and training volumes whilst substantial differences arise when disaggregating training interventions according to the types of skills to be developed. Both institutional settings and the different role of part-time and temporary employment in the labour markets of the two countries contribute to interpretation of results.

Keywords

Workplace training, skills development, part-time workers, temporary workers, Italy, UK,

1. Introduction

From the early nineties onwards, extensive labour market reforms to increase flexibility have been implemented in most European countries, leading to a wider use of temporary and part-time contracts, and progressively towards a two-tier employment protection regime that relaxes

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regulation on the use of temporary contracts, while maintaining stringent employment protection rules for permanent contracts. The objective is to facilitate employers' pursuit of numerical flexibility in accordance with fluctuations of the business cycle and to adapt to changes in the business environment. This growing incidence also reflects the availability of young people willing to accept non-standard employment work in the transition from education to employment in the face of few secure employment opportunities.

Meanwhile, workplace training has been increasingly recognized as crucial to create, update and recombine skills according to organisational needs and to enable employees to undertake more complex tasks and/or complete the old tasks better or faster than before. Skill surveys have shown that computerization and technological change have stimulated an increasing demand of general and transferable skills from the employers. The role of workplace training in Europe, however, varies among countries according to national contexts and the underlying complementarities between institutions. Acknowledgement of the importance of workplace training in order to maintain and improve firms' competitiveness has raised concern about the effects of the increasing use of non-standard forms of employment, due to low incentives to invest in human capital for both firms and workers because of the limited expected payback period for that investment. For the same reason, precarious workers are inhibited from actively participating in training programmes to achieve the expected learning outcomes. This applies, in theory, to both temporary and part-time workers. Notwithstanding that the European directive on part-time work (Directive 97/81/EC) stresses the principle of non-discrimination, there remains evidence of lower pay, lower upward mobility, and poorer job satisfaction among part-time workers. An extensive strand of empirical literature has explored the relationship between flexible contracts and training investments from the supply-side, using information on household and individual workers, while few studies have investigated this effect from the labour demand standpoint using data at firm level, and none with a comparative perspective. Moreover, most of these studies have looked at training volumes without distinguishing different types of skills involved in such programs.

This paper tries to fill this gap with a comparative analysis of the relationship between non-standard workers and workplace training at firm-level both in its quantitative and qualitative aspects in two different European countries that face similar challenges with respect to the need to increase training investments: the UK and Italy. These two countries belong to different institutional models, but they have been facing some convergent trends. The UK was one of the first countries to introduce flexibility-oriented reform processes while Italy's labour market regime has been evolving in the same direction over the last two decades. On the other hand, in the HRM literature UK is not considered any more as a standing-alone country in comparison to continental Europe (Poutsma et al., 2006; Hancké, 2007; Pedrini, 2016). Correspondingly, Italy has seen a decline of the role of the State as an agent of coordination and an hybridisation of its model of capitalism by establishing institutions that support, for instance, both wage coordination and labour markets flexibility (Simoni, 2012). As a result, Italy has an ambiguous position in relation to the traditional dichotomies of varieties of capitalism and "cannot be seen to constitute a coherent capitalist archetype in the same manners as others" (Goergen et al., 2012, p. 524), being characterized by low restrictions for fixed-term and temporary contracts combined with high employment protection. This hybridization turns out in potential similarities. For instance, in both countries vocational training is persistently viewed as relatively weak and centered on generic skills while firms are deemed to be reluctant to invest in applied industry-specific skills. Overall, these institutional changes have the potential of having influenced the attitude towards training investments in a negative way in both countries.

In parallel, both in the UK and Italy an increasing segmentation of the labour markets has been observed (Marsden, 2007; Sacchi and Vesan, 2015). However the pattern of this segmentation has progressed along different boundaries. The duality of Italian labour market has mainly concerned the divide between permanent and fixed-term workers (Berton and Garibaldi, 2012), and to a more limited extent between part-time and full-time workers. In the UK the separation is mainly between part-time (that includes the so-called "zero hour contracts") and full-time employment, whilst

temporary contracts are frequently used by firms as stepping stones to more stable jobs (Booth et al., 2002, Dekker, 2007), leading the labour markets to be more unified in this respect. The different incidence of non-standard employment and of its involuntary/voluntary component supports these insights.

Finally, in both countries labour productivity levels significantly lag behind those found in the main other European countries. This, combined with the lack of institutions that help employers spread the risk of long-term training and keep high training participation even after labour market reforms, such as in Germany (Jansen et al., 2015), has raised concerns on how to leverage on training investments in order to bridge the "productivity gap" that affects these countries. British and Italian firms are viewed as affected by short-termism compared to other countries such as Germany (Gospel and Pendleton, 2005) due to their contries' institutional setting, which for different reason may reduce establishment-level training activity (Felstead, 2016) and lead to low skill-low prodictivity equilibria.

This article addresses these issues by exploring relations between different off-the-job training and labour market flexibility practices in these two countries in order to enlighten the interactions of training figures with the recourse to the main types of non-standard employment, i.e. temporary and part-time contracts, at firm level. A comparative description of non-standard employment and workplace training in Italy and the UK is followed by an empirical analysis based on two workplace surveys carried on in 2005 and 2004 respectively. Findings on training volumes are quite similar, but once disaggregating training investments according to the types of skills they aim to develop, our evidence highlights the shifting roles of part-time and temporary contracts in Italian and British labour markets, which in turn can be partially traced back to differences in their institutional settings and flexibility practices.

The paper is organized as follows. In Section 2, theoretical and empirical work on the relationship between non-standard employment and firm training is reviewed. Section 3 compares recent and current trends in non-standard employment in Italy and the UK, and Section 4 introduces a skill-

based taxonomy of training interventions. Section 5 presents the data and descriptive statistics; Section 6 explains the empirical strategy and Section 7 shows the results of the analysis. Discussion and conclusion are summarized in Section 8.

2. The Theory and practice of the relationship between workplace training and non-standard employment

One of the main threats attached to non-standard employment is that it can be associated with firms' underinvestment in human capital. High turnover reduces firms' returns from training and in turn, workers who perceive low job security have less incentive to participate to training programs. Employers may thus reduce their investments in training in function of the presence of non-standard employees among the workforce. In presence of imperfect labour markets (Acemoglu and Pischke, 1999) or technical complementarity between general and specific human capital (Brunello, 2001), and between training and innovation (Acemoglu, 1997), this hypothesis applies to both general and specific training. The logical outcome is assumed to be a 'low skill-high turnover' equilibrium[2] under conditions that is sub-optimal in relation to productivity (Stevens, 2013).

Countervailing theoretical models support the view that under certain circumstances employers would increase training investment in presence of non-standard workers. First, flexible regimes may provide firms with incentives for hiring new workers who are usually characterized by substantial training needs (Forrier and Sels, 2003) and a higher propensity to learn in order to perform well in their jobs (Alba, 1998). Second, firms might use training as a means of learning about workers' capabilities before offering permanent contracts (Autor, 2001). Third, firms can decide to hire temporary workers and provide them with general training in order to acquire a good reputation in the external labour market (Moen and Rosen, 2004). More important for this study, in a segmented internal labour market where a contingent workforce coexists with a "core" tier of

[2] Such state of equilibrium is characterised by "a self-enforcing network of societal and state institutions which interact to stifle the demand for improvement in skill levels" (Finegold and Soskice, 1988)

employees with a long-term tenure and firms are likely to pursue a core-periphery labour utilization strategy (Kalleberg, 2001), an increase in the incidence of temporary workers can be consistent with high training investments for the stable component of the workforce to make it acquire adequate skills for addressing technological and organizational change (Gittleman et al., 1998; Cappelli and Neumark, 2001).

Other economic incentives hinge on the motivation of employees to learn from training, which has been identified as an important predictor of training effectiveness (Mathieu et al., 1992) if individuals see a link between skills development and the achievement of their own objectives, such as improving their career. Motivated workers are likely to put more effort into initially transferring and subsequently maintaining a high level of trained skills. Conversely, labour market segmentation may negatively affects employees' willingness to be trained, unless they want to participate to an entry tournament for those few posts characterized by high pay and other rewards such as status, prestige and intrinsic satisfaction (Marsden, 2007). In addition, part-time employment is more common among workers with fewer educational attainments and with jobs ranked lower on the occupational scale (Fenton and Dermott, 2006) while low-skilled workers can get explicit benefits from their participation in training only if they have the chance to move to another job in the firm-internal labour market (Sanders and De Grip, 2004)[3]. As a result, the presence of non-standard workers, in particular part-timers, may inhibit workers' incentives to learn from training, eventually depressing the relevant investments of the employer.

Concerning empirical evidence, most of the existing studies support the view that workers with open-ended contracts are more likely to have received firm-provided training than non-standard ones (e.g. Albert et al., 2005; Sauermann, 2006; O'Connell and Byrne, 2012) while comparative analyses generally confirm the negative correlation between training opportunities and temporary workers in most European countries (Bassanini et al., 2005; European Commission, 2010; OECD,

[3] However, there is a minor component of part-time jobs that are designed to retain and attract valued workers who prefer to work part-time and are not deemed to be penalized by such status (Hoque and Kirkpatrick, 2003).

2002; Arulampalam et al., 2003; Albert et al., 2010). In particular, the negative relationship between temporary workers and firm-provided training has been found statistically significant in countries with dual labour market, such as Spain, France, and Italy (Cabrales et al., 2014). On the other hand, UK household data robustly supports the negative relationship between part-time employment and training opportunities. Still, most of these studies rely on supply-side data from household and individual respondent surveys. Few contributions have investigated this effect from the labour demand standpoint (Forrier and Sels, 2003; Addison and Bielefeld, 2004; Almeida-Santos and Mumford, 2004), despite the fact that the decision whether to train or not rests mainly on the employer, who usually finances the relevant investment.

3. Stylized facts on Italy and the UK

2.1 Non-standard employment

In most of European countries labour market reforms have fostered the extension of employment flexibility. The introduction of a two-tier regime relaxing regulation on the use of temporary contracts while maintaining stringent employment protection rules for permanent contracts, has led to an increased share of temporary workers in most of EU Member States in the last two decades (Dolado et al., 2002; Bentolilla et al., 2008; Boeri and Garibaldi, 2007). In the same period European countries recorded an increasing diffusion of part-time contracts (Eurostat, 2013) which can be considered as a form of non-standard employment usually associated with unskilled jobs, low wages, and poor career perspectives (Connoly and Gregory, 2008; Manning and Petrongolo, 2008; Mumford and Smith, 2009).

In Italy extensive labour market reforms has been implemented from the early nineties onwards. OECD (2004) reports that Italy experienced the highest relaxation of employment protection legislation on temporary contracts between the late 1980s and 2003 combined with a persistent level

of protection of permanent workers (OECD indicators on Employment Protection Legislation). This reformatory process led to a substatntial expansion of atpyical employment and eventually to a dual labour market (Pulignano et al., 2015), within which the wider use of temporary and part-time contracts stands out (Figure 1). The fact that most of part-time workers are women (27.9% of total female occupation in 2009) does not mean that this contractual form is mainly voluntary. Actually, the share of part-time employees unwilling to stay in this condition has always been fairly high (around 35%) in the last decade, eventually rising to 58.5% in 2012 (Eurostat), which is much higher than the EU average (around 25% in 2012), despite the lower share of part-time contracts registered in Italy, which accounts for 15% of the labour force compared to the EU average of 18% (Eurostat, 2016). Thus in most recent years the growth of part-time work in Italy and in other Mediterranean countries has mostly concerned the non-voluntary component, mainly employed in service sectors and in non-professional white-collar occupations (Munoz de Bustillo et al., 2008). The share of involuntary temporary workers is even higher having raised from 61% to 96% between 2005 and 2010. This worrying figure is related to the poor share of conversion rate from temporary to permanent contract, which is around 22% (Eichorst, 2013). Only training contracts represent a valuable port of entry to standard employment suggesting that only binding legal constraints on training requirements and use, extension of non-standard contracts can enhance the probability of getting a permanent job (Berton et al., 2011).

<Figure 1>

As displayed in Figure 2, Britain shows one of the highest rates of part-time work among developed economies, together with Netherlands, US and Australia: the share of total employment accounted for by part-time workers is high, but quite stable, accounting for nearly 30% of total employment in 2010 and 27% in 2012 (UK Office for National Statistics). This figure includes ‘bad jobs’ as low-skilled posts are commonly organized around part-time employment (Kalleberg, 2001), and to a

more limited extent high level occupations, with significant differences with regard to gender, age and educational attainment. At an aggregate level, however, part-time workers are characterized by lower levels of general and specific skills, restricted opportunities for improvement, and poor career prospects (McDonald, Bradley and Brown, 2008, 2009; Gallie and Zhou, 2011). Over the years there has been a reduction of the wage penalty of low-skilled part-timers due to the increasing within-occupation similarity of task composition of part-time workers to that of full-time workers (Elsayed et al., 2017), but no changes in occupational segregation between part-time and full-time workers has been reported. Part-time figures also include contracts that do not guarantee a minimum number of hours ("zero-hours contracts") and represent an extreme and growing form of flexibility, accounting for 0.6% of total employment in 2010, for 1.9% in 2013 and 2.3% in 2014 (Office for National Statistics, 2015). The percentage of workplaces that had some employees on zero-hours contracts doubled from 2004 to 2011 (from 4% to 8%), raising to 21% in the large workplaces. Conversely, the share of temporary employment over total workforce is lower in than part-time working, and only slightly increased in the period of interest (from 6.1% to 6.2%).

Although the share of involuntary non-standard workers has substantially augmented after the crisis (Green and Livanos, 2013), in particular among part-time workers, these figures are far lower than European continental countries. Additionally, British labour markets are characterized by a higher conversion rate from temporary to permanent contracts (51.8%), meaning that they are likely to be stepping stones rather than "dead ends" (Cabrales et al, 2014), with a high number of managers and professionals voluntarily entering into non-standard employment (Forde and Slater, 2001). Yet, certain categories of workers that are in non-standard positions, notably young and low-skilled individuals, find it difficult to stay on the career ladder and to be treated in similar ways to permanent employees. Overall by keeping also in mind that the UK legislation is characterized by low levels of employment protection, the duality of labour markets can be mainly referred to part-time and young unskilled workers whilst in Italy the flexible tier is mostly identified with temporary employment

<Figure 2>

2.2. Workplace training

In Italy and the UK workplace training is usually advocated as a tool to bridging the productivity gap that traditionally characterize these countries (Mason and Bishop, 2015). Overall, British firms offer a lower level of training than their counterparts in other European countries while the formalization of training activity is quite low. Notably, since the early 2000s the length of training interventions, especially off-the-job, has been shortened substantially (Green et al., 2015) meaning that training often takes place on an *ad hoc* basis without being formally planned and without a dedicated budget covering training expenses. This reflects the persistent unwillingness of British employers to pay for general and underpinning components of workers' skills (Steedman, 1998), which has been related to an institutional setting that favours high turnover rates and the diffusion of non-standard workers between youngest cohorts. In the UK, the institutions attached to a Liberal Market Economy (LME) traditionally provide lower incentives for employers to invest in skill formation while workers have a higher incentive to acquire general skills, which are broadly portable across the various industries and firms in which they might seek employment. Empirical research has highlighted that, although skill needs for young people has proven to be relevant, the number of young people receiving training is decreasing side by side to the increasing presence of young people employed in "jobs without training" (JWT) (Keep, 2012; Anderson et al., 2006). In Italy the gap with the EU mainly concern the participants to training activities, and the propensity to provide training (Eurostat, 2016), which is partially related to the lower size that typically characterizes Italian firms.

In both countries individuals do not compensate employers' investments while the institutional support is relatively low compared to continental Europe (Dustmann and Schonberg, 2012) where we can find the German "dual system" based on apprenticeships, and strong forms of inter-firm

cooperation in the provision of training (Gospel and Foreman, 2006). Continental countries have also traditionally provided statutory support to employer-provided training through subsidies, tax deductions, such as in Austria and the Netherlands, or ‘‘train or pay’’ schemes such as in French (Bassanini et al., 2005)

These insights of the comparative analysis mostly apply to off-the-job training, as distinguished by on-the-job training. Off-the-job training is undertaken away from the work position and includes both the formal component of training provided through internally organized courses, and the whole range of external training provided by business schools, vocational and technical institutes, and consulting companies. It encompasses a wide range of interventions and is more relevant than on-the-job training in representing cross-country differences along the various aspects of workplace training decisions and the interaction between them and active labour policies. Off-the-job training may also contribute more to firm-level productivity than does on-the-job training (Zwick 2005). Finally, if one concentrates on off-the-job training, a negative impact of the crisis on the proportion of trained employees has been recently reported (Mason and Bishop, 2015), raising specific concerns on the needs to developing appropriate incentives for employers to improve adult skill levels’ through off-the-job training.

<Table 1>

4. Dfferent contents, different skills

Theoretical expectations differ considerably when interacting with the wide range of training contents and skills’ development initiatives that can be activated in the workplaces, each of them can be associated with a corresponding demand expressed by the firm. Relying on the classical distinction between general and specific skills, the economic literature define the category of ‘transferable’ skills (Stevens, 1994), which firms may be willing to develop because of the

existence of wage compression and the costs of obtaining information about outside job vacancies as well as the costs of switching employers (Ashenfelter et al. 2010). In this perspective, firms need to minimize the prospect of losing trained workers once they have acquired these skills (Green et al., 1999). It is also possible to add more nuanced categories related to task-specificity and industry-specificity, respectively by identifying six types of competences: meta-competences, general industry competences, intra-organizational competences, standard technical competences, technical trade competences, idiosyncratic technical competences (Nordhaug, 1998).

Idiosyncratic technical competences are connected with single tasks and related to the production technology or equipment of the firm. They generate the strongest possible lock-in of employees in regard to both employers and jobs. They include job rotation, on-the-job training, and courses aimed at disseminating core values throughout the organization. Standard technical competences refer to portable skills that embrace a wide range of operatively oriented knowledge applicable across different industries, such as accounting and finance, computer programming, knowledge of standard computer software. Technical trade competence lay in the middle and refer to those interventions directed to the execution of specific tasks that are common to the same industry. Intra-organizational competences, whose focus is on internal networking capabilities, are usually developed through team working and other interventions aimed at providing knowledge of the working environment and at disseminating organizational core values. General industry skills concern industry-specific knowledge that is highly transferrable among firms. They mainly refer to those competences encompassing a major industry-unique and contextual-knowledge component, typically the ability to analyze the specific competitive conditions of the market where the firm operates. Meta-competences encompass a broad spectrum of skills "such as literacy, learning capacity, analytical capability, knowledge of foreign language and cultures, ability to communicate and to cooperate with others, general negotiation skills, and ability to adjust to change" (Nordhaug, 1998, p. 12) also including those organizational competences related to political processes, culture, and interpersonal networks.

This taxonomy is clearly useful to derive the implications of the effects of the relationship between non-standard workers and the characteristics of workplace training. The increasing role of soft skills, mainly attached to intra-organizational skills and meta-competences, has been emphasized together with the higher need of cognitive skills as a response to the pace of change. One should thus expect to see "higher levels of workplace skill formation to generate both the work skills that cannot be learned during school and college education, and the new skills that become needed through innovation-driven growth" (Green et al., 2016, p. 3). Soft skills are increasingly identified as a factor enhancing employability while they are recognized as the ones that give rise to recruitment problems most frequently, together with the lack of technical/practical skills (Mason and Bishop, 2015)[4]. This expectation, however, may not apply in presence of increasing flexible labour markets as firms can be discouraged to finance transferable training (Crouch et al, 2001; Keep and Maylew, 2010). As a result the surge of unmatched "soft skill" gaps has been partly attributed to the increasing diffusion of non-standard contracts. Finally, non-standard contracts are normally associated with jobs where information processing and other productive transferable skills are used less intensively.

5. Dataset and descriptive statistics

The empirical analysis relies on two firm-level surveys that include a wide set of information on training activity and workforce composition. For Italy, data come from the Survey on workforce training in Italian firms performed by the Italian National Institute of Statistics (ISTAT) in 2006, which is the last one that has data on non-standard employment. The sample includes 15,470 firms employing more than 10 workers. Among them 5,986 (41.6%) have provided some kind of off-the-job firm-sponsored training in 2005. For the UK data originate from the 2004 version of Workplace Employment Relations Survey (WERS) whose purpose is to collect information about the state of

[4] In 2011 48% of British establishments with skill gaps reported the lack of job specific skills, 27% complained about gaps dealing with technical skills, while 39% and 35% were affected by a lack of planning and operations skills and problem solving skills, respectively.

employment relations in workplaces throughout Britain. WERS contains information on workforce and training activity of 2295 firms with more than 5 employees. Among them 2,029 (89%) have provided some kind of off-the-job firm-sponsored training.

These dataset are the last ones available for both countries that contain information on both the recourse to non-standard employment and workplace training, on the one hand, and the contents of training interventions, on the other hand. Unfortunately, the Italian dataset do not provide any information on the share of non-standard workers employed in each firm, forcing us to measure the presence of part-time and temporary workers through dychotomic variables.

To evaluate firms, propensity to train is measured through a binary variable that takes the value one if the firm has provided training in the year of reference and zero otherwise while the length of courses expressed in hours per year per employee is the proxy for off-the-job training volumes[5]. Off-the-job training is then disaggregated according to the portfolio of training contents, following the classification previously defined.

Tables 2a and 2b report descriptive statistics on the main variables in the subsequent empirical analysis. On average the size of British firms is three times the Italian one, but this gap is reduced to less than twice if training firms are only taken into account. Among training firms, the participation rate to training activities is substantially higher in the UK (59%) than in Italy, where training involves a minority of the workforce (41%). The distance in terms of off-the-job training volumes is even higher: in British firms it is more than four times higher than in Italian ones. Clearly, this gap is partly due to the larger size of British firms, which positively correlates with training investments. The median age cohort of the workers is the same (30-50 years old) in both countries, but the age distribution of the workers is more skewed in the UK. Off-the-job training pattern can be further distinguished according to the type of contents and skills attached to each intervention. Due to data availability the empirical analysis takes into account only a limited range of contents. Namely, general industry skills are associated with marketing courses, idiosyncratic technical skills

[5] For the UK this measure is derived through multiplying by 8 the number of days of training per year per employee.

with technical courses, intra-organizational skills with either team working (UK) or working-environment related courses (Italy), technical trade skills with health and safety courses, meta-competences with managerial courses (UK) or foreign languages courses (Italy), standard technical skills with administration and IT courses. In the UK the dominant contents refer to intra-organizational and technical trade skills, while in Italy firms mainly aim at developing technical and standard technical skills. In both countries general industry skills and meta-competences are also developed, although to a rather limited extent.

In relation to workforce characteristics, descriptive statistics show that most of the training firms employ non-standard workers. In Italy, 68.81% and 59.91% of training firms employ part-time and temporary workers, respectively. In approximately half of the cases they employ both types of workers, while 20.26% of the interviewed firms do not employ any of them. In the UK, the share of firms employing part-time workers is higher (87.36%), while the proportion is lower for temporary workers (42%). These descriptive statistics are consistent with the share of part-time and temporary workers in the national workforce.

<Table 2a>

<Table 2b>

6. Estimation strategy

In order to analyse the relationship between non-standard employment and off-the-job training volumes in Italy and in the UK, one needs to take into account potential selection effects deriving from the observation of the dependent variable only for firms providing training. One standard estimation procedure for treating this bias is the two-step method (Heckman,1979). However, this method is acceptable only if the dataset contain variables that can be used to identify the sample selection term. Since the Italian dataset cannot address this issue a multicollinearity problem is

likely to arise (Puhani, 2000). We thus estimate the following equation by using a subsample OLS estimator that restrict the regression to training firms as it is considered a preferable option:

[1] $\ln(Offtr_i) = \beta_0 + \beta_1 Temp_i + \beta_2 Ptime_i + \beta_2 X_i + \varepsilon_i$ if $Offprop_i = 1$

Where *Offtr* identifies the number of hours of off-the-job training per year per employee provided by the firm *i*, the two dummy variables *Temp* and *Ptime* measure the presence of temporary and part-time workers in the firm's workforce, respectively and *X*i is a vector of establishment-level characteristics that are expected to influence training volumes. The conditional variable $Offprop$ takes the value of 1 if the firm has provided some off-the-job training intervention during the year of reference, and 0 otherwise. OLS estimates will thus address the following question: amongst firms that provide training, how do those that employ part-time or temporary workers differ in training volume from those that employ only full-timers? The robustness of the results are then controlled through a Tobit estimate by leveraging on the censored nature of the dependent variable. It could be, however, that the diffusion of part-time working and temporary contracts are not exogenous variables for the firm. Indeed it is possible that firms that make different contractual choices are likely to differ in other ways that affect their training decisions. Given the absence of a longitudinal span, these regressions will basically capture conditional associations without inferring proper causal effects.

When disentangling this relationship according to training contents, the strategy is to estimate a Probit model in which the dependent variable is a dummy variable taking the value of 1 if the firm finance at least one course providing the selected type of skills ($Skill_s$) along the period of interest, and 0 otherwise.

[2] $P(Skill_{s,i} = 1) = F(X'_i\beta_1)$ if $Offprop_i = 1$

Wherew $F(X'_i)$ is the cumulative distribution function of the standard normal distribution and $X'i$ is a vector that includes both the dummies *Ptime* and *Temp* and the other covariates of Equation [1]. In this case the robustness check is obtained through the estimation of the relationship between the presence of non-standard workers and the variety of contents provided through off-the-job training by dividing training courses according to their different subjects. For Italy the index of variety (*ginicont*) is set up like a Gini coefficient. It is continuous and ranges from 0 (equidistribution) to 1 (maximum concentration), being regressed on the set of covariates of equation [1] though an OLS estimate. For the UK the choice is to use a count data model (Poisson distribution) that takes into account the discrete nature of the dependent variable that measure the number of different skills developed through internal training interventions.

The broadest specification includes a wide set of control variables (X_i) related to sector, size, occupations, age structure of the workforce, job-related practices, innovativeness, and trade union recognition. Control variables associated with job-related practices and trade union recognition are progressively added across the specifications in order to appreciate their effects on the estimated coefficients of the variables of interest.

7. Results

8.1 Training volumes

Results indicate that in both countries the diffusion of non-standard employment has divergent effects on training volumes according to the type of contracts (Table 3). In all specifications, the presence of part-time workers is negatively related to off-the-job training volumes. Namely, the presence of part-time workers penalizes off-the-job training investment by approximately 10% in Italy and by more than 50% in the UK. This result is robust to the inclusion of a wide array of controls and substantially confirmed by Tobit estimates[6], although the magnitude and the significance of the coefficients are slightly lower when using this second technique. This

[6] Results are available upon request.

result is consistent with the idea that in both countries the primary effect of the recourse to part-time employment is the reduction of the average post-training period during which the employer can enjoy the returns of her investments. Time flexibility can thus be detrimental for off-the-job training volumes, especially in the UK. Looking across specifications, the coefficient augments in both countries once controlling for the adoption of job-related practices (second specification), which are usually deemed as complementary to off-the-job training.

Conversely, the effect of temporary employment on training volumes is not significant both in Italy and in the UK. This result suggests that contrasting effects are in place when fixed-term workers are involved in the production process. Aside the negative effects attached to the reduced length of the employment relation, in the UK the presence of temporary workers appear to entail higher screening needs to be addressed by activating training initiatives whilst in Italy the intensification of numerical flexibility rather seems to be part of a cobweb of interconnected and complementary organisational arrangements, as suggested by the positive correlation with job rotation and quality circles.. This insight is more strongly supported for the UK where the presence of temporary workers is also positively associated with firm's propensity to train without influencing off-the-job training volumes. Namely, employing temporary workers is associated with an increase of the probability to provide off-the-job training by approximately 50% in the broader specification.

Concerning control variables, it is worth pointing out that in both countries the age distribution in of the workforce show the expected negative signs in both countries with respect to the diffusion share of elder workers whilst it is not significant as far as young individuals are concerned (under 30). Expectations are also confirmed for job-related practices, which are both positively associated with off-the-job training volumes, although for British firms coefficients are not always significant. Finally, union power, is positively related to training volumes in the UK, in line with previous evidence (Boheim and Booth 2004), whilst the relationship is unexpectedly negative in Italian firms.

<Table 3>

8.2 Training contents

Table 4 presents the results of the estimates when training activity is disaggregated according to its contents in order to go beyond the traditional distinction between general and specific skills. Findings show that the relationship between non-standard workers and off-the-job training becomes substantially different once contents are disentangled according to the characteristics of training courses and the associated skills' portfolio. In Italy the presence of part-time workers is associated with a 16.1% increase of the probability to provide training courses on standard technical skills whilst it does not significantly affect the internal development of other skills. On the other hand, the activation of courses on intra-organizational and idiosyncratic technical skills is favored by the diffusion of temporary employees by approximately 0.13 and 0.19 respectively. Thus, although the presence of part-timers penalizes training investments, firms employing these workers provide a large share of jobs that require a minimum amount of standard technical skills. Conversely, the presence of temporary workers is not significantly related to standard technical contents, but stimulates the provision of idiosyncratic technical and intra-organizational skills.

In the UK the presence of part-time workers has a strong positive relationship with the provision of idiosyncratic technical contents, whose probability to be delivered through workplace training increases by 0.7 further to a marginal increase of the rate of part-time workers. On the contrary, part-time employment is negatively related to the development of standard technical skills. This suggests that in the UK the presence of part-time workers may exacerbate their lack of portable skills. This is not the case for temporary workers as their presence positively affects the decision to develop intra-organizational and general industry skills.

<Table 4>

Results of the regression on training variety (Table 5) indicate that the impact of non-standard workers on the degree of diversification of training is different in the two countries. In Italy the equality of contents' distribution is positively correlated to the presence of both part-time and temporary workers. This suggests that the negative effects of part-time contracts on training volumes are partially counterbalanced by the higher variety of training interventions and the related skills. Again this is not the case in the UK where skills' diversification is penalized by the presence of part-time workers. Namely, the number of training contents is expected to increase by 0.73% further to a 1% increase of the share of part-time workers. No effect on training variety is instead associated with the presence of temporary employment in British firms.

<Table 5>

8. Discussion and conclusions

This article discusses the comparative incidence and qualitative composition of firm's off-site training in presence of non-standard workers in Italy and in the UK. Both countries have been experiencing a decline of off-the-job training volumes in the last two decades, especially among young workers, with increasingly lower opportunities to develop transferable skills in the workplace. This unexpected and disappointing trend can be related to the higher diffusion of non-standard employment, whose main component are represented by part-time and temporary contracts. Despite these similar tendencies, the two countries still have different institutional frameworks which lead to a reverse role of temporary and part-time contracts in achieving flexibility in the production process.

In the UK the role of "stepping stones" of temporary contracts reduces the gap with permanent employment in terms of incentives for the employer to invest in off-the-job training as suggested by

the human capital theory. The absence of any significant penalization in Italy is instead quite surprising and could be explained by two contrasting functions of temporary employment in this country. As suggested by the segmentation of the labour markets, fixed-term employment is aimed at reinforcing the numerical flexibility of the firms, which is expected to penalize the amount of training. On the other hand, temporary employment can be viewed as a tool for complementing the increase of functional flexibility obtained through a core-periphery labour utilization strategy that is associated with an increase of training volumes for the stable tier of the workforce.

Results on part-part-time employment are more clearly consistent with our theoretical and institutional framework. Both countries show a negative relationship between off-the-job training volumes and the recourse to part-time employment. The unambiguous negative association between their presence and off-the-job training intensity is consistent with human capital theory and with the idea that part-time workers can be used to control numerical flexibility amongst training firms. The magnitude of this relationship is however stronger in the UK where part-time employment includes "zero-hours contracts" and is more common among workers with fewer educational attainments and with jobs ranked lower on the occupational scale, such as the "jobs without training".

When looking at training contents, the sign and the magnitude of the relationship between presence of part-time employment and the provision of different type of skills changes substantially across the two countries. In Italy part-time contracts are associated with a higher provision of standard technical skills, which are deemed to be portable. This result seems to stem from the high diffusion of part-time contracts among low-skilled workers employed in administrative occupations. On the other hand, the evidence that training interventions are more firm-specific in presence of temporary employees can be referred the low conversion rates from temporary to permanent positions that characterize Italian labour markets. The opposite is true for the UK where part-time employment accomplishes the role of the flexible tier of the workforce and is attached to a wider set of low-skilled jobs, without a specific concentration on administrative occupations. The qualitative composition of off-the-job training thus captures the shifting role of part-time contracts in the

labour markets of the two countries and its consequences in terms of within-firms skills development paths. Such results would have been invisible if one only took into account aggregate training statistics.

These explanations are not at odds with the main achievements of the literature that focuses on training opportunities of non-standard workers. In both countries precarious pathways are likely to penalize those workers that are less able to resist in the labour markets, unless they are able to acquire new skills and knowledge at the initial stages of their fragmented career. Employability of non-standard workers, however, not only depends on the amount of human capital, but also on its portability. Under this assumption, the contribution of this article is to enlighten that the risk burden of acquiring non-portable skills through off-the-job training is mainly borne by temporary workers in Italy and by part-timers in the UK, unless these workers autonomously invest in the acquisition of transferable skills. Policy measures favouring the access to training programs dedicated to portable skills should thus be targeted to temporary workers in Italy and to part-time workers in the UK. In the UK this issue also raises specific concerns for young non-graduate workers, who are regarded as the most mobile group in the labour markets. Results also confirm the need to develop specific institutional categorizations that take into account the evolution of these countries along the last two decades.

The main limitations of this study deal with the selectivity of the status of training firm, which is only partially addressed through econometric techniques, with the restrictions to off-the-job training observations, and with the use of cross-sectional data that does not allow to assess a clear direction of the causal relationship between non-standard employment and training. Future studies on this issue will surely benefit from panel data research as well as from matching employer and employee data that separately analyse voluntary and involuntary non-standard workers. There is also scope for future research including aspects of job quality and skills (under)-utilization to be collected alongside dedicated surveys on workplace training that gather information on a wide set of aspects, including workers' characteristics and the quality of training.

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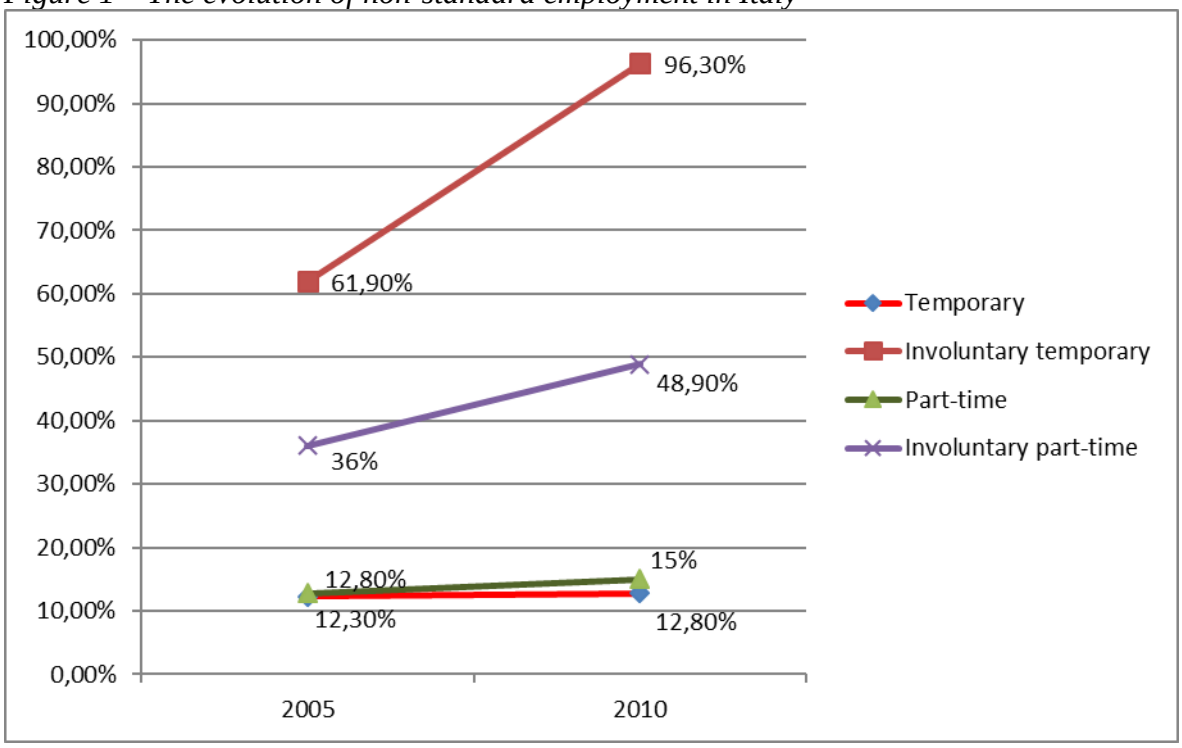
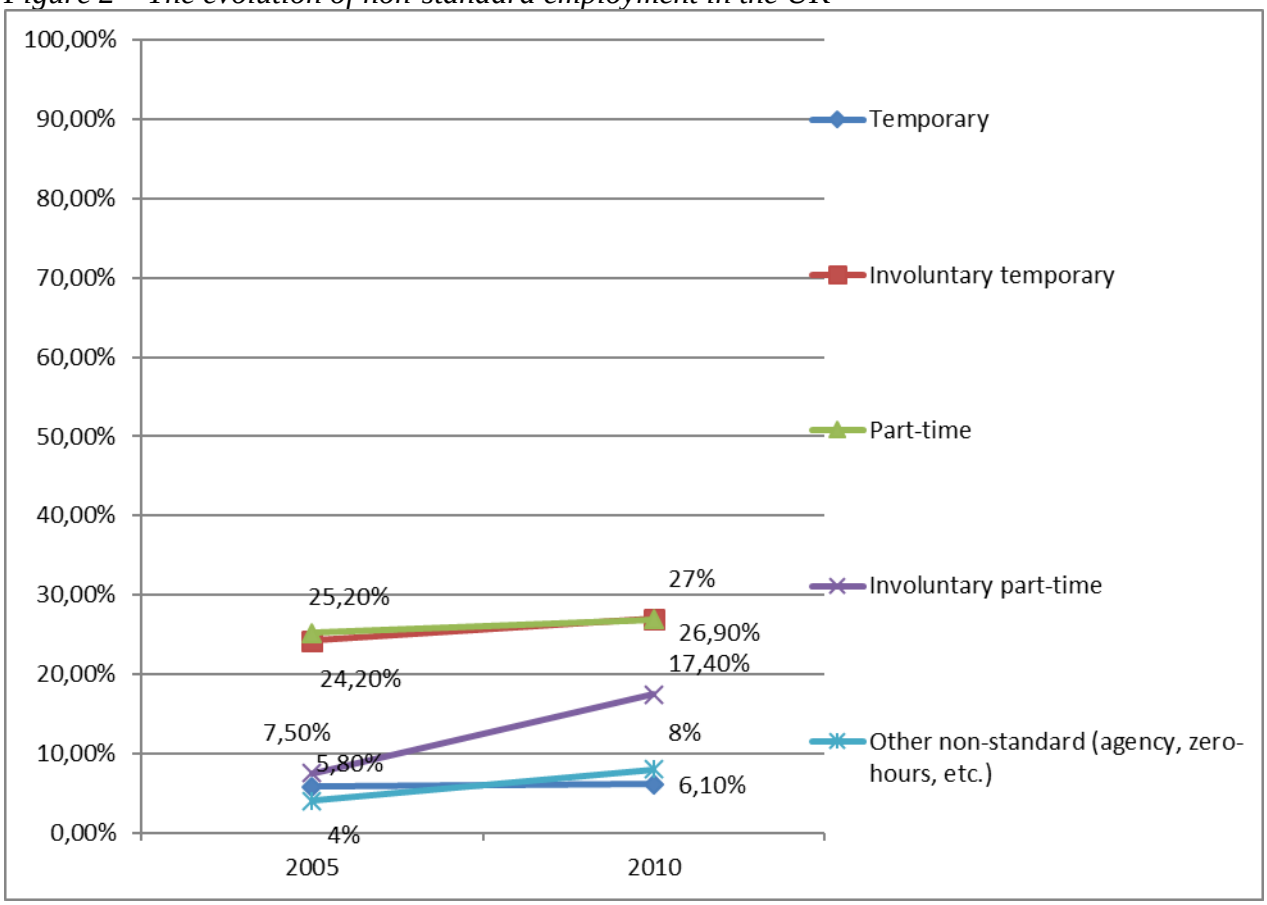
Figure 1 – The evolution of non-standard employment in Italy



Source: Italian Labour Force Surveys, 2005-2010

Figure 2 – The evolution of non-standard employment in the UK



Source: UK Labour Force Survey, 2005-2010

Table 1 – Workplace training figures

	Italy (2005)	**UK (2005)**	**UE (2005)**	**Italy (2010)**	**UK (2010)**	**UE (2010)**
Firms providing off-the-job training	27%	67%	50%	56%	80%	66%
Employees participating in off-the-job training	29%	33%	33%	36%	31%	38%
Employees participating in on-the-job training	7%	n.a.	16%	11%	30%	20%
Firms providing on-the-job-training	11%	75%	33%	24%	59%	34%
Firms providing other forms of training and work-related practices	20%	86%	48%	41%	75%	53%
Off-the-job training costs per employee (PPS)	683	416	509	595	320	638
Off-the-job training hours per employee (only training firms)	13	8	12	12	9	12

Source: Eurostat, 2005 and 2010

Table 2a – Descriptive statistics: continuous variables (only firms providing off-the-job training)

	Italy			UK		
Variable (acronym)	**Obs**	**Mean**	**Std. Dev.**	**Obs**	**Mean**	**Std. Dev.**
Number of employees (size)	5,986	136.0	85.4404	2,029	414.0	950.01
Proportion of females (women)	5,986	0.29	0.2621	2,029	0.51	0.29
Proportion of young workers (young)	5,986	0.06	0.0984	2,029	0.09	0.15
Proportion of old workers (old)	5,986	0.07	0.0890	2,029	0.21	0.16
Off-the-job training (hours per employee)	5,986	11.67	17.6437	2,029	27.56	14.09
Off-the-job participation rate	5,986	0.41	0.3661	2,029	0.59	0.38

Table 2b– Descriptive statistics: binary variables (only firms providing off-the-job training) - Relative frequencies (%)

Variable (acronym)	**UK**	**Italy**
Presence of unskilled workers (unskilled)	47.69	30.79
Presence of temporary workers (temporary	58.11	59.91
Presence of part-time workers (part time)	87.36	68.81
Training responsible (train_resp)	66.97	62.12
Training plan (train_plan)	38.54	55.23
Training evaluation based on workers' performance (perf_eval)	82.94	51.84
Contract clauses related to the participation to training activities (contr_inc)	11.27	27.21
Trade unions' involvement in training provision (un_inv)	23.46	30.93
Training contents		
Technical skills (Idios_tech)	56.27	87.35
General industry skills (Ind_gen)	62.16	71.79
Metacompetences	51.93	70.01
Standard technical skills (Std_tech)	48.36	85.72
Intraorganizational skills (Intra_org)	89.15	75.77
Technical trade skills	81.47	87.34
High performance working practices		
Job rotation	61.78	7.91
Quality circles	33.99	2.98
Propensity to innovate	64.15	26.81

Table 3 - Off-the job training volumes (OLS estimates)

	Italy (1)	UK (1)	Italy (2)	UK (2)	Italy (3)	UK (3)
part time	-0.142**	-0.5432**	-0.156***	-0.6420***	-0.091**	-0.5948***
	(0.056)	(0.2305)	(0.055)	(0.1885)	(0.036)	(0.1888)
temporary	0.070*	-0.0007*	0.063	-0.0005	0.033	-0.0006
	(0.052)	(0.0004)	(0.051)	(0.0003)	(0.034)	(0.0004)
size	-0.110***	0.0465	-0.144***	-0.053	-0.197***	-0.0244
	(0.031)	(0.0509)	(0.031)	(0.050)	(0.020)	(0.0469)
old	-1.307***	-0.5102*	-1.287***	-0.3935	-0.882***	-0.395
	(0.283)	(0.2740)	(0.279)	(0.2542)	-0.182	(0.2438)
young	0.104	0.0187	0.09	-0.1668	0.119	-0.1458
	(0.257)	(0.2669)	(0.254)	(0.2830)	-0.169	(0.2775)
women	-0.249*	0.4734*	-0.202	0.6715***	-0.289***	0.5563**
	(0.124)	(0.2581)	(0.122)	(0.2482)	-0.081	(0.2444)
innovat	0.276***	0.1036	0.210***	-0.0493	0.175***	-0.1252
	(0.055)	(0.0853)	(0.055)	(0.0861)	(0.033)	(0.0868)
job rot			0.280***	0.1906**	0.194***	0.1857**
			(0.064)	(0.0913)	-0.041	(0.0882)
qual circ			0.434***	0.1590**	0.232***	0.1193
			(-0.100)	(0.0808)	-0.056	(0.0798)
contr_inc					-0.019	0.0993
					(0.036)	(0.1094)
un_inv					-0.083*	0.2540***
					(0.034)	(0.0837)
Industrial dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	5986	1461	5986	1255	5986	1255
R^2	0.162	0.141	0.188	0.173	0.261	0.194

Training intensity is measured in hours/employee/year (log). Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4 - Off-the job training interventions by type of contents (Probit estimates)

	Italy Intra_org	UK Intra_org	Italy Ind_gen	UK Ind_gen	Italy Std_tech	UK Std_tech	Italy Idios_tech	UK Idios_tech
part time	-0.0370	-0.4613	0.0985	-0.3098	0.1615**	-0.5808*	0.0396	0.7004**
	(0.0663)	(0.3240)	(0.0727)	(0.3135)	(0.0641)	(0.3066)	(0.0650)	(0.3073)
temporary	0.1325**	0.0021**	0.0514	0.0024**	-0.0307	0.0012	0.1949***	0.0002
	(0.0608)	(0.0009)	(0.0679)	(0.0009)	(0.0618)	(0.0012)	(0.0599)	(0.0006)
size	0.2626***	0.0985	0.2931***	-0.0051	0.3281***	0.0472	0.2620***	0.1352*
	(0.0348)	(0.0694)	(0.0358)	(0.0769)	(0.0406)	(0.0730)	(0.0380)	(0.0715)
unskilled	0.0669	1.1800***	-0.0066	0.8323*	0.0307	-0.1864	0.0114	-0.4715
	(0.0642)	(0.4159)	(0.0683)	(0.4346)	(0.0631)	(0.4264)	(0.0654)	(0.4581)
innov	-0.0474	-0.1951	0.1407**	-0.0275	0.2367***	0.2254*	-0.1152*	0.0952
	(0.0635)	(0.1243)	(0.0665)	(0.1330)	(0.0693)	(0.1284)	(0.0637)	(0.1263)
young	-0.0420	0.8323*	0.2554	0.7333	-0.1360	-0.1269	0.1891**	0.5002
	(0.2932)	(0.4832)	(0.3353)	(0.5450)	(0.3430)	(0.5457)	(0.0842)	(0.4528)
job rot	0.2002*	0.2995**	0.1504*	-0.0089	0.0971	-0.0157	0.1777	0.1780
	(0.1096)	(0.1251)	(0.0851)	(0.1240)	(0.0829)	(0.1329)	(0.1195)	(0.1259)
qual circ	0.2220**	0.1874	-0.0276	0.2029	0.4190***	0.1527	-0.9093***	-0.1140
	(0.0979)	(0.1244)	(0.1099)	(0.1339)	(0.1149)	(0.1260)	(0.3136)	(0.1275)
contr_inc	0.0830	0.0685	-0.0451	0.1505	-0.1163*	0.3231*	0.0276	0.0228
	(0.0688)	(0.1712)	(0.0738)	(0.1651)	(0.0693)	(0.1782)	(0.0709)	(0.1735)
un_inv	-0.0927	0.3219***	-0.0997	0.2974**	-0.1986***	0.2820**	0.3970***	0.2814**
	(0.0675)	(0.1204)	(0.0690)	(0.1257)	(0.0629)	(0.1263)	(0.0645)	(0.1256)
_cons	-1.313***	-2.6041***	-2.114***	-1.704***	-1.0318***	-1.4017***	0.7767***	0.0348
	(0.1309)	(0.4682)	(0.1529)	(0.5105)	(0.1380)	(0.4619)	(0.1043)	(0.4737)
Industrial dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	5986	1601	5986	1601	5986	1601	5986	1601
chi2	440.899	149.440	694.989	177.753	513.484	182.753	305.3123	117.241

The dependent variable is measured as a dummy taking the value of 1 if the firms does invest in courses aimed at improving the selected competences, and 0 otherwise. Reported coefficients measure marginal effects. Control variables are the same than the ones used in the last specification of Table 3. Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5 - Off-the job training heterogeneity in Italian and British firms. OLS (Italy) and Probit (UK) estimates

	Italy	UK	Italy	UK	Italy	UK
part-time	-0.100**	-0.846***	-0.088*	-0.457	-0.098**	-0.734*
	(0.038)	(0.310)	(0.036)	(0.367)	(0.032)	(0.314)
temporary	-0.139***	0.001*	-0.126***	0.001	-0.107***	0.001**
	(0.033)	(0.000)	(0.031)	(0.000)	(0.028)	(0.000)
size	-0.244***	0.318***	-0.221***	0.304***	-0.153***	0.243***
	(0.016)	(0.006)	(0.015)	(0.078)	(0.013)	(0.066)
unskilled	-0.047	-0.333	-0.030	-1.092*	-0.033	-0.121
	(0.028)	(0.561)	(0.027)	(0.647)	(0.024)	(0.536)
innovat	-0.212***	0.149**	-0.172***	0.376**	-0.142***	0.214
	(0.027)	(0.053)	(0.026)	(0.162)	(0.023)	(0.143)
Old	0.427*	-1.652***	0.406*	-1.464***	0.355*	-1.581***
	(0.190)	(0.436)	(0.180)	(0.489)	(0.162)	(0.426)
young	0.085	0.158	0.110	1.019*	0.030	0.202
	(0.175)	(0.550)	(0.166)	(0.526)	(0.145)	(0.568)
women	0.114	1.095**	0.105	1.530***	0.102	0.948**
	(0.065)	(0.447)	(0.062)	(0.493)	(0.057)	(0.430)
job rotat			-0.193***	-0.007		
			(0.028)	(0.165)		
qual circ			-0.215***	0.319**		
			(0.038)	(0.152)		
contr_inc					-0.008	0.283**
					(0.024)	(0.143)
un_inv					0.029	0.571***
					(0.023)	(0.122)
_cons	3.009***	0.626**	2.940***	0.908***	3.017***	0.485**
	(0.147)	(0.228)	(0.137)	(0.201)	(0.129)	(0.225)
N	5986	1862	5986	1510	5986	1859
chi2	507.550	298.469	572.686	184.648	702.925	330.004

For Italy the dependent variable is measured as a continuous variable ranging between 0 (equidistribution of contents) and 1 (only one content is provided). For Britain the dependent variable is a discrete variable counting the number of contents that are provided through off-the-job training courses. Reported coefficients measure average effects. Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$