Are temporary jobs a port of entry into permanent employment? Evidence from matched employer-employee data[*]

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Abstract

Are temporary jobs a port of entry into permanent employment? In this paper we argue that the answer crucially depends on the type of temporary contracts being considered, as the different contracts observed in practice are typically characterized by varying combinations of training, tax-incentives and EPL provisions. We base our empirical evidence on a longitudinal sample of labour market entrants in Italy, a country where a large number of temporary contracts coexist with a relatively high employment protection for standard employees. We estimate dynamic multinomial logit models with fixed effects, to allow for non-random sorting of workers into the different types of contracts. We show that the transition to permanent employment is more likely for individuals holding any type of temporary contracts than for the unemployed, thus broadly confirming the existence of port-of-entry effects. Yet, not all temporary contracts are the same: training contracts are the best port of entry, while freelance contracts are the worst. We also show that temporary contracts are generally a port-of-entry into a permanent position within the same employer, but not across firms, implying that little general-purpose training is gained while on temporary jobs. Moreover, the time needed for an internal transformation from a temporary to a permanent position appears rather long, suggesting that firms are likely to use (a sequence of) temporary contracts as a cost-reduction strategy, rather than as a screening device for newly hired workers.

Jel classification: J41, J63
Key words: temporary jobs, port of entry, matched employer-employee data, dynamic multinomial logit models, state dependence, fixed effects

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1 Introduction

The liberalization of temporary contracts has been the main labour market policy in Europe in the last two decades, with the stated objective of increasing labour market flexibility. In many countries temporary contracts make up the bulk of new hires, for instance over 90% in Spain (Dolado et al., 2002) and over 50% in Italy, as we document below. In 2008 the contracts of limited duration represented 14.7% of the employed workforce in the EU25, up from a share of 11.7% in 1997 (Eurostat data).

Several reasons stand behind these developments. From the employers perspective, the availability of temporary jobs is tantamount to a reduction in firing costs, which is particularly valuable in an environment with incomplete information and high employment protection for standard jobs (Bentolila and Bertola, 1990; Bertola, 1990; Booth, 1997). Temporary jobs can be attractive from the labour supply standpoint too: they may allow a reduction of the unemployment duration and contribute to a decline in the unemployment rates of the weakest segments of the labour force (e.g. Alonso-Borrego et al., 2005; Blanchard and Landier, 2002; Bover and Gomez, 2004; De Graaf-Zijl et al., 2004; Van Ours and Vodopivec, 2006). However, all over Europe temporary jobs are often associated with poorer labour conditions with respect to standard employment: lower wages, lower training, higher job insecurity and lower protection from social security (e.g. Booth et al., 2002; Berton et al., 2009; Clark and Postel-Vinay, 2009). Furthermore, concerns have been expressed that people in such flexible working arrangements may be trapped into precarious career paths increasing the risks of social exclusion (e.g., D'Addio and Rosholm, 2005). At the extreme, temporary jobs may simply provide disadvantaged unemployed individuals with a valuable income-generating opportunity, but without significantly enhancing their human capital, social network and future employability, as in the case of the French temporary jobs considered by Magnac (2000).

One of the main questions surrounding the introduction and liberalization of temporary workers - and the one that we aim at answering in this paper - is therefore whether they ultimately represent a port of entry to open-ended jobs. We contribute to the existing empirical literature in two main ways. First, we show that the answer to this question crucially depends on the type of temporary contract being considered (e.g. fixed term, training, apprenticeship, freelance). This is because the different contracts observed in practice are typically characterized by varying combinations of training, tax-incentives for firms and EPL provisions, implying that some "contract packages" are more effective in providing port-of-entry mechanisms for workers while others just increase the flexibility of firms' workforce. A disaggregated analysis of the main types of temporary contracts can help us understand the role that temporary jobs can have in affecting a worker's career. From a policy perspective, it can also contribute to illuminate discussions on how to shape temporary work legislation. In fact, in most EU Countries fixed term, training, apprenticeship and freelance contracts are available in addition to open ended ones. However, despite the EU has tried to give its members a common legislative framework for the use of

temporary contracts (e.g. the directive 1999/70), many differences still persist in their actual phrasing (e.g., ILO, 2003; OECD, 2000; Bassanini et al., 2005, Bertolini et al, 2008). Most of the existing empirical literature, however, aggregates temporary contracts in a single category, thereby ignoring a relevant source of heterogeneity.

Second, we show that much can be learned on temporary contracts by distinguishing between transitions occurring within the same firm (e.g. a transformation from a temporary to a permanent contract) and those happening between different firms, with or without any intervening spell of unemployment. The distinction - often neglected in the existing literature due to lack of suitable data - can provide evidence on the ability of temporary jobs to increase workers' general versus firm-specific human capital. It can also inform on the reasons employers offer temporary contracts to newly hired workers.

To make our points, we use a longitudinal matched employer-employee database drawn from WHIP, the Work Histories Italian Panel. This dataset has several advantages for studying empirically the port-of-entry hypothesis. First, we are able to observe the detailed labour market history of a large number of young workers, over 6000 individuals, since they enter their first employment spell and for a long time period (from 1998 to 2004). In particular, the data record each individual's transitions between seven labour market states following entry: four different types of temporary contracts (namely, fixed-term contracts; training contracts; apprenticeship; freelance work), open-ended contracts, self-employment and non-employment. Second, given the large sample size, we can afford to look only at labour market entrants, thereby circumventing any initial condition problem that often plague the econometric analyses of labour market transitions. Third, because we use register data (as opposed to survey data), we can avoid sample selectivity problems related to non-random attrition or non-response. Moreover, the observed transitions are not affected by recall biases and other measurement errors are likely to be minimal. Forth, because of the matched employer-employee nature, we are able to observe whether the worker is employed in the same firm in two different points in time, with the same or with a different contract; i.e. we can distinguish between job changes across firms and contract transformations within the same firm.

To test the port of entry hypothesis, we estimate dynamic multinomial logit models with fixed effects, to allow for non-random sorting of workers into the different types of contracts. These models aim at estimating how past employment status (e.g., training contract) affect the chances of transiting towards any of the other states (e.g. fixed term contract, or non employment). Here the main econometric challenge is to disentangle the causal effect of past employment states from spurious selection due to unobserved individual characteristics. By allowing for individual fixed effects, our models are well placed for dealing with this challenge. In addition, the models turned out to be tractable even when transitions between as many as seven labour market states were considered, which was crucial given our aims. While the Markovian assumption embedded in these models imply that the dynamics of the process is kept relatively simple, the crucial advantage is that the estimates of transition parameters are robust

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to any specification of the distribution of unobserved heterogeneity (Magnac, 2000).

Our main results are as follows. After controlling for unobserved heterogeneity, we show that the transition to permanent employment is more likely for individuals holding any type of temporary contracts than for the unemployed, thus broadly confirming the existence of port-of-entry effects. Yet, not all temporary contracts are the same. Training contracts are the best port of entry; they provide formal training alongside a lower labour cost and non negligible EPL provisions. Freelance contracts are the worst; they have no EPL provisions, no training and low labour cost. We also show that temporary contracts are generally a port-of-entry into a permanent position within the same firm, but not across firms (none of them), implying that little general-purpose training is gained while on temporary jobs. Moreover, the time needed for an internal transformation from a temporary to a permanent position appears rather long, suggesting that firms are likely to use (a sequence of) fixed term and training contracts as a cost-reduction strategy, rather than as a screening device for newly hired workers. The only condition that increases the probability of getting an open ended contract in a new firm is having had a long employment spell with an open ended contract in the current firm.

Our paper is related to a number of recent empirical contributions testing the port-of-entry hypothesis of temporary contracts. Booth et al. (2002) for the UK, Hagen (2003) for Germany and Addison and Surfield (2009) for the USA provide evidence in favour of the port-of-entry hypothesis; Hotchkiss (1999) and Autor and Houseman (2002) for the US, Güell and Petrongolo (2007) and Casquel and Cunyat (2004) for Spain, De Graaf-Zijl et al. (2004) for the Netherlands and Magnac (2000) for France instead find little evidence of port of entry effects. As for Italy, the evidence is mixed. Gagliarducci (2005) uses retrospective survey data and shows that the probability of obtaining an open ended job grows with the duration of the current spell in temporary employment, but decreases with the number of past temporary spells. His multi-state multi-spell duration analysis allows for a rich dynamics and for random unobserved heterogeneity, but computational tractability requires that the analysis be confined to only three, highly aggregated, labour market states. The same aggregation is used by Picchio (2008) who finds evidence of port-of-entry in a different survey dataset. Ichino et al. (2008) instead focus on one specific type of temporary contracts - agency contracts - and find that they act as a port of entry in Tuscany but not in Sicily. By showing that the existence of the port of entry hypothesis is intimately linked to the type of temporary contracts being considered, as well as to whether transitions are observed between or within firms, our results intend to add to this strand of the literature.

The paper proceeds as follows: section 2 reviews the theoretical reasons for the different forms of state dependence, while section 3 presents our econometric approach. Section 4 presents the data. Sections 5 and 6, respectively, discuss the descriptive evidence and the econometric estimates. Section 7 draws the main conclusions and the appendix briefly depicts the institutional framework.

2 The theoretical framework

A number of reasons emerge in the literature to explain why temporary jobs may act as a port of entry into open ended employment, which may occur both within the same firm - i.e., the temporary contract is converted into an open ended one - or between firms, with or without an intervening spell of unemployment.

Within the same firm, temporary jobs can be used as a screening device. Since ability cannot be perfectly observed, employers often decide to post temporary vacancies in order to screen the workers, and to retain with an open ended contract only the ones who proved to be more productive. To assess the relevance of a screening device argument, the analyst is required to have information relative to the length of the learning process about the firm-worker match quality, so as to determine whether a worker's permanence in a given firm with a temporary contract is justified by a "normal" screening process. To the best of our knowledge no such measure is available in the literature.[1]

Temporary work in one firm may also be a port of entry to open ended employment in another firm. This is more likely to occur if temporary workers receive general purpose training in their current job, as this would increase their human capital with respect to unemployed individuals. Even if no training is provided, temporary jobs may allow the worker to build a network of contacts that in turn may increase open ended employment opportunities.

But temporary jobs may also become a trap. On the one hand, when the mechanisms leading to the port of entry are not activated during a temporary contract, the latter will eventually result in either unemployment or successive spells of temporary work. This may lead to human capital depreciation and a deterioration of the future prospects of getting a permanent job, representing one case of true "scarring effect" of temporary work.

On the other hand, the literature points to individual heterogeneity as a mechanism sorting individuals into different contracts, thereby explaining some or all of the observed state dependence. Worker heterogeneity may be present in the budget constraint, i.e. some individuals searching in the labour market may face liquidity constraints. Despite possibly being high productivity workers, they may rationally choose a temporary job because more protected positions are not quickly, available. Therefore the individuals with a more stringent budget constraint - who need to earn a wage as soon as possible - sort into fixed term contracts (Alonso-Borrego et al., 2005; Berton and Garibaldi, 2006). In such cases, persistence in temporary contracts is due to a possibly unobservable (to the econometrician) confounding factor, and it should fade as soon as the constraint relaxes.

Persistence in temporary contracts may also arise as a result of employers' behaviour in the face of heterogeneity in the firm-worker match quality. As pointed out by Güell and Petrongolo (2007), even in the presence of perfectly observable worker types, firms may use temporary contracts simply because

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[1] Anecdotal evidence collected with interviews to human resource managers points to a screening period of no more than nine months, depending also on the occupation.

they are a cheaper and more flexible factor of production. In this case, firms are trading off lower labour costs with a higher quit rate and the risk of losing productive matches, as temporary workers are more likely to quit in order to accept a better match with respect to permanent workers. Using a partial equilibrium search and matching model, they show under what conditions temporary contracts (i) are never converted to permanent contracts, (ii) are converted before their legal limit, (iii) are converted only at the end of the legal limit. It turns out that temporary contracts that are never converted could coexist with both early and late conversions. In particular, both a lower match productivity and less favorable worker's outside options, which make a worker's quit threat less credible, reduce the probability of contract conversion.

When individual ability is not perfectly observable by new prospective employers there is also room for statistical discrimination.[2] At least three mechanisms may induce employers to believe that former temporary workers are less productive: i) on the previous job they received less training and had themselves a lower incentive to invest in human capital (a sort of self fulfilling prophecy); ii) the previous employer hired them on a temporary arrangement just to face a demand upturn, but retention was unprofitable due to their low productivity; iii) they failed the screening period proving to be of lower ability. Employers are therefore prone to offer them another temporary position. In this case persistence in temporary jobs is not due to some (observable or not) individual characteristic, but to past temporary jobs themselves, leading to a second case of true scarring effect.

As Dolado et al. (2002) point out, there is currently no theoretical approach that is able to contemplate all these mechanisms at once; moreover, in the real world they are likely to overlap. A fully structural model is beyond the scope of the present work; we instead estimate a reduced form model, where we control for the role of individual heterogeneity (unobserved to the econometrician, but observed by the match parties) as well as possible; any remaining effects will be interpreted in the light of what has been discussed above. In particular, a high probability to move from a temporary to an open ended position within the same firm would support the hypothesis of temporary contracts as a screening device, provided that the length of the temporary contract is not exceedingly long. A transition from a temporary contract to an open ended position held in a different firm will instead be interpreted as evidence for a more general port of entry hypothesis, e.g. temporary jobs allow workers to gain general purpose human capital. Persistence in temporary jobs will be interpreted as a true scarring effect of past temporary work when emerging from transitions across firms; when emerging within the firm it would support the idea of cost reduction behaviour by the employers. From this perspective, the possibility of observing transitions between different types of contracts - i.e. different mixtures of labour cost, EPL, and training - constitute a crucial source of variation for disentangling the various mechanisms at work.

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[2] See the seminal papers by Phelps (1972) and Arrow (1973).

3 The econometric strategy

We are interested in dynamic models in which a high number of labour market states can be taken into account and it is possible to disentangle the effect of individual heterogeneity from the effect of past labour market experiences. In this respect, a trade off is faced when choosing the appropriate econometric model. On the one hand, continuous time models (e.g., the event-history analysis used by Bonnal et al., 1997 and Gagliarducci, 2005) are in general more careful about the dynamics of the process and less on controlling for unobserved heterogeneity, which is often described as a random effect that multiplicatively enters a proportional hazard. On the other hand, multi-state models in discrete time allow the introduction of unobserved fixed effects, possibly correlated with other individual characteristics, and without the need to resort to distributional assumptions, but at the cost of a poorer dynamic specification: usually, a Markov chain. Since our two main concerns are in flexibly controlling for unobserved heterogeneity while maintaining a high disaggregation of the labour market states, we follow the second strategy and use the approach proposed by Magnac (2000).[3]

The model reads as follows: for each individual $i \in \{1, ..., N\}$ the latent propensity level y_{ijt}^* to be in state $j \in \{0, ..., K\}$ at time $t \in \{2, ..., T\}$ is a function of the lagged state variables and of unobserved heterogeneity ϵ_{ijt}

$$y_{ijt}^* = \sum_{k=0}^{K} \delta_{kj} 1[y_{it-1} = k] + \epsilon_{ijt} \tag{1}$$

where $1[\cdot]$ is an indicator function and δ_{kj} are the parameters of interest. The unobserved components ϵ_{ijt} are decomposed into an individual and state specific effect α_{ij} and residuals u_{ijt}. Observed states are the states with maximum propensity

$$y_{it} = j \text{ if } y_{ijt}^* = Max_l(y_{ilt}^*) \tag{2}$$

If the residual components u_{ijt}, conditional on α_{ij}, are extreme value distributed and independent across states, individuals and periods, the probability to be in state j at time t for individual i given that she was in state k in the previous period, reads

$$\Pr\{y_{it} = j | y_{it-1} = k; \alpha, \delta\} = \frac{\exp(\delta_{kj} - \delta_{k0} + \alpha_{ij} - \alpha_{i0})}{1 + \sum_{l \neq 0} \exp(\delta_{kl} - \delta_{k0} + \alpha_{il} - \alpha_{i0})} \tag{3}$$

Identification of the state dependence parameters δ_{kj} requires a normalization constraint, namely to set to zero the parameters related to one of the destination states, here $j = 0$. Therefore, $\alpha_{i0} = 0$ and $\delta_{k0} = 0$, for any k. The interpretation

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[3] In our experience a random-effect multi-state multi-spell approach is also computationally more demanding, especially when the number of states considered is high. However, it remains attractive for the opportunities it offers to simulate workers' complete labour market histories and to perform welfare analysis. We pursue such an approach in a companion paper.

of the δ_{kj} is easier once the following ratio is considered, independent of the individual and state specific effect α_{ij}:

$$\frac{\frac{\Pr\{y_{it}=j|y_{it-1}=k;\alpha,\delta\}}{\Pr\{y_{it}=0|y_{it-1}=k;\alpha,\delta\}}}{\frac{\Pr\{y_{it}=j|y_{it-1}=0;\alpha,\delta\}}{\Pr\{y_{it}=0|y_{it-1}=0;\alpha,\delta\}}} = \exp(\delta_{kj} - \delta_{0j}) \tag{4}$$

The state parameters δ_{kj} are identified once the additional normalization $\delta_{0j} = 0$, for any j, is imposed. The interpretation is as follows: if δ_{kj} is positive, the odds of being in state j with respect to state 0 when the lagged state is k are larger than when the lagged state is 0.

Choosing "non work" as the reference state, the estimated δ_{kj} are informative of the nature of state dependence found in the data, i.e. whether a port of entry or a trap-effect dominates for the different types of contracts considered. If a trap-effect holds, the estimated transition parameters are larger when the lagged and the current states are equal than when they differ, i.e. $\delta_{kk} > \delta_{kj}$, for any $j \neq k$. In principle, this type of state dependence does not exclude a port of entry effect, i.e. $\delta_{k,j=1} > 0$, where $j = 1$ denotes open ended employment. In this case, the positive state parameter $\delta_{k,j=1}$ means that getting an open ended contract as the destination state is easier if the current state is k (say any of the temporary contracts) instead of non work. Finally $\delta_{k,j=1} > \delta_{h,j=1}$ implies that contract k provides a better port of entry with respect to contract h.

Estimation uses a conditional maximum likelihood method (CML). As shown by Magnac, the individual likelihood contribution is

$$\Pr\{y_{i2},...,y_{iT-1}|y_{i1},Y_{i1},...,Y_{iK},y_{iT}\} = \frac{\exp \sum_{k>0} \sum_{j>0} \left(\sum_{t>1} 1[y_{it} = k] \times 1[y_{it-1} = j] \times \delta_{jk} \right)}{\sum_{B} \exp \sum_{k>0} \sum_{j>0} \left(\sum_{t>1} 1[y_{it} = k] \times 1[y_{it-1} = j] \times \delta_{jk} \right)} \tag{5}$$

where $Y_{ik} = \sum_{t=2}^{T-1} 1[y_{it} = k]$ is the number of occurrences of state k for individual i from time 2 to $T-1$ and $B = \left\{ b = (y_{i2}, ..., y_{iT-1}) | \forall k > 0; \sum_{t=2}^{T-1} 1[y_{it} = k] = Y_{ik} \right\}$ is the set of all the possible state sequences that are compatible with the number of occurrences of each state. This method compares the work histories that are equivalent in terms of the number of occurrences but differ for the sequence of the states. The variability between time 2 and $T-1$ is informative about the transitions among states; for this reason, stable histories do not enter the likelihood function and at least four periods must be observed. As we explain below, our specification includes seven labour market states and up to seven yearly observations are used in the analysis.

Three considerations are in order before applying this econometric approach to our case. First, we do not explicitly account for initial conditions. This is viable, because our empirical analysis is based on a sample of entrants in the

labour market (everybody is in the same state - non work - before their initial employment spell) and because controlling for individual fixed effects we control for the initial endowment of human capital and ability.

Second, the model proposed by Magnac works out the problem of unobserved heterogeneity in a very elegant way without any distributional assumption. Nonetheless, it's not able to take into account the effect of time varying covariates. In other words, the state dependence we observe after controlling for fixed effects could be due to some individual characteristics that vary in the time interval we observe.[4] One obvious candidate is human capital, that is expected to increase more in open ended and in training contracts. However, no obvious candidates emerge once we control for the contract type, and hence indirectly for the possibly different rate of accumulation of human capital.

Finally, persistence within a contract can in fact be due to an ongoing screening process on the match quality - as argued in section 2 - instead of being due to a true "scarring effect" of past temporary work. Since in this case the main issue is the length of the screening period, one way to at least partially control for this fact is to look at transitions over increasing time intervals: we do this by estimating the model at one year and at two year intervals. To single out further the two mechanisms, we next control for the fact that the worker is employed with the same contract in two points in time in the same firm or in a different firm. Hence we separate transitions not only between/within contracts but also between/within firms as a further set of labour market states. The length of the screening process is unobservable; however, if persistence with a temporary contract within the same firm is "very long" (e.g. four years), this can be interpreted as indication of a cost reducing behaviour on the part of the firm.

4 The data

To perform our empirical analysis we use WHIP (the Work Histories Italian Panel), a large work histories dataset built up by LABORatorio R. Revelli from the Italian social security administration archives [5]. This choice allows:

- to observe many different contracts, i.e. many different "bundles" of Employment Protection provisions, Social Security Contributions and formal training content: open-ended contract, fixed-term contract[6], training contract, apprenticeship, freelance work[7] and self-employment, whose char-

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[4] Along the lines of Magnac, Honorè and Kyriazidou (2000) propose a solution to this problem. However, the conditions for the identification of the coefficients of time-varying characterisitcs - i.e. x(t) should be almost constant when the state changes - are too data-demanding to be reasonable in our context.

[5] Full details on the data can be found at www.laboratoriorevelli.it\whip

[6] Agency contracts represent only 0.3% of labor market entrants and for tractability are included among fixed-term contracts. See Heyway et al. (2006) for a recent analysis of the determinants of agency contracts.

[7] A freelance worker is formally self-employed, hence she enjoys a minimal level of social pro-

acteristics are summarized in Table 1. [8]

Table 1: Main characteristics of contracts.

Contract	EPL	Training	SSC
Open ended	high	no	high
Fixed term	low	no	high
Training	low	yes	low
Apprenticeship	low	yes	very low
Freelance	null	no	low
Self employed	null	no	low
See Appendix for details.			

- to select a flow sample of entrants in employment and follow them for a long span of time, namely the first seven years of their working careers, yet remaining with a large sample size (more than 6000 individual work histories). To be more specific, we select native people under 40 years of age never observed in employment between 1985 and 1997 that start their first paid job during 1998; we then follow them until the end of 2004. In this way we circumvent the initial condition bias that often affects the analysis of labor market transitions: the initial state, indeed, will be non-employment for everyone in the sample;

- for dependent employees, to distinguish between contract transformation within the same firm and proper labor market transitions across different employers, i.e. contract and firm code are two different pieces of information, both recorded on a monthly base.

Notice that WHIP's reference population excludes only civil servants hired on an open ended contract, high skill professions (e.g. lawyers) and workers in the black economy, by definition. Hence, we exclude from the analysis those who work with a fixed term contract in the public sector, as their eventual transition to an open ended contract in the same public sector would be unobservable. In this setting, absences from the archive can be easily labelled "non work" spells, as transitions back and forth to non observed contracts (mainly a permanent position in the public sector, or a high skill profession) are extremely unlikely[9].

As our econometric approach models transitions across states as a Markov chain, we record the entry contract as well as the labour market position of the workers in October of every year from 1998 to 2004. Since identification

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tection, but in many cases her income depends on only one contractor and her tasks are equal to those performed by dependent employees. They are often labelled "quasi-subordinate" workers. The appendix provides further details on the institutional framework. See also Bertolini et al. (2008).

[8]Our analysis does not distinguish between part time and full time jobs. Robustness checks showed that the exclusion of part time jobs is inconsequential on our results.

[9]Unemployment benefit recipients are included in the "non work" state, as inevitably are also employment spells in the black economy.

requires a minimum of four observations for each individual, the series allows the estimation at one as well as at two-year intervals.

The next section provides descriptive evidence on both the entry contract and transition probabilities. We then move to the estimates.

5 Descriptive evidence

We observe 6096 individuals aged 15 to 39 in 1998; about 46% of them are women. Table 2 details the entry contract shares in 1998: 33% of individuals start with an open ended contract, 27% as apprentice, about 10% start with each of the other contracts. Hence more than 56% of the individuals start their labour market career in a temporary contract.

Gender is a proxy for tastes and a relevant dimension of heterogeneity in general. Age at entry is a proxy for the initial endowment of ability (education, time spent looking for the first job). As table 2 shows, differences by gender and age at entry are sizeable. Females are more likely than males to start their working career with a fixed term or freelance contract. Modal age at entry is between 20 and 24 years. Younger workers (15 - 19 years old) enter mainly as apprentices. Individuals starting with a fixed term contract are younger than individuals starting with a training contract, while the other contracts and freelance ones in particular, are more often the entry contracts of more mature individuals. The share of open ended contracts as entry contract increases markedly as entry age increases.

Table 2: Entry contract in 1998. Distribution by gender and age at entry.

Entry Contract	All	Gender		Age at entry				
		Males	Females	15-19	20-24	25-29	30-34	35-39
Open ended	33.19	32.62	33.84	17.7	34.13	39.86	43.62	59.72
Fixed term	12.84	10.99	14.99	9.7	16.39	11.9	9.67	7.99
Training	9.78	10.53	8.91	3.48	10.87	17.7	8.64	0
Apprenticeship	26.59	29.13	23.66	64.98	24.29	1.41	0	0
Freelance	7.37	5.48	9.55	2.23	5.75	13.47	13.99	10.42
Self employed	10.24	11.26	9.05	1.9	8.57	15.66	24.07	21.53
Total	100.00	53.61	46.39	25.02	41.34	20.95	7.97	4.72
Column percentages. Total: row percentages.								

Table 3 shows average transition rates in the raw data. The panels contain transitions at one, two, four and six year distance, respectively. In general individuals move to the same contract they had, to an open ended contract or to non work; all other transitions are quite rare. Persistence along the diagonal appears to be substantial.

Self employees display the largest persistence, with levels fading down slowly at increasing intervals. Persistence is high for open ended contract workers too, but it falls more rapidly. Open ended contract workers exhibit a growing transition rate to non work, confirming that open ended contracts do not prevent the

possibility of losing the job and are far from being an "absorbing state". Fixed term workers and free-lancers display lower and decreasing levels of persistence, that nonetheless does not completely disappear at larger intervals. Both types of contract suffer from frequent exits to unemployment but enjoy increasing transition rates to open ended employment (and to fixed term contracts for the second group).[10] Training contracts have a legal maximum duration of 24 months, apprenticeship ones of 60 months (see the appendix): they both experience a growing transition rate to open ended jobs and a low possibility of exit to other contracts. The degree of persistence in training contracts completely fades away at longer intervals[11], while declines less rapidly for apprentices. Persistence in non work decreases over time, but it is still at 24% after six years.

Focussing on the last panel of the table, six years after entry, we can observe the medium-long run outcome of these career paths conditional on their status in October 1998, the year in which they entered employment for the first time. As said one out of four individuals is not working. However, those who had a freelance contract or an open ended one in 1998 face the highest probabilities of being not working in 2004 (a further indication that Italian open ended contracts are not so "permanent"). Almost one out of two is employed with an open ended contract; those who started with a training contract enjoy the highest probability of working with an open ended contract in 2004, even higher than those who started with an open ended contract. In 2004, 7% are employed with a fixed term contract; they entered more often with a fixed term or with a freelance contract, or they were already out of work in October of the entry year. Self employed face the highest persistence in the contract and the lowest probabilities of moving to anything else, even to an open ended contract or out of work. This confirms that self employment is a specific choice, a separate segment of the labour market, with little leakage to dependent employment. On the other hand, free-lancers move to dependent employment much more often than "true" self employees.

Finally, in table 4 we separate transitions of employees to the same or to a different firm, at both 12 month (upper panel) and 24 month (lower panel) intervals.[12] As expected, the majority of open ended contract employees is employed in the same firm 12 or 24 months later (mainly with the same contract: 59% and 78% at one year distance for short and long elapsed tenure respectively), although the share decreases the longer the interval considered (the previous figures become 51% and 67%). Also fixed term contract workers show a high persistence within the same firm: 25% of fixed term contract workers who have

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[10]The distinction between freelancers and a subset of self employees is based upon an "activity code" that is likely to suffer from measurement errors. The transition intensity between the two states is therefore less reliable.

[11]We observe a minimal number of training contracts lasting 25 months, possibly driving up the estimation of persistence at two year intervals; this is manly due to data construction reasons: starting and ending a 24-months contract during the same calendar month two years later is recorded as a 25-months spell in administrative data.

[12]In the data firm coding for freelancers is different from firm coding for employees, so we cannot observe whether freelancers become employees in the same or in a different firm. Moreover, note that this distinction is not meaningful for the self employed.

worked for a given firm for at least 24 months are observed again within the same firm after 24 more months under a fixed term contract (fifth column in the lower panel), while only 22% of them are observed within the same firm after 24 more months with an open ended contract (column three). This is an example of a "very long" - at least 48 months - screening process.

Training contracts can last up to 24 months within the same firm; if they are transformed into an open ended one before expiring the firm retains the social security rebate till the original end of the training contract. Nonetheless, firms seem to wait for the end of the contract to eventually transform it into an open ended one. In fact, of those who have spent less than one year as trainee in a firm, more than half are still trainees in the same firm after 12 more months (column seven in the upper panel), while only 13% are still working there with an open ended contract. After two years nobody can be still a trainee in the same firm, and 52% of them are converted into an open ended contract (lower panel, third column, shorter tenure); another 21% has moved to a different firm. Apprentices follow a similar pattern, i.e. the majority of them is still employed as apprentice in the same firm at one year distance; almost 20% of longer tenure apprentices are promoted to an open ended contract instead; at two year distance 20% of them is still an apprentice in the same firm, while about 40% have an open ended contract within the same firm. For them an open ended contract with a different firm is a less likely event (11% of long tenure apprentices, after 2 more years). Hence it seems that apprentices follow the pattern already observed for trainees, although with lower probabilities of transition.

In conclusion, it seems that workers face a quite long *cursus honorum* within the firm before obtaining an open ended contract. However, the evidence depicted so far mixes up the effects of heterogeneity, of genuine port of entry and of true scarring. In the next section we estimate the transition model and try to disentangle these components.

6   Econometric Results

In this section we present our CML estimates of δ_{kj} at 12 as well as at 24 month intervals (in which case we exploit the minimum of four observations per individual required by Magnac's approach). The estimates are arranged in tables that show, for each δ_{kj}, the origin state (k) by rows and the destination state (j) by columns. In other words, within each row one reads the odds of taking different contracts keeping the origin state constant; each column in turn displays the odds of taking one specific contract for different lagged conditions. Non work is taken as the reference state. Therefore positive (negative) figures mean that the odds of taking contract j with respect to non work when the lagged state is k are larger (smaller) than when the lagged state is non work. Thus, if $\delta_{k'j} > \delta_{k''j}$ the odds of taking contract j (with respect to non work) when the lagged state is k' are larger than when the lagged state is k''. Similarly, if $\delta_{kj'} > \delta_{kj''}$ the odds of taking contract j' when the lagged state is k are larger

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than the odds of taking contract j''.

First, we compare our CML estimates of δ_{kj}, obtained after the individual fixed effects have been eliminated, with simpler estimates of δ_{kj}, call them d_{kj}, obtained from a multinomial logit approach that only controls for the lagged state, i.e. without controlling for the individual fixed effects. The CML estimates of δ_{kj} are reported in table 6 for the one year transitions and in table 8 for the two year transitions. The corresponding d_{kj} estimates are reported, respectively, in tables 5 and 7. This comparison is informative about individual heterogeneity: as long as it plays a role in sorting workers among different contracts, we expect the state dependence coefficients to change after individual effects (α_{ij}) are controlled for. In particular, we expect the coefficients on the main diagonal to decrease, since the same individual characteristics that sort a worker into one contract are likely to further retain her there. Our findings support this hypothesis: persistence decreases substantially and significantly after fixed effects are controlled for, as it is immediately clear comparing the main diagonals in Table 5 and 6, and in Table 7 and 8.

Claim 1 *Individual heterogeneity explains part of the observed persistence in the same contract. The effect is an overestimation.*

Insights about the port of entry hypothesis are provided by the estimates reported under the column labelled "open ended" in tables 6 and 8. All the estimated $\delta_{k,j=1}$ are positive, for any k. Therefore, once individual fixed effects are controlled for, open ended jobs are more easily accessible from employment than from non employment. This is true for every contract of origin but freelance work, whose port of entry effect fades away before two years. An ordering among the contracts with respect to the probability of taking an open ended job emerges, with training contracts at the top, freelance work at the bottom and fixed term contracts outperforming apprenticeship ones. Training contracts display the highest coefficient both at one and at two year distance, possibly implying a positive effect of their formal training content. An effect not so evident for apprentices, probably due to their longer maximum duration (5 years). Notice that Magnac (2000) finds the opposite result: in France, training programmes are not more effective than off-the-job search in finding an open ended position.[13]

Claim 2 *The port of entry hypothesis holds; in particular, training contracts represent the best port of entry to open ended employment, freelance work the worst.*

This notwithstanding, persistence is still far from fading away. Table 6 shows that for any given contract, the most likely destination state is the same contract, even after fixed effects have been removed. At one year distance, each contract maximum stated duration might play a role: training and apprenticeship contracts, whose maximum legal durations are two and five years respectively, may

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[13]The objection that employers are forced by the law to retain at least 50% of the trainees is not relevant since retention rate is well above 50% (see table 3).

be an example, but not free-lancers or fixed term contract workers, whose work relationships are shorter than one year on average. However, we expect persistence to decrease when computed at larger intervals. Table 8 shows that the coefficients on the main diagonal actually decrease, but are still the row-specific highest figures. Two aspects are worth a comment: i) persistence in open ended jobs falls dramatically at 24 months, confirming that open ended contracts do not completely prevent a worker from losing her current job; ii) self employment is more likely to be a permanent choice of the worker; this induces the very high persistence and the very low transition coefficients we read in the tables.

Claim 3 *Retaining the same contract is always the most likely destination, at one as well as at two year intervals, even after individual effects are controlled for.*

Finally, we estimate the model separating movements within the same firm or toward a different firm, in order to disentangle a true scarring effect of temporary employment from a cost reduction behaviour of the employers who might be using temporary contracts simply as a cheaper production factor (as discussed in section 2). We focus on two year transitions, as this length of time excludes the effect of stated contract duration for trainees, and more in general it is longer than a screening period of average length.

We expect statistical discrimination to affect transitions across firms, since a new employer is more likely to have a worse guess about workers' productivity; on the contrary, we will interpret retention under temporary contracts in the same firm as evidence of a cost reduction behaviour, when lasting over two years. On the other hand, evidence of transitions toward open ended contracts may be interpreted either as a *cursus honorum* when it occurs within the firms, or as a more general port of entry when across firms.

To keep the analysis tractable we exclude individuals who have been apprentices, free-lancers or self employed at least once in the observation period. The last two groups have no firm coding, so their inclusion would add nothing to the previous analysis; the first includes very young individuals on a potentially very long contract, so their exclusion is not too costly.

Table 9 presents the results, once again obtained with the fixed effect dynamic multinomial logit model; they can be read as in table 8. There is no evidence of port of entry into a new firm (col. 1), i.e. having had a temporary job in the past or coming from non work provides the same probability of getting an open ended job in a new firm. There is only one port of entry across firms, i.e. having had a long (more than 2 years) open ended employment spell increases significantly the probability of getting an open ended contract in a new firm with respect to the probability faced by those who were not employed. This may suggest that both the general purpose training and the network building effects mentioned in section 2 are not at work with any temporary contract,or that they fade away quite quickly. On the other hand, persistence in temporary jobs across firms is not significant (col. 3 and 5, last three rows), hinting that also the scarring effects of temporary contracts are weak or fade away quickly.

However, within firm patterns are totally different: both port of entry and contract persistence emerge. Training and - to a slightly lower extent - fixed term contracts help significantly to obtain an open ended contract in the same firm (significantly positive δ_{kj} in the last three rows of column 2, Table 9). However, the probability of working with a fixed term contract in the same firm at 24 month distance is higher than the probability to obtain an open ended contract in the same firm; this is so for those who have worked in the firm for less as well as for more than 24 months with a fixed term contract, but it is so even for trainees whose most likely outcome is a fixed term contract within the firm, and not an open ended one (δ_{kj} in the last three rows of col. 4 larger than the corresponding δ_{kj} in col. 2).

Concluding, persistence in temporary jobs occurs within the firm, meaning that employers use temporary contracts as a cost reduction device, as suggested also by Güell and Petrongolo (2007). In fact, transitions are computed at intervals larger than the average duration of the contracts and larger than any reasonable screening period (up to 48 months in the firm); moreover, averaging over the first six years of one's career prevents any possible start up period bias.

Claim 4 *Temporary jobs do not represent either a scarring event or a port of entry into a new firm; they are likely to be used as a cost reduction device within the firm. The port of entry effect is taken over by an internal cursus honorum effect.*

7 Conclusions

Are temporary jobs a port of entry toward more stable career patterns, or do they engender a trapping risk into precarious employment? Studying the transitions of an Italian sample of labour market entrants over a long time period, and controlling for workers' sorting across the different contracts due to unobserved heterogeneity, we have highlighted several aspects of this issue.

First, fixed-term jobs, apprenticeship and training programmes act as a port of entry into open-ended employment - providing a significantly higher probability of obtaining such contract with respect to the one faced by non-working individuals - while freelance contracts don't. We have stressed how different combinations of EPL provisions, public subsidies, formal training contents and legal bindings may provide firms with different incentives to retain workers under temporary contract arrangements as opposed to convert these jobs into open ended positions. Strong SSC rebates, no training requirements and low legal constraints concerning renewals result in a poor port-of-entry performance, as in the case of freelance contracts. Instead, mandatory training and more binding legal constraints on the use, extension and renewals of temporary contracts tend to enhance the probability of getting a standard job, as in the case of the Italian training programmes.

Second, this port-of-entry effect coexist with a trap effect, meaning that even if working is (almost) always better than not working in order to get an

open-ended job, the most likely outcome of an employment spell is retaining the same contract. Persistence is therefore substantial too.

A joint interpretation of these two facts becomes easier once a third result is taken into account. After controlling for the identity of the employer, both the port-of-entry and the trap effects are taken over by an internal *cursus honorum* effect, i.e. a long persistence with temporary contracts within the same firm possibly followed by an advancement to an open ended contract. The state dependence generated by temporary contracts across firms fades away within two years, implying that both positive (port of entry) and negative (scarring) effects of these contracts are not permanent. Their lasting effects (positive as well as negative) are firm specific. We interpret these results as evidence of the little general-purpose training received by temporary workers and of a cost-reduction strategy followed by the employers, who retain their employees under a flexible arrangement as long as they can and in any case well beyond a reasonable screening period. This view is consistent with open-ended contracts being the only port of entry across different firms, another result we obtain in this paper.

By distinguishing among the different labour market arrangements our analysis has shed further light on the port-of-entry literature: it has intended to demonstrate that it's not just more easily accessible employment spells per se that provide workers with valuable paths to permanent employment, but specific combinations of public subsidies, training and legal constraints. By controlling for the identity of the employer we have also shown that more desirable effects (the stepping stone role of temporary jobs) may coexist with less desirable ones (cost reduction strategies and trap effects). In short, we have stressed that the answer to the question posed in the title ultimately depends on two crucial circumstances: the specific type of temporary contract one holds and whether the transition between different contractual arrangements occur within the same employer or across different employers.

Finally, since having a temporary job is from many perspectives worse than holding an open ended contract, the next question becomes: how long does a worker take to enter an open ended job? And with what welfare cost over her entire career? This involves duration analysis and simulation of welfare levels. We leave this path to our next research.

8 Appendix: institutional framework and contracts

Our analysis covers the years 1998 - 2004, i.e. the period immediately after the flexibilization of the Italian labour market was fully implemented. In fact, the period of analysis follows the 1997 "Treu" law that introduced agency contracts, reformed fixed term contracts and apprenticeship, promoted the diffusion of part time jobs and training contracts and reintroduced probation contracts (*tirocinio*). Another type of flexible jobs, freelance work, had been introduced

in the seventies, but strongly promoted only since 1996. The last year in the data is 2004, before another comprehensive reform, the Law 30/2003 ("Legge Biagi"), was actually implemented. So we focus on a period in which legislation on temporary contracts was quite constant (with the exception of 2001 freelance and fixed term contracts' reforms).

A brief discussion of the different features of the various contract types is in order.

- *Open ended contracts* have no stated duration, no training obligations and no social security rebates. They can be broken through individual or collective layoffs. Individual layoffs in Italy are allowed at no cost for just cause only.[14] If a judge rules that the dismissal lacked the ground of just cause, larger firms (more than fifteen employees) are forced to re-hire the worker and to pay her a compensation; in smaller firms a severance payment is due.[15] In larger firms layoffs occur mainly through collective dismissals, whose access is not difficult.

- *Fixed term contracts* were introduced in Italy in 1962 but never widely used; collective bargaining allowed their use more and more over the '90s and the 1997 law set an easier access to them for all firms by law; their almost complete liberalization occurred in 2001. In fact, there is no maximum duration for fixed term contracts but sequences of fixed term contracts within the same firm are allowed. They provide for no training obligations and no social security rebates.

- *Agency contracts* were introduced in 1997 and became effective in 1998.For this reason the share of agency workers in our sample - the flow of workers who entered the labor market on 1998 - is very small and we aggregate them to fixed term workers. With agency contracts the provider hires the worker and sends her to the firm; the firm pays the wage to the worker (without reductions) and a search cost to the provider. They can last for a maximum of 24 months but are renewable within the same firm. They provide for no training obligations and no social security rebates.[16]

- *The training contract* was introduced in 1984. It can last a maximum of 24 months and is *not* renewable within the same firm. Only individuals under 32 years of age can be hired with this contract. It provides to the firm from 25% to almost 100% rebate on the Social Security contributions; to the worker a minimum of formal training.[17]

- *Apprenticeship* was introduced in the early Fifties. Apprentices receive a minimum amount of external and on the job training and the employer enjoys a full Social Security contributions rebate. Its maximum duration is 5 years and is not renewable within the same firm. Only individuals under 24 years of age can be hired with this contract.

- *Free-lancers* are formally self employed but in most cases their income depends on only one contractor and their tasks are equal to those performed by

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[14] Misconduct, but also firm restructuring or lack of demand.

[15] See Garibaldi et al. (2004) for details.

[16] For details on this contract see Ichino et al (2008).

[17] The rebate differs according to regional unemployment rate, and has been decreased over time. See Contini et al. (2003) for details.

employees; they are often called quasi-subordinate workers. No training has to be provided by the firm. Social security contributions are lower than those of dependent workers. When the contract was introduced in 1996 it was for non-manual jobs only, but this limitation disappeared in 2001. Freelance contracts can be extended and repeated at will.

- *Self employed* workers observed in WHIP include all professional persons without an autonomous social security fund, as well as artisans and traders. Since they are proper self employees, there's no room for questions about maximum duration, extensions and renewals.

In general, the use of temporary contracts of any kind to substitute workers on strike is forbidden and sequences of temporary contracts face no limits provided the employer is different.

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Table 3: Raw transition rates among contracts, at increasing time intervals.

Origin	Destination						
One year	Non work	Open ended	Fixed term	Training	Apprenticeship	Freelance	Self employed
Non work	**61.96**	14.04	7.41	3.03	7.44	2.31	3.81
Open ended	12.14	**81.30**	2.99	1.10	0.92	0.42	1.13
Fixed term	25.19	26.31	**38.10**	4.87	2.86	1.34	1.34
Training	11.97	39.96	5.18	**40.17**	1.18	0.48	1.07
Apprenticeship	15.21	15.58	2.26	1.55	**63.82**	0.29	1.30
Freelance	33.18	11.53	6.94	2.24	1.88	**36.94**	7.29
Self employed	5.85	2.53	0.97	0.30	0.27	0.52	**89.57**
Total	27.32	37.75	6.28	3.88	11.08	1.86	11.83
Two years	Non work	Open ended	Fixed term	Training	Apprenticeship	Freelance	Self employed
Non work	**49.79**	20.29	8.59	3.75	9.52	2.51	5.54
Open ended	16.20	**73.71**	4.12	1.60	1.48	0.63	2.26
Fixed term	26.50	34.10	**25.46**	5.41	4.43	1.97	2.13
Training	15.65	70.07	4.68	**5.71**	1.26	0.46	2.17
Apprenticeship	17.34	28.67	3.49	3.00	**43.83**	0.55	3.12
Freelance	40.80	17.17	6.73	3.71	3.16	**19.09**	9.34
Self employed	9.13	4.87	1.41	0.49	0.34	0.74	**83.03**
Total	26.60	40.34	6.42	2.82	9.97	1.69	12.15
Four years	Non work	Open ended	Fixed term	Training	Apprenticeship	Freelance	Self employed
Non work	**35.18**	31.23	9.79	2.77	10.06	2.57	8.39
Open ended	21.65	**64.35**	5.27	1.34	1.98	1.03	4.38
Fixed term	24.24	48.29	**15.53**	2.60	3.68	1.44	4.22
Training	16.09	73.91	3.78	**1.19**	0.89	0.74	3.41
Apprenticeship	19.12	46.98	4.58	2.39	**19.29**	1.16	6.47
Freelance	40.84	27.10	6.30	1.15	2.48	**9.92**	12.21
Self employed	14.94	9.14	1.90	0.28	0.56	1.11	**72.07**
Total	25.04	44.53	6.76	1.91	7.22	1.79	12.75
Six years	Non work	Open ended	Fixed term	Training	Apprenticeship	Freelance	Self employed
Non work	**24.01**	44.09	11.00	0.88	8.35	2.02	9.65
Open ended	29.15	**54.67**	6.00	0.70	1.60	1.12	6.76
Fixed term	22.56	54.62	**10.00**	2.05	2.56	1.79	6.41
Training	19.33	69.23	3.35	**0.39**	0.59	1.18	5.92
Apprenticeship	21.60	50.24	6.28	1.33	**11.42**	0.86	8.28
Freelance	40.82	31.84	7.87	0.37	1.50	**4.87**	12.73
Self employed	18.50	10.40	1.54	0.19	0.39	1.54	**67.44**
Total	24.59	47.00	7.37	0.87	5.30	1.61	13.27
Row percentages.							

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Table 4: Raw transition rates among contracts at one and two year interval, to the same or to an other firm.

Origin		Destination								
1 year		Non work	Open ended		Fixed term		Training		Apprentices	
	Elapsed tenure and other/same firm		Other	Same	Other	Same	Other	Same	Other	Same
Non work		61.96	14.04		7.41		3.03		7.44	
Open ended	<12 months	18.90	11.86	59.46	3.65	0.74	1.37	0.63	1.19	0.43
	>12 months	8.32	9.31	77.62	1.95	0.25	0.54	0.05	0.40	0.13
Fixed term	<12 months	27.24	11.63	14.60	12.70	22.20	3.15	2.67	2.43	0.53
	>12 months	18.95	9.39	17.15	8.48	39.35	0.90	1.08	1.99	0.54
Training	<12 months	11.65	6.70	13.22	3.04	2.87	5.48	53.22	1.57	0.09
	>12 months	12.47	10.94	60.94	1.80	2.22	1.80	8.86	0.28	0.14
Apprentices	<12 months	18.98	4.80	2.40	2.36	0.22	1.57	0.09	10.30	58.20
	>12 months	11.73	4.78	18.52	1.73	0.24	1.33	0.12	5.87	53.64
Total		27.32	9.74	28.01	4.36	1.93	1.79	2.09	3.67	7.41
2 years		Non work	Open ended		Fixed term		Training		Apprentices	
	Elapsed tenure and other/same firm		Other	Same	Other	Same	Other	Same	Other	Same
Non work		51.60	19.81		8.95		3.05		8.21	
Open ended	<24 months	17.36	20.94	50.63	4.21	0.42	1.70		1.54	0.22
	>24 months	10.68	15.29	67.14	2.56	0.22	0.54		0.44	0.08
Fixed term	<24 months	25.74	19.03	15.91	13.26	12.64	3.98		3.35	0.55
	>24 months	24.05	8.23	21.52	7.59	25.32	2.53		3.16	0.63
Training	<24 months	14.51	20.77	52.02	3.52	1.20	2.92		0.86	0.00
	>24 months							(*)		
Apprentices	<24 months	16.95	10.97	14.90	3.03	0.31	3.39		12.80	34.21
	>24 months	12.09	10.50	40.21	3.28	0.56	1.97		6.09	19.68
Total		25.77	16.32	26.26	5.40	1.06	2.13		4.49	4.09

Row percentages.

Quasi subord. and Self employed as in Table 2 and not reported; no firm code available.

(*) A training contract can not last more than 24 months in the same firm. It can be observed as a spell of 25 months for data construction reasons

Table 5: d(kj) estimates without individual fixed effects, one year interval

Origin	Destination					
	Open ended	Fixed term	Training	Apprenticeship	Freelance	Self employed
Open ended	**3.186**	**0.437**	**0.405**	**-0.539**	**-0.347**	0.123
	0.037	0.067	0.102	0.094	0.152	0.100
Fixed term	**1.055**	**2.378**	**1.024**	**-0.491**	-0.091	**-0.590**
	0.059	0.058	0.110	0.130	0.191	0.187
Training	**2.260**	**0.864**	**4.259**	**-0.557**	-0.370	-0.022
	0.071	0.120	0.084	0.214	0.344	0.231
Apprenticeship	**0.936**	**-0.292**	0.234	**3.251**	**-1.182**	-0.246
	0.054	0.104	0.128	0.050	0.268	0.139
Freelance	0.103	0.106	0.114	**-1.045**	**3.400**	**0.832**
	0.107	0.139	0.210	0.231	0.091	0.140
Self employed	**0.405**	0.089	-0.141	**-1.206**	**1.754**	**5.389**
	0.117	0.172	0.289	0.309	0.151	0.079
Multinomial logit estimates, no controls. S.e. in second rows. Bold if 95 pct significant.						

Table 6: delta(kj) estimates controlling for individual fixed effects, one year interval

Origin	Destination					
	Open ended	Fixed term	Training	Apprenticeship	Freelance	Self employed
Open ended	**2.600**	**0.612**	0.028	**-0.556**	0.246	**0.385**
	0.066	0.094	0.138	0.137	0.211	0.181
Fixed term	**1.221**	**1.826**	**1.027**	0.036	0.471	0.155
	0.092	0.099	0.169	0.186	0.247	0.288
Training	**1.633**	**1.284**	**3.870**	-0.123	0.639	0.225
	0.121	0.174	0.203	0.283	0.434	0.344
Apprenticeship	**0.684**	0.124	0.331	**2.288**	-0.744	-0.321
	0.095	0.154	0.201	0.095	0.418	0.271
Freelance	**0.513**	**0.843**	0.727	-0.125	**2.283**	**1.363**
	0.189	0.197	0.375	0.411	0.182	0.265
Self employed	**0.463**	**0.701**	0.042	-0.169	**0.915**	**3.569**
	0.218	0.292	0.442	0.429	0.412	0.168
Discrete time dynamic multinomial logit with fixed effects estimates. S.e. in second rows. Bold if 95 pct significant.						

Table 7: d(kj) estimates without individual fixed effects, two year interval

Origin	Destination					
	Open ended	Fixed term	Training	Apprenticeship	Freelance	Self employed
Open ended	**3.186**	**0.437**	**0.405**	**-0.539**	**-0.347**	0.123
	0.037	0.067	0.102	0.094	0.152	0.100
Fixed term	**1.055**	**2.378**	**1.024**	**-0.491**	-0.091	**-0.590**
	0.059	0.058	0.110	0.130	0.191	0.187
Training	**2.260**	**0.864**	**4.259**	**-0.557**	-0.370	-0.022
	0.071	0.120	0.084	0.214	0.344	0.231
Apprenticeship	**0.936**	**-0.292**	0.234	**3.251**	**-1.182**	-0.246
	0.054	0.104	0.128	0.050	0.268	0.139
Freelance	0.103	0.106	0.114	**-1.045**	**3.400**	**0.832**
	0.107	0.139	0.210	0.231	0.091	0.140
Self employed	**0.405**	0.089	-0.141	**-1.206**	**1.754**	**5.389**
	0.117	0.172	0.289	0.309	0.151	0.079

Multinomial logit estimates, no controls. S.e. in second rows. Bold if 95 pct significant.
A training contract can not last more than 24 months in the same firm. It can be observed as a spell of 25 months for data construction reasons. Hence, d(training,training) estimates at two year distance are not totally reliable.

Table 8: delta(kj) estimates controlling for individual fixed effects, two year interval

Origin	Destination					
	Open ended	Fixed term	Training	Apprenticeship	Freelance	Self employed
Open ended	**1.736**	**0.432**	-0.206	**-0.506**	-0.028	0.574
	0.131	0.174	0.241	0.221	0.395	0.357
Fixed term	**0.694**	**1.599**	0.654	0.590	**1.306**	-0.787
	0.170	0.224	0.337	0.335	0.513	0.566
Training	**1.422**	**0.786**	**2.180**	0.009	-0.514	0.898
	0.202	0.320	0.538	0.448	0.848	0.597
Apprenticeship	**0.354**	0.384	0.557	**1.942**	-0.904	-0.763
	0.173	0.247	0.371	0.215	0.648	0.460
Freelance	0.142	0.703	1.034	0.101	**1.286**	**1.178**
	0.326	0.368	0.733	0.714	0.367	0.502
Self employed	**0.851**	0.277	0.711	-0.696	-0.561	**3.543**
	0.413	0.537	0.869	0.985	1.126	0.436

Discrete time dynamic multinomial logit with fixed effects estimates. S.e. in second rows. Bold if 95 pct significant
A training contract can not last more than 24 months in the same firm. It can be observed as a spell of 25 months for data construction reasons. Hence, delta(training,training) estimates at two year distance are not totally reliable.

Table 9: delta(kj) estimates controlling for individual fixed effects, two year interval, to the same or to an other firm.

Origin		Destination				
	Elapsed tenure and other/same firm	Open ended Other	Same	Fixed term Other	Same	Training Other
Open ended	<24 months	0.316	**4.592**	0.404	**3.781**	0.018
		0.191	0.391	0.248	1.701	0.368
	>24 months	**0.809**	**5.078**	-0.120	1.347	-1.051
		0.327	0.511	0.488	2.298	0.615
Fixed term	<24 months	-0.385	**2.395**	0.458	**5.963**	-0.063
		0.261	0.419	0.332	1.668	0.556
	>24 months	-0.782	**3.544**	-0.012	**5.353**	1.459
		1.685	1.460	1.451	2.761	3.341
Training	<24 months	-0.530	**3.391**	-0.687	**4.716**	0.934
		0.333	0.458	0.494	1.841	0.848
Discrete time dynamic multinomial logit with fixed effects estimates.						
S.e. in second rows. Bold if 95 pct significant						