# Labour contracts and the stepping-stone effect in Emilia-Romagna: A multinomial analysis

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## Abstract

Do short-term contracts facilitate the transition into permanent contracts? We use a rich administrative database for the Emilia-Romagna northern region in Italy from 2008 to 2012 to run a stepping-stone analysis and evaluate which contractual agreement is more likely to lead to a permanent working position. We find that individual specific characteristics make it more likely for a worker to be employed with a specific contractual agreement and that the contribution towards more working stability varies with the previous contract. We conclude that fixed-term positions act more as stumbling blocks than building blocks for open-ended contracts.

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# 1 Introduction

In recent years, most Western economies have faced the need to boost market competitiveness through processes of delocalisation, out-sourcing, and introducing more flexibility in the labour market. More flexibility was meant to allow a larger share of the population to enter the labour market by means of innovative, short-term, and 'atypical' contractual forms. The parallel scope was endowing firms with innovative instruments to meet swings in final demand by adopting on-demand labour schemes.

Institutions in Italy and in many other European countries were increasingly urged to introduce more flexible contracts, as global markets entered a phase of harsh competitiveness, especially in the aftermath of the financial crisis (not to mention the pivotal role of the new Asian manufacturing giants led by China). 'Flexisecurity' (European Commission, 2017) became almost a must for Spain, France, the UK, Germany, and Italy.

It must be underlined that it all started as a progressive liberalisation of the labour market at the margin, as short-term jobs, for instance temporary agency contracts, were increasingly deregulated, while the bulk of the permanent contract legislation was not or was only scarcely affected.

A recent major reform of the labour market was introduced in 2015 (Jobs Act), implementing a series of active policies targeting the core of the dependent labour contractual agreements, that is, the permanent working contract. The previous contract was substituted with a '*contratto a tutele crescenti*', removing the possibility of a worker's reinstatement ('*reintegro*') after illegitimate dismissal for economic motives and embedding an increasing monetary compensation in the case of separation. This measure further empowered the demand side of the labour market by weakening the supply side further.

The academic and political debate started questioning the effectiveness of the deregulation in creating more opportunities against the odds of more uncertainty in the labour market. Some authors started wondering if firms' productivity was likely to benefit from such deregulation or suffer from the increasing uncertainty and potential lack of motivation and skills of temporary workers.

The negative effects of the Great Recession probably exacerbated the undesirable aspects of the labour market deregulation. As a matter of fact, the composition and nature of contracts changed dramatically. In about 20 years, Italy experienced the doubling of temporary jobs, from about 7% in 1994 to about 14% in 2014. In other countries, such as France, the same figure increased by one-third, with temporary jobs growing from 11% to 16%, while Germany experienced an increase from 11% to 13%. Spain ranked third among the Organisation for Economic Co-operation and Development (OECD) countries in 2014 with a figure of 24% (OECD, 2016).

In this study, we investigate the role of short-term contracts in facilitating or hindering the transition into permanent jobs. We use a large, proprietary, and unique dataset (SILER) of observations of dependent workers in Emilia-Romagna in the time span from 2008 to 2012 to evaluate whether short-term, atypical contracts operate as stepping-stones towards permanent contracts. We adopt a multinomial logit approach (Greene, 2002) to identify the relative probability of being awarded a given contract type, considering a set of internal and external factors, contributing to the 'stepping-stone' literature with a thorough micro-level analysis.

The structure of the paper is as follows. Section 2 reviews the relevant literature. Section 3 presents the data. Section 4 describes the methodology and reports the empirical results. Section 5 discusses the results and concludes.

## 2      The Stepping-stone Issue in the Literature

The possibility that short-term, atypical jobs may turn into more stable working positions is relevant under many different aspects. A first concern in the socio-economic debate relates to the social implications of unsafe and unstable working conditions. Precarious working conditions can affect the perceived well-being materially and psychologically (de Graaf-Zijl, 2006) and therefore affect the life quality and lifestyle of society as a whole. If ever-increasing short-term, temporary jobs fail to create a secure job environment, perhaps resulting in an infinite cycle of temporary positions, the outcomes could be far from desirable. A second concern relates to the effect on workers' performance. Jahn, Riphahn, and Schnabel (2012), when assessing the effect of labour market deregulation of firms' productivity, pointed to a possible trade-off between efficiency and equity. Less motivated workers are likely not so keen in investing in their activities if the prospects are uncertain.

The academic focus concerning the recent labour market reforms in Italy has been greatly involved in evaluating the 'stepping-stone' versus the opposite 'deadlock' hypothesis. A stepping-stone effect would support the idea that, on average, flexibility is paying off in terms of more labour participation, higher productivity, and labour market efficiency. Evidence of a deadlock would let the policy makers infer the opposite.

The empirical evidence of the stepping-stone effect is mixed, and results change depending on the specific type of contract considered, regarding age, gender, labour market context, and so on. However, it is also likely to depend on the methodology used (Amuedo-Dorantes et al., 2008). In Europe overall, there is some unclear evidence concerning the effectiveness of temporary jobs in leading to more stable or fixed-term contractual agreements.

On one side, the introduction of 'atypical' or 'flexible' contractual agreements may actually give an opportunity to enter the labour market where none existed before. Ichino et al. (2008) detected two broad theoretical points of view for why temporary employment could offer a springboard to stable jobs: 1) more able workers can use temporary work to signal their skill by making themselves available for screening, and 2) temporary jobs may be an opportunity to build extra human capital, social contacts, and information. Whenever the first point prevails, the screening procedure can also induce less shirking and build more stable relationships between employers and employees (Portugal and Varejao, 2009). In the same article, Ichino et al. (2008) provided positive evidence for the springboard effect for workers hired through temporary agencies. Some effectiveness of the stepping-stone is also found in Barbieri and Sestito (2008). On the other, the 'trap' or 'deadlock' hypothesis in an endless precarious condition cannot be ruled out, so that the empirical investigation can only provide some evidence. According to Blanchard and Landier (2002), the use of temporary workers as buffer stocks increases job instability and uncertainty inside the firm, reduces investment in training, lowers workplace cooperation and worker motivation, and harms long-run growth prospects. Exactly the opposite

evidence from that found for Italy by Ichino et al. (2008) is instead found in Spain by Amuedo-Dorantes et al. (2008). In the United States, Autor and Houseman (2010) considered a welfare-to-work programme in Detroit and found that temporary help placements may even harm subsequent employment and earning outcomes.

Across Europe, temporary jobs are associated with poorer labour conditions with respect to standard employment: lower wages, lower training, lower job security, and lower protection from social security. In their introduction to the Economic Journal Symposium on temporary jobs, Booth et al. (2002) summarised the thrust of the contributions as suggesting that the expansion of temporary jobs as a way of increasing labour market flexibility may be undesirable, although in some cases they indeed found some stepping-stone evidence in the case of British workers. Booth et al. (2002) are the authors of a pioneering work on the stepping-stone hypothesis, where apart from assessing the existence of such 'entry ports', they also found that temporary workers in Great Britain reported lower levels of job satisfaction and received less training and lower wages.

Studying the same subject for Australia, Cai, Law, and Bathgate (2014) modelled the evaluation of the different starting statuses, stating in particular that, when trying to assess the correct probability of transitioning into a fixed-term contract from a temporary job, the individuals out of the labour force should be considered a baseline case since those who are simply unemployed are already putting some effort into finding a job. They found evidence for the stepping-stone effect. Addison et al. (2015) tested the stepping-stone hypothesis for US workers and found positive results, controlling for endogeneity that may lead a worker to be in a given position rather than another, with the special caveat that the labour market in the US is highly polarised between temporary, unskilled, low-pay workers and high-pay, specialised, temporary consultants and contractors. Drawing on data from representative national longitudinal studies, Scherer (2004) found that lower mobility chances in Italy and the strongly segmented labour market in Germany inhibit the exit out of a labour market segment once it has been entered, therefore hinting at an entrapment effect. Bosco and Valeriani (2017, 2018), using propensity score techniques, found evidence of trapping effects for temporary agency workers and even more for fixed-term employees.

## 3  The Data

The database *Sistema Informativo sul Lavoro* (SILER) in Emilia-Romagna is a proprietary database collecting the mandatory communications to be sent whenever a new labour contract is created, extended, transformed, or ceased in the region of Emilia-Romagna. The database offers a wide range of possibilities to analyse the trend and dynamics of the labour force before the same data are processed at the national level. Since every person[1] in the dependent labour market of the region is detected, it becomes possible to track the working life of people in a given time span and to follow them until the exit from the dependent labour market. Thus, features such as age,

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[1] Every person who underwent a registration, termination, transformation, or extension of a contract in Emilia-Romagna since 2008.

education, citizenship, and industry among others can be related to the length and type of the contractual agreements undersigned.

The advantage of this type of data is to get a unique view of employees' working life and to obtain some potentially significant contributions to the empirical studies of the labour market from the economic and institutional viewpoints. While linking the results to macroeconomic data is tricky but interesting (for reasons that will become clear below), it is possible to evaluate the various types of contracts arising through the years: basically, permanent jobs versus flexible and atypical contracts.

We work on a sample of workers observed over five years, from 2008 to 2012, to track the working life pattern of all individuals who appeared for the first time in 2008. We considered all the workers who had at least one contract starting in 2008 and had up to five contracts overall during the period from 2008 to 2012. The limit of five contracts per worker has a triple rationale. First, in a given year, the percentage of workers with more than four contracts is no larger than 5%. This means that, for each year, we are capturing about 95% of the workers, which is almost the whole dependent worker population. Even if the distribution is less concentrated in a five-year time span, as workers are more likely to have more than one contract, we still consider about 80% of them. Second, as the elaboration on such huge data requires prohibitive amounts of time, we set a limit of five contracts for efficiency, conscious that our results are robust anyway given the high representativeness of the sample. Third, by ruling out those few individuals with a plethora of very short-term, highly volatile contracts, we reduce some noise stemming from day-by-day contracts, representing a minority of the set.

Ideally, the workers can be split into five groups: those who only have one contract in the five years considered and those with two, three, four, or five contracts (but always with at least one contract starting in 2008). We disregard workers having started to work earlier than 2008 or after 2012. Table 1 reports the distribution of workers according to the number of contracts held.

There are 1,288,095 contracts started in 2008 (resulting in 2.27 contracts per person). Some of the contracts we consider are concluded before 31 December 2012, but we do not investigate further on what follows. Some other contracts are still current on 31 December 2012, but we right-censored them. Some contracts overlap for the same person since it happens for part-time workers, for example, to have more than one job at a time. (We control for this in the analysis). For each worker, we observe the age at the beginning of the contract, sex, citizenship, contract type according to the taxonomy reported in the appendix[2] and under Table 2, education level, economic sector, province, professional category, and skill level. Two variables for time have been computed: the length of the contracts in days and the length of the time span between one contract and another for those individuals having at least two non-overlapping contracts in the period. This second time variable can be considered the 'waiting period' between the end of a contract and the start of another, for those workers having a contract starting after the end of the

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[2] The reclassification of contractual types was created in 2013 to summarize a number of various agreements into eight categories. The variables according to which contracts were pooled into categories are duration, degree of independence from the employer, flexibility in working hours, and other social variables.

*Table 1*: Workers with at least one contract started in 2008 and number of contracts held
(up to five contracts, 2008–2012)

| NUMBER OF CONTRACTS | WORKERS | PERCENTAGE |
|:---:|:---:|:---:|
| 1 | 234,284 | 41.35 |
| 2 | 126,904 | 22.4 |
| 3 | 83,364 | 14.71 |
| 4 | 60,524 | 10.68 |
| 5 | 61,563 | 10.86 |
| 1,288,095 | 566,639 | 100 |

previous one in the quinquennial period. We do not observe the effective length of time between two contracts in the case in which the first ends before 31 December 2012, and the second starts from 1 January 2013, onwards.

The initial set contains 566,639 workers aged between 13 and 75, with this age bracket representing the age at the beginning of the first contract registered in 2008. To fully appreciate the information on contractual types, it is advisable to preliminarily go through Table A.1 in the Appendix, where each type of reclassified contractual agreement is illustrated.[3] Basically, we have open-ended contracts on one side (representing 30% of the first contractual agreements signed in 2008) and atypical contracts on the other, fully differentiated into seven subgroups of temporary contractual agreements. Our set, referring to the first contractual agreement signed in 2008, can be described by the figures in Table 2.

Younger workers are engaged in apprenticeships and internships, but the way to the open-ended contract is quite long, since, on average, a worker gets one at 36. Domestic workers, females, and foreigners are older workers, followed by those workers with para-subordinate contractual agreements. The percentage of males in open-ended contracts is 60%, a first sign of gender discrimination that also appears from other indicators (as the fragmentation of working life contracts is much higher for women, even if we cannot tell without further investigation whether this is at least partly due to individual/family preferences). The educational attainment of workers is pretty low. University degrees (and post-university education) is rare. Fixed-term contracts on average last about eight months, while the shortest duration is registered for temporary agency workers. It must also be underlined that these workers are also those who wait less between the first contract and the following one, while it takes substantial time to find another job after an internship. Open-ended contracts are the most popular in services and industry, while jobs on call are especially concentrated in trade and tourism (this is explained by the seasonality of the tourist area on the seaside of Romagna). Para-subordinate workers are those with the highest average skill level (they also have a high concentration of university graduates). Domestic female workers are those with the lowest skill level.

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[3] The reclassification is aimed at creating uniform job categories. Nonetheless, about 8% of contracts were the result of merging two different types, whenever the first one was transformed in another contractual type, such as from fixed-term to an open-ended type. For details on the initial treatment of the data, see CRISP (2014).

*Table 2*: Descriptive statistics of workers by working arrangement (mean values)

| | OPEN-ENDED | FIXED TERM | INTERN SHIPS | DOMESTIC WORKERS | JOBS ON CALL | PARA-SUBORDINATE WORK | TEMPORARY AGENCY WORK | APPRENT-ICESHIP AND ACCESS-TO-WORK |
|---|---|---|---|---|---|---|---|---|
| *Individual characteristics* | | | | | | | | |
| Age | 36.26 | 35.92 | 22.62 | 41.30 | 33.26 | 38.51 | 30.77 | 21.04 |
| Female | 0.40 | 0.50 | 0.56 | 0.86 | 0.56 | 0.45 | 0.42 | 0.42 |
| Foreign | 0.26 | 0.28 | 0.10 | 0.91 | 0.17 | 0.08 | 0.24 | 0.22 |
| *Education level* | | | | | | | | |
| Primary School | 0.59 | 0.61 | 0.60 | 0.88 | 0.64 | 0.69 | 0.54 | 0.67 |
| Junior High School | 0.20 | 0.22 | 0.15 | 0.06 | 0.22 | 0.11 | 0.23 | 0.18 |
| High School | 0.16 | 0.13 | 0.18 | 0.04 | 0.13 | 0.13 | 0.19 | 0.14 |
| University | 0.05 | 0.04 | 0.07 | 0.02 | 0.02 | 0.07 | 0.04 | 0.02 |
| *Job characteristics* | | | | | | | | |
| Duration in days [a] | 855.7 | 225.7 | 156.0 | 393.1 | 339.3 | 346.2 | 139.2 | 395.5 |
| Part time | 0.22 | 0.25 | 0.12 | 0.81 | 0.23 | 0.06 | 0.16 | 0.19 |
| Waiting period in days [b] | 107.0 | 178.9 | 240.4 | 180.7 | 220.9 | 152.8 | 123.8 | 243.6 |
| Overlapping [c] | 0.009 | 0.009 | 0.003 | 0.052 | 0.008 | 0.002 | 0.005 | 0.006 |
| *Sector* | | | | | | | | |
| Industry | 0.27 | 0.16 | 0.22 | 0.01 | 0.04 | 0.12 | 0.55 | 0.25 |
| Agriculture | 0.008 | 0.181 | 0.010 | 0.003 | 0.001 | 0.006 | 0.006 | 0.005 |
| Trade and Tourism | 0.16 | 0.24 | 0.23 | 0.01 | 0.63 | 0.14 | 0.18 | 0.33 |
| Services | 0.39 | 0.24 | 0.44 | 0.97 | 0.28 | 0.50 | 0.20 | 0.22 |
| Education [d] | 0.038 | 0.064 | 0.036 | 0.000 | 0.014 | 0.169 | 0.002 | 0.002 |
| Construction | 0.10 | 0.07 | 0.03 | 0.01 | 0.01 | 0.04 | 0.02 | 0.16 |
| *Skill level* | | | | | | | | |
| High | 0.26 | 0.14 | 0.41 | 0.01 | 0.09 | 0.67 | 0.11 | 0.12 |
| Medium | 0.44 | 0.47 | 0.50 | 0.22 | 0.72 | 0.28 | 0.42 | 0.79 |
| Low | 0.30 | 0.39 | 0.09 | 0.78 | 0.20 | 0.05 | 0.43 | 0.09 |
| N | 175,532 | 241,331 | 9,250 | 18,801 | 9,637 | 43,285 | 36,248 | 29,805 |

*Notes:*

N total = 563,889. For 2,750 workers, we do not have the contract type, and statistics were not reported.

a: For open-ended contracts lasting more than five years, the maximum allowed is 1,826 days. Part-time contracts were weighted by 0.5 for length.

b: Only for those individuals with more than one contract from 2008 to 2012, as the number of days between the end of the first contract and the beginning of the second contract, with non-overlapping contracts.

c: Percentage of individuals with more than one contract at once, after the first one registered.

d: Workers in the education sector, as a proxy for employees in the public sector. They were subtracted from the services sector.

In the appendix, a descriptive exploration through likelihood for each type of observed contract quantifies the importance of several factors, which are the same as we use in the stepping-stone analysis below. Coefficients larger than 1 imply that the factor increases the probability of the given contract type; below zero, it is decreased.

After how many contracts, if ever, do these workers end up with an open-ended contract? The transition into a permanent position happens as depicted in Table 3. On the first column, we have

the initial working agreement observed in 2008. In the other columns, we have the number of workers who reach a permanent contract in the second, third, fourth, and fifth contracts, respectively.

Those starting with a permanent contract also represent the majority of permanent contracts in the second working position. The second category most likely to reach a permanent position is the one represented by fixed-term workers, followed by temporary agency workers.

Nonetheless, it seems that temporary agency workers have a higher probability of entering an open-ended contract with respect to the fixed-term contracts. For those who reach the permanent position on the second contract, about 9.9% are temporary workers, while 6.3% are fixed-term workers. Therefore, we find traces for an effect that could go on the opposite direction of what was found by Amuedo-Dorantes et al. (2008). For the Spanish case, agency workers endured a lower likelihood of being hired on a permanent basis following their temporary assignment than their direct-hire (fixed-term) counterparts.

Para-subordinate workers do worse, as only 5.7% obtain an open-ended contract as a second contract. Interestingly, the entry rate into a permanent position (second contract) is 8.9% for apprentices, a bit lower than for temporary workers. A possible explanation is that a learning effect is taking place for temporary agency workers, as they have a higher chance to be subsequently hired with regular contracts than their fixed-term counterparts (and even apprentices). Or perhaps firms are using temporary agency workers as a screening device, while they are adopting fixed-term contracts as a real alternative to regular contracts, but not in the perspective of hiring workers on a more stable basis.

After how long, if ever, do workers reach a permanent working position? We computed Kaplan-Meier estimates of duration of non-employment between the first and second contract, when the second contract is permanent (this refers to column 2 in Table 3). The estimates in Figure 1 reveal that the transition varies with the starting contract type.

*Table 3*: Transition to the final open-ended contract, 2008–2012

| INITIAL ARRANGEMENT | OPEN-ENDED CONTRACT AS ENDING ARRANGEMENT BY NUMBER OF CONTRACTS | | | |
|---|---|---|---|---|
| | *2 contracts* | *3 contracts* | *4 contracts* | *5 contracts* |
| Apprenticeships and access-to-work | 2,595 | 1,586 | 939 | 536 |
| Fixed term | 15,414 | 11,848 | 9,715 | 6,481 |
| Open-ended | 27,129 | 10,698 | 4,842 | 2,346 |
| Internships | 882 | 668 | 412 | 225 |
| Domestic workers | 626 | 390 | 252 | 158 |
| Jobs on call | 487 | 320 | 224 | 140 |
| Para-subordinate work | 2,471 | 1,877 | 1,099 | 714 |
| Temporary agency work | 3,597 | 3,091 | 2,079 | 1,554 |
| n.a. | 259 | 158 | 82 | 40 |
| *N* | 53,460 | 30,636 | 19,644 | 12,194 |
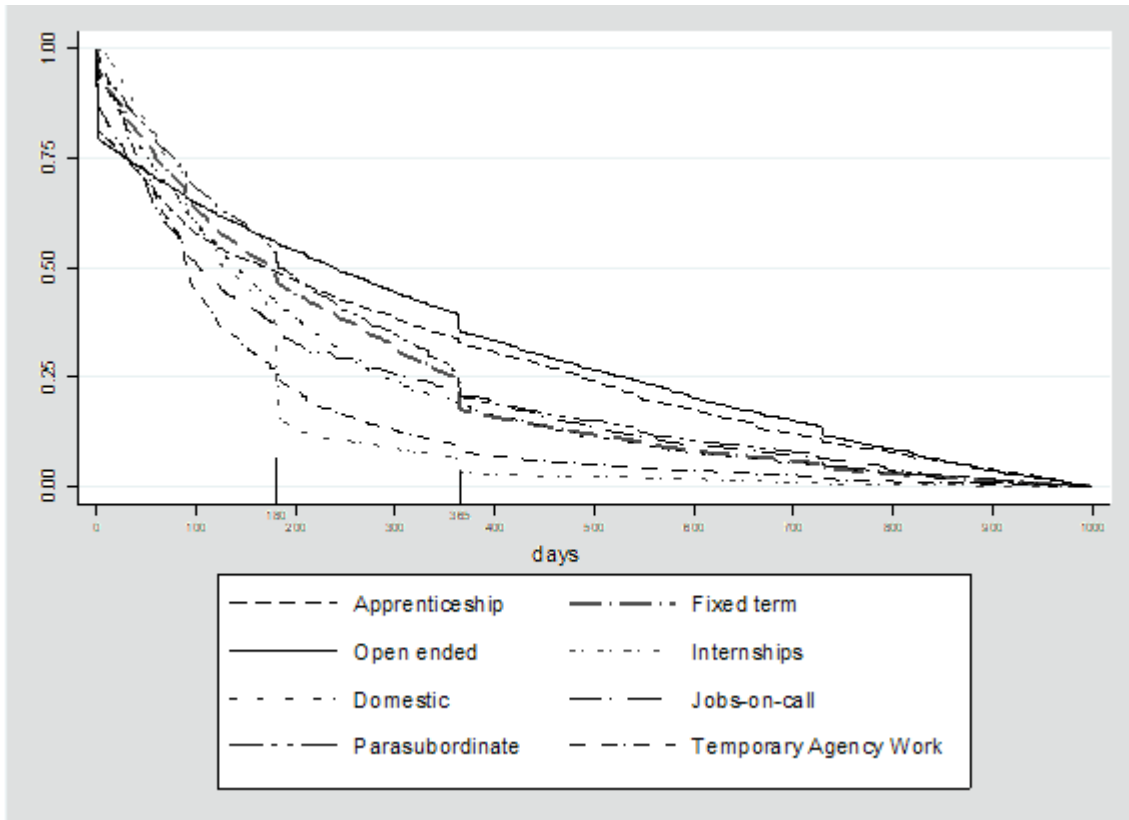
*Figure 1:* Transition to permanent contract, average in days, from first to second contract.

Table 4: Transition in days to the final open-ended contract, waiting period, and mean values by initial contract type and by number of contracts

|  | Days before the open-ended contract by number of contracts | | | |
|---|---|---|---|---|
| Initial arrangement | *2 contracts* | *3 contracts* | *4 contracts* | *5 contracts* |
| Apprenticeships and access-to-work | 133 | 94 | 66 | 57 |
| Fixed term | 126 | 87 | 60 | 54 |
| Open-ended | 55 | 61 | 61 | 62 |
| Internships | 143 | 82 | 63 | 46 |
| Domestic workers | 67 | 94 | 67 | 73 |
| Jobs on call | 149 | 88 | 85 | 56 |
| Para-subordinate work | 125 | 81 | 69 | 60 |
| Temporary agency work | 88 | 89 | 76 | 42 |
| n.a. | 104 | 61 | 35 | 40 |
| *N* | 110 | 82 | 65 | 54 |

Permanent workers changing their jobs wait on average less than anyone else. They have more probability of obtaining a permanent position and wait less than the rest. In addition, apprentices have a relatively easy transition. The six months and one-year thresholds are particularly evident for para-subordinate workers and for interns. When considering the whole contracts observed, we obtain Table 4, reporting the mean waiting period in days between the first contract observed and the next permanent contract.

As time goes by, the waiting period decreases. The cumulated effects of age and experience probably favour worker stabilisation. Some contracts, though, suffer more than others, such as jobs on call and internships. Temporary agency workers perform better than fixed-term workers in this aspect, and this result is in line with the ratios discussed above.

# 4      Empirical Strategy

Our objective is to consider several internal and external factors that can affect the ex-post probability of being awarded a given contract type with respect to a baseline case. We are aware that individual unobserved characteristics can also affect the ex-ante probability of being selected into a permanent, fixed-term, or any other specific position. The large size of our database, though, and previous published results support the hypothesis that the effect of unobservable factors should be minimum.

We ran a multinomial analysis for the second type of contract observed in the career of every individual in our sample with at least two contracts, given the initial category of the contract held. We could therefore track the likelihood of ending up with a given type of contract, given the previous status. We ruled out those types of contracts that are not deemed to be proper 'dependent labour' contracts, that is, domestic labour, jobs on call, and traineeships (as the first only relate to working at households as caretakers or nurses, the second is very erratic, and the third is often unpaid and unstable even if potentially leading to a more stable job).

We focus on the transition between the first and second contracts, as we rely on the high number of initial observations to control for potential latent variables inducing self-selection into a given working position. We performed the analysis for high-numbered transitions (from first to third, from second to third, and so on) but did not report the results since they do not differ significantly from the current results.

Specifically, the multinomial analysis allows for computing the 'success probability' of an event with respect to a base event category using workers' features, contract location, economic branch, and so on as explanatory factors. This methodological approach is used in the literature, when trying to assess the stepping-stone hypothesis towards a fixed-term contract type. It fits those situations where the variable one wants to explain in terms of success/failure is of a categorical type, and the related fitted coefficients for the explanatory variables (expressed as relative risks ratios) describe the probability that an event belongs to a given category with respect to the base event/category that can be arbitrarily chosen when a change in the explanatory variable is observed. We created dummies for the economic sectors and for provinces. The model for the 'Work Status' is therefore expressed by the following formula:

$$Prob(Y_i = j) = \frac{e^{\beta_j' x_i}}{\sum_{k=0}^{J} e^{\beta_k' x_i}},$$

where $Y_i$ is the categorical variable assuming the different observed working status ($STAWK$) types on the second contract. The exponentiated value of a coefficient is the relative-risk ratio for a one-unit change in the corresponding variable (risk is measured as the risk of the outcome relative to the base outcome). The marginal effects are to be interpreted as the change in the probability of ending in a particular working status $j$ given a one-unit change in the explanatory variable $x_i$ (Greene, 2002; Verbeek, 2012). A vector of covariates ($X$) relates to age, sex, citizenship, education, sector, and capital town dummies. More specifically, our equation is as follows:

$$STAWK_j = \beta_0 + \sum \beta_k EMP_{ik} + \sum \beta_l EDU_{il} + \sum \beta_m SEC_{im},$$

where $EMP$ refers to the $i$ employee-specific characteristics, such as age at the beginning of the contract, sex, and citizenship; $EDU$ refers to the presence of higher-level education (university or higher), and $SEC$ refers to sectoral dummies. We also include age squared as a proxy for working experience. This equation puts together the opposing forces at play on the labour market with the individual features defining the labour supply characteristics and with the sectoral dummies identifying the labour demand expressed by employers. The sectoral dimension is of utmost importance, as some contractual agreements are typical of given sectors and non-existent in others.

For instance, in Italy in the past couple of decades, most contracts in the education sector (public school) for teachers and instructors are fixed term. In the tourism sector, it is common practice to offer short-term contracts as the summer season only lasts from May to October. Open-ended contracts are mostly adopted in the manufacturing and service sectors (e.g. in the banking sector).

We evaluate the likelihood of observing a given type of contract/working status in the agreement following the first one, given the initial working status. This provides us with a range of probabilities of transition from a contractual form (all types) to a different job or to the same as the previous one, as a partial answer to the question of whether any given contractual agreement is likely to lead to a permanent job position or act efficiently as a stepping-stone or rather as a dead-end.

Unfortunately, we do not have the information on the employment/unemployment status for those individuals who conclude a contract and disappear since workers are only observed when entering and exiting a contract. Therefore, we can only assume they have been looking for a job until they find one, apart from the subjects that appear once in our time span, and then disappear (as for the cases of people retiring).

As mentioned above, under this empirical investigation, we focus on open-ended contracts, fixed-term contracts, para-subordinate contracts (as those are basically formally independent

workers but are often engaged in long-term collaborations),[4] apprenticeships (as a typical port of entry into the dependent labour world), and temporary agency workers (as one of the most investigated cases in the literature on the stepping-stone hypothesis). The results of this specification, limited to the relative risks for open-ended contracts, are reported in Table 5.

Table 5 reports six panels. Panel A contains the estimates for all workers with a second contract (only the effect for those with an open-ended contract as a second contract is shown here). The other panels are conditioned on a selected type for the first contract. Therefore, the first panel can be considered a baseline for the other estimations.

Results are reported as relative-risk ratios. The threshold for interpretation, although quite complicated (Greene, 2011), is represented by the value of 1, as all coefficients larger than 1 mean that the risk of being observed lies with the current outcome with respect to the base outcome, and vice-versa.

Age always represents a plus when evaluating the probability of observing an open-ended contract after a first contract of any kind, but the effect is stronger when the first contract observed was an apprenticeship contract. Age squared increased the performance of the specification, but the value always ranges around the value of 1, meaning probably that experience in itself is not a key determinant of the type of second contract. Being female is never an asset, as the likelihood of an open-ended contract always decreases if the worker is a woman (with respect to the base outcome, fixed term). Being female has a neutral effect only in the case in which the first contract was an open-ended contract. In all other cases but this last, even being a foreign worker gives more chance to get an open-ended contract than being a woman.

Having a university degree always leads to a higher probability of getting an open-ended contract, except for the case in which the previous contract was a temporary agency contract. The probability is especially high (1.44) in the case in which the previous contract was also an open-ended contract. This same pattern is reflected in jobs undertaken in the capital, Bologna. Construction, trade and tourism, and industry are sectors where the likelihood of ending up with an open-ended contract is higher, no matter the first contract. For the education sector, the likelihood is much stronger in the case in which the previous contract was another open-ended contract.

We are particularly interested in the predicted value for open-ended contracts stemming from the estimation. In panel A, the predicted value is 27.9%. This corresponds to the real percentage of individuals with an open-ended contract as a second contract in the population. In other words, the model exhibits enough terms to fully explain the effective percentage of individuals with an open-ended contract as a second contract. The model is said to be fully saturated.

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[4] We partially followed the choice adopted in the Rapporto Ervet on the Labour Market (2015), where the aggregation of the 'proper' dependent labour concerned open-ended contracts, fixed-term contracts, apprenticeships, and temporary agency workers. We opted for retaining in this study the para-subordinate workers since the weight of para-subordinate workers among the first contractual agreement observed is over 7%, and remains stable in the second contractual agreements observed, larger than the slightly more than 6% of temporary agency workers. Even from the taxation point of view, they are assimilated to dependent workers in Italy since 2001, with the same personal income tax and employees' social security contributions.

Table 5. Multinomial logit. Determinants of contractual types given the first contractual type, open-ended contracts as a second contract.

**A. Full database**

| | Number of observations | | | 289,974 |
|---|---|---|---|---|
| | LR chi(48)) | | | 124,532 |
| | Prob > chi2 | | | 0.000 |
| Log-likelihood = -302954.54 | Pseudo R2 | | | 0.1705 |
| Base outcome: fixed-term contracts | | | | |

| Open-ended contracts | Relative-risk ratio | Std. Error | z | P>|z| |
|---|---|---|---|---|
| Age | 1.14 | 0.03 | 48.49 | 0.0000 |
| Age^2 | 0.99 | 0.00 | -47.83 | 0.0000 |
| Female | 0.69 | 0.01 | -36.3 | 0.0000 |
| Foreign | 0.91 | 0.01 | -7.61 | 0.0000 |
| University degree | 1.18 | 0.02 | 8.26 | 0.0000 |
| Bologna | 1.30 | 0.14 | 24.16 | 0.0000 |
| Agriculture | 0.08 | 0.04 | -48.49 | 0.0000 |
| Trade & Tourism | 1.50 | 0.01 | 11.63 | 0.0000 |
| Constructions | 2.37 | 0.09 | 23.23 | 0.0000 |
| Industry | 2.92 | 0.10 | 30.73 | 0.0000 |
| Education | 1.09 | 0.04 | 2.46 | 0.0140 |
| Services | 3.28 | 0.11 | 34.58 | 0.0000 |
| constant | 0.02 | 0.00 | -58.22 | 0.0000 |
| Predicted CTI Mean | 27.9% | | | |

**B. Conditioned on apprenticeships**

| | Number of observations | | | 17,006 |
|---|---|---|---|---|
| | LR chi(48)) | | | 4,338.04 |
| | Prob > chi2 | | | 0.0000 |
| Log-likelihood = -20913.403 | Pseudo R2 | | | 0.094 |
| Base outcome: fixed-term contracts | | | | |

| Open-ended contracts | Relative-risk ratio | Std. Error | z | P>|z| |
|---|---|---|---|---|
| Age | 1.27 | 0.025 | 12.15 | 0.000 |
| Age^2 | 0.996 | 0.000 | -10.19 | 0.000 |
| Female | 0.83 | 0.041 | -3.6 | 0.000 |
| Foreign | 0.89 | 0.051 | -2 | 0.046 |
| University degree | 1.01 | 0.153 | 0.07 | 0.947 |
| Bologna | 1.16 | 0.065 | 2.7 | 0.007 |
| Agriculture | 0.08 | 0.023 | -8.58 | 0.000 |
| Trade & Tourism | 1.01 | 0.185 | 0.09 | 0.924 |
| Constructions | 2.04 | 0.39 | 3.73 | 0.000 |
| Industry | 2.149 | 0.39 | 4.17 | 0.000 |
| Education | 0.379 | 0.14 | -2.56 | 0.011 |
| Services | 1.77 | 0.32 | 3.15 | 0.002 |
| constant | 0.112 | 0.003 | -13.26 | 0.000 |
| Predicted CTI Mean | 20.4% | | | |

**C. Conditioned on open-ended contracts**

| | Number of observations | | | 62,874 |
|---|---|---|---|---|
| | LR chi(48)) | | | 9,146.52 |
| | Prob > chi2 | | | 0.000 |
| Log-likelihood = -53096.874 | Pseudo R2 | | | 0.0793 |
| Base outcome: fixed-term contracts | | | | |

| Open-ended contracts | Relative-risk ratio | Std. Error | z | P>|z| |
|---|---|---|---|---|
| Age | 1.05 | 0.00 | 8.11 | 0.000 |
| Age^2 | 0.99 | 0.00 | -7.47 | 0.000 |
| Female | 1 | 0.02 | 0.15 | 0.878 |
| Foreign | 0.75 | 0.02 | -12.74 | 0.000 |
| University degree | 1.44 | 0.07 | 7.11 | 0.000 |

**D. Conditioned on para-subordinates**

| | Number of observations | | | 25,117 |
|---|---|---|---|---|
| | LR chi(48)) | | | 5,916.59 |
| | Prob > chi2 | | | 0 |
| Log-likelihood = -22743.285 | Pseudo R2 | | | 0.1151 |
| Base outcome: fixed-term contracts | | | | |

| Open-ended contracts | Relative-risk ratio | Std. Error | z | P>|z| |
|---|---|---|---|---|
| Age | 1.11 | 0.016 | 7.47 | 0.000 |
| Age^2 | 0.99 | 0.000 | -6.94 | 0.000 |
| Female | 0.74 | 0.035 | -6.13 | 0.000 |
| Foreign | 0.88 | 0.065 | -1.63 | 0.103 |
| University degree | 0.93 | 0.070 | -0.85 | 0.394 |

**-- Open-ended contracts**

| | Relative-risk ratio | Std. Error | z | P>\|z\| |
|---|---|---|---|---|
| Bologna | 1.1 | 0.02 | 4.58 | 0.000 |
| Agriculture | 0.172 | 0.02 | -18.09 | 0.000 |
| Trade & Tourism | 1.03 | 0.08 | 0.45 | 0.656 |
| Constructions | 0.99 | 0.08 | -0.06 | 0.953 |
| Industry | 1.86 | 0.14 | 8.16 | 0.000 |
| Education | 3.92 | 0.39 | 13.56 | 0.000 |
| Services | 1.95 | 0.14 | 8.87 | 0.000 |
| constant | 0.62 | 0.09 | -3.13 | 0.002 |
| Predicted CTI Mean | 66.9% | | | |

**E. Conditioned on fixed-term contracts**

Number of observations 147,367
LR chi(48)) 36,776.27
Prob > chi2 0.0000
Pseudo R2 0.1511

Log-likelihood = -103270.97
Base outcome: fixed-term contracts

Open-ended contracts

| | Relative-risk ratio | Std. Error | z | P>\|z\| |
|---|---|---|---|---|
| Age | 1.13 | 0.005 | 26.28 | 0.000 |
| Age^2 | 0.99 | 0 | -28.05 | 0.000 |
| Female | 0.81 | 0.013 | -12.78 | 0.000 |
| Foreign | 0.91 | 0.016 | -4.83 | 0.000 |
| University degree | 1.05 | 0.036 | 1.59 | 0.111 |
| Bologna | 1.31 | 0.023 | 15.22 | 0.000 |
| Agriculture | 0.1 | 0.008 | -29.19 | 0.000 |
| Trade & Tourism | 1.58 | 0.087 | 8.23 | 0.000 |
| Constructions | 2.78 | 0.164 | 17.27 | 0.000 |
| Industry | 2.38 | 0.133 | 15.55 | 0.000 |
| Education | 1.01 | 0.616 | 0.19 | 0.848 |
| Services | 3.24 | 0.177 | 21.49 | 0.000 |
| constant | 0.01 | 0.001 | -39.84 | 0.000 |
| Predicted CTI Mean | 15.9% | | | |

**--Open-ended contracts**

| | Relative-risk ratio | Std. Error | z | P>\|z\| |
|---|---|---|---|---|
| Bologna | 1.11 | 0.055 | 2.24 | 0.025 |
| Agriculture | 0.15 | 0.044 | -6.61 | 0.000 |
| Trade & Tourism | 0.85 | 0.150 | -0.87 | 0.386 |
| Constructions | 0.96 | 0.190 | -0.2 | 0.844 |
| Industry | 1.38 | 0.250 | 1.81 | 0.070 |
| Education | 0.86 | 0.160 | -0.74 | 0.457 |
| Services | 1.29 | 0.220 | 1.5 | 0.133 |
| constant | 0.115 | 0.036 | -6.83 | 0.000 |
| Predicted CTI Mean | 14.5% | | | |

**F. Conditioned on temporary workers**

Number of observations 26,234
LR chi(48)) 5,279.66
Prob > chi2 0
Pseudo R2 0.0797

Log-likelihood = -30467.509
Base outcome: fixed-term contracts

Open-ended contracts

| | Relative-risk ratio | Std. Error | z | P>\|z\| |
|---|---|---|---|---|
| Age | 1.04 | 0.014 | 2.98 | 0.0030 |
| Age^2 | 0.99 | 0 | -3.1 | 0.0020 |
| Female | 0.83 | 0.323 | -4.56 | 0.0000 |
| Foreign | 0.92 | 0.042 | -1.66 | 0.0980 |
| University degree | 0.95 | 0.076 | -0.53 | 0.5930 |
| Bologna | 0.95 | 0.039 | -1.1 | 0.2700 |
| Agriculture | 0.061 | 0.017 | -9.71 | 0.0000 |
| Trade & Tourism | 0.9 | 0.125 | -0.73 | 0.4640 |
| Constructions | 1.37 | 0.216 | 1.99 | 0.0460 |
| Industry | 1.5 | 0.203 | 2.99 | 0.0030 |
| Education | 0.173 | 0.068 | -4.45 | 0.0000 |
| Services | 1.34 | 0.184 | 2.19 | 0.0280 |
| constant | 0.32 | 0.087 | -4.19 | 0.0000 |
| Predicted CTI Mean | 19.8% | | | |

When we move to the other panels, we find different predictions. In particular, we have 66.9% probability of observing an open-ended contract if the previous contract was open-ended as well. No prediction is higher; therefore, we can conclude that no situation is better than this to expect a second open-ended contract.

What about the other previous contractual forms? If we were looking for some stepping-stone effect, we could compare the same values when observing other contractual forms. If we were asked about fixed-term contracts as stepping-stones to open-ended contracts, the answer would be a clear 'no'. Actually, only para-subordinates workers perform (marginally) worse than fixed-term contracts in increasing the probability of obtaining an open-ended contract (14.5% versus 15.9%). The best predictor is the apprenticeship contract (20.4%) followed by the temporary agency contract (19.8%). Overall, no stepping-stone is observable from this analysis, as none of the categories observed performed better than the baseline outcome in panel A, which is the open-ended contract itself, hinting at the presence of a strong hysteresis (trapping effect) rather than a stepping-stone effect.

# 5    Discussion and Conclusions

The idea of short-term contracts working as stepping-stones toward more stable form of contractual agreements for dependent workers dates back to 2002, when the first massive flexibilisation at the margin in the labour market, mainly concerning short-term and temporary agency workers, spread wide across European countries.

In Italy, several reforms brought about a plethora of industry-tailored atypical contracts, supported by the empirical literature suggesting the existence of a stepping-stone effect, in the hope of boosting employment for young and women cohorts with the additional objective of helping firms going through reorganisation and restructuring processes in their search for competitiveness.

The current Italian panorama has changed through the recession and reshaping of the industrial world. It has been investigated with a rich and unique dataset of observations of dependent workers in Emilia-Romagna. We used a multinomial logit model to detect whether any stepping-stone effect is at work in the region. We find that the best stepping-stone toward permanent jobs is a permanent job itself. Actually, workers tend to remain with the same contract type over time. Although fixed-term workers represent prevalent contractual agreements, they have a high probability of being awarded the same type of contract again rather than to be transformed into permanent workers.

The empirical evidence speaks against the existence of a stepping-stone effect, hinting rather towards the presence of a bottleneck effect, constituted by the various short-term contracts we analysed here. Being female is never an asset, as the likelihood of an open-ended contract always decreases if the worker is a woman (with respect to the base outcome, fixed term). Being female has a neutral effect only in the case in which the first contract is an open-ended contract. In all other cases but this last, even being a foreign worker gives more chance to obtain an open-ended

contract than being a woman. Having a university degree always leads to higher probability of getting an open-ended contract, but for the case in which the previous contract was a temporary agency contract.

The lesson we can draw from this evidence is against the wide use of short-term jobs as instruments for job stabilisation and labour market efficiency. Although it is acknowledged that new contracts eased access to the labour market for given categories, workers are being defined as 'employed' by the national statistical institute questionnaires if the interviewees answer 'yes' to the question: 'Have you been working at least one hour in the past week?' Labour market reforms have had the effect of increasing (marginally) employment and uncertainty at the same time, but the theme of job stabilisation has apparently been neglected. Recent evidence from the labour market in Italy points to an increasing fragmentation of contracts, as recent reforms (2018) are creating even more hassles for firms wishing to turn to short-term contracts, with the result that unemployment has been slightly increasing as the renewals of short-term positions have slowed down.

Thus, the discussion should probably move from the presence or lack of a stepping-stone to the definition of 'employment' and how it changed in recent decades. It appears evident that working life perspectives and therefore the working experience cannot be evaluated using the same instruments adopted 20 years ago, as labour market conditions and the institutional approach to policy have changed substantially. A number of workers remain trapped in the previous contract type, in a perpetual loop of renewals where psychological factors can induce more stress and less resilience on the job.

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# Appendix

## A.1 Reclassification of Labour Contractual Agreements

| Codes | Description |
|---|---|
| CTI – Open-ended contracts | Open-ended contracts<br>Open-ended dependent labour in the public administration<br>Open-ended job sharing<br>Open-ended domestic labour<br>Open-ended labour in the Arts & Show sector<br>Maritime open-ended contracts |
| CAI – Apprenticeships contracts | Apprenticeship leading to a profession<br>Apprenticeship to fulfil the duty-responsibility of education/training<br>Apprenticeship to obtain a diploma or higher education programmes<br>Apprenticeship as per art.16. Law 196/97.<br>Access-to-work contracts<br>Contracts for line-up type a1<br>Porting |
| CTD – Fixed-term contracts | Fixed-term contracts<br>Fixed-term dependent labour in the public administration<br>Fixed-term job sharing<br>Fixed-term labour in the Arts & Show sector<br>Maritime fixed-term contracts<br>Fixed-term contracts for substitution<br>Fixed-term contracts in Agriculture |
| SOM – Temporary agency work | Open-ended temporary agency work<br>Fixed-term temporary agency work |
| LINT – Jobs on call | Open-ended jobs on call<br>Fixed-term jobs on call |
| LDOM – Domestic labour | Open-ended domestic labour<br>Fixed-term domestic labour |
| LPAR – Para-subordinate work | Project contracts/continued and coordinated collaboration<br>Casual work<br>Open-ended association in participation<br>Fixed-term association in participation<br>Autonomous work in the Arts & Show sector<br>Open-ended agency contracts<br>Fixed-term agency contracts |
| ELAV – Traineeships | Traineeships, internships<br>Community service |

## A.2 Determinants of Contractual Types, First Contract (2008)

|  |  | Number of |  |  | 561,494 |
|---|---|---|---|---|---|
|  |  | LR chi2(84) |  |  | 322,545.82 |
|  |  | Prob > chi2 |  |  | 0.0000 |
| Log-likelihood | -684585.68 | Pseudo R2 |  |  | 0.1907 |
| Base outcome: fixed- |  |  |  |  |  |
|  |  | Relative-risk ratio | Std. Error | z | P>|z| |
| Open-ended |  |  |  |  |  |
|  | Age | 1.02 | 0.0003 | 40.36 | 0.0000 |
|  | Female | 0.7 | 0.0051 | -48.95 | 0.0000 |
|  | Foreign | 0.98 | 0.0078 | -1.58 | 0.1140 |
|  | University degree | 1.37 | 0.0229 | 19.28 | 0.0000 |
|  | High School degree | 1.27 | 0.0123 | 24.89 | 0.0000 |
|  | Bologna | 1.37 | 0.0110 | 39.73 | 0.0000 |
|  | Education | 0.85 | 0.0199 | -6.92 | 0.0000 |
|  | Trade & Tourism | 1.01 | 0.0194 | 0.57 | 0.5710 |
|  | Industry | 2.31 | 0.0440 | 44.11 | 0.0000 |
|  | Services | 2.36 | 0.0441 | 46.32 | 0.0000 |
|  | Agriculture | 0.06 | 0.0021 | -85.61 | 0.0000 |
|  | Constructions | 1.84 | 0.0384 | 29.33 | 0.0000 |
|  | constant | 0.34 | 0.0074 | -49.44 | 0.0000 |
| Apprenticeships |  |  |  |  |  |
|  | Age | 0.75 | 0.001 | -166.23 | 0.0000 |
|  | Female | 1.00 | 0.015 | 0.07 | 0.9460 |
|  | Foreign | 0.72 | 0.012 | -19.33 | 0.0000 |
|  | University degree | 1.55 | 0.077 | 8.96 | 0.0000 |
|  | High School degree | 1.25 | 0.026 | 10.91 | 0.0000 |
|  | Bologna | 1.15 | 0.020 | 8.48 | 0.0000 |
|  | Education | 0.09 | 0.013 | -17.45 | 0.0000 |
|  | Trade & Tourism | 1.28 | 0.050 | 6.5 | 0.0000 |
|  | Industry | 2.01 | 0.080 | 17.78 | 0.0000 |
|  | Services | 1.26 | 0.050 | 5.91 | 0.0000 |
|  | Agriculture | 0.03 | 0.003 | -37.91 | 0.0000 |
|  | Constructions | 3.16 | 0.133 | 27.33 | 0.0000 |
|  | constant | 1.44 | 1.440 | 95.71 | 0.0000 |
| Para-subordinates |  |  |  |  |  |
|  | Age | 1.020 | 0.000 | 50.97 | 0.0000 |
|  | Female | 0.630 | 0.007 | -38.7 | 0.0000 |
|  | Foreign | 0.270 | 0.005 | -68.31 | 0.0000 |
|  | University degree | 1.130 | 0.026 | 5.56 | 0.0000 |
|  | High School degree | 0.760 | 0.013 | -15.98 | 0.0000 |
|  | Bologna | 1.690 | 0.021 | 43.24 | 0.0000 |
|  | Education | 3.320 | 0.117 | 34.23 | 0.0000 |
|  | Trade & Tourism | 0.870 | 0.030 | -4.03 | 0.0000 |
|  | Industry | 1.020 | 0.036 | 0.68 | 0.4940 |
|  | Services | 3.310 | 0.102 | 34.92 | 0.0000 |
|  | Agriculture | 0.040 | 0.003 | -44.88 | 0.0000 |
|  | Constructions | 0.770 | 0.031 | -6.46 | 0.0000 |

Traineeships

|  |  |  |  |  |
|---|---|---|---|---|
| constant | 0.060 | 0.003 | -70.62 | 0.0000 |
| Age | 0.790 | 0.002 | -94.08 | 0.0000 |
| Female | 1.190 | 0.028 | 7.81 | 0.0000 |
| Foreign | 0.350 | 0.012 | -29.46 | 0.0000 |
| University degree | 3.400 | 0.154 | 27.02 | 0.0000 |
| High School degree | 1.340 | 0.040 | 10.07 | 0.0000 |
| Bologna | 1.220 | 0.032 | 7.68 | 0.0000 |
| Education | 1.020 | 0.084 | 0.26 | 0.7980 |
| Trade & Tourism | 0.820 | 0.052 | -3.13 | 0.0020 |
| Industry | 1.730 | 0.110 | 8.67 | 0.0000 |
| Services | 2.180 | 0.134 | 12.72 | 0.0000 |
| Agriculture | 0.070 | 0.009 | -21.1 | 0.0000 |
| Constructions | 0.620 | 0.055 | -5.33 | 0.0000 |
| constant | 1.310 | 1.046 | 32.53 | 0.0000 |

Domestic Labour

|  |  |  |  |  |
|---|---|---|---|---|
| Age | 1.05 | 0.001 | 63.55 | 0.0000 |
| Female | 4.82 | 0.114 | 66.37 | 0.0000 |
| Foreign | 2.78 | 0.789 | 117.66 | 0.0000 |
| University degree | 0.72 | 0.046 | -5.11 | 0.0000 |
| High School degree | 0.72 | 0.033 | -7.04 | 0.0000 |
| Bologna | 1.17 | 0.026 | 7.57 | 0.0000 |
| Education | 0.15 | 0.056 | -5.09 | 0.0000 |
| Trade & Tourism | 0.34 | 0.043 | -8.58 | 0.0000 |
| Industry | 0.80 | 0.101 | -1.76 | 0.0790 |
| Services | 2.95 | 3.027 | 33.08 | 0.0000 |
| Agriculture | 0.11 | 0.018 | -13.48 | 0.0000 |
| Constructions | 1.12 | 0.163 | 0.8 | 0.4240 |
| constant | 0.00 | 0.000 | -87.89 | 0.0000 |

Jobs on call

|  |  |  |  |  |
|---|---|---|---|---|
| Age | 0.99 | 0.001 | -9.1 | 0.0000 |
| Female | 0.96 | 0.021 | -2.12 | 0.0340 |
| Foreign | 0.53 | 0.015 | -22.24 | 0.0000 |
| University degree | 0.47 | 0.036 | -9.88 | 0.0000 |
| High School degree | 0.69 | 0.022 | -11.5 | 0.0000 |
| Bologna | 0.62 | 0.019 | -15.51 | 0.0000 |
| Education | 0.27 | 0.028 | -12.69 | 0.0000 |
| Trade & Tourism | 2.94 | 0.170 | 18.68 | 0.0000 |
| Industry | 0.28 | 0.021 | -16.88 | 0.0000 |
| Services | 1.37 | 0.082 | 5.38 | 0.0000 |
| Agriculture | 0.01 | 0.002 | -15.39 | 0.0000 |
| Constructions | 0.14 | 0.017 | -15.76 | 0.0000 |
| constant | 0.06 | 0.004 | -41.59 | 0.0000 |

Temporary agency

|  |  |  |  |  |
|---|---|---|---|---|
| Age | 0.96 | 0.0006 | -63.16 | 0.0000 |
| Female | 0.86 | 0.0108 | -11.83 | 0.0000 |
| Foreign | 0.87 | 0.0123 | -9.86 | 0.0000 |
| University degree | 1.00 | 0.0410 | 10.26 | 0.0000 |

-- Temporary agency

| | | | | |
|---|---|---|---|---|
| High School degree | 1.60 | 0.0219 | 19.65 | 0.0000 |
| Bologna | 1.36 | 0.0229 | 38.81 | 0.0000 |
| Education | 0.03 | 0.0043 | -27.03 | 0.0000 |
| Trade & Tourism | 0.80 | 0.0267 | -6.65 | 0.0000 |
| Industry | 3.84 | 0.1223 | 42.41 | 0.0000 |
| Services | 0.90 | 0.0297 | -3.20 | 0.0010 |
| Agriculture | 0.05 | 0.0038 | -40.74 | 0.0000 |
| Constructions | 0.38 | 0.0176 | -20.91 | 0.0000 |
| constant | 0.44 | 0.0164 | -21.92 | 0.0000 |

Age at the beginning of the contract has a positive effect on all types of contract but traineeships, apprenticeships, jobs on call and somehow temporary agency workers. Being female does not improve the "risk" of being hired into an open-ended contract with respect to a fixed-term contract, but females are especially unlikely to get a para-subordinate job, with respect to all the other job categories; instead, being female represents a plus when domestic labour is taken into account, and with a much stronger risk ratio (4.82) than any other variable and category. The gender effect is particularly reinforced by being a foreign worker, as being foreign for domestic labour is the only situation where the relative-risk ratio is pretty larger than 1 and significantly different from zero. In all other cases, being foreign sounds more as a disadvantage. This evidence is explained by the widespread phenomenon of foreign, mid-aged women coming from abroad to work as caretakers. Women have a marginal advantage respect to men only in two entry-level categories of contracts, traineeships and apprenticeships.

Having a university-level degree has a positive effect over all categories with respect to fixed-term contracts, but on domestic labour, jobs on call and temporary agency workers. The category that benefits more from a university degree (with an effect almost triple than the other types) is traineeships, indicating as this is likely to be the preferred port of entry into the labour markets for the youngsters after completing a cycle of superior studies, as also confirmed by the negative effect of age. The fact of working in Bologna, capital town of the region, affects positively the risk in all categories but in jobs on call, for which instead a specific sector specific pattern emerges in Trade & Tourism. Jobs on call are typically exploited during the summer season on the coastal areas (Rimini, Riccione, etc..) while those working in the same sector in Bologna are not subjected to such a strong seasonality effect and are likely taken in with other contractual agreements. Open-ended contracts have a positive risk of being adopted over fixed-term contracts in the services and industry sectors: the risk over a fixed term is more than double.

The typical agency worker has more chances in the industrial sectors than in any other sector (3.84); traineeships are more frequent in services (for high skilled, managerial and professional positions). Teachers and instructors, isolated from the other services to proxy for the role of the public administration (as teachers are basically all public employees) have a positive risk of being hired as para-subordinate workers with respect to fixed term, but the risk is otherwise negative for the other contractual forms, and while other contractual forms are simply irrelevant for teachers (who do not enter the domestic labour market, for instance, nor do apprenticeships) the negative effect is relevant with when assessing the open-ended contracts too. This can be

interpreted in the light of the progressive de-stabilisation of the teacher contractual type, once considered a sort of safe haven against unemployment – as all teachers were basically taken in with fixed-term contracts. This is a meaningful episode that confirms the increase perception of uncertainty detected by the ESS data, as baseline, stable type of jobs, simply do not exist anymore in that sector, or decrease in importance through time. When considering the first contract, 51% of workers in the education sector were hired through a fixed-term contract, 24% as para-subordinate workers and 21% with open-ended contracts. Teachers represent over 60% of workers hired in the education sector, and half of them are hired through fixed-term contracts.

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The Editor