

Substitution, entrapment, and inefficiency? Cohort inequalities in a two-tier labour market

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Abstract

In this paper, we provide a longitudinal account of institutionally-originated, cohort inequalities in a two-tier labour market, taking Italy as an exemplary case of partial and targeted deregulation. We examine the incidence and career consequences of temporary employment relying on panel data, across reforms implemented in the 1990s and early 2000s. A substitution effect is found for the initial stages of workers' careers: while the youngest cohorts of school-leavers increasingly enter the flexible labour market, access to stable positions is hampered. Previous experiences in the flexible segment of the labour force also increase the risk of entrapment in temporary jobs. This lock-in dynamic is more visible for post-reforms cohorts and might have increased labour market inefficiency. Indeed, the entrapment risk has risen disproportionately for those individuals whose (un)observed characteristics could instead predict a faster exit from the flexible labour market, possibly towards stable positions. Our findings cast doubts on the transitory nature of temporary work in Italy and on the efficiency of partial and targeted reforms.

Keywords: contracts, labor markets, youth, Italy

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Introduction

The distinction between temporary and permanent employment has acquired relevance throughout the past decades, as most European countries pursued flexibilization to boost labour market efficiency and labour supply (Gash and McGinnity, 2007; Barbieri, 2009; Gebel and Giesecke, 2011; Emmenegger *et al.*, 2012). An array of negative consequences associated with temporary employment has been extensively researched in both the economic and sociological literature: for instance, as compared to holders of stable positions, those in temporary employment are typically paid less (Booth *et al.*, 2002; Gash and McGinnity, 2007; Comi and Grasseni, 2012) and receive less training (Fouarge *et al.*, 2012; Cutuli and Guetto, 2013; OECD, 2014). Consequently, it has been argued that temporary employment may have become a further source of labour market inequality alongside unemployment (Schmid, 2004; DiPrete *et al.*, 2006).

With respect to flexibilization, Italy may be conceived as an ideal-typical case of institutionally-driven (Palier and Thelen, 2010) insider-outsider scenario, mainly based on an age/cohort divide. Indeed, Italy undertook a process of partial and targeted labour market deregulation (Esping-

Andersen and Regini, 2000): protections for permanent employment remained unchanged, whereas temporary employment was substantially deregulated and selectively directed to young labour market entrants. We argue that this process might have left room for a diffusion of temporary employment not merely as a prerogative of the low-skilled (D'Addio and Rosholm, 2005; Kalleberg, 2009; Gebel and Giesecke, 2011), but more as a “generational” effect affecting individuals regardless of their position in the occupational structure, an outcome in line with the Spanish experience (Polavieja, 2005).

Therefore, the main question addressed in this article is whether and to what extent the Italian deregulation has generated stable improvements in the career prospects of those segments of the workforce directly targeted by the reforms. In other words, we test whether – after almost two decades since their introduction in the Italian labour market – unstable jobs serve as a stepping stone towards secure positions or rather become a trap leading to precarious career paths, especially for the youngest cohorts. Indeed, should the first scenario be confirmed, the costs attached to temporary employment could be regarded as only transitory.

We contribute to the debate by examining the incidence and career consequences of holding temporary contracts across reforms implemented in the 1990s and early 2000s, thus allowing for a longitudinal evaluation of insider-outsider dynamics in the Italian labour market: we consider Italy as an exemplary case of the “southern European model” of deregulation at the margins. First, we look for substitution effects at the micro-level. We retrieve person-year data from the 2009 wave of the Multipurpose Survey of Italian Households (*Famiglia e Soggetti Sociali*, FSS), covering the period between 1980 and 2009. This enables us to make two contributions: first, we track individual career developments in the aftermath of recent normative changes, such as the so called Biagi law of 2003, overlooked by previous studies because of data constraints (e.g. Gagliarducci, 2005; Barbieri and Scherer, 2009). Second, we extend the analysis of substitution dynamics not just to the first job (Scherer, 2005; Gebel, 2009), but to the first stages of individuals’ work histories, up to nine years after school-leaving. Recent cohorts of school-leavers still turn out to be increasingly exposed to temporary contracts, while conversely less likely to obtain permanent positions; this substitution effect appears to be particularly resilient in the Italian labour market.

Further, a major contribution regards the issue of stepping-stone opportunities versus entrapment risks for those holding temporary contracts. We find new and theory-driven evidence suggesting that notable entrapment risks exist for the younger cohorts of school-leavers approaching the Italian labour market. The use of dynamic models (Wooldridge, 2005) allows for the identification of temporary employment traps as the outcome of true state-dependence, i.e. persistence in unstable jobs net of time-constant unobserved characteristics. The risks of entrapment have risen disproportionately for those individuals whose observed *and* unobserved characteristics would

instead predict a faster exit from the secondary labour market, possibly towards stable positions. This might spur labour market inefficiency even in a (partially) deregulated labour market (cf. Martin and Scarpetta, 2012), “democratizing” the risk of entrapment within each cohort of new entrants.

To sum up, the main research questions are as follows:

- (i) We ask whether a common pattern is observable between subsequent policy reforms in the resulting incidence of temporary employment. More precisely, are post-reform cohorts of school-leavers more likely to end up in temporary positions, whereas access to secure jobs is hampered (*substitution*)?
- (ii) Do temporary jobs give rise to entrapment, net of observed and unobserved heterogeneity, and more so for post-reform cohorts (*entrapment*)?

The following section briefly surveys the macro-level institutional conditions that have led to and are brought by labour market flexibilization, focusing on the Italian case (1). Micro-level mechanisms shaping the consequences of temporary employment are then examined (2) and weighted against the existing empirical evidence; our main hypotheses are formalized right after. Data, concepts, and the modelling strategy are then presented (3). The following paragraphs (4, 5) display and comment on the results of the analyses. Directions for future research are discussed in the last section alongside our concluding remarks.

1 The institutional background

In line with mainstream economics (OECD, 1994), flexibilization was conceived as an answer to the eurosclerosis diagnosis, thereby linking the persistence of unemployment to the alleged excess of regulation in European labour markets (Siebert, 1997; Nickell, 1997; Blanchard, 2006; DiPrete *et al.*, 2006). The adjustment of European labour markets was not homogeneous, but institutionally filtered. First, it shied away from the general lack of regulations typical of the US employment regime (DiPrete *et al.*, 2006) as more viable segmenting strategies were pursued. Second, institutional complementarities unfolded: divisions within the workforce established in the field of industrial relations were further consolidated by labour market- and social protection reforms (Palier and Thelen, 2010). Yet, different country clusters acted mainly on diverse dimensions of flexibility, either accepting a wider wage differentials or relaxing employment protections (Maurin and Postel-Vinay, 2005; Barbieri, 2009).

Reforms of employment protection legislation (EPL) were largely two-tier reforms rather than general ones, thereby widening the dualism between core and peripheral segments of the workforce (Boeri, 2011) and leading to an institutionalisation of distinct labour market segments (for a review, Barbieri, 2009). Continental countries such as Germany and Belgium primarily reformed at the margins, targeting low-skilled workers (Giesecke and Groß, 2003; Gebel and Giesecke, 2011). Italy followed the pattern of Spain, targeting new entrants and thus segmenting on an age/cohort basis (Golsch, 2003; Barbieri and Scherer, 2009; Barbieri, 2011).

Plagued with long queues for (first) job searchers and persistent unemployment, the Italian labour market displayed a rigidity that could be mainly ascribed to its strong protection of permanent employees and to the legal constraints on temporary contracts. Regarding permanent employment, Italy was initially ranked among the most strictly regulated regimes (Grubb and Wells, 1993). This positioning was later revised by the OECD itself (OECD, 2004): a deferred-wage type of benefit (Tfr, *Trattamento di fine rapporto*) was erroneously accounted for as a component of severance payments against no-faults dismissal, thus artificially inflating the index. Scholars have also contrasted the rigidity hypothesis, highlighting non-negligible job-to-job mobility among the core workforce (Contini and Trivellato, 2006). Nevertheless, Italy still ranks one standard deviation above the OECD average EPL for permanent workers (OECD, 2013), yet lags behind the even more stringent cases of Germany and Belgium.

As already recalled, this sphere of employment protection was left untouched in the period we are focusing on. Similarly to other European countries, the reform process featured a trade-off between size and scope (Boeri, 2011): it indeed stood out within the pool of advanced economies as one of the deepest normative efforts (Brandt *et al.*, 2005), albeit narrowly confined. Reforms centred upon temporary employment practices whose usage was originally limited to exceptional circumstances, while permanent employment relationships were promoted as the norm (law no. 230 of 1962).

In the mid-1980s, firms were allowed to stipulate temporary contracts more extensively, but still conditionally on collective agreements with trade unions and provided that the share of temporary employees would not have exceeded a certain firm-level threshold (Boeri and Garibaldi, 2007; for a review, see Hijzen *et al.*, 2013).

Reforms culminated almost a decade later, with the so-called “Treu package” of 1997 and the “Biagi” law of 2003¹. In the midst of flexibilization, the share of temporary workers over total dependent employment doubled, reaching the 13.2% before the start of the recession and remaining fairly constant ever since (OECD, 2013). The overall OECD index for legal constraints on temporary employment (going from 1, low protections, to 6, tight protections) shrank from a value of 5.25 at beginning of the 1980s to a value of 2.71 in 2009 (OECD statistics database).

The aforementioned policies shared similar features. At the level of the *law-in-the-books*, they targeted traditionally weak labour market groups (mainly the young and women) in order to tackle the former's unemployment rates and enhance participation in paid work of the latter. Reforms applied only to those entering (or re-entering) the labour market, thereby easing restrictions on fixed-term contracts (FTCs)²: at the end of the reform period, FTCs had become viable *a*) in response to any “technical, productive, organizational and substitutive reason” identified by firms; *b*) for a maximum of six renewals within the same company; *c*) with progressively shorter breaks (eventually, around 20 days) between the end of one FTC and the start of a separate one in the same firm; *d*) without any firm-level threshold regarding the share of FTCs over the total number of employees – a threshold previously set at 20%; *e*) with no dismissal costs attached to the end of FTCs.

New forms of temporary employment were also promoted as a regularized alternative to off-the-books jobs. Temporary work agency (TWA) contracts were introduced in 1997 and their (de)regulation continued in 2003. Further, the 2003 reform instituted various new contractual figures (job-on-call, staff leasing, job-sharing, etc) and redefined the legal boundaries for freelance work (*contratti di collaborazione coordinata e continuativa*), thereafter named “project-based” freelance work (*contratti a progetto*). These job holders are formally independent contractors mainly involved with a single employer for the realization of a “project”, variously redefined by reforms. Such employment relationships have limited duration and require lower social security (i.e. pension, maternity leave, etc.) contributions from employers (OECD 2013: 171); in the following, we will refer to this category as that of pseudo self-employment (Barbieri and Scherer, 2009).

These positions added up to a new segment of the labour force, labelled ‘atypical’ by contrast with *a*) typical employment in the Italian market, i.e. permanent employees and traditional self-employment, and with *b*) other “old” forms of non-standard employment, either seasonal or off-the-books (Barbieri and Scherer, 2009; Blossfeld *et al.*, 2005).

At the macro level, theoretical premises regarding the effects of EPL re-definition are – to a certain extent – heterogeneous. On the one hand, it has been argued that a short-lived employment growth, the so-called *honeymoon effect* (Boeri and Garibaldi, 2007), can be expected as a specific by-product of increased dualism. On the other hand, it has been suggested that this phenomenon can be paralleled by a process of substitution between permanent and temporary employment (Kahn, 2010; Barbieri and Cutuli, 2015) in response to an increasing regulatory gap between these two tiers of the labour market.

Generally, research has shown that no clear-cut impact on aggregate employment can be ascribed to reforms focused on the EPL-gap between permanent and temporary employees (Skedinger, 2011). Consistent evidence rather underscores the perverse effects of partial and targeted reforms

(Blanchard and Landier, 2002; Dolado *et al.*, 2002; Kahn, 2010; Barbieri and Cutuli, 2015; Noelke, 2015): in dual labour markets, sub-protected temporary employees face high job turnover and low chances of accessing secure positions in the primary segment of the labour force.

Other than being detrimental to labour productivity growth (Boeri and Garibaldi, 2007; Hijzen *et al.*, 2013), dualization has been shown to have relevant political implications pertaining to social protection systems (Palier and Thelen, 2010). For instance, stronger insider-outsider divides are associated with more modest adjustments of active and passive labour market policies in response to an increase in unemployment levels (Rueda, 2014). From a sociological perspective, holding temporary positions in the labour market began to be regarded as a new source of social inequalities (DiPrete *et al.*, 2006), affecting individuals' life courses and family formation processes – especially in Southern Europe (Golsch, 2003; Barbieri *et al.*, 2015). As clarified in the following section, institutional variation plays a crucial role in determining whether and for whom temporary positions might serve as stepping stones towards employment security or as traps leading to carousels of precarious jobs and unemployment. In Mediterranean welfare regimes, it has been noted that the unequal re-distribution of risks and protections gives rise to cohort cleavages, privileging *older* insiders over *young* outsiders (Blossfeld *et al.*, 2005, 2008; Barbieri, 2011; Chauvel and Schröder, 2014). The mechanisms involved in such segmentation are assessed here descending to the micro-level of analysis.

2 Integration or entrapment? Theories, findings, and expectations

Theoretical arguments concerning the career consequences of temporary employment fit into two contrasting scenarios: one leaning towards integration and the other towards cleavage(s) and entrapment (OECD, 2002; Giesecke and Groß, 2003; Gash and McGinnity, 2007; Barbieri and Scherer, 2009; Gebel, 2010).

As for the former perspective, temporary employment is conceivable as a stepping stone towards more stable or desirable employment positions (Booth *et al.*, 2002; Scherer, 2004; de Lange *et al.*, 2014), serving both employers and employees favourably. On the demand side, screening theories suggest that temporary contracts provide probationary periods for high-ability job applicants whose productivity is difficult to assess upon hiring (Wang and Weiss, 1998; Kahn, 2010). Helped in solving informational asymmetries by an extended on-the-job test, employers are able to retain the best match(es) and dismiss the others at a low cost. In turn, an incentive effect is said to induce potential employees to accept temporary positions provided that credible conversion rates to permanent jobs are ensured by employers (Polavieja, 2003; 2005). Additional incentives are twofold: in initially unstable positions, job searchers may recognize an instrument to signal their

productivity on-the-job rather than simply through their credentials (Giesecke and Groß, 2003). Further, information about which job suits the worker best and which open positions are available in the market is more easily acquired when employed (even only temporarily) than when waiting in the unemployment queue (Korpi and Levin, 2001).

Research findings coherently point at the career benefits or the absence of harmful consequences of temporary job spells within European labour markets (Scherer, 2004; McGinnity *et al.*, 2005; de Lange *et al.*, 2014; Gash and McGinnity, 2007) – and especially in the UK (Booth *et al.*, 2002; Gebel, 2010). The stepping-stone hypothesis finds some (weak) support in Italy as well.

Considering short-term employment prospects, workers “treated” with a spell of temporary employment fair better than those experiencing unemployment in the same period: Ichino and colleagues (2008) analyse temporary work agency (TWA) jobs in their study, using data for two Italian regions only; after proper sensitivity analyses, their results are robust only for one of the two regions. Picchio’s (2008) main finding is that, *ceteris paribus*, having a temporary contract rather than being unemployed increases the probability of leaving unemployment to enter a permanent job two years later by about 13–16 percentage points.

Nevertheless, even if any job is still better than no job at all, this hardly completes the assessment of whether or not temporary jobs are “bad jobs” (Kalleberg, 2000; Kalleberg *et al.*, 2000).

Specifically, insights into long-term dynamics are missing. Do temporary contracts provide long-lasting exits and protection from unemployment, or do they simply lead to carousels of unstable jobs? We are also blind to the distribution of such opportunities (or of risks) across different categories of workers. Screening arguments would indeed suggest that temporary contracts will not burden those already disadvantaged in the labour market, but rather ease the match between highly skilled applicants and job vacancies (Giesecke and Groß, 2003; McGinnity *et al.*, 2005). This suggestion is contradicted by a number of studies. New entrants, women, the low-skilled, and immigrants are found to unevenly bear the risks of employment insecurity (Barbieri and Scherer, 2009; Gebel and Giesecke, 2011; Kogan, 2011), albeit to a different extent given the institutional setting (Barbieri, 2009). As already established, the cohort cleavage seems predominant in Italy, and we therefore formalize our first, descriptive hypothesis as follows: *H1) post-reform cohorts of school-leavers are increasingly likely to access the labour market through temporary positions, whereas their chances of landing in secure jobs are hampered.*

Chains of temporary jobs, and the frequent career breaks in between each contract, are then associated with the experience of temporary employment (Giesecke and Groß, 2003; Gebel, 2010; García-Pérez and Muñoz-Bullón, 2011; for Italy: Gagliarducci, 2005; Barbieri and Scherer, 2009). This scenario of entrapment might stem from employers' usage of temporary employees as a buffer stock to cope with demand fluctuations, technological change, and stricter dismissal rules for

permanent workers³ (D'Addio and Rosholm, 2005; Kahn, 2010; Hijzen *et al.*, 2013). The costs of production adjustments are transferred to those holding temporary positions, i.e. the first and easiest to be fired— by simply not renewing their contracts. Buffering may fit not only employers' needs, but also the interests of permanent employees, who may avoid layoffs more easily if firms adjust their workforce primarily through temporary employees (Saint-Paul *et al.*, 1996; Polavieja, 2005). In the light of these considerations, arguments based on the screening properties of temporary contracts may be challenged. Facing a dismissal in the short term (because of buffering), employees have no interest in acquiring on-the-job skills, nor do employers have interest in providing training (Booth *et al.*, 2002; Giesecke and Groß, 2003). In other words, the investment in specific human capital is deferred. While firms prevent efficiency losses, employees do not acquire the kind of expertise that could boost their mobility towards permanent employment (Fouarge *et al.*, 2012). Additionally, if workers are indeed trapped in chains of temporary contracts, the chances of human capital depreciation add up to the inability to accumulate skills while employed, further hampering workers' career prospects (Gagliarducci, 2005).

An additional mechanism that might foster entrapment is derived from signalling theories. Previous job experience can be regarded as one of the applicants' characteristics discernible by employers upon hiring (Spence, 1973). If the employer has discretion over whom to fire (which is likely to be the case for temporary workers), being laid off may serve as a signal of low ability and/or low productivity for the market (Gibbons and Katz, 1991). Therefore, we might expect future employers not to hire or offer permanent positions to workers who have failed to have their temporary contracts stabilized in the past, and more so the more temporary contracts an individual has accumulated without any stabilization (Gagliarducci, 2005; Gebel, 2009).

Such an argument could provide a micro-level rationale for the dynamics highlighted by two-tier labour market theories (e.g. Boeri and Garibaldi, 2007; Bentolila *et al.*, 2012). The institutionally-driven creation of a second tier in the labour market⁴, comprising temporary employees, might be sustained by lock-in dynamics, as permanence within the flexible segment works as an adverse signal and hinders mobility towards stable jobs. In line with this framework, our second and main hypothesis reads as follows: *H2) previous experiences in temporary employment give rise to negative feedback, increasing individuals' chances of remaining trapped in temporary employment itself.*

3 Empirical approach

The analysis draws on new life-history data from the 2009 wave of the ISTAT–Multipurpose Survey of Italian Households (FSS 2009). Labour market trajectories are retrospectively recalled by respondents up to their eleventh employment spell and include interstitial periods of joblessness.

For the purposes of this study, we retrieve yearly information and obtain an unbalanced panel for the period 1980-2009 (N of observations = 218,413; N of individuals = 12,917).

Individuals are part of the sample since they leave school, a moment that approximates the start of job searches. Defining the timing of school-leaving requires a crucial distinction between stop-gap jobs (i.e. secondary to full-time enrolment in education) and individuals' stable entry into the labour market (Scherer, 2005; McGinnity et al., 2005). Hence, we built a calendar for educational attainment and established a hierarchy between individuals' involvement in education and in the labour market. In doing so, we followed procedures well established in the literature (Gebel, 2009). First employment spells are thus considered either a) those begun after leaving the educational and training system (hereafter, ETS) or b) those begun during an interruption of the educational path lasting more than 12 months. Coherently, we also retained c) episodes begun before individuals left the ETS but that continued after and had an overall duration exceeding 12 months⁵. Finally, first employment spells whose interruption is due to military service are trimmed out.

Labour market status is the dependent variable and is mainly coded focusing on the cleavage between typical and atypical employment relations. First, permanent dependent employment and traditional self-employment are aggregated in the primary core of typical and secure positions (Barbieri and Bison, 2004). Second, atypical jobs are defined as forms of either temporary dependent employment (fixed-term contracts, TWA, and others) or of pseudo self-employment (Blossfeld et al., 2005; Barbieri and Scherer, 2009). It is worth noting that all school-leavers from 1980 onwards are part of the sample: other than the typical-atypical dichotomy, this includes individuals holding seasonal or irregular jobs, first-job seekers, the unemployed, and discouraged workers.

As implied in the first hypothesis, we initially seek to establish robust descriptive evidence on the substitution – across cohorts – between secure and insecure labour market access. We employ population-averaged (PA) probit models, specified as follows:

$$y_{it}^* = \alpha_i + \mathbf{X}_{it}\beta + \varepsilon_{it} \quad (1)$$

where y_{it}^* is the latent outcome (with $y_{it}^* > 0$ if $y_{it} = 1$, and zero otherwise) indicating the chances of holding a particular position in the labour market, \mathbf{X}_{it} is a vector of covariates, and β is a set of associated coefficients. The error term consists only of an idiosyncratic component (ε_{it}); the working correlation matrix is of the exchangeable type, meaning that every pair of residuals on the same subject is assumed to display the same correlation⁶. To track substitution, we first model employment chances in the short-term (within 3 years since leaving school) and then focus on the

type of position attained in the medium-long term (atypical or typical within 5 and 9 years, respectively).

Covariates in each model include dummies contrasting women and men and distinguishing different cohorts. More specifically, five school-leaver cohorts are identified: leavers in the period 1980-85 (the reference category), pre-flexibilization cohorts (1986-90 and 1991-97), and post-reform cohorts (1998-2003 and 2004-09).

An indicator increasing by one point for each year passed since leaving school is introduced to tap potential experience in the market. Regional differences, education, and social origin are also controlled for. A dummy for the area of residence is provided since part of the literature highlights the presence of a North-South divide regarding the consequences of temporary employment in Italy (for instance, Ichino *et al.*, 2008). Education is operationalized referring to the ISCED classification: primary and lower-secondary levels are collapsed together, whereas a distinction is made between general and vocational upper-secondary education, and between the first level of tertiary education (bachelor degrees and post-secondary specializations) and the second level (master degrees or higher). By design, educational levels are time-constant in all our models: once individuals stop studying, and start searching for their first job, they enter the sample with the level of education achieved up to that point. Lastly, a categorical predictor for the class of origin is built, employing a seven-fold EGP schema and accounting for dominance between parents' class positions (Breen, 2004).

Two time-varying, macro-level predictors are drawn from the OECD online database and added in our models. The annual GDP growth rate controls for the macroeconomic cycle. Institutional changes in labour market regulations are expressed by means of the OECD sub-indicator for the strictness of temporary employment protection legislation. For both predictors, we employ their lag at $t - 1$ to minimize the potential for endogeneity.

Moving to the entrapment hypothesis, our test exploits dynamic RE probit models. Such models are being increasingly employed in the economic and sociological literature concerned with individuals' persistence in a certain state. Some relevant examples regard the persistence of social assistance transfers (Cappellari and Jenkins, 2009), of low-pay (Clark and Kanellopoulos, 2013), and unemployment or fixed-term employment traps of the sort we are interested in (Kogan, 2011). These models enable us to identify true state-dependence in temporary employment net of observable and time-invariant unobservable characteristics. We follow the specification (Wooldridge, 2005):

$$y_{it}^* = \alpha_0 + \mathbf{Z}_{it}\beta + \gamma y_{i,t-1} + \alpha_1 y_{i0} + \alpha_2 \mathbf{w}_i + v_i + \varepsilon_{it} \quad (2)$$

in which the latent outcome variable y_{it}^* expresses the chances of holding an atypical position at time t conditional upon its lagged value at $t - 1$ (state-dependence); the outcome is coded 1 if individuals hold an atypical job and 0 otherwise, i.e. for all labour market conditions but the atypically employed. More precisely, the reference category includes a share of person-year records in which individuals are *a*) first-job seekers, jobless or discouraged (roughly 25%); *b*) seasonal and off-the-books employees (around 5%); and, most and foremost, *c*) those employed in the stable core (around 63%). The remaining 7% of records is coded 1, as these are the atypically employed. The choice of contrasting the atypically employed to *all* other labour market positions allows us to keep in the estimation sample all records and, consequently, to maintain constant the meaning of state-dependence, i.e. the effect of being atypically employed a *year before* on the chances of being atypically employed at time t . Our results should be interpreted in terms of the “stickiness” of the flexible segment, as compared to all other labour market positions, a point we will return on when discussing our main findings.

In line with Wooldridge, the model is estimated as a standard RE probit comprising a set of explanatory variables Z_{it} and the initial condition y_{i0} , i.e. a dummy indicating whether or not individuals held an atypical position at the start of the panel. Additionally, unobserved heterogeneity (here capturing the unobserved factors increasing individual risks of being atypically employed) is assumed to depend on the initial condition itself, the subject-specific intercept v_i , and on the individual averages for time-varying variables w_i (if any). Regarding these averages, we introduce a counter for the number of temporary employment spells to track the accumulation of risks that signalling arguments and part of the literature suggest (Gagliarducci, 2005). The counter is built upon the monthly employment information in order to minimize endogeneity issues with the lag of the independent variable (atypical at $t - 1$)⁷.

All results are reported in the form of average marginal effects (AME). For the dynamic model, predicted probabilities are also estimated, by contrasting those who held an atypical job the year before and those who did not. The difference between the two estimates, evaluated at different levels of unobserved heterogeneity, expresses the marginal, trap effect of temporary contracts or the true state-dependence in atypical employment.

4 Labour market access: substitution?

We begin by investigating labour market access in the medium-long term. Our main concern relies on comparisons between individuals on the basis of time-constant features (e.g. cohort), fitting with the rationale of population-average (PA) methods (Szmaragd et al., 2013). Table 1 reports average marginal effects for the chances of finding any job within three years of leaving school, an atypical

job within five years, and a secure job within nine. Modelling the school-to-work transition (three-year threshold), we exclude those subjects already employed at the first observation point. All models control for time since school-leaving, measured in years. In the following models, we include the whole sample, controlling for those “early entries” into the labour market. These procedures help us in separating the analysis of employment chances from the heterogeneity in the timing of labour market access.

Figure 1 displays AME for the cohort patterns we are interested in. To begin with, a slight improvement is observable for the latest cohort. As compared with ETS leavers in the period 1980-85, the 2004-09 cohort displays higher chances (roughly 6 percentage points more) of finding employment after three years. Nonetheless, both post-reform cohorts (1998-2003 and 2004-09) seem to experience substitution in the type of position attained in their early careers. Within five years since leaving school, their chances of getting an atypical job increase by 6 and 13 percentage points, respectively. Conversely, their probability of finding a stable position⁸ up to nine years after leaving school decreases by similar figures (around 5 and 13 percentage points). This evidence is coherent with our first hypothesis. Given the chosen time thresholds⁹, substitution interestingly appears to operate not only for first employment spells, but more generally in the initial stages of individuals' work histories.

[Figure 1 around here]

Figure 1: Average marginal effects (AME) for the chances of holding any job within three years of school-leaving (left panel), an atypical job within five, and a typical job within nine. Estimates refer to different cohorts of school-leavers, holding the 1980-85 as the reference. Complete models are displayed in Table 1.

The observed divide between cohorts is robust to control for the macroeconomic conditions and the institutional process of flexibilization, which in turn display little or null influence¹⁰. The remaining part of the models highlights other renowned cleavages in the Italian labour market. Women experience lower chances than men of quickly accessing the job market, whereas their probability of ending up in atypical employment is slightly higher. Most of all, their chance of finding a typical job within nine years is around 10 percentage points less than that of men. The traditional North-South divide also emerges: irrespective of the outcome, the labour market of the Southern regions seems plagued by relatively scant employment prospects.

As for educational differentials, the pattern reconfirms previous findings (Barbieri and Scherer, 2009). First, employment chances appear to be better for each educational category – and

particularly for those with tertiary education— as compared with the reference. Considering the magnitude of estimates, individuals with a university degree have higher probabilities of occupying atypical positions in the medium term, even if confronted with those with upper-secondary education. At the same time, their chances of leaving the secondary labour market segment within the nine years window, to enter a secure job, are the highest: the relative advantage in respect to the low-educated is of roughly 18-19 percentage points compared to the 10-12 for individuals with vocational or general diplomas. Those with tertiary education are therefore both more likely to enter the labour market with an atypical contract and, possibly, endowed with the highest chances of experiencing atypical entries as a stepping stone towards the typical core.

[Table 1 around here]

5 Entrapment in atypical employment

In the next step, we focus on the issue of entrapment within atypical employment. This is analysed in terms of the year-by-year individual chances of being employed in atypical positions. Under the framework mentioned in Section 3, the Wooldridge model allows for the identification of state-dependence *net of time-constant unobservables*. Additionally, we further explore cohort trends. As previously displayed, subsequent school-leaver cohorts face a decline in their probability of obtaining a secure job. It is worth asking whether this is a result of an increasing lock-in dynamic originated by the process of partial and targeted labour market deregulation.

The model in Table 2 provides evidence for such scenario. Chances of permanence in insecure jobs increase on average by 12 percentage points for individuals who had been atypically employed the year before. The strength of this persistence is about three times that of transitions between joblessness¹¹ at $t - 1$ and fixed-term employment at time t (roughly 4 percentage points). It may be suggested that the temporarily employed face better re-employment chances than the jobless, as in part of the literature (Picchio, 2008). However, our findings neither dismiss nor reinforce this previous evidence. We are not comparing (matched) groups of atypically employed and unemployed individuals on their overall labour market chances. What our data show is that the intensity of stability within temporary positions is stronger than that of fluidity between joblessness and these same positions.

Some of the cleavages described in the fourth section are highlighted once more. Women have slightly higher chances of holding atypical jobs than men. A monotonically increasing trend is

observable for school-leaver cohorts¹², especially regarding the post-reform period (+2.6 percentage points for the 1997-2003 cohort, and +5.4 percentage points for the 2004-09 one).

[Table 2 around here]

The effect for the initial condition (holding an atypical job at t_0) is not substantially interpreted here, since its inclusion in the regression is merely aimed at solving the so-called “initial condition problem” of dynamic specifications¹³. However, it is worth noting that its inclusion might capture the entirety of the educational gradient (but not the cohort one) that, indeed, disappears in the models¹⁴.

We carry out further analyses specifically centred on cohort patterns and on the role played by unobservables over time. Indeed, Table 2 does not show whether or not the trap effect is different – and possibly rising – across cohorts. We address this further question evaluating state-dependence (i.e. entrapment in atypical positions) at different (possible) levels of unobserved heterogeneity, across cohorts. Here unobserved heterogeneity can be conceived as a marginal, unobserved propensity for holding atypical positions in the Italian labour market and it is modelled as a linear combination of the term v_i and the initial condition y_{i0} ¹⁵.

We predict three “possible” values of unobserved heterogeneity: “low” ($\alpha_1 y_{i0} - \sigma_{v_i}$), “average” (mean value of $\alpha_1 y_{i0}$), and “high” ($\alpha_1 y_{i0} + \sigma_{v_i}$). In other words, low levels of unobservables are one standard deviation below the mean value of v_i , whereas high levels are one standard deviation above¹⁶. Keeping this unobserved term constant, predicted probabilities are estimated for those holding an atypical job the year before ($y_{i,t-1} = 1$) and those not ($y_{i,t-1} = 0$). The difference between the two, all else being equal, is the marginal, trap effect of temporary contracts or the true state-dependence on atypical employment, at different levels of unobserved heterogeneity.

Figure 2 portrays the results of this procedure. Estimates are further separated by cohort so as to contrast the pre-reform cohort (1991-97) and the post-reform ones (1998-2003 and 2004-09). The first overarching conclusion is that persistence in atypical employment holds regardless of time-invariant unobservables; therefore, we have enough confidence to support genuine entrapment in atypical positions in the Italian labour market. An increasing penalty across cohorts is also visible: chances of entrapment gradually rise for both post-reform cohorts with respect to the “reference”, once again at different levels of unobserved heterogeneity. Still, a third finding is of major interest: the probability of holding an atypical job conditional upon being atypically employed the year before varies widely across the levels of unobservables. In particular, it may be observed that the chances of entrapment increased the most for individuals with low or average residual propensity for holding an insecure job. The implications of this result are twofold: on the one hand, it indicates

how the diffusion over time of temporary employment came with an increasing persistence of atypical positions within individual careers. On the other hand, it shows how, across cohorts, entrapment within the flexible segment has become less and less due to individual observed (and even unobserved) characteristics, thus suggesting a major influence of macro-level factors (for example: increasing convenience of atypical contractual arrangements, normative discrepancy in employment protection of permanent and temporary employment, firms' strategy to reduce labour costs, or even broader political factors - political representation, veto-power expressed by the various social categories, outsiders' possibilities of voice etc.). Between the 1991-97 and the 2004-09 cohorts, predicted probabilities increased by roughly 25 percentage points for the "low-propensity" workers (those "at low risk of being entrapped, all-else-being-equal") and by 19 percentage points for the "average-propensity" workers (those "at medium risk of being entrapped, all-else-being-equal"), whereas the rise is of about 6 percentage points for "high-propensity" individuals (those "at high risk of being entrapped, all-else-being-equal").

Taken together, this evidence suggests not only that previous experiences in unstable jobs may give rise to a negative loop for post-reform cohorts, but also that this trap effect somehow increased inefficiently. Individuals whose (un)observed characteristics would predict fast(er) access to other forms of employment, including more stable ones, are disproportionately exposed to the increase in the entrapment risk across cohorts.

[Figure 2 around here]

Figure 2: True state-dependence in atypical employment evaluated at different levels of unobserved heterogeneity u_i . Estimates refer to the predicted probabilities (and the 95% relative confidence interval) of being atypically employed at time t conditional upon being atypically employed at time $t - 1$. Education, sex, social origin, and area of residence are kept constant (set at general upper-secondary, male, IVab, and North + Centre, respectively). Other profiles are available upon request.

A further proposition claims that chains of temporary contracts, and not the experience of temporary employment by itself, might trigger entrapment (Gagliarducci, 2005). We put this proposition to the test by specifying a second probit model (Table 3) in which a counter for the number of atypical employment spells is added. This enables us to consider a cumulative and possibly long-term dynamic, regarding lock-in effects.

Indeed, we find a positive and significant effect associated with our counter (2.3 percentage points). Inserting this predictor and plausibly capturing additional unobserved heterogeneity (with the

individual average of atypical employment spells), the magnitude of each and every effect also present in the previous model is reduced. State-dependence (*entrapment*), however, remains strong and significant (8.9 percentage points), hinting that persistence in atypical employment does not work only, or mainly, through the accumulation of contracts.

[Table 3 around here]

Discussion

Our analysis supports a scenario of substitution and entrapment. First, it appears that post-reform cohorts – although slightly more likely to find any job within three years – are increasingly at risk of accessing the labour market through temporary employment. Their chances of holding a stable job are conversely hampered. Remarkably, this substitution effect holds in the medium-long term (up to nine years after leaving school) and extends beyond the time span of previous research on the Italian case. Concerning the entrapment hypothesis, we find robust evidence of persistence within atypical employment in the form of true state-dependence, net of time-constant unobservables. Furthermore, this trap effect has increased for recent cohorts: the selective pattern of deregulation thus emerges both in the incidence and in the consequences of atypical employment. Previous studies have suggested that EPL reforms fail to integrate weak segments of the labour force, particularly failing to accomplish a reduction of unemployment risks among the low-skilled (Oesch, 2010; Gebel and Giesecke, 2011). Our findings complement this evidence: when examining the risks attached to new forms of flexible employment, cohort divides may “trump” skills-based ones, at least in the Italian case.

Strikingly, the results also shed some light on whether labour allocation may be regarded as more efficient after the reforms. In the economic literature, labour allocation is typically found to be hindered by stringent employment regulations (Martin and Scarpetta, 2012). We find micro-level evidence that, even after reducing labour protections, efficiency may still fail to be achieved. Indeed, entrapment risks seem to have risen inefficiently across cohorts, increasing the most for those workers featured by *lower* unobserved propensity to hold atypical contracts. The key implication is that those same workers might have been better employed in more secure jobs: nevertheless, since we contrast atypical employment to all other labour market conditions, and not to the stable core alone, this conclusion should be taken with caution.

All in all, our findings cast doubts on whether temporary employment can be regarded as transitory in a two-tier labour market, highlighting the potential waste of resources brought about by an

unwarranted labour market deregulation that entraps even workers that might find better job matches elsewhere in the market.

Additional research and work-history data are necessary to address research questions and mechanisms overlooked in this paper, and even more so given that recent reforms have been carried out in Italy maintaining a targeted, cohort-based rationale.

One direction for future research regards the sorting out of possible explanations of entrapment in atypical employment. We have shown that the accumulation of temporary contracts does not fully account for state-dependence. Therefore, it is legitimate to ask whether part of this effect is due to human capital depreciation or disinvestment, a hypothesis that could not be tested with this data.

One might lean towards adverse signalling or stigma. Nonetheless, the workings of such a mechanism remain puzzling: stigma effects might be more easily in place in periods or sectors of the economy in which temporary employment is not (yet) frequent. On the other hand, the micro-level experience of temporary contracts in our data proves to be an adverse signal notwithstanding its diffusion. The finding that younger cohorts are increasingly exposed to entrapment risks points in the direction of a growing relevance of normative, institutional dualism, reducing workforce mobility between outsider and insider positions, and enhancing social inequalities between cohorts.

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Endnotes

¹ Subsequent labour market regulations have been introduced (albeit beyond the observation period allowed by FSS data) by recent Italian governments, with different aims and contrasting policy goals. While the Law 92/2012 made it significantly less convenient for firms to use collaborators and FTCs, the following Law 78/2014 went exactly in the opposite direction, liberalizing the number of renewals of successive temporary contracts under which a worker can be employed by the same firm. This repropose the logic of deregulating at the margins, thus concentrating labour market adjustments on non-standard workers. Incidentally, the opposite strategy is recommended by the OECD in its 2014 Employment Outlook (OECD, 2014).

² Looking at the OECD's list of single items comprised in the overall EPL index for temporary employment, one finds a component for the "valid cases for use of fixed term contracts" (FTC1, see OECD, 2013; OECD statistics database). It is no wonder that the strictness for such a component shifted from 6 (i.e. maximum strictness) in 1985 to a value of 2 in 2013. Similarly, the sub-component capturing "the types of work for which temporary work agency employment is legal" (TWA1) changed from a value of 6 in 1985 to a value of 1.5 in 2013.

³ Italian firms above the threshold of 15 employees face more stringent rules and higher costs for unfair dismissals. A recent paper by Hijzen and colleagues (Hijzen et al., 2013) suggests that this institutional constraint is circumvented through buffering strategies: firms around the size-threshold significantly increase their use of temporary employees so as to lower the costs of workforce adjustments. Similarly, Schivardi and Torrini (2008) have posited that firms circumvent employment protection restrictions by substituting temporary for permanent workers, thus reinforcing labour market dualization.

⁴ In the relevant literature, a common theoretical framework has been that of theories of dual (Doeringer and Piore, 1971; Piore, 1975) and of segmented labour markets (Kalleberg and Sorensen, 1976; Taubman and Watcher, 1987). Such theoretical propositions commonly point at the gap in terms of job stability, career prospects, and wages between two separate segments of the workforce. They do so, however, at different levels and thus should not be conflated: dual labour market theories were originally concerned with firm-level practices, while segmentation is regarded as a structural feature of labour markets (most often along the lines of skills and/or ethnicity). Moreover, as highlighted by Polavieja (2003: 502), such theories lack a clear narrative of the institutional drivers of dualism, as well as one of the micro-mechanisms generating lock-in dynamics in each segment. This debate is a long-lasting one in the economic literature (for an early survey, Cain, 1976): one of the strands makes use of the labels "dual" and "segmented" in the sense we have referred to in this paper as well (Saint-Paul, 1996; Schivardi and Torrini, 2008; Palier and Thelen, 2008; Emmenegger et al., 2012; Hijzen et al., 2013). However, in line with Polavieja's critique, we mostly stick to a perspective that couples *two-tier* labour market theories (Boeri, 2011), stressing the institutional, macro-level origins of the division between stable and unstable positions, with the test of adverse signalling as our micro-level mechanism.

⁵ In this latter case, job search durations had to be imputed: episodes starting less than 6 months prior to leaving school are assigned a corresponding job search duration of one month; episodes whose reported starting date exceeds this last threshold are imputed as the median value of search duration of individuals belonging to the same cohort and attaining the same level of education. Results proved robust to these and the previous procedures of data management.

⁶ As recommended by the literature (Neuhaus et al., 1991; Szmargd et al., 2013), we use robust standard errors to take into account possible misspecifications of the correlation matrix.

⁷ As Wooldridge (2005) puts it: "the assumptions are sufficient for uncovering the quantities that are usually of interest in nonlinear applications: partial effects on the mean response, averaged across the population distribution of the unobserved heterogeneity."

⁸ Relying on a more restrictive definition of the stable core, one that includes permanent employees only, our findings regarding substitution effects remain unaffected.

⁹ Temporary contracts in Italy have a maximum duration of three years (OECD, 2014). A natural hypothesis is that individuals might complete at least one of these spells within the five-year threshold and 2-3 in the span of nine years. Additionally, the latter threshold allows us to fully observe the outcomes for the 2004-09 cohort and (mostly) for the 1998-2003 one. All in all, this further reinforces our conclusions on the unfolding of a substitution effect across cohorts in the medium-long term.

¹⁰ Population-averaged estimation impedes any substantial interpretation of the effects of such time-varying variables (Neuhaus et al., 1991). Therefore, we ran a series of fixed-effects (FE) linear probability models on the same outcomes analysed in the text. All models include lags for GDP growth and EPL on temporary contracts, plus a control for age. Chances of finding a stable job seem to improve with more favourable macroeconomic cycles. This output is available upon request.

¹¹ Due to data restrictions, we cannot properly identify unemployment spells. Therefore, we stick to a more general definition of joblessness, i.e. a temporary career interruption, in contrast to inactivity, which is coded as a career break that lasts for the whole period under investigation. We control for the effect of joblessness at $t - 1$ following similar practices in the literature (Kogan, 2011).

¹² Holding a temporary contract at $t - 1$ may have less and less informative content the more flexible jobs become the main port of entry in the labour market and the more workers remain entrapped in them; for this purpose, we have accounted for the increasing share of temporary employees in the workforce by including a corresponding control in our dynamic model (output available upon request). Given that the share (%) of temporary employees is a time-varying continuous variable, we decompose it using the Mundlak approach in an average proportion for each individual panel and the deviation from such average at each time-point; we also lag this predictor at $t - 1$ to minimize endogeneity issues.

State-dependence is unaffected by the inclusion of this predictor and still amounts to a year-by-year 12% effect, as already estimated in our Model 2. Differently, the inclusion of this predictor captures cohort effects, no longer statistically reliable in this additional specification: therefore, we conclude that the cohort dummies in our Model 2 already account for the compositional dynamic usefully pointed out by an anonymous reviewer.

¹³ In a nutshell, the initial condition problem has to do with the need to specify how, given initial conditions, the system will evolve with time. The initial conditions problem (ICP) is well-recognised in the estimation of dynamic discrete choice models. Its cause is the presence of both the past value of the dependent variable and an unobserved heterogeneity term in the equation and the correlation between them. The strict exogeneity assumption is a standard assumption in static discrete choice models, needed in order to marginalise the likelihood function with respect to unobserved heterogeneity, and cannot be used in a dynamic setting due to the presence of the lagged dependent variable. For more info, see Wooldridge (2005) and Arulampalam and Stewart (2007), to whom belongs this short definition of the ICP.

¹⁴ By employing a time-invariant indicator for education, we cannot adequately identify its “effect”: not only the initial condition could capture most of the variability between subjects, but sorting in different educational paths/levels may also depend on unobservables not included in the model. Hence, omitted variable bias could affect estimates for the parameters associated with individuals’ education displayed in Tables 2 and 3. A solution would entail deploying a *time-varying* indicator for education, decomposed in its individual mean (Mundlak, 1978) and the deviations from such mean at each time-point; parameters associated with the individual mean would capture educational sorting as affected

by time-invariant unobservables, while the parameters associated with the deviations would capture individual, within variation (i.e. the effect of obtaining a diploma, a degree, and so forth). Given the low shares of individuals experiencing educational upgrades after labour market entry in Italy, this decomposition is not feasible in our analysis; we leave to further research the task of addressing such limitation. Previous studies have found some evidence of the association between educational sorting and the chances of holding fixed-term contracts in other European countries, while no within-effect for education was detected, possibly because of the few educational transitions in samples of “school-leavers” (Kogan, 2011).

¹⁵ **It is however difficult to define what unobserved heterogeneity might stand for in this model. Given the proposed specification, this unobserved propensity to remain stuck in atypical employment does certainly not depend on characteristics such as sex, social origin, area of residence, and educational attainment. We rather interpret this as an unexplained component of the risk of being atypically employed. More than at the individual level, this component acquires sociological relevance coming to the time (cohort) dimension. Indeed, the changing weight of unobserved heterogeneity in determining cohorts’ career outcomes is independent from compositional issues and individual characteristics.**

¹⁶ In the Wooldridge model, it holds that $v_i \sim (N, \sigma_v^2)$.