

"Temporary workers in Italy: who are they and where they end up?"

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Temporary work has been an important component of employment growth in Italy since the early 1990s. At the end of 1992, 7,1% of the employees were on temporary contracts. By the end of 2003 this share had risen to 10,5%. Such a rise has become controversial as the nature of temporary work, either stepping stones or dead-end jobs, remains unclear. Indeed, in the perspective of creating more but also better jobs emphasised by the EU Council in Lisbon, the quality of work has become a policy goal often measured by looking at the incidence of temporary work..

This paper analyses the characteristics of temporary work in Italy and traces its evolution over the period 1993-2003, up to the approval of a major reform, the so-called "Biagi Law"(entered into force in the last October by Legislative Decree n.276/2003), often assumed to be a factor further boosting temporary work. We will examine the determinants of the (rise in the) probability of being a temporary worker. We will further provide some baseline information on the "quality" of temporary jobs considering (subjective and objective) indicators available in the Labour Force Survey (LFS) and we will specifically focus upon labour market transitions of temporary workers in order to test whether temporary work can serve as an entry route into the labour market or represent a dead-end situation. To do so, we will evaluate whether passing through temporary employment has a causal effect upon the subsequent labour market outcomes.

To investigate this issue we make use of the longitudinal data set from LFS. We compare the subsequent labour market status of people who have recently acquired a temporary job to that of those people who have been either (lucky and capable) to acquire a permanent position or (unlucky, unwilling and incapable) to get any job at all. Different econometric and propensity score techniques are used in order to take into account the heterogeneity of the groups above mentioned, focusing upon the different comparison patterns arising in different socio-economic contexts.

The paper goes on as follows: after the introductory paragraph, Section 2 presents the different arrangements of temporary work and the data sources available to investigate the phenomenon. Section 3 provides an overview of the development of temporary work since 1993. Section 4 provides evidence on different indicators of job quality. Next, in Section 5 we consider the dynamic aspect of temporary jobs looking at the subsequent labour market chances of temporary workers.

1. Introduction¹

Temporary work has been an important component of employment growth in Italy since the early 1990s. At the end of 1992, 7,1% of the employees were on temporary contracts. By the end of 2003 this share had risen to 10,5%. Such a rise has become controversial as the nature of temporary work, either stepping stones or dead-end jobs, remains unclear. Indeed, in the perspective of creating more but also better jobs emphasised by the EU Council in Lisbon, the quality of work has become a policy goal often measured by looking at the incidence of temporary work..

This paper analyses the characteristics of temporary work in Italy and traces its evolution over the period 1993-2003, up to the approval of a major reform, the so-called “Biagi Law”(entered into force in the last October by Legislative Decree n.276/2003), often assumed to be a factor further boosting temporary work. We will examine the determinants of the (rise in the) probability of being a temporary worker. We will further provide some baseline information on the “quality” of temporary jobs considering (subjective and objective) indicators available in the Labour Force Survey (LFS) and we will specifically focus upon labour market transitions of temporary workers in order to test whether temporary work can serve as an entry route into the labour market or represent a dead-end situation. To do so, we will evaluate whether passing through temporary employment has a causal effect upon the subsequent labour market outcomes.

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2. The measures of temporary work

In order to investigate the phenomenon of temporary work the first difficulty emerges because of the rather imprecise mapping between juridical definitions and available statistics. From a normative point of view, in Italy temporary work is still an exception to the general rule according to which work contracts have no predetermined duration and may not be interrupted at will by the employer. So the fixing of a predetermined duration is a way-out allowing the firm to terminate at will the contract, albeit after a given period. Given this, the possibility to make use of temporary contracts is subject to several limitations in that it may happen only under some circumstances and limitations are also provided by the law to the possibility to continuously renew temporary engagements between a given worker and a given firm.

While those limitations have been largely eased over the last decade – as shown by the summary EPL measures recently updated by the OECD² – the general frame is still one in which limited duration contracts may take the form of:

¹ The opinions here expressed are held by the Authors and do not necessarily involve the Institutions they belong to.

² See chapter 2 of the 2004 OECD, Employment Outlook. Italy’s summary measure of easiness to use temporary work has passed from 5.4 (in the late ‘80s) to 2.1 in the most recent period (the biggest change across OECD countries). Notice that the corresponding EPL indicator for permanent workers has remained unchanged showing that the increase in labour market flexibility has mostly happened at the fringe of the market. For an overall description (and interpretation) of such a shift see Sestito (2002). The most recent changes – the so-called Biagi law, whose effects are still to be registered and are beyond the time period here examined – are succinctly presented in Sestito (2004).

- Fixed-term contracts, i.e. contracts with a specific limited duration or a predetermined ending date because of some firm related (and to a minor extent worker related) circumstances allowing to do that³;
- Temporary agency workers, temporarily hired by an agency who send them on a mission to perform work at the premises of a third-party customer enterprise⁴;
- Training contracts, that is apprenticeship and other training related contracts subjects to specific regulations as they apply only to youths and, at least in principle, should have some training content without guaranteeing a permanent position at the end of the training period.

Apart from those fixed term contracts made possible by the insertion of disadvantaged workers⁵, the first type of contracts do not carry over any labour cost advantage or disadvantage, while the third category provides firms with sizable labour cost rebates⁶. Temporary agency workers on the other hand are more costly in financial terms as the agencies themselves have to be remunerated⁷.

Besides these arrangements, also the so-called parasubordinate workers are interested by temporary arrangements. It has to be noticed that, while often featuring many characteristics of the employees (being engaged by just one firm, working on the firm's premises etc.), these workers are not legally speaking employees. Moreover, at least up to the Biagi law, there was no predetermined duration of the contractual arrangement as such, the firm having no need at all to justify on the basis of the labour legislation the interruption of the contract itself. More recently the Biagi law, in order to contrast possible abuses, has stated that, while not qualifying for an employees' status, such a contractual arrangement is possible only when a given work project, with a predetermined or determinable duration, has been identified⁸.

No precise data according to each of these contractual arrangements is available. Some of them are identifiable in social security files as they are subjects to peculiar social security contribution rates. Some others are counted by data on gross hiring (as such notified to local PES offices), which however are not available for the whole country over the most recent years and in any case would tend to overestimate the relevance of temporary work (by definition over-represented in hiring data). Some others, like the parasubordinate workers, represent a genuine statistical puzzle, as the most updated official figures refer to the count of individuals who transited at least once through the special social security scheme instituted for them since 1996; even the figures referring to the number of people who actually paid social security contributions during a given year, currently available only up to 1999, do not allow to estimate the average stock of workers of this category over the year, as no information about the time worked over the year is available.

³ By *firm related circumstances* it is meant that there must be some "productive reasons" asking for a limited duration work duty. In the past these circumstances were rather strictly predetermined by the law and mostly related to seasonal activities. Later on, the law introduced the possibility for social partners to agree upon additional circumstances, this having been the route through which the constraints upon temporary work have been gradually eased during the nineties (usually introducing quantitative ceilings to the recourse to fixed term contracts). Lastly, already at the end of 2001, firms have been freed from the need to preliminarily agree with unions upon a predetermined list of cases, whatever organizational or productive reason being potentially valid (but subject to possible intervention by the courts). While this has reduced the veto power of unions, it has to be noticed that the contracts may still impose quantitative ceilings (and other limitations) and that, at least temporarily, the uncertainty about possible courts' interventions has limited the extent of this further easing. The *worker related circumstances* refer to the fact that some disadvantaged workers may be hired temporarily, this acting as a possible incentive to firms to test their capabilities inserting them into the labour market. Such a possibility was present for the beneficiaries of some unemployment benefit schemes (the people enrolled in the so-called mobility lists); more recently the Biagi law has more broadly introduced a "reinsertion contract" scheme for several disadvantaged groups (elderly workers, females in high unemployment areas, etc.).

⁴ Temporary work agencies have been introduced by the Law 196/1997, experiencing a take-off since the second half of 1998.

⁵ Up to the Biagi law relatively unimportant: see footnote no. 2.

⁶ And other advantages as apprentices are not counted in order to establish whether a firm is large enough to be subject to some regulations (as for instance the guarantees against unfair dismissal provided by Art 18 of Law 300/1970).

⁷ Moreover there is an additional 4% supplementary contribution which finances training interventions made by the agencies. The fact that temporary workers hired by the agencies are registered as service sector workers implies that they are not subject to some other social security contributions which apply only to the industrial sector.

⁸ In some cases there remain no need to identify such a project.

So the statistical figures usually considered are those coming from the LFS⁹. Temporary employment here comes from a question posed to all people who have already qualified as employees. So in principle it (rightly) exclude parasubordinate workers. However, it has to be reminded that up to 2003 parasubordinate workers were not identified as such in the LFS and many of them are likely to perceive and qualify themselves as employees. So it is quite possible that in the employees counted by the LFS there are also parasubordinate workers and it is likely that among those many perceived themselves as temporary workers.

The question actually posed is whether the job position is permanent or temporary and in this latter case people are asked whether it is so because the contract covers a training period, the person could not find a permanent job, the person did not want a permanent job or the contract covers a probationary period; a last item covers the cases in which no specific reason is provided by the respondent.

The subcategories so identified by the LFS do not overlap with the juridical ones before discussed, actually mixing up personal judgements by the worker upon his or her situation – whether the temporary status is, at its extremes, a voluntary or an involuntary one – and (some of) the contractual arrangements envisaged for by the legislation.

Even the temporary status itself is actually filtered through the respondent's lenses. So it is possible that people with temporary arrangements – and possibly not well informed about the formal aspects of those arrangements¹⁰ - perceive themselves as permanent, this being the common understanding of the worker and the firm (or at least this being the promise the former has received from the latter). Viceversa, people formally engaged on a permanent basis but who feel their job is unstable may perceive themselves as temporary workers. On actual grounds, the data show several incoherencies between the perceived temporary status and some features which should apply to temporary contracts: for instance, many temporary workers declare a tenure which is incompatible with the time limits for temporary contracts (which in general may not last more than 3 years, even when prorogated¹¹). Specularly, administrative data about training contracts are systematically higher than the count of people declaring they have a temporary contract because the contract covers a training period¹². All in all, it appears that the count of temporary workers from the LFS underestimates the count of employees with a formal temporary status, such an outcome being particularly remarkable given that LFS temporary workers may include some parasubordinate workers who do not qualify as employees¹³.

So, making use of the LFS data carry over some disadvantages. Most importantly it does not allow to analyse specific contractual arrangements. Nonetheless it allows to have an overall view of temporary work which, limiting oneself to any given contractual arrangement would be impossible to have as the different contractual arrangements are very much close substitutes of each other. Moreover, while imperfect, the view coming from LFS data covers the whole decade (from 1993 to 2003 with no interruptions) of increase in the use of temporary work and the LFS data carry over all the related LFS information about the individual and the work relationship he or she is engaged in. It also allows to exploit its longitudinal features in order to analyse where the worker comes from

⁹ The LFS data we refer to here are those coming from the quarterly survey conducted up to 2003. Since then, the new continuous survey provides for many more information. While it remains based upon the self perception of the juridical status by the worker (sample problems further impeding any precise mapping between detailed juridical categories and the survey data), many of the pitfalls described in the text – most importantly the lack of identification of parasubordinate workers and the mixing of subjective feelings about the content of the work relationship and its juridical features – should be overcome.

¹⁰ Moreover it has to be noticed that in many cases the LFS responses are provided by a proxy respondent in the household.

¹¹ Longer durations are possible in some sectors and for the apprenticeship schemes.

¹² In principle it would be possible that the discrepancy is due to the fact that the respondents have classified their temporary contract according to its voluntary or involuntary features instead of making use of the juridical features of the contracts. More broadly it is possible that the respondent has a fair expectation that the training contract is just a first stage of a continuous relationship (actually many training contracts are later on transformed on a permanent basis such a transformation being tax favoured: for details about the system and data about it see the periodic *Rapporto di Monitoraggio* issued by the Ministry of Labour).

¹³ For more details about such a comparison see Ministry of Labour, *Rapporto di monitoraggio* no. 1-2003, Box no. 1.

and his or her future work prospects. So, it is to LFS data which we resort in drawing a general picture of temporary work in Italy over the last decade. Most specifically we will focus upon the 4 LFS waves of April 1994, 1997, 2000 and 2003.

3. The growth of temporary work in the 1990s

The whole period from 1993 has seen a growth of 636 thousands people in temporary work vis-avis a rise of 761 thousands people in permanent employment.

Chart 1 – Growth of temporary employment, 1993-2003 (index1993=100)

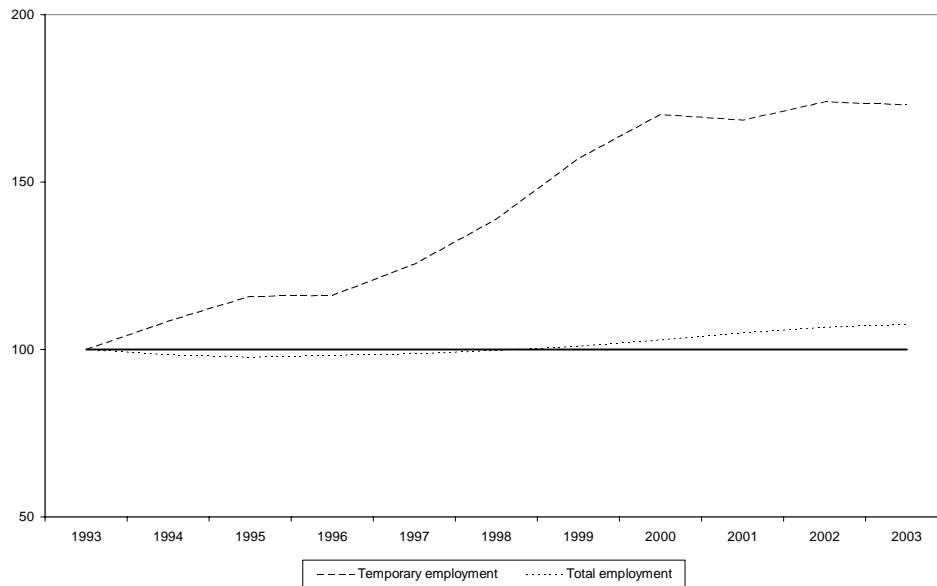


Figure 2 displays the evolution of the share of temps among employees, in total employment and as a share of working age population. The overall decade may be divided among three main sub-periods. Firstly, between the end of 1992 and 1997, temporary employment grew while total employment at best stagnated; indeed the growth of temps anticipated the recovery of total employment that, after the fall between 1992 and 1994, begun in the second half of 1995. This evolution is broadly consistent with the idea that temporary employment already picks up from the trough to the end of the recession¹⁴. In the second subperiod, lasted until 2001, temporary contracts continued in the rapid upsurge providing the largest chunk of the overall significant rise of total employment. The period from 2002 and onwards has seen a slowdown in employment growth, again somehow anticipated by the slowdown of temporary work, which has remained at best a constant share of total employment.

¹⁴ References

Chart 2 - Evolution of temporary work as % of employees, total employment and population

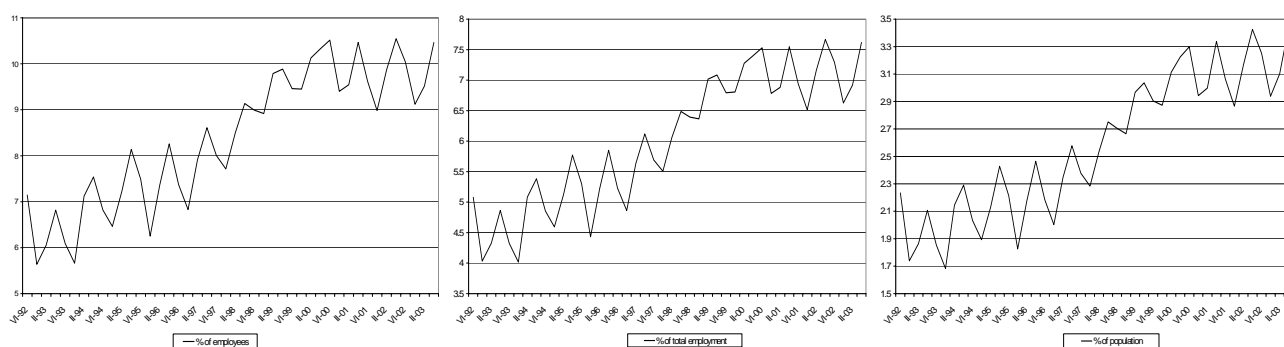


Table 1 - Decomposition of total employment growth

	apr94- apr97	apr97- apr00	apr00- apr03	apr94- apr03	Livello apr96	Livello apr03
% change of total employment	0.0	3.7	5.4	9.3	100.0	100.0
Self Employed	0.2	0.4	0.6	1.2	28.6	27.3
part time self-employed	0.1	0.2	-0.2	0.0	2.0	1.9
full time self-employed	0.1	0.2	0.8	1.2	26.6	25.4
Employees	-0.2	3.3	4.8	8.1	71.4	72.7
full time permanent employees	-1.2	0.3	4.1	3.3	63.6	61.2
Atypical employees	1.0	3.1	0.7	4.8	7.8	11.5
part time permanent employees	0.5	1.1	0.7	2.4	2.7	4.6
part time temporary employees	0.2	0.8	-0.3	0.7	1.6	2.1
full time temporary employees	0.3	1.1	0.3	1.7	3.5	4.8

Clearly business cycle factors and structural shifts, related to changes in labour market policies, have both impinged upon such an evolution. So the temporary employment stability experienced during the third sub-period may be due to both cyclical considerations – as permanent employment substitutes for temps during peak periods and temporary employment starts declining before permanent employment when the cycle goes down – and the joint presence of sizable incentives to hire permanent workers and some uncertainties related to the new legislative frame concerning fixed term contracts. In the future, the many changes established by the Biagi law are likely to provide further impetus to temporary employment, which however has already established itself as a sizable segment of the Italian labour market.

In order to have a better understanding of the last decade evolution of temporary work we performed the estimation of a probit model determining the probability of being a temp (conditionally upon being an employee) over the period 1994-2003. The data refer to the 4 April waves conducted in the years 1994, 1997, 2000 and 2003 and we focused upon changes over time in the effects of a large set of individual and labour market variables.

Our specification includes demographical variables: AGE (a set of dummies covering four age groups: <25, 25-34, 35-54, >54), GENDER (a dummy variable equal to one for males), educational attainment levels (DEGREE, a set of dummies for four levels of education: primary, lower secondary, upper secondary and tertiary), STUDENT (a dummy equal to one for who classify as a student). We further include a dummy variable (ENTRY) equal to one for those employees who had less than five years of prior (potential) experience in the labour market, so as to identify the period after the school-to-work transition phase.

Table 2 – Probit estimates of the determinants for an employee of being temporary

	dF/dx	Std. Err	z	P> z
1997	0.004	0.008	0.540	0.588
2000	0.033	0.009	3.800	0.000
2003	0.029	0.009	3.280	0.001
Male	-0.037	0.003	-14.040	0.000
1997*Male	0.005	0.004	1.300	0.195
2000*Male	0.007	0.004	2.120	0.034
2003*Male	0.002	0.003	0.510	0.612
Marital status				
Married	-0.027	0.002	-18.510	0.000
Separated, divorcee, widower/widow	-0.020	0.002	-7.710	0.000
Student	0.503	0.085	7.770	0.000
1997*Student	-0.042	0.016	-1.660	0.097
2000*Student	-0.049	0.011	-2.400	0.017
2000*Student	-0.056	0.007	-3.190	0.001
Age				
25-34	-0.014	0.003	-4.240	0.000
35-54	-0.062	0.004	-15.970	0.000
>54	-0.049	0.003	-12.270	0.000
1997*(25-34)	0.003	0.005	0.590	0.552
1997*(35-54)	-0.010	0.004	-2.250	0.025
1997*(>54)	-0.017	0.006	-2.450	0.014
2000*(25-34)	-0.010	0.004	-2.250	0.025
2000*(35-54)	-0.011	0.004	-2.460	0.014
2000*(>54)	-0.024	0.005	-3.880	0.000
2003*(25-34)	-0.004	0.004	-0.830	0.404
2003*(35-54)	-0.008	0.004	-1.800	0.071
2003*(>54)	-0.022	0.005	-3.450	0.001
Educational level				
Lower level certificate	-0.023	0.002	-12.820	0.000
Upper secondary level certificate	-0.030	0.002	-14.490	0.000
College degree	-0.019	0.003	-6.760	0.000
Entry	0.098	0.004	30.790	0.000
Sector				
Industry excluding construction	-0.105	0.003	-29.520	0.000
Construction	-0.053	0.002	-15.180	0.000
Trade	-0.070	0.002	-21.990	0.000
Private services	-0.072	0.002	-21.290	0.000
Public administration	-0.094	0.004	-24.120	0.000
1997*industry excluding construction	0.013	0.008	1.710	0.087
1997*construction	0.023	0.010	2.690	0.007
1997*trade	0.002	0.008	0.220	0.827
1997*private services	0.018	0.009	2.300	0.021
1997*public administration	0.024	0.008	3.380	0.001
2000*industry excluding construction	0.023	0.009	3.000	0.003
2000*construction	0.007	0.008	0.840	0.403
2000*trade	0.012	0.009	1.470	0.141
2000*private services	0.014	0.008	1.840	0.065
2000*public administration	0.034	0.008	4.620	0.000
2003*industry excluding construction	0.028	0.009	3.530	0.000
2003*construction	-0.001	0.008	-0.130	0.900
2003*trade	0.010	0.009	1.150	0.251
2003*private services	0.018	0.008	2.330	0.020
2003*public administration	0.037	0.009	4.860	0.000
Occupation				
Professionals	0.015	0.006	2.510	0.012
Technicians and clerks	-0.004	0.005	-0.750	0.451
Services and sales workers	0.023	0.007	3.740	0.000
Craft and related workers, plants/machine operators	0.018	0.006	3.140	0.002
Elementary occupations	0.071	0.009	9.850	0.000
Armed forces	-0.043	0.004	-7.360	0.000

Table 2 – Probit estimates of the determinants for an employee of being temporary (cont.)

	dF/dx	Std. Err	z	P> z
Area				
Northeast	0.027	0.004	6.920	0.000
Centre	0.016	0.004	3.850	0.000
South	0.035	0.004	8.850	0.000
1997*Northeast	-0.010	0.004	-2.210	0.027
1997*Centre	-0.008	0.005	-1.530	0.125
1997*South	-0.009	0.004	-2.090	0.036
2000*Northeast	-0.017	0.004	-3.900	0.000
2000*Centre	-0.005	0.005	-0.960	0.338
2000*South	-0.015	0.004	-3.750	0.000
2003*Northeast	-0.007	0.004	-1.420	0.155
2003*Centre	0.002	0.005	0.430	0.666
2003*South	-0.017	0.004	-4.250	0.000
%change_empl	0.066	0.015	4.380	0.000
%change_empl^2	-0.483	0.203	-2.380	0.017
unemployment rate	0.002	0.000	15.880	0.000

Confining our estimates to employees, we also make use of some job related covariates: OCCUPATION (a set of seven dummies covering legislators and managers - inserted in the constant - professionals, technicians and clerks, services and sales workers, craft and related workers, plants/machine operators, elementary occupations, armed forces), SECTOR (a set of dummies for industry excluding construction, construction, trade, private services, public administration, agriculture being inserted in the constant). We also control for the labour market context through: AREA (a set of geographical dummies for North-eastern, Central and Southern regions, the North-west being considered in the constant), a quadratic in the rate of growth of provincial employment (in order to take into account the complex cyclical features above mentioned) and the provincial unemployment rate.

Focusing upon changes over time, we specifically consider the role of time dummies (a set for identifying 1994, 1997, 2000 and 2003), also interacting them with the other covariates. In the final specification here reported we include only those (grouped) interactions that passed an F-test at a 5% significance level.

Results are in Table 2¹⁵. Focusing upon the average effects over time of each group of variables, it appears that the probability of being a temp diminishes with age and educational attainment, being higher for females, students and during the school-to-work transition period. Temporary employment is most important in agriculture and in elementary occupations. The highest probability for an employee of being a temp is found in the Mezzogiorno. Moreover, it has to be reminded that also unemployment, much higher in those regions, has a positive impact upon the probability of being a temp. As for the other cyclical factors, it is confirmed that temporary employment first rises and then declines when total employment rises.

As for the time effects, there is an overall positive trend, with however a clear stabilisation at the end of the sample period. Interestingly, not many interaction terms are statistically significant hinting at the fact that the positive trend is pervasive across all groups and segments of the labour market. The interaction terms which are significant, however, show that temporary employment has strengthened its youths flavour (possibly also because of the rise in apprenticeship schemes), while attenuating its female, South and agricultural flavour.

¹⁵ For dummies, the coefficients correspond to the change in the predicted probability associated with an increase from 0 to 1 of the indicated dummy variable when all other variables are set at their sample means.

We have further focused upon the changes over time through a standard Blinder-Oaxaca decomposition¹⁶ exercise and looking at the two end points, 1994 and 2003. For sake of robustness we used a more general model in which all coefficients (and not just the ones for which the time interactions were statistically significant as in the model exposed in table 2) are allowed to differ over time.

Table 3 reports the decomposition of the difference in probabilities between April 1994 and April 2003. According to our results, the total .2.3% rise in the share of temps is not due to compositional effects, which by themselves would have left to a (1.9%) reduction in that share. The change is so mostly due to the change in the coefficients and to a large extent in the constant itself.

Table 3– Decomposition of the change between 2003 and 1994 in the probability for an employee of being in a temporary position.

TO BE COMPLETED LATER

	Explained	Unexplained	Total
	diff in characteristics	diff in coefficients	(including residuals due to non-linearity)
Sex			
Marital status			
Student			
Age			
Education			
Entry			
Sector			
Profession			
Area			
% change employment			
Unemployment rate			
Constant			
Sum			

In parentheses percentages of the total difference (0,023)

¹⁶ The Blinder-Oaxaca decomposition focuses on the gap in the outcome variable between two groups or periods. It aims to decompose this gap into explained and unexplained causes, the former being defined in terms of differences in the values of the covariates determining that outcome in question, while the latter is associated with differences in the coefficients associated to those covariates (including the constant). To deal with the problems given by the use of a non-linear model, we employ a method for a binary choice model (here estimated by probit) as proposed by Yun (2000). As for the linear regression, the differences in probabilities can be divided into two parts: the first which represents the differences in the individual characteristics between two groups (differences in the X's, the so called explained component) and the second which represents the differences of probit coefficients between two groups (differences in the beta's, the so called unexplained component). The non-linear decomposition method, based on a first order of the Taylor expansion, aims to explain the effects of differences in "each" individual characteristics and the effects of differences in "each" coefficient.

All in all it appears that temporary workers tend to be over-represented among weak groups of workers and in more menial industries and professions. Over time, there has been a widespread positive trend in the incidence of temporary employment with an attenuation of many of its (industry, geographical and sex) specificities, an exception being in its even strengthened youth flavour.

4. Are temporary jobs bad jobs?

The concerns raised by the rise in temporary employment stem from the idea that temporary jobs may be bad jobs. The concept of quality of a given job is something intrinsically difficult in that working conditions, firstly the wage, may be always bettered. So, it is difficult to say beyond which threshold a job has to be considered a good job. Moreover, even using the simplest metric – the wage associated with a given job – and fixing a given threshold, it is difficult to say whether a given individual worker in a given job is or not is in a bad position: while doubtless an higher wage would make that individual better off, the wage he or she is actually earning might be high enough for his or her actual capabilities and market chances; to put it differently, having accepted that job position might be (to some extent has to be, given that he or she has accepted that job position) better than remaining unemployed.

Notwithstanding the difficulties raised by the quality concept, we will try to look at some qualitative features of the jobs people actually held verifying whether temporary positions are associated with positive or negative features. We leave to the next section the more policy relevant issue whether accepting a temporary job has any longer run positive or negative effect upon workers.

The qualitative features we deal with are those which may be captured by the LFS. Unfortunately we have neither data concerning the wage nor summary job satisfaction measures¹⁷. So we make use of 3 different indicators.

The first one refers to the involuntary nature of the temporary job position as directly stated by the individual. It has to be reminded (see section 1) that the question actually posed to the individual respondent mixes up the possible voluntary or involuntary nature of the job itself (involuntariness referring to the fact that the individual had to accept that job not having found a suitable permanent position) and (some of) the detailed contractual forms of temporary employment. So we also refer to two other more “objective” indicators. One measures whether workers were involved in education or training activities, the risk of being excluded from these activities, assumed to be an essential asset in a knowledge-based economy, being often associated to temporary employment. The last indicator looks at whether, whatever the reasons why the worker had accepted that job position, he or she is currently looking for an alternative job, such a search behaviour being a possible hint of an unsatisfactory situation.

The first indicator is shown in Chart 3, where we simply report the share of temporary workers who declare themselves being temp because of the impossibility to find a permanent position. Over time such a share decreased from above 50% to around 40%. Most of the decline coincides with the period – the second half of the ‘90s - during which temporary employment had the most remarkable rise (as a % of total employment). Later on, with total employment rapidly rising, the share of involuntary temps has somehow shown a small increase. To interpret such an evolution is not easy as it might depend upon labour market realizations but also upon the expectations workers previously held. In a buoyant economy, with people having great expectations about their chances, ending up with a temporary position could imply being very upset. Viceversa, in a period in which only temporary employment is on the rise, people might consider as realistic prospects only temporary positions. All in all, it seems however that the long run positive rise in temporary

¹⁷ The latter have been examined in Sestito (2002), chapter 7 using the SHIW data produced by the Bank of Italy. The results show that jobs which are “discontinuous over the year”, a concept related but different from the temporariness here considered, tend to be significantly associated with an higher perceived risk of unemployment, but also, albeit less intensively, more “consideration by other people”. The summary measure of job satisfaction is not related at all with the discontinuous features of the job itself. The results are obtained in a specification which also includes earnings reaped on the job as a control variable.

employment was not associated with an increase in the share of people who were constrained to accept it by the lack of alternatives. Yet, the overall level of involuntariness confirms that a permanent position is (on average) strictly preferred.

Chart 3- Proportion of temporary workers that could non find a permanent job on total temporary workers



In order to shed further light we also replicated the probit specification of the previous section looking at the determinants of being an involuntary temp (conditional upon being a temporary worker). Estimates are in Table 4. The results show that among temporary workers the ones who accepted temporariness just because of the lack of alternatives are especially adults, non students and people far from the school-to-work transition period. The probability of being an involuntary temporary worker is not significantly affected by gender and education. We also find that technicians and workers in semi-skilled occupations are more likely to be involuntary workers relative to the base occupational group of managers and legislators. Finally, temporary workers in the South have a greater probability of being involuntary so (provincial unemployment itself further raising such a probability). As for trends over time, what previously said about the decrease in the risk of involuntary temporariness is however strengthened, 2003 being at a minimum.

Table 4 – Probit estimates of the determinants of being involuntary temporary worker (conditional upon being temporary worker)

	dF/dx	Std. Err	z	P> z
1997	0.049	0.052	0.940	0.346
2000	-0.045	0.049	-0.910	0.363
2003	-0.096	0.050	-1.910	0.057
Male	-0.005	0.019	-0.250	0.804
1997*Male	-0.042	0.026	-1.600	0.109
2000*Male	-0.024	0.024	-0.970	0.331
2003*Male	-0.010	0.025	-0.410	0.685
Marital status				
Married	0.013	0.010	1.220	0.224
Separated, divorcee, widower/widow	0.034	0.023	1.500	0.133
Student	-0.359	0.065	-3.340	0.001
1997*Student	0.307	0.130	1.950	0.052
2000*Student	0.278	0.132	1.810	0.070
2000*Student	0.054	0.193	0.280	0.781
Age				
25-34	0.113	0.025	4.600	0.000
35-54	0.081	0.026	3.050	0.002
>54	-0.048	0.042	-1.130	0.259
1997*(25-34)	-0.038	0.031	-1.210	0.228
1997*(35-54)	0.009	0.033	0.260	0.795
1997*(>54)	0.042	0.057	0.730	0.465
2000*(25-34)	0.048	0.031	1.570	0.116
2000*(35-54)	0.114	0.031	3.630	0.000
2000*(>54)	0.224	0.049	4.190	0.000
2003*(25-34)	0.005	0.031	0.150	0.884
2003*(35-54)	0.068	0.032	2.120	0.034
2003*(>54)	0.105	0.055	1.900	0.057
Educational level				
Lower level certificate	-0.022	0.013	-1.620	0.106
Upper secondary level certificate	-0.023	0.015	-1.540	0.123
College degree	-0.030	0.022	-1.370	0.169
Entry	-0.105	0.014	-7.250	0.000
Sector				
Industry excluding construction	-0.066	0.032	-2.020	0.043
Construction	0.187	0.034	5.320	0.000
Trade	-0.039	0.038	-1.010	0.313
Private services	-0.066	0.032	-2.050	0.041
Public administration	0.027	0.028	0.990	0.324
1997*industry excluding construction	-0.127	0.043	-2.820	0.005
1997*construction	-0.088	0.048	-1.800	0.073
1997*trade	-0.060	0.053	-1.120	0.262
1997*private services	-0.047	0.045	-1.030	0.301
1997*public administration	-0.114	0.037	-3.020	0.003
2000*industry excluding construction	-0.097	0.042	-2.230	0.025
2000*construction	-0.147	0.044	-3.170	0.002
2000*trade	-0.069	0.049	-1.390	0.166
2000*private services	-0.078	0.042	-1.830	0.068
2000*public administration	-0.139	0.034	-3.870	0.000
2003*industry excluding construction	-0.040	0.045	-0.890	0.371
2003*construction	-0.111	0.047	-2.280	0.023
2003*trade	-0.038	0.051	-0.730	0.463
2003*private services	-0.022	0.044	-0.510	0.613
2003*public administration	-0.073	0.037	-1.950	0.051
Occupation				
Professionals	0.007	0.048	0.140	0.887
Technicians and clerks	0.075	0.046	1.640	0.102
Services and sales workers	0.137	0.046	2.920	0.003
Craft and related workers, plants/machine operators	0.101	0.047	2.150	0.031
Elementary occupations	0.162	0.046	3.480	0.001
Armed forces	-0.014	0.071	-0.190	0.848

**Table 4 – Probit estimates of the determinants of being involuntary temporary worker
(conditional upon being temporary worker)
(cont.)**

	dF/dx	Std. Err	z	P> z
Area				
Northeast	-0.134	0.027	-4.770	0.000
Centre	-0.006	0.031	-0.210	0.834
South	0.094	0.029	3.280	0.001
1997*Northeast	0.108	0.038	2.780	0.005
1997*Centre	0.034	0.042	0.810	0.416
1997*South	0.036	0.036	1.020	0.309
2000*Northeast	0.094	0.037	2.530	0.012
2000*Centre	0.008	0.039	0.200	0.844
2000*South	-0.051	0.033	-1.530	0.125
2003*Northeast	0.092	0.037	2.450	0.014
2003*Centre	0.034	0.039	0.870	0.382
2003*South	0.016	0.034	0.470	0.636
%change_empl	-0.093	0.110	-0.840	0.399
%change_empl^2	2.100	1.472	1.430	0.154
unemployment rate	0.005	0.001	4.940	0.000

The previous results show that many temps are so because they could not find something better. The two other indicators allow to say whether, ex post, such a status is actually so bad. Even here we keep at a descriptive level and we do not attempt to take into account the endogeneity of the process through which temps are selected. The only controls we allow for are the same (individual, job and labour market related) covariates already experimented in the previous analysis.

Firstly we ask whether a temporary job is associated with less or more training taking into account that the temporary job position itself is more likely for a given individual (according to sex, age, educational attainment etc.), a given job (as accounted for by industry and occupational dummies) and labour market context. As before, we insert a set of time dummies and test their interactions with the other covariates. Results are in table 5.

While interesting by themselves – as for instance it is confirmed the strongly negative link between training and age and the strongly positive impact of the previous educational attainment – the results we are here mostly interested are those concerning the impact of being a temp. Quite against the simple story that temporary jobs are at a disadvantage as far as the investment in human capital is concerned, the temp dummy has a significantly positive, albeit declining over time (as shown by the time dummies interactions), impact upon training. The result is even more remarkable as we also controlled for the low tenure features of temporary employment inserting a dummy equal to one for positions whose elapsed tenure was less than 2 years (which, even if not statistically significant, actually, decreases the probability of participating to training activities)

Table 5 – Probit estimates of training participation

	dF/dx	Std. Err	z	P> z	
	1997	0.009	0.007	1.500	0.135
	2000	0.007	0.007	1.120	0.265
	2003	0.052	0.009	7.380	0.000
	Male	0.003	0.001	2.980	0.003
Marital status					
	Married	-0.003	0.001	-2.550	0.011
	Separated, divorcee, widower/widow	0.004	0.002	1.800	0.071
	Pes_registered	0.007	0.003	2.750	0.006
	Student	0.719	0.087	9.060	0.000
	1997*Student	0.016	0.040	0.470	0.640
	2000*Student	-0.035	0.001	-7.180	0.000
	2000*Student	-0.035	0.001	-6.740	0.000
Age					
	25-34	-0.006	0.002	-3.260	0.001
	35-54	-0.006	0.002	-2.690	0.007
	>54	-0.020	0.002	-9.160	0.000
Educational level					
	Lower level certificate	0.018	0.005	3.700	0.000
	Upper secondary level certificate	0.039	0.005	7.980	0.000
	College degree	0.054	0.009	7.790	0.000
	1997*Lower level certificate	0.002	0.007	0.350	0.729
	1997*Upper secondary level certificate	0.003	0.007	0.520	0.603
	1997*College degree	0.022	0.010	2.780	0.005
	2000*Lower level certificate	0.005	0.007	0.670	0.503
	2000*Upper secondary level certificate	0.008	0.008	1.200	0.231
	2000*College degree	0.010	0.009	1.350	0.178
	2003*Lower level certificate	0.004	0.006	0.620	0.535
	2003*Upper secondary level certificate	0.011	0.007	1.790	0.073
	2003*College degree	0.033	0.010	4.090	0.000
	Entry	0.032	0.005	7.850	0.000
	1997*Entry	-0.010	0.003	-2.970	0.003
	2000*Entry	-0.015	0.003	-4.570	0.000
	2003*Entry	-0.020	0.002	-7.360	0.000
Sector					
	Industry excluding construction	0.002	0.004	0.440	0.662
	Construction	-0.009	0.003	-2.320	0.020
	Trade	0.000	0.004	-0.010	0.993
	Private services	0.011	0.004	2.780	0.005
	Public administration	0.035	0.005	8.560	0.000
Occupation					
	Professionals	-0.006	0.002	-2.520	0.012
	Technicians and clerks	-0.008	0.002	-3.400	0.001
	Services and sales workers	-0.020	0.002	-8.580	0.000
	Craft and related workers, plants/machine ope	-0.025	0.002	-10.100	0.000
	Elementary occupations	-0.029	0.001	-13.010	0.000
	Armed forces	-0.019	0.002	-5.960	0.000
Area					
	Northeast	0.018	0.001	15.470	0.000
	Centre	-0.012	0.001	-11.030	0.000
	South	-0.027	0.001	-26.520	0.000
	TemporaryEmpl	0.038	0.005	9.030	0.000
	1997*TemporaryEmpl	-0.009	0.003	-2.440	0.015
	2000*TemporaryEmpl	-0.018	0.002	-5.560	0.000
	2003*TemporaryEmpl	-0.021	0.002	-7.640	0.000
	%change_empl	0.000	0.000	2.000	0.046
	%change_empl^2	0.000	0.000	1.660	0.096
	Tenure<=2 years	-0.003	0.001	-1.820	0.069

In table 6 we revert to the last quality indicator, whether an employee is actually looking for another job which we interpret as a dissatisfaction index¹⁸. Clearly dissatisfied people search for another job only in case they expect to have some chances to find such a job. So we insert a host of covariates, starting from the ones already discussed and which differentiate temporary from permanent workers, some of the covariates also taking into account those factors possibly impinging upon the expected chances of actually finding a job. In particular we have variables pertaining to the local labour market context – including a measure of the turnover rate at the provincial level, which may capture the job offer arrival rate and which actually has a strongly positive impact upon the probability to look for another job – and the tenure dummy – capturing the fact that low tenured workers have not yet passed through a satisfactory matching process and are more likely to look for alternatives¹⁹.

Again we are mostly interested in the impact of the temp dummy (and its time interactions). As expected, and confirming the more subjective (and backward based) indicator firstly examined, temps are more likely to be looking for another job (of being dissatisfied according to our interpretation). However, over time, the impact of temporariness upon the probability of looking for another job has slightly declined.

¹⁸ The dummy variable is equal to one when the individual looks for an alternative job, being equal to zero when there is no search activity at all or the search is motivated by the intention to find a second job (in addition to the currently held one).

¹⁹ References... Jovanovic..

Table 6 – Probit estimates of the determinants of being an employee looking for another job

	dF/dx	Std. Err	z	P> z
1997	-0.005	0.006	-0.760	0.449
2000	0.048	0.009	6.540	0.000
2003	0.015	0.008	2.140	0.032
Male	-0.001	0.002	-0.530	0.599
1997*Male	-0.004	0.003	-1.590	0.113
2000*Male	-0.008	0.003	-2.930	0.003
2003*Male	-0.006	0.003	-2.070	0.039
Marital status				
Married	-0.011	0.001	-9.190	0.000
Separated, divorcee, widower/widow	0.007	0.003	2.860	0.004
Pes_registered	0.176	0.005	57.470	0.000
Student	-0.032	0.004	-4.830	0.000
Age				
25-34	0.010	0.002	5.250	0.000
35-54	-0.009	0.002	-4.200	0.000
>54	-0.032	0.002	-13.840	0.000
Educational level				
Lower level certificate	0.002	0.002	1.010	0.313
Upper secondary level certificate	0.016	0.002	8.330	0.000
College degree	0.039	0.004	11.480	0.000
Sector				
Entry	-0.008	0.002	-3.910	0.000
Industry excluding construction	0.052	0.006	9.480	0.000
Construction	0.058	0.009	8.430	0.000
Trade	0.046	0.008	6.980	0.000
Private services	0.028	0.006	5.040	0.000
Public administration	0.018	0.005	3.730	0.000
1997*industry excluding construction	0.000	0.007	-0.020	0.983
1997*construction	0.007	0.008	0.900	0.366
1997*trade	0.012	0.009	1.550	0.122
1997*private services	0.019	0.009	2.390	0.017
1997*public administration	0.011	0.008	1.550	0.121
2000*industry excluding construction	-0.030	0.003	-6.490	0.000
2000*construction	-0.026	0.004	-5.010	0.000
2000*trade	-0.027	0.003	-5.440	0.000
2000*private services	-0.022	0.004	-4.230	0.000
2000*public administration	-0.026	0.004	-5.280	0.000
2003*industry excluding construction	-0.020	0.005	-3.620	0.000
2003*construction	-0.020	0.005	-3.210	0.001
2003*trade	-0.014	0.006	-2.160	0.031
2003*private services	-0.009	0.006	-1.310	0.192
2003*public administration	-0.015	0.005	-2.530	0.011
Occupation				
Professionals	-0.004	0.005	-0.880	0.378
Technicians and clerks	0.010	0.005	2.070	0.039
Services and sales workers	0.040	0.007	6.920	0.000
Craft and related workers, plants/machine operators	0.031	0.006	6.040	0.000
Elementary occupations	0.060	0.008	9.350	0.000
Armed forces	-0.022	0.005	-3.190	0.001
Area				
Northeast	-0.007	0.001	-5.360	0.000
Centre	0.001	0.001	0.390	0.699
South	0.007	0.001	5.120	0.000
TemporaryEmpl	0.180	0.008	36.620	0.000
1997*TemporaryEmpl	0.000	0.003	0.040	0.972
2000*TemporaryEmpl	-0.011	0.003	-3.640	0.000
2003*TemporaryEmpl	-0.013	0.003	-4.460	0.000
%change_empl	0.000	0.000	2.480	0.013
%change_empl^2	0.000	0.000	1.130	0.260
Tenure<=2 year2	0.031	0.002	23.490	0.000

All in all it seems that temporary positions are clearly considered less satisfactory than permanent ones, both looking at the reasons why they have been accepted – often simply because of the lack of alternatives – and to the actual current behaviour – as temps are much more likely to be looking for alternatives. Over time, both indicators however show that the temporary job disadvantage has been reduced. Moreover it is not confirmed the often heard about risk of a human capital investment gap for temporary workers.

Given the rather descriptive nature of our analysis it is however difficult to conclude much from it. Moreover, to testify a gap in the job satisfaction dimension of temporary workers vis-à-vis permanent ones has no much say upon the relevant policy issue, whether accepting a temporary position is a better strategy than remaining unemployed while waiting for something better. It is to this issue which is dedicated the next section.

5. Ex-post effects of a temporary job experience.

In this section we revert to a more direct analysis of the policy question about the impact of temporary employment. The fact that current working conditions are somehow worse in temporary positions than in permanent ones does not imply that remaining unemployed (waiting for a permanent position) is the best strategy. Actually the fact that many people unable to find a permanent position accept a temporary one implies that many chose the opposite strategy. Even this may have no meaning at all, as it may be due to the fact they have been pushed into such a strategy by the lack of opportunities.

From a policy perspective the issue is whether easing the supply of temporary positions, as actually done in Italy during the last decade, leads or not to an improvement for the unemployed. While still disregarding general equilibrium considerations²⁰, we explicitly use an evaluation frame in order to try to answer to this question.

To do that we state an outcome variable and compare in those terms people transited through a temporary job position to the others who did not. Given the strategic nature of the question, we define an outcome in terms of ex-post employment chances and we compare temporary workers to both permanent workers and unemployed people while taking into account the heterogeneity between “treated” and “untreated” individuals. The outcome variable is measured using the longitudinal features of the LFS. It has to be noticed that we only may make use of a short panel, measuring the employment chances one year later, not the longer run career paths. Moreover, we just consider whether an individual is or is not employed (and in some robustness exercises some qualitative features of this employment), no earnings data being available.

As we want to consider the impact of having a temporary work experience, we restrict our sample to people who were not employed in the recent past and who now are either employed, as permanent or temporary workers, or unemployed. So we basically start from a sample of people not employed at time t_0 and then estimate the impact of the three above mentioned different labour market status they were at time t_1 upon the probability of being employed at time t_2 .

Time t_1 and time t_2 conditions are linked using the longitudinal features of the LFS; the condition at time t_0 is instead identified restricting our sample at those people who, at time t_1 , were either employed with a sufficiently low elapsed tenure (as measured according to the time t_1 cross section retrospective information) or unemployed with no work experience over the same time window (the lack of recent work experience being again measured using the time t_1 cross section retrospective information). We opted for this empirical strategy, instead of considering for instance the subsample possibly made by linking 3 different cross sections, in order to avoid restricting too much our sample size²¹. Clearly the nature of the experiment is affected by the peculiar strategy here followed. Here we are considering people who have accepted a job position during a given

²⁰ Related to the fact that easing temporary positions would also reduce the supply of permanent positions and would change the whole matching processes (with further impacts upon wage bargaining etc.).

²¹ Linking two cross sections implies a reduction to one half of the sample (with respect to the original cross section sample). Linking 3 cross sections would have further cut by one half the final sample.

time window spanning from t_0 to t_1 ²² and who are holding it at time t_1 in comparison to people who were never employed over that time window²³.

While sticking to our preferred solution we have experimented with the length of the t_0 - t_1 time window, testing 3 different alternatives: 3, 6 and 12 months. In the latter case the sample will be made by many more employed than unemployed (actually the unemployed would be only the long term ones), while in the former case the opposite would happen (the employed corresponding only to the most recently hired people). In the estimates carried out the results do not differ very much among the 3 cases and so we mostly refer to the 12 months case in our exposition. In any case the distance between t_1 and t_2 will be 12 months.

Table 7 presents the basic results. The covariates are all those already considered in section 3 as those variables may control for the observable factors impinging upon the probability of being a temporary work (if employed). The additional variables inserted into the picture are variables capturing the labour market context in time $t+1$ (...) and the dummies identifying whether an individual was employed and if employed whether he or she was a temp at time t (the unemployed at time t are in the reference group). Needless to say unobservables may also enter into the picture and much of our later discussion refers to the attempt to circumvent the fact that the unobservables possibly impinging upon the probability of being a temporary worker at time t might also have an impact upon the probability of being employed later on, at time $t+1$. Disregarding for the moment such an issue, the coefficients we are mostly interested refer to the employed and temp dummies. For the temps we also inserted a couple of additional dummies identifying those who declare to have voluntarily selected a temp status and the polar group of those who had accepted a temporary position because of the lack of alternatives (so the temp dummy per se identifies the ones who declare being temp because of a training contract, a probationary period etc.).

The overall message is that employment at time t has a sizable positive impact upon employment chances one year apart. A positive impact is present also for the temps, even if in their case the impact is significantly less positive than for a permanent worker. Voluntary temps appear to have (*coeteris paribus*) worse chances, possibly because from the very beginning they were not interested to work for a long period; however, such a negative impact is not very significant from a statistical point of view. Interestingly, even less significant is the differential impact for the involuntary temps. All in all it would seem that temporary jobs have a positive impact upon future employment chances, even if there is a gap *vis-à-vis* permanent ones.

As for the other covariates, males, adults and more educated people have better employment chances. Being in search of an alternative job (if employed) depresses later employment chances, while people currently unemployed somehow differ from other inactive people. Besides the role of local labour market variables (starting period unemployment at provincial level and t_1 - t_2 employment growth and turnover all affect in the expected direction later employment chances, the South area dummy having also a sizable negative impact), being a full timer and not being a student (plausibly proxying for the intensity of the job market attachment) also have a sizable positive impact upon later employment chances.

²² The job position may have been just accepted or it may have lasted over the whole time window. Moreover, an individual might have transited through several job positions (some permanent and some temporary) during the time window, the temporary versus permanent nature of the job position itself being identified on the basis of the one held at the endpoint of the time window.

²³ The ones who are unemployed at time t_1 but who had some work spells over the time window are simply excluded from the sample as we do not know the starting date of the job held (and lost) during the t_0 - t_1 time interval.

Table 7 – Probit estimates of the determinants of being employed 12 moths later

	Coef.	Std. Err	z	P> z
t0empl	2.293	0.202	11.360	0.000
TemporaryEmpl	-0.349	0.049	-7.140	0.000
Involuntary TemporaryEmpl	-0.022	0.060	-0.370	0.713
Voluntary TemporaryEmpl	-0.234	0.143	-1.630	0.102
In search	0.265	0.028	9.370	0.000
In search of another job	-0.309	0.046	-6.770	0.000
1999	0.084	0.031	2.740	0.006
2002	0.087	0.032	2.760	0.006
Marital status				
Male	0.371	0.024	15.460	0.000
Married	-0.056	0.031	-1.810	0.071
Separated, divorcee, widower/widow	-0.019	0.067	-0.290	0.773
Age				
Student	-0.307	0.045	-6.790	0.000
25-34	0.102	0.039	2.610	0.009
35-54	0.096	0.046	2.110	0.035
>54	-0.330	0.069	-4.810	0.000
Educational level				
Lower level certificate	0.116	0.036	3.270	0.001
Upper secondary level certificate	0.233	0.039	6.020	0.000
College degree	0.542	0.059	9.120	0.000
Sector				
Newtit	0.212	0.040	5.280	0.000
Entry	-0.038	0.040	-0.950	0.341
Industry excluding construction	-0.057	0.089	-0.640	0.524
Construction	0.030	0.074	0.400	0.689
Trade	-0.155	0.080	-1.930	0.054
Private services	0.023	0.067	0.350	0.726
Public administration	0.147	0.069	2.110	0.034
Occupation				
Professionals	-0.111	0.207	-0.540	0.592
Technicians and clerks	0.201	0.193	1.040	0.299
Services and sales workers	0.060	0.195	0.310	0.758
Craft and related workers, plants/machine oper	0.066	0.193	0.340	0.734
Elementary occupations	0.000	0.195	0.000	0.999
Armed forces	-0.232	0.364	-0.640	0.525
Area				
fulltime	0.172	0.049	3.540	0.000
Northeast	-0.035	0.040	-0.870	0.383
Centre	-0.072	0.038	-1.920	0.055
South	-0.138	0.045	-3.060	0.002
% change of empl oyment t1-t2	1.407	0.300	4.690	0.000
% change of empl oyment t0-t1	-0.109	0.275	-0.400	0.691
(% change of empl oyment t0-t1)^2	1.695	3.440	0.490	0.622
Unemployment rate	-0.018	0.003	-7.170	0.000
Turnover	0.013	0.005	2.430	0.015
_cons	-1.437	0.067	-21.480	0.000

As already said, the results might be affected by the presence of unobservables at the same time affecting both the probability of being a temp at time t1 and the subsequent employment chances. To put it differently, the endogeneity of the temp status at time t may bias the results. More specifically, temps may be individuals less capable (even after having controlled for a large array of covariates) than permanent workers, this possibly affecting negatively also their employment chances at time t2. Specularly, temps might be more capable and less choosy than the unemployed, these characteristics again possibly impinging upon their time t2 employment chances.

In order to deal with this issue we attempted to instrument the temp status. More specifically we constructed 3 instruments by considering the interaction between sex, education and age dummies and a set of variables capturing, at provincial level, possible firm side determinants of the probability that a job position is a temporary ones. The firm related factors relate to the industry, the occupational and the firms size composition at the provincial level²⁴. Being firm side factors these should be uncorrelated with the unobservable individual characteristics possibly impinging also upon employment chances at time t2.

The results in Table 8 are not very much encouraging. The qualitative features do not change very much: being employed at time t1 increases later employment chances, this being true also for the temps, even if always with a gap vis-à-vis permanent workers. The differential impact of the temp dummy however becomes statistically insignificant as the standard error jumps up. While the instruments do not appear too bad (at the first stage), our feeling is that a proper implementation of such a strategy would require properly instrumenting also the employment dummy.

//other IV experiments are undergoing

Tab. 8 Instrumental variable probit estimation of the determinants of the probability of being employed 12 months later (selected coefficients).

	Coef.	Std. Err	t	P> t
t0empl	0.705	0.112	6.270	0.000
TemporaryEmpl	-0.085	0.272	-0.310	0.754
Involuntary TemporaryEmpl	0.638	0.508	1.260	0.209
Voluntary TemporaryEmpl	-2.221	2.894	-0.770	0.443

An alternative route has been followed using propensity score techniques in order to compare, one to one, the temps to either the permanent workers or to the unemployed. On practical grounds the difference between the probit estimates before presented and the propensity score approach is that, while in both cases one assumes that the heterogeneity is fully taken into by the same large array of covariates²⁵, in the latter one would more safely restrict the comparison to those individuals who are most similar to each other in terms of the large array of covariates used as a control.

Given that we make bivariate comparisons (in one case temps versus permanent workers and in the other case temps versus the unemployed) we may also exploit the different time windows above described in order to maximize the comparison samples.

This experiment is still in progress

Further aspects to be looked at: do the effects of temporary positions interacted change according to some macro variables?

6. Conclusions

TO BE WRITTEN

²⁴ More precisely

²⁵ More precisely it is assumed that conditioning upon them there is no correlation between the unobservables impacting upon t1 and t2 status.