Temporary contracts and young workers' job satisfaction in Italy

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Abstract

The Italian process of flexibilization of the labor market has created a dual market populated by protected permanent employees and unprotected temporary workers. The latter comprises not only temporary employment relationships (fixed term contracts, on-call jobs, agency jobs, etc.) but also arrangements of autonomous collaborations used by the firms as chip de facto temporary employment relationships. While there is plenty of evidence on the labor market consequences of these temporary jobs, particularly widespread among young workers, little is known about their quality. To this end, we estimate a regression model of perceived overall job satisfaction of young workers, based on the ISFOL-PLUS 2006-2008-2010 panel. We control for the different nature of temporary contracts and for perceived satisfactions in nine aspects of the job. We find that job stability is the most serious cause of lower satisfaction for both temporary employees and autonomous collaborators. But while temporary employees tend to compensate concerns of job stability with other job aspects, attaining job satisfaction levels comparable to permanent employees', autonomous collaborators do not and so, on average, are significantly the least satisfied.

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1. Introduction

In the last decades increasing labour market flexibility has been the main response to the high structural unemployment problem in all the OECD countries. The implementation of this goal has followed different strategies in different countries, mainly according to the existing and desired level of Employment Protection Legislation (EPL): in some countries efforts have been made to reduce the degree of EPL of existing permanent contracts, whereas in others the existing high levels of EPL have been joined by new contractual forms of temporary jobs, namely fixed-term and temporary agency work contracts. Rules regulating temporary employment have been liberalized in Several Mediterranean, Continental and East European countries and, in particular, recently Germany and Italy loosened more than others their temporary employment legislation (Jahn et al., 2012).

As well known, this type of reforms "at the margin" has been considered the principal way by which unprotected people (youth, women, less skilled) may enter the labour market, especially in the presence of segmented labour markets, and at the very least contribute to increase firms' profits (Boeri, 2011).

There are two related ways to view at the potential effects of flexibility. The first, more traditional, focuses on the labor market outcomes of flexible contracts. The second view is more recent and is concerned with the general quality of the new jobs.

From the first point of view the desirable outcome in the labour market both for firms and workers is employment stability. For firms having a stable employment is a way of taking the highest advantage from investments in human capital and reducing costs of workforce screening and selection. On the other hand, having a stable occupation allows workers to maximize their revenues in the short and in the long period. Introducing flexible contracts is considered as the most advantageous way to obtain a stable occupation (stepping stone effect) (cfr. Bruno, Caroleo and Dessy, 2012 and the literature therein quoted) in the presence of dualism in the labour market and imperfect information. Temporary jobs allow people to attain specific human capital (work experience) together with the acquisition of firm-specific social capital (relational networks and hence easier access to the information on vacancies). Besides, they guarantee lower entry wages and allow firms to form buffer stocks of jobs, reducing hiring, firing and dismissal costs. They might also be a probation instrument for firms, and a way for people to signal their skills and motivation to employers.

In the empirical literature it has been also questioned if temporary contracts could be, rather than a stepping stone towards a stable occupation, a precariousness trap especially for the weak subjects of

the labour market. On the other hand it has been argued that the two tier reforms have deepened the insider-outsider divide making real reforms to deal with the great recession much harder (Bentolila et al., 2012).

From the labor market perspective, therefore, most of the concerns raised from the widespread use of temporary contracts regard job-security, based on the fact that, generally, temporary contracts are much less protected from the loss of job than the permanent ones. If some countries (such as Denmark and Netherlands) have joined policies of EPL reduction with the extension of unemployment benefits and the introduction of active labour market policies, therefore being able of implementing the so-called model of flex-security (European Commission, 2007), in other countries (such as in Italy) temporary workers are still mainly an unprotected category, so that we might say, with the words of Berton et al. (2009), that a flex-insecurity model has been implemented.

In the last decades, several international institutions have considered also a different and multidimensional way to evaluate jobs. In fact, commitments have been introduced not only to increase employment but also to improve its quality. One of the points of the United Nations Millennium Declaration, approved by the UN Assembly in September 2000, is, for instance, the need ”to develop and implement strategies that give young people everywhere a real chance to find *decent* and productive work” where the International Labour Office (ILO) states: “*Decent work* sums up the aspirations of people in their working lives. It involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men”.

A second example of this new perspective is provided by the Commission on the “Measurement of Economic Performance and Social Progress” (CMEPSP), created in 2008 by the President of the French Republic, Nicholas Sarkozy, and composed by Joseph Stiglitz, Amartya Sen and Jean Paul Fitoussi. The Sarkozy’s Commission considered quality of life a broader concept than economic production, and living standards as an indicator of economic performance and social progress. To this end, having a paid work undoubtedly matters for quality of life even if jobs are not all equally valuable. Other job aspects could matter such as: “non-standard employment, gender gaps in employment and wages, discrimination in the workplace, opportunities for lifelong learning, access to employment for disabled persons, working time and ‘unsocial hours’, the work-life balance, work accidents and physical risks, work intensity, social dialogue and workers’ autonomy”.

The European Union Programme for the new millennium (Lisbon Agenda 2000) offers another instance of the quest for job quality, which this time is explicitly viewed in close connection with traditional labor market outcomes. Indeed, the Lisbon Agenda stresses the need to create better *job quality* and better productivity at work in order to achieve the goal of full employment (Eurofound, 2012).

In Italy the flexibilization of the labor market has been implemented through the continuous proliferation of new temporary contractual work arrangements of heterogeneous nature, ones that increasingly include arrangements peculiar to autonomous work, but that hide de facto temporary employment relationships. Temporary contracts are widespread among young people. In 2006 the percentage of young working people involved in fixed-term employment was 24% (versus a percentage of incidence of such contracts on the whole working population of 9.57%) and those working in autonomous collaborations were 8.40% (versus 5.72% of the whole population) (Mandrone and Marocco, 2012a). Temporary contracts in Italy have been effective in helping young people's entrance in the labor market, but at the expenses of 1) delaying the step to permanent employment, since the rate of permanence in temporary contracts is about 43%; and 2) facilitating the exit to unemployment as an effect of the crisis, after 2007 (Mandrone and Marocco, 2012b).

The question therefore arises as to whether this flexibilization process in Italy, beyond the aforementioned effects, has improved the quality of jobs among disadvantaged workers. In this paper we attempt to give an answer to this question, focussing on the quality of jobs among young workers as reflected by their own perceived job satisfaction levels.

It is worth to mention that ILO, in its school to work transition survey, take the initiative to define the stable occupation that youth try to reach, introducing elements of job quality (Elder, 2010). As matter of fact, according to this definition the transition period from school to work ends when young workers obtain the first "regular and/or satisfactory job". In other words, the attribute of duration of the contract (regularity) alone could not suffice to characterize the job objective of youth. Working under a temporary contract may not be necessarily considered as non-decent working conditions. It depends on the perception that the young worker has toward the type of contract in terms of job satisfaction.

Ours is the first attempt in this sense on a rather unexplored territory for Italy, that of subjective evaluations of job quality among young workers. Building upon previous studies on other countries (van Praag et al, 2003, for Germany; de Graaf-Zijl, 2012 for the Netherlands; Booth et al. , 2002, Bardasi and Francesconi, 2004, and Green and Heywood, 2011, for the UK) we estimate a regression model of self declared job satisfaction to quantify the relationship between job

satisfaction and temporary contract arrangements, and in particular to what extent, for each category of workers, lower satisfaction with one aspect of the job is compensated by more satisfaction with another aspect.

For our analysis we use the 2006-2008-2010 panel collected by the Institute for Workers' Professional Development (Istituto per lo Sviluppo Professionale dei Lavoratori, ISFOL) in the Participation, Labour, Unemployment Survey (PLUS). This data-set has a number of advantages for our purposes of research: 1) it is a panel, and as such it allows us to include individual effects into the specification, which is crucial when working with models of personal evaluations; 2) it covers a time-period that is subsequent to the introduction of labor market reforms and that includes the beginning of the financial crisis, whose effect on job satisfaction, therefore, can in principle be identified; 3) it follows individuals, although bi-yearly, for 5 years, and this is particularly useful given the persistence in temporary contracts of young people in Italy; 4) it allows to identify de facto temporary employment relationships, disaggregated into the two broad categories of temporary employment and autonomous collaborations, and to further break down temporary employment into fixed term contracts and a residual category that includes jobs on-call, job sharing and agency work; 5) it presents a unique richness of information about self-declared satisfactions on an uncommonly high number of job aspects. More specifically, we observe nine dimensions of job satisfactions, whereas for other countries' data much less job-aspects are available (four in Green, Heywood, 2011; five in de Graaf-Zijl, 2012). This last feature of ISFOL-PLUS data allows us to estimate a complete model of job satisfaction, in which all the job-aspects are used as explanatory variable, both separately and in interactions with the contract dummies.

We find that job stability is the most serious cause of lower satisfaction for both temporary employees and autonomous collaborators. On the other hand, the various categories of temporary contracts respond quite differently to differences in aspect satisfactions. This implies that temporary employees get compensated for dissatisfaction with job stability with more satisfaction with other job aspects, and eventually attain satisfaction levels comparable to permanent employees'. To the opposite, autonomous collaborators are not compensated, and so, on average, are the least satisfied.

The Chapter is organised as follows. In Section 2 we review the literature on the relationship between temporary works and job satisfaction. Section 3 analyzes the Italian way to the flexibilization of the labor market. In Section 4 we describe our data and define the variables used for the empirical analysis. Section 5 explains our econometric strategy. Results are discussed in Section 6. Section 7 concludes.

2. Temporary work and job satisfaction

Job satisfaction is a subjective measure of how people feel about their job. Broadly speaking, it can be thought of as a multidimensional construct involving subjective aspirations and objective opportunities. In particular we focus on the so called cognitive job satisfaction which is the extent of individuals' satisfaction with particular aspects of their jobs, such as work environment, work organization, duties, protection against sickness, accident and industrial injury, career perspectives, pay, competence and skill development, job security.

Workers' job satisfaction has been widely analysed by sociologists and industrial psychologists but conveys also useful information about economic life and labour market decisions that should not be ignored (Freeman, 1978; Eurofound, 2007). From this point of view it is important at least for two reasons: 1) it increases job productivity (Hamermesh, 1997) and therefore firms' productivity (Oswald, 1997); and 2) it improves social welfare, as it is extremely correlated to overall individual happiness and well-being (social life, family, etc) (Addabbo and Solinas, 2012).

As we have seen, due to the diffusion of temporary contracts, many studies have deeply analysed the potential effects of flexibility on labour market outcomes, but recently a growing empirical literature has studied also the impact of flexibility on job satisfaction (de Graaf-Zijl, 2005, 2012; Booth et al., 2002; Blanchflower and Oswald, 1999; Bailey et al., 2001; Freeman et al., 2000; Bauer, 2004; Theodossiou and Vasileiou, 2005; Origo and Pagani, 2009; Beckmann et al, 2007; Salvatori, 2010; Ferrer-i-Carbonell and van Praag, 2006; Green and Heywood 2007, 2011 among others).

Specializing to the economic dimension of job satisfaction, it can be considered as a proxy of the utility function, and as such is expected to be increasing with wage or income (or at least with income of reference groups) and decreasing with hours of work (Clark and Oswald, 1996), all other conditions being equal. In this case, a lower wage of temporary workers, compared with that of permanent ones, does not mean in theory a lesser job satisfaction but simply that they are discounting the cost of filling the work experience or skill gap and the costs of the time needed to gather information in searching for the best match. According to the stepping stone hypothesis, therefore, the lower satisfaction of temporary workers, found in the majority of empirical researches, is nothing else but the motivation driving them toward a stable occupation, that is ranked as one of the most important factors of job satisfaction (European Commission, 2001) or even toward occupations and jobs which ensure the best match between a worker's ability and job requirements, as well as with personal requirements and occupation-specific reward structures (Eurofound, 2007).

We notice, however, that empirical studies show numerous different findings. According to Booth et al. (2002), for example, temporary workers have a lower satisfaction with several aspects of their

jobs in the UK. For the same country, Bardasi and Francesconi (2004) report, on the other hand, no long-term negative effects of limited-duration contracts, confirmed by Ferrer i Carbonel and van Praag (2006) for the Netherlands, but not for Spain, where temporary contracts (fixed-term and casual contracts) are strongly negatively correlated with job satisfaction. Petrongolo (2004) also finds lower job satisfaction among temporary workers, across Europe and especially in Southern countries.

Subjective or objective characteristics other than wage condition the choices of workers in accepting or not temporary contracts and seem to explain the different results available in the literature on the relationship between job satisfaction and flexible works. For example, during the process of transition toward a stable occupation it is important that job mobility be voluntary and not forced (Eurofund, 2007). In fact, with regard to voluntary mobility, people would tend to exhibit increased satisfaction with their next job as compared to those who were forced to move (Gottschalk and Maloney, 1985). On the other hand, workers who change job many times are likely to belong to a group which has not found an optimal match between skills and job requirements and to be trapped into the unemployed or into repeated short term jobs. Therefore, it is plausible to conclude that the number of job changes would be negatively correlated with current job satisfaction.

Another central point is perceived job security. Origo and Pagani (2009) show that job satisfaction is negatively related with the risk of becoming unemployed, which may be independent of the type of contract (permanent or temporary).

de Graaf-Zijl (2005 and 2012) studies the case of the Netherlands and analysing different work contracts (regular, fixed-term, on-call, temporary agency) on five job aspects, she finds that a lack of job security is responsible of temporary workers' lower job satisfaction, compared to permanent workers'. However, with the exception of temporary agency workers, the gap disappears if other job aspects are considered, and in particular job content. Green and Heywood (2007, 2011) using British data, and considering four job aspects state the opposite: low job satisfaction associated with less job security is not offset by higher compensation or other job characteristics. One possible explanation is lower coverage against the loss of job in the UK than in the Netherlands.

Ferrer-i-Carbonell and van Praag (2006) show that working conditions and job security can account also for regional differences in job satisfaction. Analysing data on Spain and the Netherlands, they find that the differences in job satisfaction between the two countries can be due to different levels of uncertainty associated with temporary contracts in each country. In other words, flexsecurity, as implemented in the Netherlands, seems to pay in terms of more job satisfaction (see also Green and Leeves, 2003).

Several personal traits or occupation characteristics could also interfere with the relationship between job satisfaction and temporary jobs so that there could be a potential selectivity bias (Beckmann et al., 2007). Clark et al. (1996) provide strong evidence for a U-shaped relationship between age and job satisfaction, declining from a moderate level in the early years of employment and then increasing steadily up to retirement, that remains statistically significant after controlling for personal characteristics, aspects of jobs and work values (Eurofound, 2007). As mentioned before, youth starting a work, either short term or permanent, report in general good feelings about the new experience: working is better than being unemployed. Job satisfaction declines more or less rapidly depending on the jobs (specially if temporary) being insecure or precarious, and unemployment periods being frequent. Job satisfaction declines for several reasons when adults reach stable occupation: expectations and aspirations are lower, job becomes routine or work intensification worsens (Cristini and Origo, 2011). Older workers may also improve job satisfaction as, having accumulated enough work, skill experience and job tenure, can attain better placements (Kalleberg and Loscocco, 1983).

Expectedly, gender is also important. Generally, it has been found that women report higher levels of job satisfaction than do men (gender-job satisfaction paradox) despite their disadvantaged position on the labour market (Clark, 1997; Sousa-Poza and Sousa-Poza, 2003). The “expectation hypothesis” explains these findings supposing that, other job characteristics being equal, women's expectations are lower than men's. Consequently women are forced by experience to adapt their aspirations to a lower level, which produces a job satisfaction premium as a result of low requirements. More interestingly the difference of the institutional and social contexts could account for the relationship between woman’s job satisfaction and temporary contracts. Country comparative studies (Petrongolo, 2004; Kaiser, 2005) show that socio-economic and institutional determinants of labour market statuses account for different job satisfaction of women. In particular Petrongolo (2004) underscores as woman are over-represented in part-time jobs in all the European countries, while are over-represented in fixed-term contracts in southern Europe. In both cases this allocation cannot produce a different job satisfaction with respect to men or full-time workers in so far as it reflects a voluntary choice or the need to reconcile work with child and family care. This holds especially in northern European countries, where welfare state and labour market regimes are deliberately designed to encourage equal employment opportunities for men and women. In southern Europe part-time and temporary jobs of women are often involuntary and of low quality providing significantly lower job satisfaction than fulltime jobs even though, for the expectation hypothesis, women should not have necessarily a lower job satisfaction than men (Kaiser, 2005).

Holding income constant, satisfaction levels are shown to be strongly declining in the level of education. Clark and Oswald (1996) justify this with the expectations hypothesis. In other words the process of education could itself raise workers' expectations but would also increase the risk to undervalue job rewards (Eurofound, 2007) and therefore to reduce job satisfaction. On the other hand, more education can also have a positive impact on those aspects of job satisfaction that are job-related, as it augments the probability to obtain better jobs and salary, higher career prospects, and lower risks of unemployment. An important determinant of job satisfaction, concerning in particular youth temporary workers, are overeducation or overskilling, namely whether individuals' education or skills are at a higher or lower level than those required for the job (Sánchez-Sáncheza and McGuinness, 2011; Allen and van der Welden, 2001).

Finally, there are also some occupation characteristics that may influence the job satisfaction-work flexibility relation, such as the difference between managers, blue-collars and white-collars, and sectors. In this contest it is worth to mention the case of self-employed. In fact, it is well-known that self employed report greater overall job satisfaction as they value highly the autonomy, flexibility, and opportunity to work in a small organization even if they earn less money, work more hours, and experience more work-related stress (Blanchflower, 2000; Frey and Benz, 2002, Bradley and Roberts, 2004).

3. The Italian case

In Italy, the *flexibilization process* of the labour market has followed the way of the *reforms at the margin*, without, therefore, reducing the degree of EPL for employees working with a permanent job (considered as the "standard" type of contract). A number of new contractual forms for temporary jobs have been introduced in the form of "atypical" or "non-standard" jobs[1]. The first attempt goes back to the 80's with the implementation of *work-and-training employment* contracts, but the main process of the labour market flexibilization started out in the second half of 90's with the so called Treu reform (law n. 196/1007), that substantially introduced *temporary work agencies* as well as *temporary contracts*, regulated with the D. Lgs n. 368 /2001, and redefined the part-time contracts. The reform of the Italian labour market continued with the "Biagi Reform" (law 30/2003) that introduced other particular contractual forms of non-standard employment such as: *job on call*, *job sharing*, *job placement agreements* and an update of *apprenticeship contract*s. Also other contractual arrangements of labour outsourcing, similar to temporary agency work contracts, were

1 The concept of "standard" refers to the Fordist model of production in which the work contract of unlimited duration was the typical contractual form regulating work.

proposed such as: *staff leasing* and *transfer of undertakings*[2]. (Mandrone and Massarelli, 2007; Mandrone and Marocco 2012a; Mandrone, 2009).

Labour reforms have also given a special attention to self-employment, considering that traditionally it accounts for a large share of the working population in Italy (Mandrone, 2008). In particular, some worker figures have been introduced, such as *collaborators*, *contracting/consulting worker* and *occasional workers*, who contract-out the execution of specific duties for the firm in a fixed time-limit as free-lancers, coordinated by the employer but not hired as employees. Although formally "autonomous" or self-employed, as far as their contracts are continuously renewed, these workers become a very cheap toll for firms to implement their goal of flexibility so hiding an employment relationship (*lavoro parasubordinato*)[3]. In other words, although self-employment could be considered another "typical" form of work, as it is neither characterized by limited duration nor it is a form of dependent employment, over the last years in Italy it has tended to comprise also these unprotected "false" autonomous temporary collaborators that de facto are "non-standard" or "atypical" employees.

These different trends of flexibilisation of the Italian labor market, mixed together with an unsuitable use of the employment opportunities, especially among young people, have created a deep disorder in the employment world. According to Bertola (2002), Mandrone and Marocco (2012a) the multilevel segmentation of working relationships has made the traditional categories not adequate for understanding the actual composition of the Italian labor market. In particular, the distinction between "atypical employees" and "atypical autonomous" workers is crucial for the analysis of job quality linked to the flexibilization process of the Italian labor market. These two figures are not only different from the contractual point of view, as explained before, but they can also generate different development of workers' skills, career patterns, relationships with colleagues, time schedules, and (least but not last) pays.

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2 *Job on call* ("lavoro a chiamata") is an agreement according to which an employee makes himself available to the employer, who may use his occasional performance (within the limits to be set out in the national collective agreements). Under a *Job sharing* agreement ("lavoro ripartito") two or more employees jointly undertake to fulfil a single working obligation, for which each employee shall remain personally and directly liable. *Placement contracts* ("contratti di inserimento") are particular types of agreements aimed at placing or replacing some categories of employees on the labour market (i.e. young people between 18 and 29 years of age; long-term unemployed, employees over 45 without any job, women residing in areas having low female employment rates, disabled, etc.). By a *Staff leasing* agreement, companies are allowed to lease staff for a definite term for technical, productive, organisational or substitution reasons. Companies belonging to *Groups of undertakings* can entrust the parent company to fulfil the obligations set out by pay-roll, social security and welfare regulations also with respect to employees of other companies of the Group.

3 Forms of consultancy agreements are: Consultant Agreements ("collaborazioni coordinate e continuative, co.co.co.") and Project Works ("lavoro a progetto, co.co.pro"), that imply the occasional execution of one or more specific projects or work programs or stages thereof. Other forms of occasional work performances are: Occasional Work, i.e. work executed for a term not exceeding thirty days during a calendar year, for the same employer; and Occasional Work of an Accessory Nature, i.e. carried out by particular individuals (unemployed, housewives, students, pensioners, disabled, etc.) and being merely of occasional nature (petty housework, private lessons, petty gardening etc.).

The disaggregation among contracts needs therefore to be sufficiently detailed, as a general classification of working people in permanent employees, temporary employees, and self-employed including the "autonomous collaborators" would be highly distorsive in the Italian context. The pattern becomes even more complicated if we consider that the flexibilization of work relationships along the trend of free-lance collaborations has recently intensified to the point that in many cases individuals have decided, perhaps pushed by the contractor, to become formally self-employed with an own VAT code, although working only for one firm. This is an even cheaper tool than "atypical autonomus" contracts for firms to implement flexibility, that in some sense perturbates even more the definition of self-employed as "typical" workers.

All of the foregoing reasons help to clarify the benefits of the ISFOL-PLUS Panel, which besides providing otherwise unavailable information on personal evaluations of job satisfaction, gives also the opportunity to distinguish the contractually different forms of "typical" and "atypical" jobs, as we will explain in the next Section.

4. Data

The empirical analysis is based on micro-data collected by ISFOL in the Participation, Labour, Unemployment Survey (PLUS). This survey, started in 2005, consists in a sample of about 38,000 working aged people interviewed by telephone. Detailed personal data, information about educational career, family background, occupational characteristics and job search condition are collected. On the methodological ground, the representativity of the sample follows exactly the same criteria of the national survey carried out by the Italian National Institute of Statistics (ISTAT): the Labour Force Survey (LFS). But the general purpose of the questionnaire asked in the PLUS is to register also people's auto-perceptions about different aspects of their lives, and especially of their jobs, therefore completing in many features the canonical information available in the LFS. In particular the PLUS, allows us to analyze in more detail both the different contractual forms of workers and their satisfaction with particular dimensions of their job.

To date, the PLUS data are supplied in different formats: either as bi-annual cross sections, or as short (two contiguous waves) and long panels (the three available waves). The information delivered is different across formats, in particular the balanced panels provide only variables that are homogeneous across waves. In our analysis we use the longest 2006-2008-2010 panel for taking advantage of the longest working history available for individuals, at the cost of probably less detailed information on contracts and some family characteristics than available in the cross-

sections. Nonetheless, the contracts' classification of the long-panel PLUS version allows us to break down de facto temporary employment into its three components of fixed term contracts, other temporary contracts and autonomous collaborations.

In our analysis we focus on the population of young working people, selecting the sample of people aged between 15 and 35 years. The choice of such high upper bound for age is due to the evidence that in Italy exit from school/entrance in the labour market is often delayed, and therefore the category of *young* workers is wider than in other countries. From the sample are also excluded immigrants (identified as people without the Italian citizenship) and those performing military jobs. Table 1 reports the distributions of workers by year and sex. The average number of observations per year is 6,700 and the distribution between men and women is constant across years, with young women more numerous than young men (62% versus 38%).

4.1 Evidence on contracts and estimation sample

In the panel version of ISFOL data, the detailed information about contracts asked in the questionnaire is aggregated into the seven categories showed in Table 2. As explained in Section 3, the two main categories of *typical jobs* in Italy are *Permanent Employment (EP)* and *Autonomus* activity *(A)*, including business owners–entrepreneurs, partnerships, and self-employed (VATs). As we can see, the aggregation of our data allows us to distinguish, among the broad variety of *atypical temporary* contracts, nowadays so pervasive in Italy, those involving an employment relationship from autonomous or freelance collaborations. In the first group of atypical contracts we find most of the temporary employment job relationships introduced by the first reforms of the labor market, namely *Employee Temporary (ET)*, including temporary, work/training, apprenticeship, and work-entry contracts; and *Employee Other Temporary (EOT)*, that considers the further on introduced forms of temporary employment (agency, job sharing, intermittent/on call works, and work practice, internship, traineeship experiences[4]). The second group of atypical temporary contracts, *Autonomous Collaborators (AC)*, includes instead the recently introduced forms of temporary autonomus contracts. There are then two residual categories, *Employees Other (EO)* and *Autonomous Other (AO)*, that include people who do not know the contractual form or do not answer the question, respectively in the two broad forms of employment and autonomous work[5].

[4] Only paid traineeships, internships and work experience are considered.
[5] See Mandrone (2008) for detailed definitions.

Table 3 shows the distribution of our sample of young people among all the possible job arrangements. On average 58% of our sample (49% EP and 9% A) work in typical jobs, while 42% are found in "atypical" temporary arrangements. Within the latter, 27% are atypical employees (20% ET, 5% ETO, 2% EO) and about 14% are atypical autonomous collaborators (13% AC and 1% AO). The total sample is an average of 2,874 individuals per year, that is 42% of the total population of young people. Table 3 shows that the distribution of young workers by contracts is almost stable across years. Below, the table reports also the status of people belonging to our balanced panel over time. From 2006 to 2010 the percentage of students in our sample quite expectedly decreases, while the percentage of employed increases. However, being the quota of inactive almost constant, if the percentage of unemployed decreases from 2006 to 2008 of 1% in our sample, it increases of about 3% between 2008 and 2010. One possible explanation for these stylised facts can be found in Mandrone (2012), according to whom temporary contracts in Italy have helped the entrance in the labour market of young people but at the cost of trapping them in temporary arrangements, and without being particularly helpful soon after the beginning of the crisis, since the use of temporary contracts has slightly decreased and the youth unemployment rate has increased.

As explained in Section 3, *AC* work arrangements, as well as cases of self-employment with V.A.T. in *A* might hide de facto employment relationships. Mandrone and Marocco (2012) have made some attempts in this sense on the ISFOL-PLUS 2010 cross-section, exploiting information on job characteristics that might shed light on the true nature of the work relationships, finding that the incidence of 'false' autonomous is much higher among *AC* workers, especially if young, than among *A* workers (80% versus 17%).

Based on the foregoing considerations, we have decided to drop the *A* workers from our estimation sample, as well as EO and AO, in order to keep only contract types that with a sufficiently high degree of confidence share a de-facto employment relationship. Therefore, we end up using the sample we believe closer to de facto employment, that comprising EP, ET, EOT and AC.

4.2 Evidence on job-satisfaction by contract

In the ISFOL-PLUS 2006-2008-2010 panel for all workers *job satisfaction* is evaluated both overall and in 9 dimensions, available as answers to the following questions: *"Overall, which is your level of satisfaction with respect to: 1) work environment (relationships with colleagues and superiors); 2) work organisation (timetable, shifts, overtime, holidays); 3) duties; 4) content of job; 5)*

protection against sickness, accident and industrial injury; 6) career perspectives; 7) pay; 8) competence and skill development; 9) job-stability". Answers have been reported in 4 possible levels, that we have re-ordered homogeneously for increasing intensity as follows: *low, medium-low, medium-high, high.* The *'do not know'* and *'not applicable'* options have been eliminated from the sample.

Table 4 shows how contracts differ across overall job satisfaction and its observed aspects. Columns correspond to a given contract type and show differences in satisfactions between that contract type and *EP* for each satisfaction category. The last column contains the average satisfactions of *EP*.

We observe significantly lower overall satisfaction levels for EOT and especially AC, while ET workers seem to be close to EP. All categories of atypical workers declare to be more satisfied than EP for the aspects regarding the development of relationships with colleagues and of skills. Importantly, job security/stability is the only dimension of job for which all the atypical workers are significantly the least satisfied than EP.

Such initial analysis of the data shows that on average 1) young atypical workers are no more satisfied than EP; 2) the primary matter of concern among young atypical workers is job stability. To draw conclusion on differences in job satisfaction across categories of workers, controlling for differences in aspect satisfactions, personal and job characteristics and unobserved heterogeneity along various dimensions we need to implement an econometric model of perceived satisfaction with appropriate controls and an appropriate error structure.

4.3 Explanatory variables

We use the available information on personal and firms' characteristics. The former group of variables is standard and comprises sex, age, education (3 levels: primary, secondary and tertiary), and region of residence (4 macro-areas: north-west, north-east, centre, south and isles).

The data-set is particularly rich as regards the latter group of variables: we observe occupations (3 groups: high-medium-low skilled) reclassified according to Goos et al. (2010), sectors (5 groups: agriculture-forestry-fishing, manufacturing, construction, trade and food service, services)[6], experience, tenure, job place (firm, at home, moving, other people's house, other firm), firm size,

[6] Sector (public or private) and Part-time/Full-time controls, although the information is available, have been eliminated because of the limited number of observations.

annual earnings, commuting time (in minutes) and over-education (that reports the necessity/or not of the education degree required for the working activity performed).

Table 5 displays the averages for the explanatory variables by contract types in the estimation sample. Individual characteristics are almost equally distributed across contracts, except overeducation, that is more common among AC workers. While the ISFOL-PLUS data oversamples young women (Table 1), in our estimation sample the incidence of women is even greater (65%). 60% of young workers have a medium-level degree of education and only 20% are highly educated.

Turning to firm characteristics: high-skill occupations are frequently governed by autonomous contracts, whereas in medium-low-skilled occupations employment relationships register the highest frequencies of observations. Also, the occupations where young work with the highest frequency are medium-high skilled (50% and 34%). Sectors that are more intensive of autonomous work are agriculture, construction, trade and food services and services in general, where the majority of young people find occupation. Employment contracts are instead more common in manufacturing. As expected, in EP jobs experience and tenure are higher than in temporary work relationships. The place where the majority of our young workers carry out their activity is the firm. Surprisingly enough, this holds also for AC workers, which is a signal of the improper use that firms make of these contracts' forms for implementing low-cost de-facto employment relationships. Also, apparently the majority of firms using AC are small-size, whereas medium-large size firms prefer typical or atypical employment contracts.

5. Econometric strategy

As explained in Section 4, our data-set contains ten categorical variables of job satisfaction. Let y_{it} stand for overall job satisfaction for worker $i = 1,..,N$ at time $t = 1,..,T$ and $y_{a,it}$, $a = 1,\ldots,9$, measure each a specific aspect of job satisfaction. All satisfaction variables may take on values $m = 1,2,3,4$ with 1 corresponding to the lowest level of satisfaction and 4 to the highest.

We assume that underlying the categorical indicator, y_{it}, there is a continuous variable, y_{it}^{*}, ranging onto the real line, R , to be thought of as worker's latent job satisfaction. R is partitioned into four intervals common to all individuals (μ_{m-1}, μ_m), $m = 1,2,3,4$, where $\mu_0 = -\infty$ and $\mu_4 = \infty$. Thus, through his/her declared value, y_{it}, each respondent reveals the interval $\left(\mu_{m(i,t)-1}, \mu_{m(i,t)}\right)$ of the R partition in which his/her y_{it}^{*} happens to lie. We then model y_{it}^{*} using a latent regression model with five groups of explanatory variables, keeping in mind that permanent employment, c=1, is the reference contract type:

1. The job-aspect satisfactions, $y_{a,it}$, $a = 1,\ldots,9$

2. The dummies indicating the three contract types other than permanent, $d_{c,it}$, c=2,...,4.

3. The interactions of job-aspect satisfactions and contract type indicators, $(y_a * d_c)_{it}$, $a = 1,\ldots,9, c = 2,..,4$.

4. Time and regional dummies.

5. The vector $\boldsymbol{x}_{it}$ of personal and job characteristics indicated in Section 4.

So, the latent regression model, in its more general form, can be written as

$$y_{it}^{*} = \gamma_0 + \sum_a \gamma_a * y_{a,it} + \sum_c \delta_c * d_{c,it} + \sum_a \sum_c \delta_{ac} * (y_a * d_c)_{it} + \boldsymbol{x}_{it}^{'} * \boldsymbol{\beta} + u_{it} \qquad (1)$$

where $u_{it} = \alpha_i + \eta_t + \upsilon_{r(it)} + \epsilon_{it}$ and ϵ_{it} is an independent idiosyncratic component; α_i indicates a worker specific component, which may accommodate, among other individual-specific effects, subjective interpretation of the satisfaction questions; η_t stands for a time specific component accommodating aggregate transitory shocks and $\upsilon_{r(i,t)}$ is a regional component capturing latent heterogeneity at the region level, with $r(i,t)$ indicating the region of work for individual *i* at time *t*.

A less compact but easier to interpret formulation of Equation (1) is one that explicitly represents the four possible job satisfaction statuses for a given worker *i* at year *t*, depending on his/her contractual arrangement $c(i,t) = c$, $c = 1,..,4$. So,

$$y_{it}^{*} = \begin{cases} \gamma_0 + \sum_{a=1}^{9} \gamma_a * y_{a,it} + \boldsymbol{x}_{it}^{'} * \boldsymbol{\beta} + u_{it} & if\ c(i,t) = 1 \\ \gamma_0 + \delta_2 + \sum_{a=1}^{9} (\gamma_a + \delta_{a2}) * y_{a,it} + \boldsymbol{x}_{it}^{'} * \boldsymbol{\beta} + u_{it} & if\ c(i,t) = 2 \\ \gamma_0 + \delta_3 + \sum_{a=1}^{9} (\gamma_a + \delta_{a3}) * y_{a,it} + \boldsymbol{x}_{it}^{'} * \boldsymbol{\beta} + u_{it} & if\ c(i,t) = 3 \\ \gamma_0 + \delta_4 + \sum_{a=1}^{9} (\gamma_a + \delta_{a4}) * y_{a,it} + \boldsymbol{x}_{it}^{'} * \boldsymbol{\beta} + u_{it} & if\ c(i,t) = 4 \end{cases}$$

With the foregoing representation in mind, interpretation of the γ_0, γ_a, δ_c and δ_{ac} coefficients is clear-cut.

1. The constant term, γ_0 , is the average contribution of all unobserved components, including job aspects, that are peculiar to permanent workers. In other words, it is the residual average job satisfaction of permanent workers (the reference contract type).

2. Coefficients on job-aspect satisfactions, γ_a, $a = 1,..,9$ estimate the effects of aspect satisfactions for permanent workers.

3. For a given contract type $c = 2,..,4$, coefficient δ_c measures the difference in residual average job satisfaction of that contract-type with respect to permanent workers.

4. For a given contract type c=2,..,4, coefficients δ_{ac} , $a = 1,..,9$, measure the differences in aspect satisfaction effects of that contract type with respect to permanent workers.

It is also clear that differences in average satisfactions between contract types c=2,..,4 and c'=1, keeping $\boldsymbol{x}_{it}$ and u_{it} constant, can be evaluated as

$$\bar{y}_c^* - \bar{y}_1^* = \delta_c + \sum_{a=1}^{9} \gamma_a * (\bar{y}_{c,a} - \bar{y}_{1,a}) + \sum_{a=1}^{9} \delta_{ac} * \bar{y}_{c,a} \quad (2)$$

$c = 2,3,4$, where $\bar{y}_c^*$ and $\bar{y}_{c,a}$ are the averages of, respectively, y_{it}^* and $y_{a,it}$ over all observations (i,t) such that $c(i,t) = c, c = 1,2,3,4$.

In our data the average difference in job-stability satisfaction, say $\bar{y}_{c,9} - \bar{y}_{1,9}$, is by far the largest (see Table 4). For this reason we single out its contribution into Equation (2) to get

$$\bar{y}_c^* - \bar{y}_1^* = \sum_{a=1}^{8} \gamma_a * (\bar{y}_{c,a} - \bar{y}_{1,a}) + \gamma_9 * (\bar{y}_{c,9} - \bar{y}_{1,9}) + (\delta_c + \sum_{a=1}^{9} \delta_{ac} * \bar{y}_{c,a}) \quad (3)$$

Notice that in Equation (3) the average difference in job satisfaction is decomposed into three effects:

1. that of the difference in the average satisfaction for job stability: $\gamma_9 * (\bar{y}_{c,9} - \bar{y}_{1,9})$;

2. that of the differences in the remaining job-aspect satisfactions: $\sum_{a=1}^{8} \gamma_a * (\bar{y}_{c,a} - \bar{y}_{1,a})$;

3. that of the contract-specific coefficients: $(\delta_c + \sum_{a=1}^{9} \delta_{ac} * \bar{y}_{c,a})$.

We will get back to the above decomposition in the next section, when we compare job satisfaction estimates across the contract categories.

Turning to the estimation issues, we notice the inclusion of individual dummies is not legitimate to capture the α effects in latent regression models with small clusters of individuals, due to the well-

known incidental parameter problem. One simple solution is to estimate the model parameters by a random effect ordered probit with the latent heterogeneity component α modeled a la Mundlak, through a linear combination of regressors in group-means (see Wooldridge 2010). Two other popular methods are both based on the Chamberlain conditional logit estimator, where the α elements are conditioned out in the log-likelihood function: the fixed effect ordered logit minimum distance estimator by Das and Van Soest (1999) and its popular variant by Ferrer-i-Carbonell and Frijter (2004) (adopted, among others, by de Graaf Zijl 2012 for a model of job satisfaction similar to ours). All such estimators, however, are computationally expensive, the first involving evaluation of multiple integrals and the last two requiring multiple steps of estimation. In addition, Baetschmann et al (2011) prove that the various ways through which the Ferrer-i-Carbonell and Frijter (2004) method has been implemented have led to inconsistent estimators.

For all of the foregoing reasons we follow an alternative estimation strategy based on a fixed effect extension of the linear approach to ordered response models described in Van Praag et al. (2004) and (2006), also known as probit OLS (POLS), an approach that has also been followed by Green et al (2013) in a similar analysis of job satisfaction on Australian data. This method is based upon the consideration that ordered probit yields an OLS-like log-likelihood, with the same set of regressors as in the underlying latent regression model and a dependent variable given by the conditional mean $E(y_{it}^{*}|\mu_{it} < y_{it}^{*} \leq \mu_{it})$. Then, assuming a standard-normal distribution for y_{it}^{*}, one can estimate $E(y_{it}^{*}|\mu_{it} < y_{it}^{*} \leq \mu_{it})$ through sample analogs and implement ordered probit as on OLS regression. In this way the inconsistent estimates of the α elements are separable from the slope estimators, exactly as in ordinary linear panel data models, so that the latter are consistent for $N \to \infty$ and T fixed.

We implement three different specifications. Model 1 maintains homogeneous effects of aspect satisfactions across contract types and excludes personal and job controls, setting $\delta_{ac} = 0$, $a = 1,\ldots,9$, $c = 2,\ldots,4$ and $\boldsymbol{\beta} = \mathbf{0}$. Model 2 provides an intermediate specification setting $\boldsymbol{\beta} = \mathbf{0}$, while Model 3 carries out unconstrained estimation. We estimate the three models for the whole sample and, separately, for the male and female subsamples.

A random effect POLS can always be implemented as an alternative to fixed effect POLS. Indeed,Van Praag et al (2004) advocate the use of the random effect POLS for two reasons: 1) if valid, it is more efficient than the fixed effect POLS and 2) it can identify effects of time constant variables. It must be kept in mind, however, that while the random effect POLS does not use up degrees of freedom in estimating individual effects, it is also less robust than the fixed effect POLS to individual effects that may be correlated with the worker's observed characteristics. In addition,

gender is the only time-constant variable that is of primary interest in our analysis and we prefer to assess its impact at the most general level, by running separate regressions on male and female subsamples. With these pros and cons in mind, we have subjected the choice between the two estimators to a battery of heteroskedasticity-robust Hausman tests, which led to rejection of the random effect specification for all models and samples at any conventional level of significance.

Van Praag et al. (2006) show that ordered probit and POLS estimates are almost identical up to a proportionality coefficient, namely both methods provide virtually the same estimates of coefficient ratios, referred to as trade-off ratios in Van Praag et al (2006), in the satisfaction equation. It is not hard to see that the probit analogous of the fixed effect POLS is the random effect ordered probit a la Mundlak we mentioned above. Therefore, we have also applied this estimator to our three models to find that, indeed, fixed effect POLS estimates and the Mundlak random effect ordered probit estimates are very close up to a proportionality coefficient with also close t-statistics, exactly as evidenced by Van Praag et al. (2006) in the case of the simple ordered probit and POLS estimates. For example, FE POLS and Mundlak Ordered Probit applied to Model 1 over the whole sample provide an estimate for the trade-off ratio between $y_{1,it}$ and $y_{2,it}$ of 3.22 and 3.17, respectively; in Model 2 they both yield a trade-off ratio of 3.03; in Model 3 they yield trade-off ratios of 3.10 and 3.14, respectively. Given this substantial equivalence of results and noticing that Mundlak Ordered Probit is computationally more expensive than fixed effect POLS, the latter estimator can be considered as a valid alternative to the latter in the estimation of satisfaction models.

Based on the foregoing results, in the next section we report and comment only the fixed effect POLS results.

6. Results

In this Section we discuss the results for our three models, estimated first on the whole sample and then separately for males and females. Table 6 shows results for all models and samples. Since our focus is on job-aspect satisfactions, separately and interacted with the contract types, the largest portion of our comments is devoted to the impact of these two sets of variables. We also comment on some interesting aspects of heterogeneity: between males and females, over time and across regions.

6.1 Job-aspect satisfactions

Model 1 assumes homogeneous impacts of job-aspect satisfactions across contract types. As expected, all dimensions of job satisfaction are positively significant. Satisfaction with *relationships with colleagues and superiors* emerges as the most important determinant of overall job satisfaction, especially for males. *Job stability* emerges as a second important dimension of job-satisfaction, especially for females.

When comparing our results with previous studies on the subject one has to keep in mind that we are concentrating on the subpopulation of young workers. Nonetheless, our job stability estimate is fully consistent with the evidence for the UK (Clark, 1997, Green et al., 2011) and Australia (Wooden et al., 2004; Green et al., 2013), where job stability has been found strongly linked to workers' well-being. The data examined by de Graaf-Zijl (2012), instead, tells a different story for the Netherlands, where it is *happiness with job content* that is the primary aspect and job stability counts for the least. In our data job content has a prominent position only for the male subsample, but in the whole sample, as well as the female sample, it seems to be less important than both relationship with colleagues and job stability. Such discrepancy with results in de Graaf-Zijl (2012) may simply reflect true differences between the population of Italian young workers and that of Dutch workers, and indeed be explained by the effective flexicurity policies implemented in the Netherlands. However, since happiness with work relationships, as well as other important dimensions of job satisfactions that we observe, are not observed in the Dutch data it is also possible that the job content and the job stability coefficient estimates in de Graaf-Zijl (2012) capture also the impact of the neglected factors.

After job relationships and job stability, the other job-aspects that determine job satisfaction are the following, in order of importance: pay, content of the job and skills' development, and lastly burden, times and safety of work. Focussing on contractual dummies, it seems that ceteris paribus ET and EOT are more satisfied than EP (especially ET males), whereas ceteris paribus AC job satisfaction is not significantly different from EP. The ceteris paribus clause is obviously crucial in interpreting this result, since the actual differences in overall satisfaction can be mainly driven by differences in aspect satisfactions across contract categories. We will get back to this point in Subsection 6.3.

Model 2 includes interaction terms, allowing for separate effects of aspects of satisfaction across contract types. Interestingly, while interactions terms are jointly significant, contract dummies are no longer so, indicating that, once interactions are included, there are no residual unobserved job aspects to explain differences in overall satisfaction across contract types. Not only does this make interpretation of results more clear-cut, but also it is reassuring in terms of our model specification, which indeed considers a more complete list of aspect satisfactions than in previous studies. For

example, de Graaf Zijl (2012) notices that significant coefficients on contract dummies may be explained turning to neglected job aspects, such as career opportunities and relationships with co-workers, which are instead observed in our analysis. Coefficient estimates on job-aspects satisfaction are still significantly positive and close to those of Model 1.

To fully evaluate the impact of the different domains of satisfaction in Model 2 we have also to consider interaction coefficients, which permit heterogeneous impacts across contract types. The ones that turn out significant are shown synthetically in Table 7. ET workers seem to be rather homogeneous to EP over almost all job aspects. Heterogeneity of behaviour with respect to EP seems to characterise more EOT and AC, but often with opposite patterns.

In more detail, if in the whole sample EOT put more weight than EP on hours, for AC (especially women) it is the opposite. Opposite patterns of behaviour between EOT and AC are observed also with respect to job content. Strikingly, from all estimation samples it emerges that EOT evaluate this aspect significantly more than EP. This is not the case for AC, with male AC significantly putting less weight than EP on job content. Male AC are concerned with Safety significantly more than EP, while EOT (and ET) are not significantly different from EP in this regard. AC (especially females) put more weight than EP on career prospects, while again EOT (and ET) do not seem differently concerned than EP on this aspect. ET and EOT are also homogenous in terms of pay, which is evaluated by both (especially males) as less important than by EP.

Model 3 adds personal and job characteristics to Model 2. Before discussing results for this model we observe, as a result of an F test, that such additional regressors are not jointly significant, which validates the conclusions already drawn in the previous paragraph. In fact, coefficient estimates here are very close in size to, and have almost always the same sign of, those of Model 2. The pattern of statistical significance is also confirmed, with one interesting additional result: the positive impact of career satisfaction for ET in the whole sample reaches 10% significance, where the same coefficient in Model 2 presents a larger standard error.

6.2 Time, regional and gender effects

The year 2008 brings about a significantly lower job satisfaction level, compared to 2006 and 2010, for all samples and models. This can be explained with the worsening of expectations in all categories of workers in the wake of the first year of financial crisis in Europe. That in 2010 job satisfaction has reverted, on average, to the levels of 2006, while the Italian youth unemployment rate has increased by 6.5 percentage points from 2008 to 2010, seems to be puzzling. One possible explanation is that many of the dissatisfied in 2010 are indeed those who must exit the sample to unemployment, while those remaining, in spite of a worsening macroeconomic background, are

perhaps relieved by being able to keep their jobs in bad times, and so upgrade their current expectations compared to 2008.

In model with fixed effects, regional effects are identified by movers across regions, but transition frequencies are extremely low in our data, explaining the general insignificant coefficients on regional dummies. The barely significant effects for young male workers in all models must be taken with a grain of salt, being identified by a very small group of individuals (8 observations: 6 movers-out and 2 and movers-in) and so it is hard to tell whether it is a pure regional effect or it just reflects the presence of outliers.

A gender effect cannot be identified through fixed effect estimation. It is possible, however, to compare male and female intercept estimates, which reflect the average of the estimated fixed effects for each subsample. Although differences of intercepts are not highly significant (based on coefficient and standard error estimates in Table 6, we find that Model 3 yields the highest t-test of -1.57), we observe that the intercept of males is always smaller than that of females, confirming the gender effect evidenced in the existing literature (this is the "gender paradox" discussed in Section 2). A more direct and explicit result consistent with the gender effect comes from (unreported) random effect estimation a la Mundlak, which always yields a significantly negative coefficient on the male dummy.

6.3 Predicted satisfaction levels

The analysis of individual coefficients as carried out so far, either on aspect satisfactions or interactions, sheds light on the different patterns of satisfaction between pairs of contractual forms only on a counterfactual basis, that is assuming the same ceteris paribus variation in a given aspect for both types of contracts. As observed in Section 4, however, aspect satisfactions are actually significantly different across the different types of workers and indeed may explain a great deal of variation in overall job satisfaction among contract types. We now, therefore, apply our estimation results to bring comparisons on job satisfaction at a more factual level, based on the actual patterns of aspect satisfactions that are observed in the data. In this respect, comparisons are based on Equation (3) in Section 5, which boils down to an Oaxaca decomposition of the difference between average job satisfactions of flexible workers and average job satisfaction of permanent workers, keeping personal and job characteristics, as well as individual, time and regional effects constant, but allowing aspect satisfactions to vary. Table 8 shows results on satisfaction differences and on the composition of such differences, broken down into the contributions of 1) the difference in average satisfaction for job stability, which emerges from the analysis of Section 4 as the most prominent concern for all categories of flexible contracts; 2) the differences in the remaining

average job-aspect satisfactions; and 3) the contract-specific coefficients on contract dummies and interactions, which reflect contrasts with permanent workers. Results are the following.

1. There are no significant differences between ET and EP in the whole sample. Focussing only on the female subsample does not change this conclusion. Restricting to males, instead, we see that ET gain significantly higher job satisfaction than EP. Significant satisfaction differences are never observed for EOT. At the other extreme, we find that AC workers have always significantly lower job satisfaction than EP.
2. For all categories and all estimation samples lower satisfaction with job stability emerges as the strongest cause of lower overall job satisfaction.
3. In the case of ET workers this negative effect is offset by the joint effect of differences in other aspect satisfactions, which is always positive and statistically significant. For male ET there is the additional effect of a significantly positive portion of higher job satisfaction brought about by differences in coefficients, which eventually bring male ET on a higher level of job satisfaction than male EP.
4. In the case of EOT the last two components are hardly individually significant. However they are always positive, with the last also sizeable, so that the two effects together offset the job-stability component both in size and in statistical significance.
5. For AC workers the last two components always go hand in hand with the job-stability component, contributing to make AC significantly worse off than EP. Using a similar decomposition, de Graaf Zijl (2012) finds similar results for on-call and agency workers, although in the latter case dissatisfaction with work content is more pronounced than dissatisfaction with job stability.

7. Conclusions

In this chapter we have investigated job quality from the point of view of young Italian workers, using self-declared levels of job satisfaction for a sample of young workers extracted from the ISFOL-panel.

We have estimated three fixed effect models of job satisfaction, all including nine aspects of job satisfaction and three contractual dummies for de facto temporary employees, ET, EOT and AC, as explanatory variables. We found that, compared to EP, lower satisfaction with job stability is the aspect with the highest negative, and significant, incidence on the job satisfaction of all three categories of de facto temporary employment. We also found that ET present patterns of job satisfaction that are rather homogenous to EP. Heterogeneity of behaviour with respect to EP seems

to characterise more EOT and AC, but often with opposite patterns. Finally, we found that, while ET and EOT tend to compensate concerns of job stability with other job aspects, attaining job satisfaction levels not significantly different from EP, AC do not, and so, on average, stand as the least satisfied.

Our fixed effect estimates are robust to endogeneity of the aspect satisfactions due to correlation with, and sorting of workers into contracts based on, all observables and time-constant unobservables.

It is tempting to conclude that in the rather regulated Italian labor market a theory of compensating differentials is at work for young temporary employees, while it fails for autonomous collaborators. But this would push us too far, since there are two important, although difficult, directions for future research: 1) dealing with endogeneity of the satisfaction variables and contract dummies arising from correlation with unobserved time-varying characteristics; and 2) incorporating exits to unemployment and non-activity into the model.

A conclusion that can be drawn at this stage is that the picture representing youth temporary employment in Italy as a homogenous group of precarious workers with low expectations needs to be adjusted. ET and, to a smaller extent, EOT contracts seem to ensure satisfaction patterns comparable to those of permanent workers. This is in accordance also with the evidence based on the INPS archives in Berton et al. (2011), showing that ET and EOT are more likely to upgrade to EP positions than AC.

Our analysis shows that the most disadvantaged category of young workers in Italy is definitively the one of AC workers, who are contractually free-lancers, but are mostly used by firms for implementing flexibility at a lower cost than temporary employees, justifying the recent policy concerns raised by these contractual arrangements.

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Table 1: Distribution of the sample (young between 25 and 30) by sex

	2006	2008	2010
males	2,566	2,560	2,556
	37.9	37.85	37.82
females	4,205	4,204	4,202
	62.1	62.15	62.18
Total	6,771	6,764	6,758
	100	100	100

Table 2: Definition of contract aggregates in the ISFOL-PLUS 2006-2008-2010 panel

CONTRACT CATEGORY:	TYPICAL	ATYPICAL
1. EMPLOYEE PERMANENT (EP)	permanent job	
2. EMPLOYEE TEMPORARY (ET)		temporary job work and training apprenticeship starter contract
3. EMPLOYEE OTHER TEMPORARY (EOT)		agency temporary job sharing/on call stage professional training
4. AUTONOMOUS (A)	enterpreneur cooperative members self-employed (V.A.T) family co-worker	
5. AUTONOMOUS COLLABORATORS (AC)		contracting job occasional job consulting job
6. EMPLOYEE OTHER (EO)		do not know/do not answer
7. AUTONOMOUS OTHER (AO)		do not know/do not answer

Table 3: Distribution of young workers by contract and status.

	2006	2008	2010	(2006-2010
Contract (%)				(averages)
EP	48.22	48.6	50.71	49.18
ET	19.64	20.47	19.39	19.83
EOT	5.8	5.28	4.6	5.23
A	8.84	9.21	10.16	9.40
AC	13.56	12.91	11.69	12.72
EO	3.37	1.98	2.46	2.60
AO	0.56	1.55	0.98	1.03
Total	2,138	3,029	3,455	2,874.00
Status (%)				
EMPLOYED	31.58	44.78	51.12	42.49
UNEMPLOYED	15.64	14.84	17.39	15.96
INACTIVE	6.91	6.14	5.09	6.05
STUDENT	45.87	34.24	26.4	35.50
Total	6,771	6,764	6,758	6,764.33

Table 4: Dimensions of job satisfaction by contract.

	ET	EOT	AC	EP
JS aspects:				
Relationships	0.11***	0.12**	0.12***	3.11***
Times	-0.01	-0.07	0.01	3.10***
Burden	0.11***	-0.01	0.04	2.90***
Content	0.09***	-0.02	0.01	3.03***
Safety	0.02	-0.05	-0.15***	3.11***
Career	0.05	-0.06	-0.21***	2.44***
Pay	0.03	-0.13*	-0.22***	2.51***
Skills	0.14***	0.14***	0.09**	2.80***
Stability	-0.62***	-1.00***	-1.11***	3.26***
Overall	-0.03	-0.13***	-0.25***	2.97***

- $p<0.05$; ** $p<0.01$; *** $p<0.001$

Table 5: Averages of explanatory variables by contract.

	EP	ET	EOT	AC
Age	26.483	25.431	25.265	25.433
Sex:				
Males	0.368	0.357	0.350	0.350
Females	0.632	0.643	0.650	0.650
Education:				
Education low	0.211	0.224	0.236	0.227
Education medium	0.593	0.580	0.584	0.577
Education high	0.195	0.196	0.180	0.196
Overeducated	0.528	0.566	0.580	0.575
Occupation:				
Occupation - high skills	0.325	0.418	0.408	0.567
Occupation - medium skills	0.568	0.490	0.499	0.396
Occupation - low skills	0.107	0.092	0.093	0.038
Sector:				
Sector Agriculture-Forsertry-Fishing	0.013	0.026	0.014	0.020
Sector Manufacturing	0.143	0.098	0.112	0.035
Sector Construction	0.033	0.027	0.027	0.026
Sector Trade and Food service	0.192	0.204	0.182	0.119
Sector Services	0.619	0.646	0.665	0.799
Experience	8.612	5.153	4.813	5.226
Tenure	5.653	2.407	2.266	2.311
Job Place:				
Firm	0.826	0.834	0.876	0.761
Home	0.004	0.004	0.005	0.026
Moving	0.103	0.091	0.059	0.138
Others' house	0.005	0.005	0.007	0.012
Other firm	0.063	0.066	0.054	0.063
Size	418.654	203.280	207.577	110.938
Annual earnings	18764.330	16563.340	15015.370	12167.320
Commuting time	19.897	21.571	21.901	23.149
Unsafe job	0.237	0.216	0.169	0.183

Table 6: Job Satisfaction – Fixed effects POLS

	Model 1			Model 2			Model 3		
VARIABLES	Whole sample	Males	Females	Whole sample	Males	Females	Whole sample	Males	Females
sat relationships	0.194***	0.208***	0.182***	0.202***	0.205***	0.196***	0.204***	0.208***	0.198***
sat times	0.0603***	0.0500*	0.0678***	0.0665***	0.0611*	0.0710**	0.0650***	0.0608*	0.0723**
sat burden	0.0694***	0.0614**	0.0779***	0.0709***	0.0499	0.0874***	0.0727***	0.0542	0.0881***
sat content	0.137***	0.203***	0.0918***	0.124***	0.197***	0.0688**	0.123***	0.192***	0.0675*
sat safety	0.0386***	0.0412**	0.0374**	0.0282*	0.0238	0.0348*	0.0298*	0.0248	0.0342
sat career	0.110***	0.143***	0.0867***	0.0844***	0.116***	0.0637***	0.0803***	0.111***	0.0612***
sat pay	0.140***	0.121***	0.156***	0.150***	0.154***	0.148***	0.149***	0.159***	0.144***
sat skills	0.114***	0.105***	0.119***	0.130***	0.138***	0.119***	0.129***	0.130***	0.124***
sat stability	0.166***	0.132***	0.186***	0.150***	0.114***	0.174***	0.147***	0.109***	0.174***
Ref. PE									
ET	0.0753**	0.113**	0.0315	0.123	0.0566	0.0911	0.137	0.0785	0.113
EOT	0.131*	0.121	0.107	-0.354	-0.111	-0.576	-0.447	-0.302	-0.537
AC	-0.00978	-0.0211	-0.00560	-0.244	0.0598	-0.478	-0.205	0.0752	-0.385
Controls	no	no	no	no	no	no	yes	yes	yes
ET*relationships				0.0114	0.0643	-0.0288	0.0130	0.0590	-0.0265
EOT*relationships				-0.0800	-0.131	-0.0718	-0.0494	-0.0884	-0.0503
AC*relationships				-0.0504	-0.0910	-0.0258	-0.0613	-0.101	-0.0463
ET*times				-0.00235	-0.0405	0.0219	-0.000692	-0.0340	0.0178
EOT*times				0.174**	0.232	0.152	0.179**	0.224	0.135
AC*times				-0.105**	-0.0814	-0.118*	-0.101*	-0.0979	-0.111*
ET* burden				-0.00128	0.0506	-0.0310	-0.00447	0.0475	-0.0123
EOT* burden				-0.0767	-0.268*	0.00539	-0.0616	-0.206	-0.00791
AC* burden				0.0446	0.0947	0.0109	0.0406	0.109	0.00491
ET*content				0.00551	0.0344	-0.0133	0.00759	0.0252	-0.00626
EOT* content				0.288**	0.343**	0.258*	0.269**	0.267	0.268*
AC* content				-0.0263	-0.252**	0.109	-0.0252	-0.246**	0.105
ET*safety				-0.0100	0.0167	-0.0307	-0.0125	0.0186	-0.0370
EOT* safety				-0.000244	0.0152	0.0521	0.0242	0.0378	0.0707
AC* safety				0.0651	0.153**	0.0199	0.0621	0.149**	0.0212
ET*career				0.0554	0.0401	0.0467	0.0607*	0.0419	0.0518
EOT* career				0.123	0.143	0.0544	0.118	0.128	0.0765
AC* career				0.0839*	0.0696	0.105*	0.0871*	0.0719	0.0994
ET*pay				-0.0541	-0.105*	0.00895	-0.0592	-0.119*	0.00886
EOT* pay				-0.113	-0.190*	-0.0616	-0.132*	-0.175	-0.0922
AC* pay				0.0743	0.0461	0.101	0.0716	0.0654	0.0917
ET*skills				-0.0656	-0.0932	-0.0283	-0.0729	-0.0873	-0.0479
EOT* skills				-0.151	-0.154	-0.118	-0.162	-0.165	-0.119
AC* skills				0.0250	0.0345	0.0188	0.0279	0.0131	0.0318

ET*stability				0.0455	0.0302	0.0514	0.0470	0.0434	0.0371
EOT* stability				-0.0185	0.0548	-0.0558	-0.0137	0.0963	-0.0807
AC* stability				0.00272	0.0314	-0.0265	-0.00156	0.0395	-0.0344
Ref. North West									
North – East	-0.210	0.301	-0.779	-0.130	0.390*	-0.693	-0.131	0.420*	-0.618
Center	0.397	-0.240	0.855	0.330	-0.245	0.660	0.309	-0.211	0.633
South-Isles	-0.293	-0.603*	0.0178	-0.305	-0.461*	-0.0709	-0.301	-0.513*	-0.131
Ref. 2006									
2008	-0.0842***	-0.0689**	-0.0922***	-0.0878***	-0.0743**	-0.0894***	-0.103***	-0.103***	-0.0928***
2010	0.0220	0.0327	0.00977	0.0199	0.0345	0.00943	-	-	-
Constant	-2.916***	-2.995***	-2.817***	-2.845***	-3.012***	-2.667***	-3.349***	-4.802***	-2.640***
Observations	6,860	2,827	4,033	6,860	2,827	4,033	6,794	2,804	3,990
R-squared	0.316	0.346	0.302	0.326	0.365	0.315	0.330	0.372	0.320
Number of pid	3,469	1,395	2,074	3,469	1,395	2,074	3,435	1,383	2,052
F-test ASatisf[§]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F-test Contracts[§]	0.048	0.086	0.628	0.400	0.991	0.181	0.336	0.943	0.296
F-test interactions[§]	-	-	-	0.016	0.046	0.062	0.012	0.073	0.096
F-test X p-value [§]	-	-	-	-	-	-	0.495	0.255	0.741

Cluster *** p<0.01, ** p<0.05, * p<0.1

[§] p-values

Table 7: Summary of results of the interactions between contract types and job-aspects satisfaction

Model 2

	JS aspects:								
	Relationships	Times	Burden	Content	Safety	Career	Pay	Skill	Stability
ET									
All									
Males							-0.105*		
Females									
EOT									
All		***0.174***		***0.288***					
Males			-0.268*	0.343**			-0.190*		
Females				0.258*					
AC									
All		***-0.105***				***0.0839***			
Males				-0.252**	0.153**				
Females		-0.118*				0.105*			

Model 3

	JS aspects:								
	Relationships	Times	Burden	Content	Safety	Career	Pay	Skill	Stability
ET									
All						***0.0607***			
Males							-0.119*		
Females									
EOT									
All		***0.179***		***0.269***			***-0.132***		
Males									
Females				0.268*					
AC									
All		***-0.101***				***0.0871***			
Males				-0.246**	0.149**				
Females		-0.111*							

Table 8. Average differences in satisfaction with respect to PE

(based on Model 3 estimates for constant personal and job characteristics)

	ET	EOT	AC
Whole sample			
Difference in job satisfaction	0.036	-0.033	-0.230***
due to differences in satisfaction for security	-0.091***	-0.147***	-0.163***
due to differences in other aspects satisfaction	0.068***	0.011*	-0.013*
due to differences in coefficients	0.059	0.104	-0.053
Males			
Difference in job satisfaction	0.116**	-0.070	-0.226***
due to differences in satisfaction for security	-0.054***	-0.103***	-0.113***
due to differences in other aspects satisfaction	0.047***	0.001	-0.025*
due to differences in coefficients	0.123**	0.032	-0.088
Females			
Difference in job satisfaction	0.033	-0.023	-0.243***
due to differences in satisfaction for security	-0.123***	-0.181***	-0.202***
due to differences in other aspects satisfaction	0.079***	0.010	-0.009
due to differences in coefficients	0.012	0.148	-0.032

*** p<0.01, ** p<0.05, * p<0.1