Cambridge Journal of Economics 2019, **43,** 1549–1575
doi:10.1093/cje/bez010
Advance Access publication 24 April 2019

The quality of employment in the early labour market experience of young Europeans

Gabriella Berloffa, Eleonora Matteazzi, Alina Şandor, Paola Villa*

Abstract

This paper presents a new approach to evaluating individuals' employment quality, considering the evolution of individuals' employment conditions over a period of time, instead of the quality of jobs held at a point in time. In particular, we present a new definition of employment quality, based on four dimensions: employment security, income security, income success and occupational success. Using EU-SILC data, we analyse the early labour market experience of young adults and the extent to which the achievement of employment quality around five years after leaving education varies according to gender, education and labour market institutions. Our findings suggest that there is still a pressing need to enhance women's chances of remaining continuously in employment and to move up in the labour income distribution. Stricter rules on the use of temporary contracts appear to improve youth employment prospects in general, whereas a more stringent regulation of individual dismissals seems to generate some difficulties for high-school and university graduates.

Keywords: Employment quality, Employment security, Income security, Young people, Employment protection legislation.

JEL classifications: J81, J69, J13

Address for correspondence:

Alina Şandor, Department of Economics and Management, University of Trento, Italy;

email: alinamihaela.sandor@unitn.it

* Department of Economics and Management, University of Trento, Italy (GB, AS, PV); Department of Sociology and Social Research, University of Trento, Italy (EM). This paper is based on research carried out within the STYLE project (EU-7FP, http://www.style-research.eu/). The project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under Grant Agreement no. 613256. The authors would like to thank Thomas Biegert, Vladislav Flek, Marge Unt, participants to the STYLE General Assembly Project Consortium Meetings (Grenoble, March 23-24, 2015; Turin, June 13-15, 2016; Krakow, January 29-31, 2017), SASE 27th Annual Conference (London, July 2-4, 2015), IWPLMS 37th Annual Conference (Barcelona, July 6-8, 2016), TIY 24th Annual Workshop (Trento, September 7-10, 2016) for helpful comments and suggestions.

1. Introduction

The objective of this paper is to present a new approach for the evaluation of the 'quality' of employment of young women and men in Europe and to provide some empirical evidence on the way in which labour market institutions affect it.

Empirical studies that measure the quality of employment focus on the features of the jobs held by workers at a specific point in time. But labour markets are increasingly characterized by young workers frequently moving between jobs, with possible unemployment spells in-between (O'Reilly et al., 2018). Therefore, if we are interested in evaluating young workers' well-being, we need to develop new concepts of employment quality that refer to individuals' employment conditions over a period of time, instead of the quality of jobs held at a certain point in time.

In this paper, we present a new definition of (objective) employment quality based on the evaluation of various dimensions of individuals' labour market experiences over a relatively long period of time. In particular, we consider four dimensions of employment quality: employment security, labour income security, labour income success and occupational success. The novelty of this approach is twofold. First, we evaluate the quality of individuals' employment condition over a period of time, and not the quality of the jobs held at a point in time. Second, we account for the heterogeneity in the degree of labour market attachment by identifying different types of employment status sequences.

We implement this approach to analyse the labour market experience of young Europeans (aged 17-34) close to the start of their employment careers. The study is carried out using EU-SILC longitudinal data for 17 EU countries over the period 2006-2012.[1] The availability of longitudinal data for a large number of European countries allows us to evaluate young adults' employment quality, as well as to provide some evidence on the role of labour market institutions. More precisely, we examine how individual characteristics and labour market regulations and policies at the national level (in particular, employment protection legislation and expenditure for labour market policies) affect the probability of reaching a secure and/or successful employment condition. Our results show that there are considerable differences by gender and educational attainment in the probability of achieving a good employment quality. Stricter rules on the use of temporary contracts are associated with positive effects for young adults' employment quality, and even more so for young women, whereas a more stringent regulation of individual dismissals generates some difficulties for high-school and university graduates.

The rest of the paper is structured as follows. In section 2 we review the relevant literature. Section 3 presents our definitions of the various dimensions considered in the evaluation of youth employment

quality, the data used and some descriptive statistics. Section 4 presents the econometric model and discusses the main empirical findings. Section 5 concludes.

2. Literature review

A large body of literature has explored the complex and multidimensional concept of job-quality from a variety of perspectives: workers' own evaluation of their jobs, intrinsic quality of jobs (i.e. objective characteristics), as well as country-level evaluation of the quality of employment.[2] Although there is no consensus as to what exactly constitutes a 'good job', all studies that adopt an objective perspective on job-quality include an evaluation of earnings and (almost all of them) of job-security.[3] Earnings quality is generally captured by the level of earnings (both in absolute and relative terms), and job-security by the type of contract or the unemployment risk.

To our knowledge, all these studies focus on the features of the job held at a specific point in time. No attempt has been made to define the various dimensions of employment quality by considering the evolution of individuals' employment conditions over time. We believe that this is crucial for the analysis of young people's labour market experiences because of the increased use of temporary contracts and other non-standard job arrangements. In this paper we extend the definition of some key dimensions of employment quality by considering individuals' employment conditions over two-year windows. We focus our attention on employment security, earnings quality, and the coherence between individual's educational qualification and type of occupation. In the following subsections we review the relevant literature for these dimensions of employment quality.

2.1 Employment security

Employment security is mainly analysed by authors concerned with the consequences of labour market flexibilisation. One stream of this literature examines the effects of employment protection legislation (EPL) on indicators measuring the ease of entering or re-entering employment: transition to first job, exit rates from unemployment, and hiring rates. [4]A second stream of literature analyses the use of temporary contracts (characterised by low job security), and the transition towards permanent contracts.[5] Unfortunately, these studies do not combine information on job security with information about the duration of individual unemployment spells between different jobs, which is essential for the evaluation of the actual degree of individuals' employment security. Indeed, the idea of 'employment security' at the base of the so called 'flexicurity approach'[6] is that individuals should be able to retain employment over time, although not necessarily in the same job with the same employer.

Berloffa et al. (2016; 2018) argue that it is crucial to go beyond the simple idea of job security associated with the type of contract, and use a definition of individual employment security based on the actual duration of employment and unemployment spells. This new approach considers individual employment status trajectories, based on monthly observations, for a relatively long period of time. These trajectories are defined as sufficiently 'secure' if they encompass long-enough employment spells and short-enough unemployment spells. This approach has the advantage of allowing comparison among individuals' employment experience in labour markets characterised by very different labour market regulations (ranging from the case of no temporary contracts but employment at-will to the case of strict rules on dismissals and high flexibility in the use of temporary contracts).

2.2 Earnings quality: labour income security and labour income success

In the assessment of job quality, OECD (2014) evaluates earnings quality at the country level according to two dimensions: the level of average earnings, which provides a key benchmark for assessing their contribution to material living standards; and their distribution across the workforce, because how earnings are distributed also matters for well-being. These two dimensions can also be considered at the individual level to evaluate whether individual labour income is high enough to ensure decent material living standards (what we label 'income security'), and whether it is relatively higher than what is earned by other individuals with a similar educational level (what we label 'income success').

Two components of (labour) income security are traceable in the literature: one relates to the issue of in-work poverty, the other to the occurrence of (large) income declines.

'In-work poverty' is defined as a condition in which equivalised household disposable income is not sufficient to avoid poverty despite having worked for a sufficiently long number of hours/months. Empirical research shows that working poverty has become a serious socio-economic problem at European level (Peña-Casas and Latta, 2004; Andreß and Lohmann, 2008, Fraser et al., 2011). Most national studies focus on the relation between in-work poverty and individual characteristics (gender, age and education levels), job characteristics (temporary, part-time and self-employment) and household context (composition, number of earners and work intensity).[7] From this literature, we borrow the idea of considering the risk of poverty as a threshold to identify 'decent material living standards' for employed individuals. Since we want to assess individuals' employment quality (not individuals' overall economic well-being) we consider only labour income (excluding other types of economic resources on which individuals can rely). Therefore, the first component of our definition of (labour) income security is that young people's annual earnings should be high enough to avoid the risk of poverty.

The importance of considering income declines has been highlighted by the literature dealing with the issue of economic security at the micro level. Studies in this field usually focus on household income, and evaluate either its volatility (Rohde et al., 2014) or the frequency of large net income declines (see the 'Economic Security Index' proposed by Hacker et al., 2014).[8] The rationale for considering income reductions is loss aversion in the labour market (Crawford and Meng, 2011; Camerer et al., 1997). There is also evidence that pay reductions reduce workers' well-being through increased overall stress (Russell and McGinnity, 2014). On the basis of these studies, we assume that labour income security depends not only on earnings level but also on their evolution over time. And this is crucial for young people at the beginning of their working lives because they need to save for future needs. Therefore, the second component of our definition of (labour) income security requires that annual earnings do not fall (significantly) over time.

As already mentioned, OECD (2014) considers also the distribution of earnings across the workforce as a key dimension of earnings quality. From an individual perspective, this corresponds to evaluating the relative performance of individuals compared to their peers. Indeed, several studies show that subjective well-being is strongly affected by relative income, defined in a range of different ways (Clark, Frijters, and Shields, 2008; Dolan, Peasgood and White, 2008). Earning more than other individuals with similar educational attainments influences individuals' perception of being successful in the labour market. Therefore, we consider the relative position of individuals within the income distribution as an important dimension of employment quality. We label this dimension 'income success'.

2.3 Educational-occupational match

The educational-occupational match is not usually considered in the literature on job quality. Skill mismatch between workers' competences and what is required by their job, a widespread and increasing phenomenon in Europe, is generally explored either as a cause of youth unemployment or for its consequence on labour income (EC, 2012; ECB, 2014; ILO, 2014). Among the many types of skill mismatch, the concept of over-education (originally introduced by Freeman, 1976) has received most attention (EC, 2012: 258; Cedefop, 2010). But educational qualifications are an imperfect proxy for the skills and competences possessed by individuals because they fail to account for the dynamic process of skill gains/losses related to work experience, as well as differences across education and training systems (EC, 2012: 362). Owing to a lack of appropriate data measuring skill mismatch, most studies use educational qualifications as proxies for competences.[9]

Over-qualified workers earn less than their equally-qualified and well-matched counterparts (but more than appropriately-qualified workers doing the same job); while under-qualified workers earn

more than their equally-qualified and well-matched counterparts (but less than appropriately-qualified workers doing the same job) (Quintini, 2011: p. 17). Moreover, over-educated individuals are less satisfied than adequately educated workers with a similar educational background (Verhaest and Omey, 2009). Given the increasing importance of skill mismatch in EU countries (McGuiness, Bergin and Whelan, 2018), especially for young people, we include it among the dimensions of employment quality.

3. Data, definitions and descriptive analysis

The empirical analysis used longitudinal EU-SILC data. The structure of the dataset was a rotating panel where each household was interviewed for a maximum of four interviews. We used eight waves, the first referring to the years 2006-2009 and the last to the years 2013-2015.[10] We restricted the analysis to individuals with at least three consecutive interviews in order to increase the sample size and to use the last available wave.[11] We further restricted the sample to those individuals who had left education three to five years before the first interview, which corresponds to a sample of individuals aged 17-34.[12] This should allow us to focus on the early labour market experience of young adults, but excluding the turbulent period of school-to-work transitions (i.e. the first three years after school exit).

3.1 Definitions

Drawing on the literature, we define 'employment quality' according to four dimensions that we consider essential for successful inclusion of young people in the labour market: employment security, labour income security, labour income success and occupational success. All employment quality dimensions are defined over a two-year period because of the way in which the relevant information is collected in EU-SILC. In each interview individuals reported their employment status in each month of the preceding calendar year and the labour income earned in the previous calendar year,[13] while they were asked to report their current occupation (i.e. the occupation held in the year of the survey). By selecting individuals with three consecutive interviews in each wave, we had only a two-year overlapping period, which allows us to measure the four dimensions of employment quality over the same time span. Table 1 illustrates the composition of our sample according to the calendar years of the information used to define the four dimensions.

[INSERT TABLE 1 HERE]

The precise definitions of the four dimensions of employment quality are the following:

1) *employment security:* if a young person has experienced employment spells lasting (each) at least six months and non-employment spells lasting (each) at most three months over the 24 months of observation;[14]
2) *labour income security:* if the annual labour income in both years of observation is above the at-risk-of-poverty threshold[15], and not decreasing over time (in real terms);
3) *labour income success:* if monthly labour income[16] in both years of observation is larger than the country-year-education specific median earnings (calculated for the sample of analysis), and is not decreasing over time (in real terms);
4) *occupational success*: if, in both years of observation, a young person is not over-educated as defined by ILO (2014)[17], and does not move from an occupation category to an inferior one.

In the empirical analysis, we further grouped these dimensions into two broader ones: '*overall security',* which considers the joint occurrence of employment and income security, and '*overall success',* which captures both income and occupational success.[18] Since the group of those who do not experience security and/or success is rather heterogeneous in terms of labour market attachment, we distinguished various subgroups of insecure (or unsuccessful) individuals according to the characteristics of their employment status trajectories.[19] In particular, we identified various trajectory types according to the prevailing status and the frequency of status changes. Indeed, individuals with frequent status changes are in a different position and require different policies compared to individuals who remain for long periods in unemployment or inactivity. Therefore, we divided both groups of 'overall insecure' and 'overall unsuccessful' individuals into the following six subgroups:

1) *continuously employed*: individuals who were employed in each month, or had only a short spell in education (i.e. lasting less than six consecutive months);
2) *prevalently employed*: individuals with a long employment spell (i.e. lasting more than 12 consecutive months), a low number of changes from employment to non-employment (and vice-versa; three at most) and, overall, more months in employment than in other statuses;
3) *in&out*: individuals with at least four changes from employment to non-employment (and vice-versa);
4) *prevalently unemployed*: individuals with a long unemployment spell (i.e. lasting more than 12 consecutive months), a low number of changes from employment to other statuses (and vice-versa; three at most), more months, overall, in other statuses than in employment, and relatively more months in unemployment than in inactivity;

5) *prevalently inactive*: individuals with a long inactivity spell (i.e. lasting more than 12 consecutive months), a low number of changes from employment to other statuses (and vice-versa; three at most), more months, overall, in other statuses than in employment, and relatively more months in inactivity than in unemployment;
6) *returned to education*: individuals who returned in education for at least six months.

Thus, in our empirical analysis, we considered two distinct groupings of individuals. In the first grouping, each individual was either 'overall secure' (i.e. both employment- and income-secure) or 'overall insecure' with an employment sequence pertaining to one of the six types just described. In the second grouping, each individual was either 'overall successful' or 'overall unsuccessful' with an employment sequence pertaining to one of the six types just described. Note that, since the 'continuously employed' are employment-secure according to our definition, the 'continuously employed but insecure' individuals are employment-secure but income-insecure. Individuals in the other subgroups are all employment-insecure, although some of them could be income-secure. Individuals who are 'prevalently unemployed', 'prevalently inactive', 'in&out' or 'returned to education' are almost entirely both 'overall insecure' and 'overall unsuccessful'. Hence these subgroups are almost identical in the two groupings.

We also perform a sensitivity analysis of our findings, considering alternative definitions of employment security, labour income security, labour income success and occupational success. Results are substantially unchanged (in terms of both the magnitude of the marginal effects and their significance level), if we adopt a more restrictive definition of employment security,[20] and/or a different measure of occupational success.[21] In contrast, results change when alternative definitions of income security and income success are adopted. We comment these new results in the text, while details are provided in various endnotes.

3.2 Descriptive analysis

We considered 17 European countries, representative of four country groups: Nordic (DK, FI, SE), Continental (AT, BE, FR, NL), Mediterranean (EL, ES, IT, PT) and Central-Eastern European (CEE) (CZ, EE, HU, PL, SI, SK).[22] Tables 2, 3 and 4 present some descriptive statistics of our main variables of interest by gender, education, country group and some selected observation periods.

About 68% of young individuals in our sample experienced employment security, but only 38% enjoyed income security (Table 2). When we combined these two dimensions, about 35% of young individuals were 'overall secure'. From Table 3 (first row), we can see that more than 90% of our sample was actually participating in the labour market (only 8.6% were either 'prevalently inactive' or 'returned to education'). Therefore, the share of 'overall-secure' individuals conditional on labour

market participation is not very different from the unconditional one (38% vs. 35%). More than a half of individuals in our sample enjoyed occupational success, but only 20% have income success. Only 16% of young people are 'overall successful', combining income success with occupational success. If we exclude the 'prevalently inactive' and 'returned to education', this percentage increases only slightly to 17.5%.

[INSERT TABLE 2 and 3 HERE]

There are noticeable differences in these attainments by gender, education, country group and period of time.

Young women appear disadvantaged in all dimensions. Only 30% of them enjoy 'overall security' (i.e. employment and income security) (vs. 41% of young men), and only 10% (vs. 21%) record 'overall success' (i.e. income and occupational success). When we exclude the 'prevalently inactive' and 'returned to education', these gaps reduce but do not disappears. Conditionally on labour market participation, 35% of young women are 'overall secure' (vs. 42% of young men) and about 12% are 'overall successful' (vs. 22% of young men). These results clearly reflect the issues of occupational segregation and wage penalty for women, already remarkable at the early stage of their working lives. As is well known, in Europe women earn less than men because they are segregated into low paid sectors and less valued occupations.[23]

Education plays a crucial role in ensuring overall security: 42% of university graduates are 'overall secure', while only 15% of those with lower secondary educations are so. Differences are particularly large for income security, with the share of university graduates about three times that of low-educated young people (45% vs. 17%), while the relative difference is smaller for employment security (77% vs. 36%). Once again, these gaps reduce when we condition on labour market participation, because the share of 'prevalently inactive' is smaller among the high-educated (5% vs. 15% for the low-educated). However, the size of the gap between these educational groups remains substantial even among those who participate in the labour market (82% vs. 43% for employment security, and 48% vs. 20% for income security). Differences in 'overall success' are relatively small between high and medium-educated young people, but quite large compared to the less educated, for income success (22.6% vs. 12.1%) and occupational success (58.7% vs. 35.7%).

Differences across country groups are larger for 'overall security' than for 'overall success', with Nordic and Continental countries performing better than Mediterranean and CEE countries in both dimensions. Mediterranean countries stand out for the lowest share of young people enjoying 'overall security' (only 29% vs. around 43% in Nordic and Continental countries), and also 'overall success' (14% vs. around 20% in Nordic and Continental countries).

Finally, following the Great Recession of 2008-2009, there appears to be a temporary reduction in the share of young people enjoying 'overall security': 32% in 2010-2011 compared with 43% in 2006-2007 and 36% in 2013-2014. Both the reduction and the subsequent increase are driven mainly by the 'income security' dimension, whereas the dimension of 'employment security' shows smaller but continuously negative variations. A similar pattern emerges also for the dimension of 'overall success': 20% in 2006-2007, 13% in 2010-2014 and 16% in 2013-2014.

Table 3 helps us to understand the composition of the 'overall insecure' group. In the overall sample, 28% are 'continuously employed but insecure', i.e. they are 'employment secure' but 'income insecure'. Another 15% are 'prevalently employed', i.e. they are both 'income insecure' and 'employment insecure' despite spending a large number of months in employment. About 14% of young individuals are 'overall insecure' because they are either 'in&out' or 'prevalently unemployed'. Finally, the remaining 9% are at the margin of the labour market ('prevalently inactive'; 7.6%) or have moved out ('returned to education'; 1%).

Young women are more disadvantaged than young men, not only because they are more likely to be 'prevalently inactive' (11pp difference), but also because they are more likely to be 'prevalently employed', i.e. to experience long employment spells but also long unemployment spells (5pp difference). Indeed, if we exclude the 'prevalently inactive' and 'returned to education', the share of young women 'prevalently employed' becomes about 20% and the share of young men 12.5%.

Low-educated young individuals are much more likely than university graduates to be 'prevalently unemployed' (29% vs. 4%), 'in&out' (8% vs. 4%) and 'prevalently inactive' (15% vs. 5%). They have also the lowest share of 'continuously employed' individuals (14% vs. 31%).

Young people in Mediterranean countries appear more disadvantaged in terms of 'overall security' compared to the other country groups: only 29% vs. around 35-43%. This disadvantage is mainly related to a much higher incidence of 'prevalently unemployed' in Mediterranean countries (16%) than in the other country groups (2%-7%). CEE countries (recording 35% of young people 'overall secure'), instead, record the highest incidence of 'prevalently inactive' (11% vs. 4%-6% in the other country groups).

Following the Great Recession of 2008-2009, the share of 'overall secure' young adults reduced initially, but partially recovered in the subsequent years (from 43.1% in 2006-2007 to 31.6% in 2010-2011, to 36% in 2013-2014). These variations were counterbalanced by opposite variations in the share of young people 'continuously employed but insecure' (+7pp from 2006-2007 to 2010-2011, -4pp in the recovery). There was also a short-term increase in the shares of 'prevalently employed' and 'in&out' in 2010-2011, but the size of the increase was quite small (about +1.4pp in both cases).

Table 4 shows the distribution of 'overall successful' and 'overall unsuccessful' individuals. Differences with respect to Table 3 are concentrated in the first three columns because the remaining groups of 'in&out', 'prevalently unemployed', 'prevalently inactive' and 'returned to education' are almost the same in the two tables. The share of 'overall successful' young people is about half the share of 'overall secure' (15.7% vs. 35.5%). This difference is mainly off-set by a much larger share of young people who are 'continuously employed but unsuccessful' (44%) compared to those who are 'continuously employed but insecure' (27.6%). The difference in the shares of 'prevalently employed' is much smaller (17.4% vs. 14.6%). The same pattern emerges for all individual and country characteristics. This suggests that getting a job for a relatively long period of time is not a sufficient condition for a satisfactory integration into the labour market, neither in terms of security nor success.

[INSERT TABLE 4 HERE]

4. Econometric analysis

The objective of the econometric analysis was to examine how individual characteristics and labour market institutions (at the country level) affect the probability of an individual having a secure or successful employment condition. To this end, we estimated two multinomial logit models for the security and the success dimension, where the categories included in the two models are those reported in the columns of Tables 3 and 4.

Explanatory variables were the same in both models. They included individual characteristics (gender, educational level, age, potential experience, and household arrangement), plus country and year dummies.[24] We also included the real GDP growth rate, to control for business cycle fluctuations at the country level, and expenditure on Active Labour Market Policies (ALMPs) and indicators of the strictness of the employment protection legislation (EPL), to account for the role of labour market institutions.[25] More precisely, for ALMPs, we computed country and year specific total expenditure per unemployed as a share of per-capita GDP. For EPL, we considered two indicators referring to the strictness of EPL for regular and temporary contracts (EPL-R and EPL-T, respectively).[26] A higher value of EPL-R indicates more difficulties and higher costs for individual dismissals while a higher value of EPL-T indicates more difficulties in using temporary contracts.

In what follows, we discuss the main findings emerging from the estimation of the two multinomial logit models (presented in terms of marginal effects at the means in Tables 5 and 6). For the sake of simplicity, the main findings are grouped under three headings: the role of gender, the role of education, and the role of labour market institutions (i.e. EPL and ALMP). In order to interpret the

results, it should be borne in mind that both 'overall secure' and 'continuously employed but insecure' individuals are 'employment secure'. Therefore, the sum of the marginal effects in the first two columns of Table 5 corresponds roughly to the marginal effects for the probability of being 'employment secure'.

[INSERT TABLES 5 and 6 HERE]

i) *The role of gender*. No significant gender differences are estimated for the likelihood of being 'overall secure' (at least for women not in a couple). However, young women are significantly less likely to be 'continuously employed but insecure' compared to young men (-21pp); hence they are less likely to be 'employment secure'. This result suggests that, although young women are more likely to experience fragmented employment pathways, when they are able to enter a sufficiently continuous employment trajectory they have more chances than men of achieving income security, leading to a similar probability of being 'overall secure'. The sensitivity analysis shows that this is due to the fact that single women have less chances of getting an annual income above the poverty line than single men, but more chances of enjoying a stable labour income (when they get it).[27]

Furthermore, young women's lower probability of being 'employment secure' is counterbalanced by a higher probability of following all other trajectory types (except 'in&out'). This means that gender differences are not concentrated only on employment or inactivity, because women are also more likely to experience longer periods of unemployment in their early career. Finally, the marginal effects in Table 6 show that young women have also a lower probability of being 'overall successful' compared to young men (-20pp). The sensitivity analysis shows that this gap reduces if we increase the threshold to measure 'income success', i.e. the gender gap is smaller at the top of the income distribution, and larger in the middle.[28]

The employment condition of young women in a couple is even worse than that of single women. They are less likely to be 'employment secure' and 'overall successful' compared to single women, but they are also less likely to be 'overall secure' compared to single men. In contrast, young men in a couple perform better than single men in terms of both overall security and success, albeit with a small difference.

ii) *The role of education.* Education plays a crucial role in the achievement of both employment and overall security. Obtaining a high-school diploma raises young people's probability of being 'overall secure' by 38 percentage points. Obtaining a university degree further increases this probability by 8pp. However, university graduates have also a higher probability of being 'continuously employed but insecure' (+21pp), so that their likelihood of being 'employment secure' is about 30pp higher. This suggests that university graduates are significantly more likely to achieve employment security

compared to high-school graduates, but not much more likely to be 'overall secure' (i.e. to achieve also income security). The sensitivity analysis shows that the small advantage in terms of income security associated with tertiary education is the result of two opposing effects: university graduates have a clear advantage in terms of income levels, but they are also more likely to experience some labour income reduction over time.[29]

In regard to the other subgroups of insecure individuals, secondary education reduces the probability of being 'prevalently employed', 'prevalently unemployed' and 'prevalently inactive'. Tertiary education leads to a large additional reduction of the probability of being 'prevalently unemployed', whereas the additional reduction of the likelihood of being 'prevalently employed' and 'prevalently inactive' is very small. In any case, university graduates have a much lower likelihood of being 'in&out' compared to both low- and medium-educated individuals.

iii) *The role of labour market institutions.* As one would expect, the variables related to labour market regulations and policies (EPL-T, EPL-R and ALMP) affect more the security dimension of employment quality rather than that of success, which should depend more on the individuals' observed and unobserved characteristics. Interestingly, their effects differ by gender and educational level. The discussion that follows considers, in sequence, the role of EPL-T, EPL-R and ALMP.

First, a more stringent regulation on fixed-term contracts (i.e. a higher EPL-T index) is associated with a higher probability of being 'employment secure' for both men and women, whatever the educational level. More precisely, a higher EPL-T index raises the likelihood of being 'continuously employed but insecure', whereas it has no significant effects on the likelihood of being 'overall secure'. The sensitivity analysis shows that this negligible effect on the probability of being 'overall secure' is due to two offsetting effects: the higher is the EPL-T index, the more likely young individuals are to have income above the poverty line, but also the more likely to experience income reductions over time. And this effect is more pronounced for young women.[30]

Interestingly, a higher EPL-T is also associated with a lower probability of being 'prevalently unemployed' and a slightly higher probability of being 'prevalently inactive', for both women and men. This suggests that stricter rules on the use of temporary contracts reduce the unemployment risk of young adults, although they are associated with a small 'discouraged worker' effect, smaller for women than for men. Moreover, for women, a higher EPL-T is associated with larger probabilities of being 'employment secure' and 'overall successful'. The positive association between EPL-T and women's probability of being 'overall-successful' disappears if we restrict the definition of income success to the top quartile of the distribution (see endnote 28).

In short, stricter rules on the use of temporary contracts (i.e. a higher EPL-T index) appear to increase the chances of all young adults to follow a continuous employment pathway (and even more so for women), reducing their probability to remain unemployed and slightly increasing that of non-participation. Furthermore, a stricter regulation of temporary contracts appears to increase the likelihood of getting an annual labour income above the poverty line, although with the possibility of experiencing some (real) income reductions. For women, it is also associated with higher chances of getting a monthly income above the education-year-specific average, although not in the top quartile of the income distribution. Thus, around five years after leaving education, stricter rules on the use of temporary contracts are associated with positive net effects for all young adults, and these effects are even stronger for women.

Second, more stringent regulations on regular contracts (i.e. a higher EPL-R index) have no effects on the probability of being 'overall secure' for low-educated individuals. The sensitivity analysis reveals that two offsetting effects lie behind this result: a higher probability of having an annual labour income above the poverty line, and a higher risk of income reductions.[31] For this educational group, a higher EPL-R is associated with a different distribution of insecure trajectories, increasing the probability of being 'prevalently employed' and reducing the probability of being 'in&out', 'prevalently unemployed' and 'prevalently inactive'. For both medium- and high-educated individuals, a higher EPL-R index is associated with a lower probability of being 'overall secure' and a higher probability of being 'prevalently employed', with an additional higher probability of being 'continuously employed but insecure' for high-school graduates. This suggests that stricter rules on individual dismissals increase the risk of following more fragmented employment pathways for medium and high-educated individuals, reducing their likelihood of being 'employment-secure'. Moreover, they seem to reduce the chances of being 'income secure' for both educational groups. Indeed, the sensitivity analysis reveals that a higher EPL-R is associated with a higher risk of income reductions over time for both groups, and also with a higher risk of having annual incomes below the poverty line for university graduates. [32]

For women, a higher EPL-R has no additional effects on overall security, whereas it has an additional positive effect on their likelihood of being 'continuously employed but insecure' (i.e. it slightly improves their chances of being 'employment secure'). Stricter rules on layoffs also increase women's probability of being 'overall successful' (mainly by decreasing the likelihood of following fragmented trajectory types). This positive association between EPL-R and women's probability of being 'overall-successful' disappears with the more restrictive definition of income success (see endnote 28). This suggests that the regulation of individual dismissals does not affect women's chances of being at the top of the income distribution.

In short, more stringent regulations on individual dismissals are associated with negative effects for medium- and high-educated individuals, increasing their risk of following more fragmented employment pathways (somehow less so for women), and of experiencing income reductions over time. For university graduates there is also an increase in the probability of having an annual income below the poverty line. For low-educated individuals, there are some positive effects in terms of 'better' employment pathways (although with no effect on the likelihood of becoming 'employment secure'), and in terms of income levels (with higher chances of getting annual incomes above the poverty line), but there is also a higher probability of experiencing income reductions over time. For women, a higher EPL-R is associated with additional slightly higher chances of being 'employment secure' compared to men, and with a more polarized distribution in terms of annual incomes (higher chances of having annual incomes either below the poverty line or above the average, although not in the top quartile of the income distribution).

Finally, a higher expenditure on ALMPs is associated with a lower probability of being 'prevalently unemployed' and 'overall-secure', and a higher probability of being 'continuously employed but insecure' for low-educated individuals. For medium- and high-educated individuals the effects go in the same direction, but they are much less pronounced and sometimes not significant. In contrast, these effects are more pronounced for women. Also, a higher expenditure on ALMP is associated with a lower risk for women of being 'prevalently inactive'. Thus, a higher ALMP expenditure improves the chances of entering the labour market and having a stable employment pathway, particularly for low-educated individuals, but it may have some negative effects in terms of income security. Results of the sensitivity analysis suggest that, for low-educated individuals, a higher ALMP expenditure is associated with a higher probability of receiving an annual income below the poverty line when 'continuously employed', and with a lower probability of experiencing (small) income reductions over time.[33]

In interpreting these results, it is important to keep in mind that the magnitude of the effects of ALMP expenditure is relatively small. In our sample, the mean of ALMP expenditure per unemployed as a share of per capita GDP is 0.11, which corresponds to about 2,200 euros for a per capita GDP of 20,000 euros. One standard deviation increase in this share (which corresponds to an increase of about 1,500 euros per unemployed) is associated with a 4pp increase in the probability of being 'employment secure' for low-educated individuals. This 4pp results from a 11pp increase in the probability of being 'continuously employed but insecure' and a 7pp decrease in the probability of being 'overall secure'. ALMP expenditure has almost no effects for 'overall success', but it increases the probability of being 'continuously employed but unsuccessful', except for university graduates.

In short, a higher expenditure on ALMPs improves the chances of entering the labour market and having a stable employment pathway for low-educated women and men, but it may have some negative effects in terms of income security, increasing the probability of receiving a low income (below the poverty line in at least one year). For low- and medium-educated individuals who follow a continuous employment pathway, it is also associated with a lower likelihood of being 'income successful' (i.e. to earn a monthly income above the average). In any case, the magnitude of the effects associated with an increase in ALMP expenditure is relatively small.

5. Conclusions

A new approach to the evaluation of the 'quality' of employment has been presented in this paper, the purpose being to analyse the quality of young people's labour market experiences in Europe. The quality of employment is usually defined according to the features of the jobs held by workers at a specific point in time. But labour markets are increasingly characterized by young workers who frequently move between jobs, with possible unemployment spells in-between. Thus, in order to evaluate young workers' well-being, we need new concepts of employment quality that refer to individuals' employment conditions over a period of time, instead of the quality of jobs held at a particular point in time. To this end, we have developed a new definition of employment quality based on the evaluation of various dimensions of individuals' labour market experiences over a relatively long period of time. In particular, we have considered four dimensions of employment quality: employment security, labour income security, labour income success and occupational success. The novelty of this approach is twofold. First, the quality of individuals' employment condition is evaluated over a period of time, instead of the quality of the jobs held at a point in time. Second, the heterogeneity in the degree of labour market attachment is taken into account by identifying different types of employment status sequences.

We have used EU-SILC longitudinal data to analyse how individual and labour market characteristics affect the employment quality of young Europeans (aged 17-34) around five years after leaving full-time education. Our results show that there are considerable differences by gender and educational attainment on the probability of achieving good employment quality as well as experiencing better employment status trajectories. Women, compared to men, are considerably less likely to be 'employment secure' (i.e. they are considerably more likely to experience career interruptions and have more fragmented career pathways). Among those who follow a stable employment trajectory, women are less likely to earn an annual income above the poverty line, but also less likely to experience income reductions over time. As a consequence, if we define income security according to both the level and the variability of labour incomes, the chances of achieving overall security are

the same for men and women. In contrast, women always have less chances of being successful (in terms of both income and occupational success), even when they manage to remain continuously employed. This gap reduces if we restrict the definition of income success to the top quartile of the distribution.

Education plays a crucial role in ensuring a good employment quality in terms of employment and income security. Obtaining a high-school diploma is decisive for avoiding the risk of being continuously unemployed/inactive, and avoiding (income) poverty. Obtaining a university degree contributes to reducing the risk of following fragmented employment trajectories. However, conditionally on being continuously employed, it does not increase the chances of achieving income security, compared to high-school graduates. This is because university graduates have a clear advantage in terms of income levels, but they are also more likely to experience some income reductions over time.

Labour market institutions appear to be associated most with the security dimension of employment quality rather than with the success dimension, which is more highly correlated with individual observed and unobserved characteristics. Stricter rules on the use of temporary contracts are associated with positive net effects for young adults, and even more so for young women. They tend to reduce the probability of having fragmented trajectories, making it easier to reach employment security around five years after leaving education, and to have an annual income above the poverty line. However, they also tend to slightly increase the probability of inactivity and of experiencing some (real) income reductions over time. For women, they are associated with additional positive effects in terms of income success, increasing their chances of getting a monthly income above the average, although not in the top quartile of the income distribution.

A more stringent regulation of individual dismissals (i.e. a higher EPL-R) generates some difficulties in gaining employment and overall security for high-school and university graduates, but it is associated with positive effects for low-educated individuals. Highly educated young adults are more likely to follow 'better' employment pathways (although remaining 'employment insecure'), and to get annual incomes above the poverty line (although with some risk of variability). For young women, a higher EPL-R is associated with additional slightly higher chances of being employment secure compared to men, albeit with a more polarized distribution in terms of annual incomes.

ALMP expenditure appears to have positive effects, particularly for low-educated individuals and women. It does so by increasing the likelihood of being employment secure and by reducing the probability of being prevalently unemployed or inactive. It may have also some negative effects in terms of income, mainly for low- and medium-educated individuals, by increasing their probability

of being insecure and unsuccessful when following a continuous employment trajectory. However, the magnitude of these effects is relatively small.

From a policy perspective, our findings suggest, first, that there is still a pressing need to enhance women's chances of remaining continuously in employment and moving up in the labour income distribution. Indeed, the well-known gender differences in labour market outcomes (career interruptions, job segregation, wage penalty, etc.) are already remarkable in the early stage of women's working lives. Second, loosening the rules on the use of temporary contracts does not appear to be an effective policy tool with which to improve youth employment outcomes. In fact, it reduces the chances of achieving a sufficiently secure employment condition around five years after having left education for all young people, and even more so for women. Third, both stricter rules on the use of temporary contracts and a higher ALMP expenditure could improve the chances of low educated young adults to follow a stable employment pathway. However, tightening the rules on temporary contracts would also improve the employment quality of medium- and high-educated individuals, with more pronounced favourable effects for women. Fourth, relaxing the rules on individual dismissals could improve the quality of the employment pathway for medium- and high-educated individuals and reduce the 'polarization' of women's labour income distribution. But it could have some negative effects for low-educated individuals, in terms of both income and employment pathways. All things considered, our findings support the idea that young adults'employment quality in Europe could benefit from a reduction in contractual dualism in labour markets.

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Table 1. Distribution of our sample by EU-SILC wave and the calendar years to which the observation period refers

Wave	Sample size	Observation period								
1	**2,101**	**2006**	**2007**							
2	**2,130**		**2007**	**2008**						
3	**2,230**			**2008**	**2009**					
4	**2,375**				**2009**	**2010**				
5	**2,154**					**2010**	**2011**			
6	**2,364**						**2011**	**2012**		
7	**2,096**							**2012**	**2013**	
8	**2,256**								**2013**	**2014**
Total	**17,706**									

Notes: The sample includes: i) individuals with three consecutive interviews; ii) individuals who left education three to five years before the first interview and iii) individuals with no missing data for all variables used in the econometric analysis.
Source: Authors' own calculations based on 2006-2015 EU-SILC longitudinal data.

Table 2. Descriptive statistics of employment quality for young people (aged 17-34) around 5 years after leaving education in 17 European countries (percentages)

	SECURE EMPLOYMENT CONDITION			SUCCESSFUL EMPLOYMENT CONDITION			
	Employment Secure	Income secure	**Overall SECURE** (Employment and income secure)	Income successful	Occupational successful	**Overall SUCCESSFUL** (Income and Occupational successful)	**No. Obs.**
All sample	68.4	38.0	**35.5**	19.7	56.4	**15.7**	**17,706**
Gender							
Men	75.2	43.2	**40.9**	26.5	62.0	**21.3**	**8,882**
Women	61.6	32.6	**30.0**	12.9	50.7	**10.1**	**8,824**
Education							
Low	35.9	16.7	**15.0**	12.1	35.7	**9.4**	**1,405**
Medium	66.1	35.5	**33.3**	18.3	57.7	**15.1**	**8,575**
High	76.9	44.5	**41.6**	22.6	58.7	**17.6**	**7,726**
Country group							
Nordic	74.7	46.3	**42.9**	24.2	65.3	**20.3**	**1,407**
Continental	76.1	44.5	**41.9**	23.7	63.2	**19.3**	**3,264**
Mediterranean	61.3	32.6	**29.5**	18.0	50.7	**13.7**	**4,621**
CEE	68.3	37.0	**35.0**	18.4	55.4	**14.7**	**8,414**
Observation period*							
2006-2007	71.3	45.8	**43.1**	23.9	60.7	**19.6**	**2,101**
2010-2011	67.5	34.3	**31.6**	17.1	52.2	**12.6**	**2,154**
2013-2014	66.8	38.4	36.0	19.5	56.6	**16.1**	**2,256**
No. Observations	**12,117**	**6,720**	**6,277**	**3,490**	**9,985**	**2,788**	**-**

Notes: The percentages in each row are calculated with respect to the row-specific sub-sample (last column). Education: Low: lower secondary education; Medium: upper secondary education; High: tertiary education. Country groups: Nordic: DK, FI, SE; Continental: AT, BE, FR, NL; Mediterranean: EL, ES, IT, PT; CEE: CZ, EE, HU, PL, SI, SK (for acronyms, see footnote 1).

* For simplicity we present descriptive statistics for only three waves (out of eight), although the econometric analysis was carried out on the entire sample, including all eight waves described in Table 1.

Source: Authors' own calculations based on 2006-2015 EU-SILC longitudinal data.

Table 3. Distribution of overall secure and insecure young people (17-34; around 5 years after leaving education) by various characteristics (17 European countries, percentages)

	Overall SECURE (Employment and income secure)	**Overall INSECURE** Employment and/or income insecure						**TOT**
		Continuously employed but insecure	Prevalently employed	In&Out	Prevalently unemployed	Prevalently inactive	Returned to education	
All sample	35.5	27.6	14.6	4.9	8.9	7.6	1.0	**100**
Gender								
Men	40.9	29.7	12.1	4.9	9.4	2.1	0.9	**100**
Women	30.0	25.4	17.0	4.9	8.5	13.1	1.1	**100**
Education								
Low	15.0	14.1	17.7	8.2	29.1	14.9	1.0	**100**
Medium	33.3	26.8	15.4	5.5	10.0	8.5	0.5	**100**
High	41.6	30.9	13.0	3.7	4.1	5.2	1.5	**100**
Country group								
Nordic	42.9	26.1	15.3	7.2	1.2	6.2	1.1	**100**
Continental	41.9	28.8	13.4	5.6	5.4	3.8	1.0	**100**
Mediterranean	29.5	25.7	16.2	6.4	16.3	4.0	2.0	**100**
CEE	35.0	28.4	14.0	3.4	7.5	11.3	0.4	**100**
Observation period*								
2006-2007	43.1	23.1	13.6	3.7	8.1	7.5	1.0	**100**
2010-2011	31.6	30.6	15.0	5.2	9.1	7.3	1.3	**100**
2013-2014	36.0	26.6	13.0	5.0	11.8	6.6	1.0	**100**
No. Obs.	**6,277**	**4,883**	**2,577**	**871**	**1,578**	**1,344**	**176**	**17,706**

Notes: Education: Low: lower secondary education; Medium: upper secondary education; High: tertiary education. Country groups: Nordic: DK, FI, SE; Continental: AT, BE, FR, NL; Mediterranean: EL, ES, IT, PT; CEE: CZ, EE, HU, PL, SI, SK (for acronyms, see footnote 1).

* For simplicity we present descriptive statistics for only three waves (out of eight), although the econometric analysis was carried out on the entire sample, including all eight waves described in Table 1.

Source: Authors' own calculations based on 2006-2015 EU-SILC longitudinal data.

Table 4. Distribution of overall successful and unsuccessful young people (17-34; around 5 years after leaving education) by various characteristics (17 European countries, percentages)

	Overall SUCCESSFUL (Income and occupational successful)	OVERALL UNSUCCESSFUL Income and/or occupational unsuccessful						TOT
		Continuously employed but unsuccessful	Prevalently employed	In& Out	Prevalently unemployed	Prevalently inactive	Returned to education	
All sample	15.7	44.3	17.4	5.0	8.9	7.6	1.0	**100**
Gender								
Men	21.3	46.4	15.0	5.0	9.4	2.1	0.9	**100**
Women	10.1	42.2	19.9	5.1	8.5	13.1	1.1	**100**
Education								
Low	9.4	17.6	20.1	8.0	29.1	14.9	0.9	**100**
Medium	15.1	41.9	18.4	5.6	10.0	8.5	0.5	**100**
High	17.6	51.8	15.9	3.9	4.1	5.2	1.6	**100**
Country group								
Nordic	20.3	45.1	18.4	7.7	1.2	6.2	1.2	**100**
Continental	19.3	48.6	16.2	5.7	5.4	3.8	1.1	**100**
Mediterranean	13.7	39.0	18.5	6.5	16.3	4.0	2.0	**100**
CEE	14.7	45.4	17.1	3.5	7.5	11.3	0.4	**100**
Observation period*								
2006-2007	19.6	42.8	17.2	3.8	8.1	7.5	1.0	**100**
2010-2011	12.6	45.9	18.5	5.3	9.1	7.3	1.3	**100**
2013-2014	16.1	43.1	16.4	5.0	11.8	6.6	1.0	**100**
No. Obs.	**2,788**	**7,843**	**3,087**	**889**	**1,578**	**1,344**	**177**	**17,706**

Notes: Education: Low: lower secondary education; Medium: upper secondary education; High: tertiary education. Country groups: Nordic: DK, FI, SE; Continental: AT, BE, FR, NL; Mediterranean: EL, ES, IT, PT; CEE: CZ, EE, HU, PL, SI, SK (for acronyms, see footnote 1).

* For simplicity we present descriptive statistics for only three waves (out of eight), although the econometric analysis was carried out on the entire sample, including all eight waves described in Table 1.

Source: Authors' own calculations based on 2006-2015 EU-SILC longitudinal data.

Table 5. Predicted probabilities and marginal effects at the means for the Security dimension of employment quality (Multinomial Logit Model)

	OVERALL SECURE (Employment and income secure)		OVERALL INSECURE Employment and/or income insecure											
			Continuously employed but insecure		Prevalently employed		In&out		Prevalently unemployed		Prevalently inactive		Returned to Education	
Predicted probabilities:	Pr	St.Err.	Pr	St.Err.	Pr	St.Err.	Pr	St.Err.	Pr	St.Err.	Pr	St.Err.	Pr	St.Err.
	0.388	0.004	0.312	0.004	0.164	0.003	0.047	0.001	0.053	0.002	0.027	0.001	0.005	0.001
Marginal effects:	dy/dx	St.Err.	dy/dx	St.Err.	dy/dx	St.Err.	dy/dx	St.Err.	dy/dx	St.Err.	**dy/dx**	St.Err.	dy/dx	St.Err.
Women	-0.04	0.05	-0.21***	0.05	0.11***	0.04	0.02	0.02	0.04**	0.02	0.06***	0.02	0.02***	0.01
Women in a couple	-0.13***	0.01	-0.03**	0.01	0.08***	0.01	0.00	0.01	0.02**	0.01	0.06***	0.00	-0.00*	0.00
Men in a couple	0.03**	0.01	0.04***	0.01	-0.01	0.01	-0.01	0.01	-0.02***	0.01	-0.03***	0.01	-0.00	0.00
Living in the family of origin	-0.03**	0.01	-0.03**	0.01	0.01	0.01	0.00	0.01	0.03***	0.01	0.01**	0.00	0.00***	0.00
Medium education	0.38***	0.10	0.04	0.09	-0.15**	0.06	-0.02	0.03	-0.18***	0.02	-0.06***	0.02	-0.00	0.01
High education	0.46***	0.11	0.21**	0.10	-0.18***	0.07	-0.11***	0.04	-0.30***	0.03	-0.07***	0.02	-0.02**	0.01
Age	0.01	0.00	0.00	0.00	-0.01**	0.00	-0.00**	0.00	0.00**	0.00	-0.00	0.00	-0.00	0.00
Potential labour experience	0.00***	0.00	0.01***	0.00	0.00	0.00	-0.00	0.00	-0.01***	0.00	-0.00***	0.00	-0.00***	0.00
EPL-T	-0.05	0.03	0.09***	0.03	0.01	0.02	-0.02	0.01	-0.04***	0.01	0.02**	0.01	-0.01**	0.00
EPL-T * medium education	-0.02	0.03	-0.02	0.03	0.01	0.02	0.01	0.01	0.01**	0.01	0.00	0.00	0.00*	0.00
EPL-T * high education	0.02	0.03	-0.03	0.02	-0.01	0.02	0.01	0.01	0.01**	0.01	-0.00	0.00	0.01**	0.00
EPL-T * women	0.01	0.01	0.03***	0.01	-0.03***	0.01	0.00	0.00	-0.00	0.00	-0.01**	0.00	-0.00	0.00
EPL-R	0.03	0.04	0.01	0.04	0.05*	0.03	-0.04**	0.02	-0.05***	0.01	-0.02***	0.01	0.01	0.01
EPL-R * medium education	-0.09***	0.03	0.05**	0.02	0.03*	0.02	-0.00	0.01	0.02***	0.01	0.00	0.01	-0.00	0.00
EPL-R * high education	-0.13***	0.03	0.01	0.03	0.05***	0.02	0.03**	0.01	0.05***	0.01	-0.00	0.01	0.00	0.00
EPL-R * women	-0.01	0.02	0.03**	0.01	-0.01	0.01	-0.01	0.01	-0.01	0.01	-0.00	0.01	-0.01***	0.00
ALMPs	-0.83**	0.36	1.28***	0.32	0.06	0.22	-0.15	0.10	-0.32***	0.09	0.00	0.06	-0.05*	0.03
ALMPs * medium education	0.45	0.34	-0.81***	0.29	0.08	0.20	0.03	0.08	0.14*	0.08	0.08	0.05	0.04	0.03
ALMPs * high education	0.59*	0.34	-1.11***	0.29	0.11	0.20	0.07	0.09	0.17*	0.10	0.09*	0.06	0.07***	0.03
ALMPs * women	-0.20*	0.11	0.35***	0.10	0.01	0.09	0.04	0.05	-0.04	0.06	-0.14***	0.05	-0.02*	0.01
No. observations	**6,277**		**4,883**		**2,577**		**871**		**1,578**		**1,344**		**176**	

Notes. Low education (reference category) includes ISCED levels from 0 to 2 (i.e. lower secondary education at most); medium education ISCED levels 3 and 4 (upper secondary education at most); high education ISCED levels 5 and 6 (i.e. tertiary education). EPL-T: Employment Protection Legislation on Temporary contracts. EPL-R: Employment Protection Legislation on Regular contracts. ALMPs: Active Labour Market Policies expressed as expenditure per unemployed as a share of per–capita GDP. Other variables included in the regressions are GDP growth rate, and country and year fixed effects. ***p<0.01,**p<0.05,*p<0.10.

Source: Author's estimates based on 2006-2015 EU-SILC longitudinal data.

Table 6. Predicted probabilities and marginal effects at the means for the Success dimension of employment quality (Multinomial Logit Model)

	OVERALL SUCCESSFUL (Income and occupational successful)		OVERALL SUCCESSFUL Income and/or occupational unsuccessful											
			Continuously employed but unsuccessful		Prevalently employed		In&out		Prevalently unemployed		Prevalently inactive		Returned to Education	
Predicted probabilities:	Pr	St.Err.	Pr	St.Err.	Pr	St.Err.	Pr	St.Err.	Pr	St.Err.	Pr	St.Err.	Pr	St.Err.
	0.160	0.004	0.502	0.004	0.200	0.003	0.049	0.001	0.053	0.002	0.027	0.001	0.005	0.001
Marginal effects:	dy/dx	St.Err.	dy/dx	St.Err.	dy/dx	St.Err.	dy/dx	St.Err.	dy/dx	St.Err.	**dy/dx**	St.Err.	dy/dx	St.Err.
Women	-0.20***	0.04	-0.11**	0.05	0.15***	0.04	0.02	0.02	0.04**	0.02	0.07***	0.02	0.03***	0.01
Women in a couple	-0.08***	0.01	-0.10***	0.01	0.10***	0.01	-0.00	0.01	0.01**	0.01	0.06***	0.00	-0.00*	0.00
Men in a couple	0.02*	0.01	0.07***	0.02	-0.02	0.01	-0.01**	0.01	-0.02***	0.01	-0.03***	0.01	-0.00	0.00
Living in the family of origin	-0.06***	0.01	-0.00	0.01	0.02**	0.01	-0.00	0.01	0.03***	0.01	0.01**	0.00	0.00***	0.00
Medium education	0.04	0.07	0.34***	0.10	-0.11	0.07	-0.02	0.03	-0.18***	0.02	-0.06***	0.02	-0.01	0.01
High education	0.08	0.08	0.54***	0.10	-0.13*	0.08	-0.11***	0.04	-0.30***	0.03	-0.07***	0.02	-0.02**	0.01
Age	0.01***	0.00	0.01	0.00	-0.01***	0.00	-0.00***	0.00	0.00**	0.00	-0.00	0.00	-0.00	0.00
Potential labour experience	0.00	0.00	0.01***	0.00	-0.00	0.00	-0.00	0.00	-0.01***	0.00	-0.00***	0.00	-0.00**	0.00
EPL-T	-0.02	0.02	0.07**	0.03	-0.01	0.03	-0.02	0.01	-0.04***	0.01	0.02***	0.01	-0.01**	0.00
EPL-T * medium education	-0.00	0.02	-0.05*	0.03	0.02	0.02	0.01	0.01	0.01**	0.01	0.00	0.00	0.00*	0.00
EPL-T * high education	-0.01	0.02	-0.02	0.03	-0.00	0.02	0.01	0.01	0.02**	0.01	-0.00	0.00	0.01**	0.00
EPL-T * women	0.02***	0.01	0.03***	0.01	-0.04***	0.01	-0.00	0.00	-0.00	0.00	-0.01**	0.00	-0.00	0.00
EPL-R	0.02	0.03	0.02	0.04	0.05	0.03	-0.04**	0.02	-0.05***	0.01	-0.02***	0.01	0.01	0.01
EPL-R * medium education	-0.01	0.02	-0.01	0.03	0.00	0.02	-0.01	0.01	0.02***	0.01	0.00	0.01	-0.00	0.00
EPL-R * high education	-0.03	0.02	-0.07**	0.03	0.02	0.02	0.02**	0.01	0.05***	0.01	-0.00	0.01	0.00	0.00
EPL-R * women	0.03**	0.01	0.01	0.02	-0.01	0.01	-0.01	0.01	-0.01	0.01	-0.00	0.01	-0.01***	0.00
ALMPs	0.11	0.23	0.72**	0.33	-0.28	0.24	-0.14	0.10	-0.35***	0.09	-0.01	0.06	-0.05	0.03
ALMPs * medium education	-0.30	0.21	-0.37	0.31	0.33	0.21	0.04	0.08	0.16**	0.08	0.09*	0.05	0.05	0.03
ALMPs * high education	-0.17	0.21	-0.70**	0.31	0.37*	0.22	0.12	0.09	0.19**	0.10	0.11*	0.06	0.09***	0.03
ALMPs * women	0.01	0.07	0.32***	0.11	-0.14	0.10	0.03	0.05	-0.05	0.06	-0.15***	0.05	-0.03***	0.01
No. observations	**2,788**		**7,843**		**3,087**		**889**		**1,578**		**1,344**		**177**	

Notes: see Table 5. *** p<0.01,**p<0.05,*p<0.10. Source: Author's estimates based on 2006-2015 EU-SILC longitudinal data.

Endnotes

[1] Austria (AT), Belgium (BE), the Check Republic (CZ), Denmark (DK), Estonia (EE), Greece (EL), Spain (ES), Finland (FI), France (FR), Hungary (HU), Italy (IT), the Netherlands (NL), Poland (PL), Portugal (PT), Sweden (SE), Slovenia (SI), Slovakia (SK).

[2] See Burchell et al. (2014) for a review of the development of concepts related to the quality of employment. See EC (2014a, Annex 1, pp. 172-179) for a brief review of objective definitions of job-quality at the country level developed by various international organisations. Examples include the European Job Quality Index (European Parliament, 2009); EMCO indicators for job quality (EC 2014a); Quality of Work and Employment (Eurofound 2002; 2012); Job Quality Framework (OECD 2014); finally, Decent Work Agenda (ILO 2012).

[3] Other dimensions considered in the literature include the working environment (nature and content of work performed, health and safety, working-time arrangements and workplace relationships), education and training, work-life balance and gender equality (Burchell et al., 2014; OECD, 2014). See Muñoz de Bustillo et al. (2011) for a critical survey of job-quality indicators.

[4] Generally, results provide evidence of a negative relationship between EPL index and the inflow rate into unemployment, the rate of exit from unemployment and the hiring rate (more difficulties in finding new jobs), the speed of entry or re-entry into employment (Gomez-Salvador et al., 2004; OECD, 2004; Scherer, 2005; Wolbers, 2007; Kugler and Pica, 2008; Mills and Prag, 2014).

[5] These studies show that in some countries – such as Germany, Austria, UK, Sweden and the Netherlands – temporary contracts act as stepping stones to more stable and better paid jobs (EC, 2010: 140-142; de Graaf-Zijl et al., 2011), but in other countries – such as Spain, Italy, Greece but also France and Poland – they act as 'traps' (D'Addio and Rosholm, 2005; Berloffa et al., 2014; Givord and Wilner, 2015).

[6] Flexicurity is an integrated strategy for enhancing, at the same time, flexibility and security in the labour market. It attempts to reconcile employers' need for a flexible workforce with workers' need for employment security (i.e. confidence that they will not face long periods of unemployment). The underlying idea is to reduce EPL and increase the efficiency of ALMP, combined with adequate unemployment benefits. See Wilthagen and Tros (2004); Muffels and Luijkx (2008); EC (2014c).

[7] See Crettaz (2011), Eurofound (2010), Frazer and Marlier (2010) for a review of the literature.

[8] Other studies focus on some combination of income and wealth (Lusardi et al., 2011, Bossert and D'Ambrosio, 2013) or only wealth (D'Ambrosio and Rohde, 2014).

[9] Three alternative methods of measuring vertical mismatch have been used in the literature: the job evaluation method based on information included in formal job descriptions; the worker self-assessment method (that relies on the subjective response of workers about educational requirements of their job); and the empirical method (that calculates vertical mismatch from the distribution of schooling levels across a given occupation). Each method has its strengths and weaknesses. The different approaches used to estimate the incidence of over-qualification tend to yield broadly consistent conclusions (EC 2012: p. 361; Quintini (2011: p. 14).

[10] Data for 2016, fourth year of the last wave, are not yet available.

[11] If we consider individuals with four consecutive interviews, we lose about 40% of observations (from 783,175 observations to 496,729 observations).

[12] In selecting the sample, we had to resort to data imputation because we did not have information on the year when the highest level of education was attained. Therefore, we used the official age at which each ISCED level is supposed to be completed (EC 2014b). For low-educated individuals, this age is 14 in some countries.

[13] Exceptions are UK and IE where the income reference period refers to the 12 months preceding the interview.

[14] Berloffa et al. (2016) conduct detailed discussion of the difference between this definition of employment security and a definition of job-security based on the type of contract or on the permanence in the same job over time. The contract-based definition considers as job-secure individuals with a permanent contract and insecure those with a temporary contract. The definition of job-security based on the permanence in the job over time considers as job-secure individuals those employed for two consecutive years with no change in the job or a voluntary change to take up a better job. Results highlights that around 40% of the persons considered job-insecure are in fact employment-secure, i.e. they were able to re-enter the labour market rapidly.

[15] This threshold corresponds to 60% of the national median equivalised disposable income after social transfers.

[16] Monthly earnings are computed by dividing the declared annual labour income by the number of months worked during the income reference period

[17] 'Over-education' or 'under-education' means that workers have more or less education than that required by their job. ILO (2014) measure of education-occupation mismatch is based on a correspondence between the ISCED and ISCO classifications. Workers in a particular occupational group who have the assigned level of education are considered well matched, those with a higher (lower) level of education are considered overeducated (undereducated).

[18] Few authors have analysed employment and income security jointly (Van Oorschot and Chung, 2015; Halleröd et al., 2015). Halleröd et al. (2015) investigate whether 'working poor' is a low-wage or an unemployment problem; they find that in Europe in-work poverty is an unemployment problem among the self-employed and individuals moving in and out of employment. Van Oorschot and Chung (2015) look at perceived insecurity, using ESS; they show that perceived employment insecurity and income insecurity only partly overlap: the correlation between feelings of employment insecurity and feelings of income insecurity is 0.42 at the individual level.

[19] In order to minimize the degree of heterogeneity we exploit all possible information for the identification of these subgroups of insecure or/and unsuccessful individuals by considering individual employment sequences over all the 36 available months. We exclude those individuals who were inactive during the whole period of observation (less than 3% of our sample, mainly women).

[20] We restricted the definition of employment security to those individuals who had employment spells of at least 10 months and unemployment spells no longer than 2 months.

[21] For the occupational success, we evaluated over-education using a statistical approach. We considered 'over-educated' those individuals whose years of schooling were above the mean plus one standard deviation of the years of schooling for their occupational category in our sample, maintaining the additional requirement of not moving to an inferior occupational category over the observation period.

[22] IE and UK are excluded because the definition of the income reference period is different from that of the other countries, and income is an important dimension of our subsequent analysis. BG, CY, LT, LV, MT, RO are excluded because the policy variables that we use in the econometric analysis are not available. IS, LU and NO are excluded because of the small sample size (fewer than 100 observations)

[23] The disadvantage suffered by women in the labour market are well documented in the annual reports produced by the European Commission on gender equality. See https://ec.europa.eu/info/policies/justice-and-fundamental-rights/gender-equality_en

[24] Potential experience is measured as the difference between age and the age at which the individual began his/her first regular job. Household arrangements include indicators for whether individuals are still living in their family of origin or independently, and for whether they are single or in a couple. All individual characteristics and year dummies refer to the first year of each individual's observation period.

[25] We do not include expenditure for passive labour market policies for two reasons. First, our definitions of income security and income success refer only to earnings and not to other sources of income, such as unemployment benefits. Hence, the role of passive labour market policies should be less relevant than that of active labour market policies. Second, as shown in Berloffa et al. (2016), there is a high correlation between these two policy variables, and therefore we cannot include both variables in the analysis.

[26] Data on ALMP expenditure are taken from the Eurostat LMP database. It includes expenditure on all programmes aimed at increasing the employment opportunities of job seekers and at improving the matching between vacancies and unemployed workers. EPL indicators are taken from the OECD Employment database on Labour market policies and institutions. Both EPL-R and EPL-T indicators range from 0 to 6, and are weighted averages of sub-indicators of employment regulation. The EPL-R indicator accounts for procedural inconveniences (notification procedures and delays involved before notice can start), length of notice periods of dismissal and amount of severance pay for no-fault individual dismissal, other difficulties of dismissal (definition of justified or unfair dismissal, length of trial period, compensation following unfair dismissal, and possibility of reinstatement following unfair dismissal). The EPL-T indicator accounts for the number of valid cases in which fixed-term contracts can be used, the maximum number of renewals and the maximum cumulated duration of successive fixed-term contracts, the types of work for which temporary work agency employment (TWA) is legal, restrictions on the number of renewals of TWA assignment and the maximum cumulated duration of TWA assignments. See OECD (2013) for more details. EPL indicators and ALMP expenditure refer to the year preceding each individual's observation period. GDP growth rates refer to the first year of the observation period.

[27] If we consider 'income secure' those young individuals with annual income in both years above the poverty line independently of whether it varies over time, single women have a much *lower* probability of being 'overall-secure' than single men (-23pp), and the same likelihood of being 'continuously employed but insecure'. This implies that single women, compared to men, are less likely to have income above the poverty line. Since, with the original definition, young women have the same chances of being 'overall secure', it follows that they are also less likely to experience income reductions over time.

[28] The gender gap in the probability of being 'overall successful' reduces from -20pp to -8pp if we restrict the definition of income success to those young people whose monthly income is above the third quartile of the corresponding country-year-education specific distribution in both years (independently of whether it is increasing or decreasing over time).

[29] If we adopt a less restrictive definition of income security (see endnote 27), high-educated individuals have a higher probability of being 'overall secure' (+ 65pp), but there is no significant effect on the probability of being 'continuously employed but insecure'. This means that tertiary education gives a clear advantage in terms of having an annual income above the poverty line, but it may add some limited variability (making it more likely to experience some income reductions over time).

[30] With the less restrictive definition of income security (see endnote 27), a higher EPL-T is associated with higher chances of being 'overall secure', and with slightly lower chances of being 'continuously employed but insecure'. Hence, the higher the EPL-T index, the more likely individuals are to have income above the poverty line, but also more likely to experience income reductions over time. This type of effect is more pronounced for women.

[31] With the less restrictive definition of income security (see endnote 27), a higher EPL-R is associated with a higher probability of being 'overall secure' for low-educated individuals.

[32] With the less restrictive definition of income security (see endnote 27), a higher EPL-R has the same type of effects than with the original definition for university graduates, whereas there are no more effects for medium educated individuals.

[33] With the more restrictive definition of income security (see endnote 27), a higher ALMP expenditure has no effects on the probability of being 'overall secure', while there is still a positive effect on the probability of being 'continuously employed but insecure', particularly for low-educated individuals.