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HOW CAN YOUNG PEOPLE'S EMPLOYMENT QUALITY BE ASSESSED DYNAMICALLY?

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8.1. INTRODUCTION

The objective of this chapter is to present a dynamic approach that enables assessment of various aspects of youth labor market performance over a relatively long period of time. Standard analyses of labor market performance are usually based on indicators aimed at capturing young people's condition in the labor market at a single point in time (employment, unemployment, or inactivity rates; see Hadjivassiliou et al., this volume) or on estimations of the conditional probabilities of entering or leaving a certain status (see Flek, Hála, and Mysíková, this volume). More recently, some authors have turned their attention to the analysis of entire employment status trajectories. In this chapter, we argue that it is important—in order to be able to set priorities and design appropriate policies—to consider sequences of individual employment statuses over time that encompass information on the timing, length, and order in which changes of status occur.

Another aspect of labor market outcomes for which it is important to adopt a dynamic perspective is evaluation of the "quality" of employment. Researchers and policymakers are increasingly concerned with various employment dimensions, such as the security of jobs, a decent labor income, and a good match between educational qualifications and skills. Because it is increasingly common for individuals to move between different jobs, with possible unemployment spells in between, we need to go beyond the concepts of job security

and job quality and evaluate the quality and security of the individual employment condition over an appropriate period of time. In this chapter, we present the definition of employment quality illustrated in Berloffa et al. (2015). This definition is based on four dimensions (employment security, income security, income success, and successful match between education and occupation), which are identified using information covering a 2-year period.

An empirical application of this approach to analyzing young people's employment quality within a dynamic perspective is presented here. We distinguish between two different phases of young people's working lives: entry into the labor market (i.e., the transition from school to the first relevant employment experience) and the subsequent phase approximately 5 years after leaving full-time education. The analysis of these two phases is carried out using EU-SILC (European Union Statistics on Income and Living Conditions) longitudinal data over the period 2006–2012 for 17 countries. Our results suggest that adopting a dynamic approach to youth labor market performance allows a more accurate analysis of young people's employment paths and their quality. Empirical findings show that although males and females have similar chances of rapidly accessing paid employment after leaving education, women's labor market conditions deteriorate over the following few years. Consequently, there is still a pressing need to enhance women's chances of remaining continuously in employment and of moving up the labor income distribution. Relaxing the rules on the use of temporary contracts actually generates more difficulties for women and low-educated individuals, and it also appears to worsen youth employment prospects in general.

The remainder of the chapter is organized as follows. Section 8.2 reviews the relevant literature. Section 8.3 discusses the methodology and data used. Section 8.4 presents some descriptive statistics to show the extent to which individual trajectories and employment quality vary across European countries, gender, and educational attainment. Section 8.5 presents the empirical methodology and illustrates our main empirical findings. Section 8.6 concludes the chapter.

8.2. LITERATURE REVIEW

In the analysis of individual labor market performance, two aspects are of particular interest to researchers and policymakers: employment status and some job-related characteristics (job security, earnings, and match with level of education). Analysis of individual employment status is usually based on aggregate indicators referring to a single point in time (employment, unemployment, and inactivity) and on related trends (International Labour Organization 2015; European Commission 2016). More sophisticated studies also include the temporal dimension (European Commission Employment Committee 2009). Such studies generally consider the probabilities of entering or exiting a certain status

(employment or unemployment), conditional on current or previous statuses, but they differ according to the type of conditionality considered. Some authors estimate simple status-dependent probabilities (Russell and O'Connell 2001; Uhlendorff 2006; Stewart 2007; Cappellari and Jenkins 2008; Berloffa, Modena, and Villa 2014); others use a duration analysis to capture different effects of previous statuses according to their length (Muller and Gangl 2003; Kalwij 2004; Dorsett and Lucchino 2013b). Some scholars consider only transitions between statuses of a specific length (Korpi et al. 2003), whereas others are interested in the long-term effect of youth unemployment on later labor market outcomes (employment status, earnings, etc.; Mroz and Savage 2006).

One drawback of these approaches is their focus on a single status change (education–employment, employment–unemployment). They often account for the length of previous spells yet discard other crucial information on labor market dynamics, such as the timing and the order in which events occur. The sequence analysis approach attempts to overcome these shortcomings by considering the complexity of a transition process involving several status changes over time (Shanahan 2000). Various authors have recently used this type of analysis to model longitudinal processes, such as school-to-work transitions and career trajectories (Scherer 2005; Brzinsky-Fay 2007; Quintini and Manfredi 2009; Dorsett and Lucchino 2013a).[1] All of these studies adopt the optimal matching (OM) technique to group individual sequences.[2] However, the use of OM to study life course events is a controversial choice. The most recurrent criticisms concern the lack of a theoretical basis for converting sequences into a model (Levine 2000) and the failure to account for the direction of time and the order of statuses across sequences (Wu 2000). Given these criticisms, research on OM has moved toward a fine-tuning of the methodology.[3] Notwithstanding the various extensions and improvements developed during the past decade, the classification of trajectories or sequences based on OM is still *data driven*. In the following section, we present an alternative, *outcome-driven* methodology for grouping individual trajectories. This approach does not rely on sequence alignment (OM) or data-reduction techniques (i.e., cluster analysis or discrepancy analysis) to group trajectories. Instead, we identify—on the basis of our research questions—the main outcomes we are interested in, and we group the individuals in our sample accordingly.[4] Further details regarding this methodology are discussed in Section 8.3.

Because labor markets are increasingly characterized by workers moving quite frequently between jobs, with possible unemployment spells in between, we need to adopt a dynamic perspective not only for individuals' employment statuses but also for the evaluation of other dimensions of their employment condition. For example, the need to combine flexibility and security in European labor markets (Smith et al., this volume) requires going beyond the concept of job security associated with type of contract and instead using a definition of individual employment security based on employment status

trajectories (Berloffa et al. 2016). In this chapter, we present a new ambitious attempt to define a concept of "employment quality" within a dynamic perspective.

Numerous studies have explored the definition and implications of the complex and multidimensional concept of job quality (Green 2006; European Commission 2014, 172–79). Even when attention is restricted to objective (rather than subjective) job quality, the definition and the aspects considered vary noticeably across academic fields and studies. Nevertheless, there is some convergence on the features considered to be crucial for workers' well-being. These always include some indicators on the level of earnings (and earnings distribution) and on insecurity (i.e., unemployment risk).[5] Thus, our definition of employment quality encompasses four dimensions that we consider essential for the successful inclusion of young people in the labor market: employment security, income security, income success, and a good match between educational qualification and occupation. The last dimension is not usually considered in the literature on job quality. However, skill mismatch is a widespread and increasing phenomenon in Europe, especially for young people (European Commission 2012; European Central Bank 2014; International Labour Organization 2014a, 2014b; McGuinness, Bergin, and Whelan, this volume)[6] and for migrant workers (Spreckelsen, Leschke, and Seeleib-Kaiser, this volume). Generally, overqualified workers are less satisfied with their jobs and are more likely to leave them compared to their equally qualified and well-matched counterparts (Quintini 2011). Therefore, we include a good match between educational qualification and occupation as one of the key dimensions of employment quality (also see Berloffa et al. 2015).

8.3. DATA AND METHODOLOGICAL ISSUES

The approach presented in this chapter is based on two main tools of analysis: (1) a new "outcome-driven" methodology for grouping individual employment status trajectories (ESTs) and (2) a dynamic concept of employment quality. In the evaluation of youth labor market performance, these two tools can be used jointly or separately according to the specific aim of the analysis. As an example, we show how they can be employed to examine two different phases of youth working life: the first entry into the labor market and the subsequent phase approximately 5 years after exit from education.[7]

For young individuals exiting full-time education (first phase), a particularly important policy concern is whether they are able to enter and remain in employment for a sufficiently long period of time. In this phase, other aspects of employment quality are less relevant. Hence, we use only the first tool of analysis—that is, the features of individual ESTs in the first 3 years after leaving education. As in Berloffa, Mazzolini, and Villa (2015), we classify ESTs according

to the outcome of interest—that is, the achievement of a "relevant" employment spell, defined as lasting for at least 6 consecutive months (see Section 8.3.1 for more details).

For the subsequent phase (approximately 5 years after education exit), it is important to examine whether individuals achieved a secure and successful employment condition and whether the shortcomings of lack of work experience are overcome. For the analysis of this phase, we combine the two tools of analysis, as in Berloffa et al. (2015). We identify those individuals who achieved a good-quality employment condition and disaggregate the group of those who did not achieve this outcome by the type of EST that characterizes their labor market experience during that same period. In this case, trajectory types are grouped according to the outcome of interest—that is, prevailing status and the frequency of status changes (for further details, see Section 8.3.2).

The empirical analysis makes use of EU-SILC longitudinal data covering the years from 2006 to 2012. The focus is on young people aged 16–34 years. The data make it possible to track individuals for a maximum of four interviews (i.e., 4 years), but our analysis is restricted to individuals with at least three consecutive interviews (i.e., 3 years) in order to increase the sample size. For the first phase, we consider only young individuals who left education during the 3 years covered by the three interviews. Because of data limitations, we are able to consider 17 countries (AT, BE, CZ, DK, EE, EL, ES, FI, FR, HU, IT, PL, PT, SE, SI, SK, and UK).[8] For the second phase, we consider young people who left education 3–5 years before the first interview.[9] We consider the same group of countries as for the first phase, except for Denmark (because of the low number of cases in some EST types) and the United Kingdom (because its definition of the income reference period is not consistent with that of the other countries and with the data used to identify employment status sequences). However, we are able to also include the Netherlands in the second phase of the analysis. In both phases, monthly information about self-declared employment statuses (e.g., employed, unemployed, inactive, and in education) is used to identify individual employment status sequences.[10]

8.3.1. First Phase: ESTs in the First 3 Years After Leaving Education

In the analysis of the early labor market experiences of young people, we consider their ESTs during the first 3 years after education exit. As discussed in Berloffa, Mazzolini, and Villa (2015), we classify them according to the time needed to reach, and the pathway that led to, the first relevant employment spell—that is, an employment spell lasting at least 6 consecutive months.[11] We distinguish between successful and unsuccessful trajectories according to the achievement or not of this outcome, and we identify various subtypes according to whether individuals experience a small number of long jobless spells (i.e., spells of

unemployment or inactivity) or a large number of short employment and jobless spells. We also consider the decision to return to education after a sufficiently long period in employment or unemployment/inactivity. These criteria produce six different EST types:

Successful trajectories
- *Speedy pathway*: The sequence presents a relevant employment spell within 6 months after leaving full-time education.
- *Long-search pathway*: The sequence presents a relevant employment spell after more than 6 months in unemployment or inactivity.
- *In & out successful pathway*: The sequence presents a relevant employment spell after various nonrelevant employment spells, interspersed by short periods in unemployment or inactivity.

Unsuccessful trajectories
- *In & out unsuccessful pathway*: The sequence (similar to the *in & out successful pathway*) does not end in a relevant employment spell.
- *Continuous unemployment/inactivity pathway*: The sequence is characterized only by spells of unemployment or inactivity.

Return to education pathway: The sequence is characterized by a long spell in education (at least 6 consecutive months) experienced 6 months after having left full-time education.

Figure 8.1 provides a graphical representation of individual employment trajectories pertaining to these six EST types. They are obtained by applying the previously specified criteria to the EU-SILC sample of young people for the first phase (i.e., during the first 3 years after education exit).

8.3.2. Second Phase: Employment Quality Approximately 5 Years After Leaving Education

As discussed in Berloffa et al. (2015), for the subsequent temporal phase of youth labor market experience, four dimensions are essential for assessing individuals' "employment quality": employment security, income security, income success, and education–occupation success. The definition of each dimension is presented in Table 8.1. Each dimension is evaluated during the two calendar years corresponding to the first two interviews.[12]

Identifying those young people who experience security and/or success is not enough from a policy standpoint because the group of those who have not achieved this outcome is quite heterogeneous. Indeed, individuals with frequent status changes require different policy interventions compared to individuals who remain for long periods in unemployment or inactivity. Therefore, we consider individual ESTs and group them according to their prevailing status and
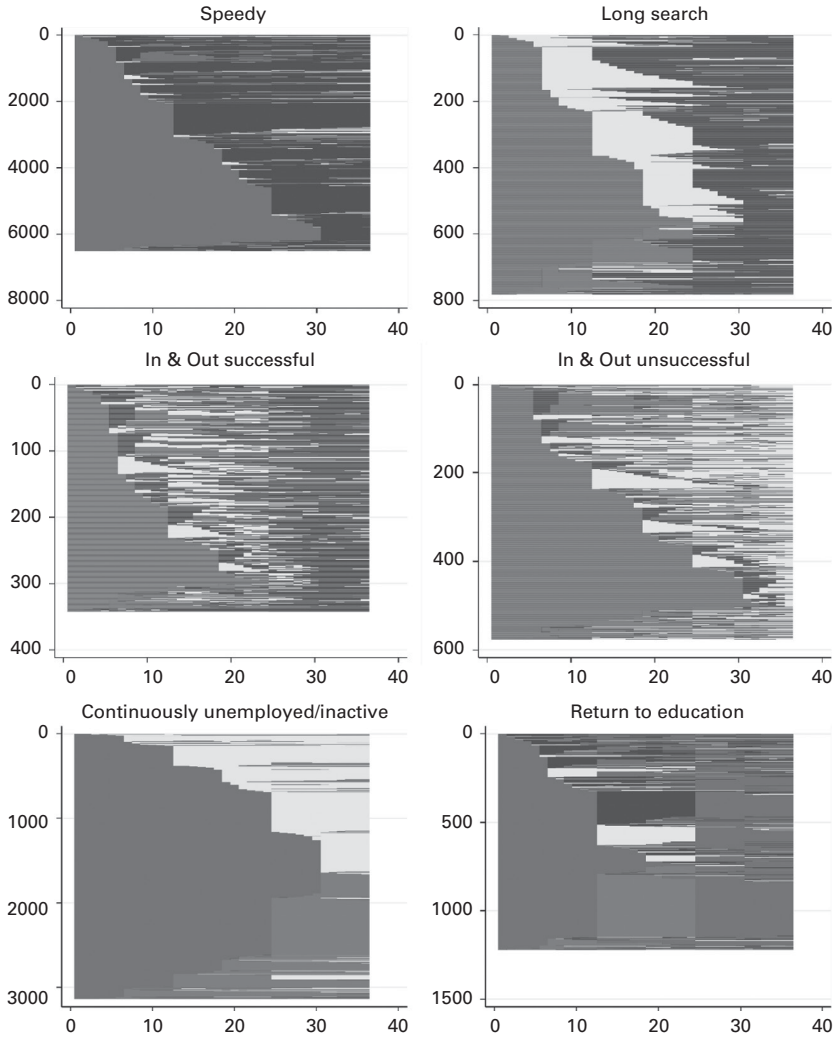
Figure 8.1 ESTs for young people in the first 3 years after leaving education (first phase) in 17 European countries.
Source: Berloffa, Mazzolini, and Villa (2015) based on EU-SILC longitudinal data (2006–2012).

the frequency of status changes.[13] In this group, returning to education for a relevant number of months may have important consequences for future prospects. Hence, it cannot be mixed with other types of trajectories. Given these criteria, we identify six EST types for the second phase:

1. *Almost always in employment*: All months in employment, with or without short spells in education (less than 6 consecutive months).

Table 8.1 Employment quality and its dimensions: Security and success

Employment quality	
Security	**Success**
Employment security	Income success: Individuals' monthly earnings[a]
Spells of employment ≥ 6 months	Above the country–year–education median earnings
Spells of nonemployment ≤ 3 months	Not diminishing over time
Income security: Individuals' annual earnings[b]	Education–occupation success[c]
Above the at-risk-of-poverty threshold	Not overeducated
Not diminishing over time	Not moving down the occupational ladder over time

[a]Monthly earnings are computed by dividing the declared annual labor income by the number of months worked during the income reference period.
[b]This threshold corresponds to 60% of the national median equivalized disposable income after social transfers.
[c]Overeducation and undereducation mean that workers have more or less education than is required to carry out their job (International Labour Organization 2014b).

2. *Prevalently in employment*: Long employment spells (at least 12 consecutive months); few spells of nonemployment (unemployment, inactivity, or education); low number of status changes (three at most); and, overall, more months in employment than in unemployment and inactivity.

3. *Prevalently in unemployment*: Long unemployment spells (at least 12 consecutive months); few spells of employment or inactivity/education; low number of status changes (three at most); and, overall, more months in unemployment/inactivity than in employment. This category also includes individuals who were always out of employment, with more months in unemployment than in inactivity.

4. *Prevalently in inactivity*: Long inactivity spells (at least 12 consecutive months); few short spells (less than 6 months) in employment and education;[14] low number of status changes (three at most); and, overall, more months in inactivity than in unemployment.

5. *In & out employment:* More than three status changes; individuals enter and exit paid employment at least four times during the 36 months considered.

6. *Return to education*: Returned to full-time education for at least 6 consecutive months.

A representation of individual trajectories pertaining to the different EST types can be found in Berloffa et al. (2015).

8.4. YOUTH TRAJECTORIES IN EUROPE: A DESCRIPTIVE ANALYSIS

Differences in youth transitions, both from school to work and within the labor market, may be explained by cross-country differences in education systems, labor market institutions, youth unemployment rates, and other macroeconomic conditions (Müller and Gangl 2003; Scherer 2005; Schomburg and Teichler 2006; Wolbers 2007). But individual trajectories vary greatly also with respect to some individual characteristics, particularly gender and education level.

8.4.1. First Phase: From School to Work

Table 8.2 shows the unconditional distribution of the six EST types (in the first 3 years after leaving full-time education) by gender, highest education level attained, across European countries,[15] and before and during the economic crisis.[16]

Approximately 66% of young individuals in our sample reach a relevant employment spell within 3 years after leaving education, with no major gender differences. Within the unsuccessful group, women have a slightly higher share of continuous unemployment/inactive pathways, whereas men slightly more frequently have in & out unsuccessful trajectories. Level of education plays a relevant role in leading to a successful EST: 73% of university graduates have a speedy pathway, compared to 59% of those with a high school diploma and 44% of those with primary education. Only 10% of individuals with tertiary education have an unsuccessful trajectory, whereas this share is substantially higher among people with secondary and primary education (21% and 41%, respectively). Within this unsuccessful group, the relative distribution between continuous unemployment/inactivity and in & out is similar across education levels.

Successful trajectories are more frequent in the Nordic countries, which exhibit the highest shares of young people in both speedy (74%) and in & out successful pathways (5%). The Nordic countries also have the lowest percentage of young people who are continuously unemployed/inactive (6%). The Southern countries show the worst youth labor market outcomes. Only 43% of young people have a speedy trajectory, whereas more than 31% are continuously unemployed or inactive.

The impact of the economic crisis on ESTs is significant: The share of young people with speedy trajectories decreases by 11 percentage points (pp) between 2005–2007 and 2009–2011 (from 63% to 52%). Also apparent is an increase in individuals who experience continuous unemployment/inactivity trajectories (from 16% to 24%) and in & out unsuccessful pathways (from 4% to 7%). Moreover, return to education pathways record an increase (from 6% to 9%), suggesting higher investment in human capital during economic downturns, as would be expected.

Table 8.2 Descriptive statistics on ESTs in the first 3 years after leaving education (first phase) in 17 European countries

| | Successful trajectories | | | Unsuccessful trajectories | | | |
	Speedy	Long search	In & out successful	In & out unsuccessful	Continuously unemployed/ inactive	Return to education	No. of observations
All sample	0.57	0.06	0.03	0.05	0.21	0.08	6,924
Gender							
Male	0.57	0.06	0.03	0.06	0.20	0.07	3,256
Female	0.56	0.06	0.03	0.04	0.22	0.09	3,668
Education							
Low	0.44	0.04	0.03	0.08	0.33	0.09	3,016
Medium	0.59	0.07	0.03	0.04	0.17	0.10	1,856
High	0.73	0.08	0.04	0.02	0.08	0.04	2,052
Country group							
Nordic	0.74	0.01	0.05	0.05	0.06	0.08	974
Continental	0.60	0.06	0.03	0.06	0.20	0.05	1,727
Southern	0.43	0.06	0.03	0.06	0.31	0.12	2,239
Eastern	0.60	0.09	0.03	0.04	0.19	0.06	1,984
ESTs observed in							
2005–2007	0.63	0.07	0.04	0.04	0.16	0.06	1,230
2009–2011	0.52	0.06	0.03	0.07	0.24	0.09	1,156

Notes: ESTs, individual employment status trajectories. Sample: young individuals (aged 16–34 years) observed for 36 months. Education: low, lower secondary education; medium, upper secondary education; high, tertiary education. Country groups: Nordic = DK, FI, and SE; Continental = AT, BE, and FR; the UK is also added to this group because the sample size is too small to be considered separately and because the distribution of UK individuals across EST types is more similar to Continental countries than to other country groups; Southern = EL, ES, IT, and PT; Eastern = CZ, EE, HU, PL, SI, and SK.
Source: Authors' calculations based on EU-SILC longitudinal data (2006–2012).

8.4.2. Second Phase: Employment Quality and ESTs Approximately 5 Years After Leaving Education

Table 8.3 shows the shares of young people who, approximately 5 years after leaving education, achieve each of the four dimensions used to define their employment quality. Inspection of Table 8.3 reveals that 67% of young individuals in our sample experience employment security, whereas 42% enjoy income security. Overall, 40% of young individuals have a "secure employment condition" (combining employment security with income security). Major differences by gender emerge: Young males are more likely than young females to have a secure employment condition, whatever the dimension of security taken into account. Moreover, education plays a crucial role in ensuring a "secure employment condition": Almost half of all university graduates experience security, compared to only 16% of those with a lower secondary education. The Southern countries stand out as featuring the lowest share of young people enjoying security. Finally, the impact of the economic crisis results in an overall reduction in the share of young people enjoying security: 36% in 2009–2010 compared to 45% in 2006–2007.

The share of young people in our sample enjoying a successful employment condition (i.e., income success and education–occupation success) is only 16%. More than half of young individuals enjoy a good match between their educational attainments and the type of their occupation, but only one out of five is income successful.[17] Because economic success is defined with respect to the education-specific earnings distribution, differences between university and high school graduates disappear when we examine the "success" dimension.

The differences across country groups are relatively small, with the Southern countries recording the lowest shares of young people in terms of both dimensions of success. Although we define income success using year-specific monthly earnings, there is a modest reduction over time in the share of young people experiencing income success. Because our definition of the latter also requires that monthly earnings are nondecreasing during the 2-year observation period, this result suggests that since the onset of the crisis, it has become more likely for youth to experience a reduction in their monthly earnings over time. During the crisis, young people encounter increasing difficulties not only in finding a job but also in finding one that matches their education level.

What is really striking in this scenario is the strong disadvantage suffered by young women—in terms of both income success and education–occupation success. As a result, only 11% of women, versus 21% of men, enjoy a successful employment condition. These results clearly reflect the issues of occupational segregation and wage penalty for females (Dalla Chiara, Matteazzi, and Petrarca 2014).

As noted in Section 8.3.2, the group of people who do not achieve a secure or successful employment condition is quite heterogeneous. Table 8.4 shows

Table 8.3 Descriptive statistics of employment quality of young people approximately 5 years after leaving education (second phase) in 15 European countries

	Secure employment condition			Successful employment condition		
	Employment security	Income security	Employment and income security	Income success	Education–occupation success	Income and education–occupation success
All sample	0.67	0.42	**0.40**	0.21	0.53	**0.16**
Gender						
Male	0.72	0.46	**0.44**	0.28	0.57	**0.21**
Female	0.61	0.38	**0.35**	0.15	0.49	**0.11**
Education						
Low	0.40	0.18	**0.16**	0.14	0.36	**0.10**
Medium	0.65	0.41	**0.39**	0.21	0.55	**0.17**
High	0.78	0.51	**0.48**	0.24	0.58	**0.18**
Country group						
Nordic	0.69	0.41	**0.37**	0.22	0.60	**0.18**
Continental	0.74	0.44	**0.42**	0.23	0.56	**0.17**
Southern	0.58	0.37	**0.33**	0.19	0.44	**0.14**
Eastern	0.69	0.45	**0.43**	0.22	0.57	**0.18**
Employment quality in						
2006–2007	0.68	0.48	**0.45**	0.24	0.55	**0.18**
2009–2010	0.66	0.38	**0.36**	0.19	0.49	**0.14**

Notes: See Table 8.1 and notes to Table 8.2. DK and UK are not included in the analysis.
Source: Authors' calculations based on EU-SILC longitudinal data (2006–2012).

Table 8.4 Descriptive statistics on ESTs approximately 5 years after leaving education (second phase) in 15 European countries

	Almost always in employment	Prevalently in employment	Prevalently in unemployment	Prevalently in inactivity	In & out	Return to education	No. of observations
All sample	0.55	0.19	0.09	0.06	0.06	0.05	8,070
Unsuccessful and/or insecure people	0.49	0.21	0.11	0.07	0.07	0.06	6,824
The relative distribution of young people with unsuccessful and/or insecure ESTs							
Gender							
Male	0.53	0.20	0.11	0.02	0.08	0.06	3,277
Female	0.45	0.22	0.10	0.11	0.07	0.06	3,547
Education							
Low	0.24	0.22	0.23	0.07	0.09	0.15	816
Medium	0.45	0.22	0.11	0.08	0.08	0.06	3,510
High	0.62	0.19	0.05	0.05	0.05	0.03	2,498
Country group							
Nordic	0.51	0.20	0.03	0.06	0.15	0.06	358
Continental	0.57	0.20	0.05	0.03	0.08	0.07	1,289
Southern	0.40	0.22	0.17	0.04	0.08	0.10	2,130
Eastern	0.51	0.21	0.10	0.10	0.06	0.03	3,047
ESTs observed in							
2005–2007	0.50	0.19	0.12	0.06	0.07	0.05	1,284
2009–2011	0.48	0.21	0.11	0.05	0.08	0.07	1,280

Notes: See notes to Table 8.2. DK and UK are not included in the analysis.
Source: Authors' calculations based on EU-SILC longitudinal data (2006–2012).

the unconditional distribution of the six second-phase EST types described in Section 8.3.2 for the whole sample and for the unsuccessful/insecure group. As to be expected, unsuccessful and/or insecure young people are less likely to be almost always in employment. Among the young individuals unable to achieve success and/or security, young women are less likely than men to be almost always in employment and are more likely to be prevalently inactive. No relevant gender differences emerge for the other EST types in this set.

University and high school graduates are much more likely to be almost always in employment compared to individuals with low education, and they are much less likely to be prevalently in unemployment. Only 15% of young people with a low education level choose to return to education.

Again, the Southern countries stand out for the difficulties that young people face in the labor market: Only 62% are almost always or prevalently employed, compared to 72% or more in the other country groups. Southern Europe also exhibits the highest share of young individuals who are prevalently unemployed. No important differences are observed in the distribution of young people by EST types before and during the crisis.

8.5. THE DETERMINANTS OF YOUTH TRAJECTORIES AND EMPLOYMENT QUALITY

We estimate various multinomial logit models for the first and the second phase of young people's labor market experience in order to check the extent to which socioeconomic factors impact on the probability of experiencing various types of outcomes. For the first phase, the outcome considered is the EST type. For the second phase, the explained variable is the interaction between the secure or successful employment condition and the EST types. We also estimate a multinomial logit model for the interaction between the employment security condition and the EST types because we want to compare the results of this model with those for the first phase.

Among the explanatory variables,[18] we include individual characteristics (sex, age, education level, and potential labor market experience), country and quarter of the interview dummies,[19] gross domestic product (GDP) growth rate corresponding to the first and second year of the sequence, and variables accounting for the role of labor market institutions. These include employment protection legislation (EPL) and active labor market policy (ALMP) expenditure. For EPL, we enter separately the two Organization for Economic Co-operation and Development (OECD) indicators of the strictness of regulation on regular contracts (EPL-P) and on temporary contracts (EPL-T),[20] whereas for ALMP we consider annual expenditure on active policies per unemployed, as a share of per capita GDP.[21] For the first phase, the analysis could suffer from right censoring, especially for individuals who left education in the last year of observation

(approximately 16% of our sample).[22] Because approximately half of these are continuously unemployed or inactive, our analysis might slightly overestimate the percentage of young people continuously at the margin of the labor market and might underestimate those engaged in lengthy job search.

8.5.1. School-to-Work Trajectories: The Role of Individual Characteristics and Institutions

Table 8.5 shows the predicted probabilities and some selected marginal effects for the first phase of labor market entry. No major gender differences emerge in the likelihood of following various trajectory types, with two exceptions: Males have a higher probability of moving in and out of employment without reaching a relevant employment spell, and they have a lower probability of returning to education. Education is crucial for rapid labor market entry and for avoiding the risk of being continuously unemployed/inactive. Previous working experiences contribute to gaining stable and relevant employment after leaving education, and they reduce the probability of experiencing continuous unemployment/inactivity or of returning to education. However, they also have a small positive and significant effect on the probability of remaining in an unsuccessful in & out pathway.

More stringent regulation of the use of temporary contracts (i.e., a higher level of the EPL-T index) is associated with a lower probability of following both an in & out unsuccessful and a long-search successful pathway. It also increases female probability of being in & out successful. This result suggests that encouraging the use of temporary contracts by reducing the strictness of the rules regulating their use (as has been done mainly by Southern countries)[23] is not an effective policy tool with which to improve employment outcomes; indeed, it may even have undesirable effects.[24]

The effects associated with EPL for regular contracts are more diverse across the subgroups. In general, a more stringent regulation of firings and dismissals (i.e., a higher level of the EPL-P index) appears to have positive effects on the school-to-work transition because it reduces the probability of following an in & out unsuccessful pathway. However, for medium- and highly educated individuals, it also increases the probability of being continuously unemployed/inactive while reducing the likelihood of undergoing a (successful) long search for high school graduates and that of being speedy for university graduates. Thus, a higher EPL-P index is associated with a more difficult school-to-work transition for more educated individuals. It also makes the transition more difficult for females, who have to cope with an even lower probability of rapidly entering paid work.

Finally, ALMP expenditure positively affects the probability of being speedy, and it reduces the probability of being in & out unsuccessful. The latter effect is larger for highly educated young people and females. The magnitude of these effects is, however, quite small.[25]

Table 8.5 Predicted probabilities (Pr) and selected marginal effects for ESTs in the first 3 years after leaving education (first phase) in 17 European countries

| | Successful pathways | | | | | | Unsuccessful pathways | | | | | |
| | Speedy | | Long search | | In & out successful | | In & out unsuccessful | | Continuously unemployed/inactive | | Return to education | |
Predicted probabilities	Pr	St. Err.	Pr	St. Err.	Pr	St. Err.	Pr	St. Err.	Pr	St. Err.	Pr	St. Err.
	0.616***	**0.008**	**0.048*****	**0.003**	**0.025*****	**0.002**	**0.049 *****	**0.003**	**0.203 *****	**0.007**	**0.059 *****	**0.005**
Marginal effects	dγ/dx	St. Err.	dγ/dx	St. Err.	dγ/dx	St. Err.	dγ/dx	St. Err.	dγ/dx	St. Err.	dγ/dx	St. Err.
Male	−0.169	0.106	0.068	0.050	−0.010	0.033	0.092**	0.050	0.115	0.108	−0.096 **	0.053
Medium education	0.153*	0.090	0.085	0.061	0.014	0.047	0.077	0.059	−0.322***	0.095	−0.006	0.068
High education	1.226***	0.228	−0.051	0.087	−0.018	0.081	−0.184	0.203	−0.882***	0.192	−0.091	0.107
Age	0.138***	0.026	−0.004	0.016	0.007	0.012	0.006	0.013	−0.118 ***	0.023	−0.028	0.017
Potential labor experience	0.042***	0.008	−0.003	0.005	0.002	0.001	0.008***	0.002	−0.040 ***	0.006	−0.009 ***	0.003
EPL-T	0.034	0.025	−0.024**	0.013	0.011	0.010	−0.051**	0.023	−0.004	0.026	0.034	0.025
EPL-T* medium education	−0.020	0.020	0.022	0.014	0.006	0.007	0.006	0.009	−0.018	0.012	0.004	0.014
EPL-T* high education	0.009	0.032	0.013	0.017	−0.003	0.007	0.009	0.015	−0.002	0.026	−0.026	0.020
EPL-T* female	−0.005	0.019	0.006	0.008	0.008**	0.004	0.001	0.006	−0.007	0.014	−0.003	0.010
EPL-P	0.099	0.206	0.163	0.107	0.064	0.066	−0.232**	0.118	−0.083	0.207	−0.011	0.166

EPL-P* medium education	−0.009	0.034	−0.049**	0.024	−0.005	0.019	−0.030	0.023	0.101 ***	0.037	−0.008	0.028
EPL-P* high education	−0.410***	0.085	0.001	0.036	0.009	0.032	0.072	0.070	0.300***	0.069	0.028	0.039
EPL-P* female	−0.071*	0.041	0.022	0.019	−0.015	0.013	0.033**	0.018	0.060	0.041	−0.030	0.023
ALMPs	0.011**	0.005	−0.003	0.002	−0.001	0.002	−0.007***	0.003	−0.003	0.005	0.003	0.004
ALMPs* medium education	−0.006	0.005	−0.003	0.003	−0.002	0.003	−0.004	0.003	0.011 **	0.005	0.004	0.003
ALMPs* high education	0.010	0.017	0.007	0.007	0.005	0.003	−0.020**	0.009	−0.013	0.015	0.011	0.009
ALMPs* female	0.002	0.005	−0.001	0.003	0.002**	0.001	−0.005**	0.003	−0.002	0.004	0.003	0.002

Notes: Sample of young individuals (aged 16–34 years) observed for 36 months. Complete estimation results are available from the authors.
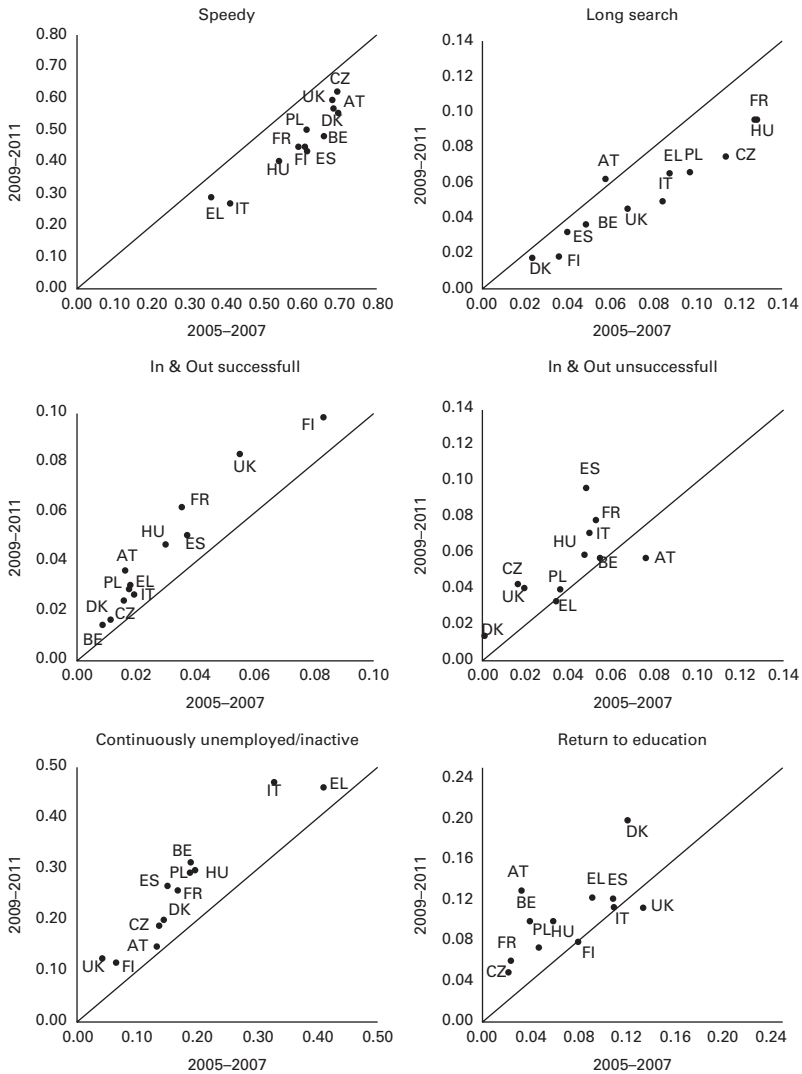
*$p < .10$.

**$p < .05$.

***$p < .01$.

Source: Authors' estimations based on EU-SILC longitudinal data (2006–2012).

The effect of the economic crisis on the transition from school to work is illustrated in Figure 8.2, which shows the predicted probabilities by trajectory type in various European countries for the subperiods 2005–2007 and 2009–2011. The graphs highlight the overall negative impact of the Great Recession on school-to-work trajectories, but they also reveal some heterogeneity across countries. All countries record a reduction in the probability of following speedy trajectories and of undergoing a successful search period (with the sole exception of Austria).

Figure 8.2 Conditional distribution of young individuals by (first-phase) EST types in 12 European countries, 2005–2007 versus 2009–2011.
Source: Authors' estimations based on EU-SILC longitudinal data (2006–2012).

Moreover, young people in all the countries studied face a higher degree of instability, with an increase in the likelihood of experiencing in & out pathways, both successful and unsuccessful (again with the sole exception of Austria). Finally, the economic crisis has increased the likelihood of being at the margin of the labor market by increasing the probability of being continuously unemployed/inactive but, fortunately, also by increasing the probability of returning to education (with the exception of the United Kingdom).

8.5.2. Employment Quality: The role of Individual Characteristics and Institutions

Table 8.6 shows the predicted probabilities and some selected marginal effects for employment security and different pathways of employment-insecure individuals approximately 5 years after education exit. In contrast with the first phase, in this second phase, females have a significantly lower probability of achieving employment security compared to males and a higher probability of experiencing inactivity and returning to education. Thus, although males and females have similar chances of obtaining good employment outcomes immediately after leaving education, women's labor market conditions deteriorate over the following few years, with females being substantially less likely to be employment secure approximately 5 years after having left education.

The employment condition of women in couples is even worse.[26] In addition to having much lower chances of being employment secure, they are also considerably more likely to have a fragmented career pathway (being prevalently employed and insecure) or to be out of paid employment (prevalently unemployed and inactive). In contrast, males in a couple have a higher probability of being employment secure. Educational attainments are crucial also in this phase of labor market experience. Higher levels of education are associated with a higher probability of being employment secure and with a lower probability of being in all the other trajectory types (except for return to education). Potential work experience also increases the probability of achieving employment security by reducing the risk of experiencing unemployment and the probability of returning to education.

Regarding the mix of EPL and ALMP expenditure, some interesting results emerge. A more stringent regulation of the use of fixed-term contracts (i.e., a higher EPL-T index) increases young people's probability of being employment secure and reduces their probability of experiencing either short employment spells or long unemployment spells from one employment spell to the next (i.e., being prevalently employed but employment insecure). This is in line with what we found in Section 8.5.1 for the first phase, in which a higher level of the EPL-T index was associated with a lower probability of following both in & out unsuccessful and long-search pathways. However, in this second phase, the effects associated with EPL-T are greater for women and low-educated individuals. In

Table 8.6 Predicted probabilities (Pr) and selected marginal effects for employment security approximately 5 years after leaving education (second phase) in 15 European countries

			Employment insecure									
Predicted probabilities	Employment secure		Prevalently employed		In & out		Prevalently unemployed		Prevalently inactive		Return to education	
	Pr	St. Err.	Pr	St. Err.	Pr	St. Err.	Pr	St. Err.	Pr	St. Err.	Pr	St. Err.
	0.752***	0.006	0.089***	0.004	0.051***	0.003	0.057***	0.004	0.029***	0.003	0.022***	0.002
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.
Female	−0.221 ***	0.060	0.055	0.040	0.025	0.031	0.032	0.029	0.063 ***	0.021	0.046 ***	0.015
Female in couple	−0.143 ***	0.019	0.082***	0.013	−0.003	0.009	0.030***	0.010	0.055 ***	0.006	−0.021 ***	0.006
Male in couple	0.060 **	0.025	−0.005	0.017	−0.010	0.011	−0.022	0.014	−0.013	0.011	−0.010	0.007
Living in family	−0.039**	0.017	0.031 ***	0.012	−0.021***	0.008	0.028***	0.009	0.002	0.005	0.000	0.004
Medium education	0.293 ***	0.104	−0.112 *	0.066	−0.005	0.051	−0.142 ***	0.040	−0.060 **	0.027	0.026	0.024
High education	0.690 ***	0.116	−0.222***	0.072	−0.115 **	0.059	−0.252***	0.051	−0.086 ***	0.032	−0.014	0.028
Age	0.008	0.005	0.001	0.003	−0.004*	0.003	0.002	0.002	−0.001	0.001	−0.005 ***	0.001
Potential labor experience	0.019 ***	0.002	0.001	0.001	0.001	0.001	−0.014 ***	0.001	0.000	0.001	−0.006 ***	0.001
EPL-T	0.128 ***	0.049	−0.116 ***	0.034	0.014	0.026	−0.044 **	0.021	0.021	0.014	−0.003	0.012
EPL-T* medium education	−0.053**	0.023	0.041 ***	0.015	0.000	0.011	0.012	0.009	0.003	0.008	−0.003	0.005
EPL-T* high education	−0.052**	0.024	0.013	0.015	0.014	0.011	0.019 *	0.010	0.001	0.008	0.006	0.005

EPL-T* female	0.052 ***	0.014	−0.015*	0.009	−0.001	0.007	−0.013 *	0.007	−0.009	0.006	−0.014 ***	0.004
EPL-P	0.077	0.176	−0.042	0.100	−0.195*	0.117	0.108	0.086	−0.029	0.034	0.082	0.085
EPL-P* medium education	0.027	0.028	−0.021	0.019	−0.008	0.015	0.009	0.012	0.005	0.008	−0.011 **	0.005
EPL-P* high education	−0.084***	0.030	0.028	0.019	0.015	0.016	0.031 **	0.014	0.008	0.009	0.003	0.006
EPL-P* female	0.020	0.021	−0.008	0.014	−0.007	0.011	−0.001	0.010	−0.006	0.007	0.002	0.004
ALMPs	0.886 ***	0.341	0.087	0.221	−0.304*	0.158	−0.562***	0.146	−0.049	0.112	−0.060	0.069
ALMPs* medium education	−1.063 ***	0.267	0.263	0.165	0.104	0.122	0.338 ***	0.116	0.159 **	0.082	0.199 ***	0.054
ALMPs* high education	−1.221 ***	0.291	0.370**	0.178	0.138	0.134	0.342 **	0.146	0.165 *	0.092	0.206 ***	0.062
ALMPs* female	0.082	0.150	0.029	0.099	0.018	0.069	0.048	0.084	−0.106 *	0.064	−0.071 **	0.034

Notes: Sample of young individuals (aged 16–34 years) observed for 36 months. Complete estimation results are available from the authors.

*p < .10.

**p < .05.

***p < .01.

Source: Authors' estimations based on EU-SILC longitudinal data (2006–2012).

other words, a more stringent regulation of the use of temporary contracts is likely to reduce the probability of having fragmented trajectories in both phases, facilitating the achievement by young people of an employment-secure condition approximately 5 years after leaving education,[27] with more marked effects over time for the weakest groups (women and low-educated young people). This finding may be related to the gender and educational segmentation in employment contracts—that is, to the fact that women and low-educated individuals are overrepresented in fixed-term contracts (Petrongolo 2004; Muffels 2008).

The effects associated with EPL-P are similar to those that emerged in Section 8.5.1. A more stringent regulation of individual dismissals (i.e., a higher EPL-P index) is associated with a lower probability of being in & out and with some adverse effects for highly educated individuals (a lower probability of being employment secure and a higher probability of being prevalently unemployed). In other words, where the regulation of individual dismissals is more restrictive, the relative advantage of highly educated workers (compared to individuals with medium or low education) in terms of rapid labor market entry and of employment security is reduced. A possible explanation is that the higher the individual wage, the higher is the expected (discounted) total labor cost that firms face when it is more difficult for them to fire a worker. In any case, the magnitude of these effects decreases over time.

ALMP expenditure has positive effects as in the first phase, but in this second phase it is more differentiated across education levels. Higher ALMP expenditure is associated with a lower probability of being prevalently unemployed for all young people, but with larger effects for low-educated individuals. This lower probability of being prevalently unemployed is compensated by a higher probability of being employment secure for low-educated young people and by a higher probability of returning to education for high school and university graduates. In this case, the magnitude of the effects is much larger than those presented in Section 8.5.1.[28]

In Table 8.7, we consider the combined condition of employment and income security (outcome "secure") and the combined condition of income success and a good education–occupation match (outcome "success"). We report the predicted probabilities and the marginal effects for the secure/success outcomes and for only three trajectory types among the insecure/unsuccessful groups (almost always in employment, prevalently employed, and in & out). For the other trajectory types (prevalently unemployed, prevalently inactive, and return to education), the predicted probabilities and marginal effects are very similar in sign, magnitude, and significance to those obtained for employment security.

The first interesting result is that females and males have the same chances of achieving a secure employment condition. The reason is that although females are more likely to be employment insecure, they are less likely to be income insecure when following a continuous/stable employment pathway (i.e., to be almost always employed and income insecure).[29] By contrast, women living in a couple

Table 8.7 Selected predicted probabilities (Pr) and marginal effects for security and success approximately 5 years after leaving education (second phase) in 15 European countries

	Secure		Insecure — Almost always employed		Insecure — Prevalently employed		Insecure — In & out		Successful		Unsuccessful — Almost always employed		Unsuccessful — Prevalently employed		Unsuccessful — In & out	
Predicted probabilities	Pr	St. Err.	Pr	St. Err.	Pr	St. Err.	Pr	St. Err.	Pr	St. Err.	Pr	St. Err.	Pr	St. Err.	Pr	St. Err.
	0.44 ***	0.01	0.24 ***	0.01	0.15 ***	0.01	0.06 ***	0.00	0.17 ***	0.01	0.46 ***	0.01	0.19 ***	0.01	0.06 ***	0.00
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.	dy/dx	St. Err.
Female	0.10	0.07	−0.29 ***	0.06	0.01	0.05	0.03	0.03	−0.14 ***	0.05	−0.11	0.07	0.05	0.05	0.05	0.03
Female in couple	−0.18 ***	0.02	0.01	0.02	0.12 ***	0.02	−0.01	0.01	−0.11 ***	0.02	−0.08 ***	0.02	0.13 ***	0.02	−0.01	0.01
Male in couple	0.03	0.03	0.04 **	0.02	−0.01	0.02	−0.01	0.01	0.00	0.02	0.04	0.03	0.01	0.02	−0.01	0.01
Living in family	−0.05 **	0.02	0.01	0.02	0.03 **	0.02	−0.03 ***	0.01	−0.10 ***	0.01	0.03 *	0.02	0.06 ***	0.02	−0.02 ***	0.01
Medium education	0.53 ***	0.16	−0.21	0.14	−0.13	0.09	−0.01	0.06	0.08	0.11	0.14	0.15	−0.06	0.10	−0.01	0.06
High education	0.67 ***	0.17	0.01	0.15	−0.19 **	0.10	−0.13 **	0.06	0.09	0.12	0.48 ***	0.16	−0.11	0.11	−0.12 *	0.07
Age	0.01 **	0.01	0.00	0.01	0.00	0.00	−0.01 *	0.00	0.02 ***	0.00	0.00	0.01	0.00	0.00	−0.01 *	0.00
Potential labor experience	0.01 ***	0.00	0.01 ***	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02 ***	0.00	0.00	0.00	0.00	0.00
EPL-T	0.18 ***	0.06	−0.02	0.05	−0.14 ***	0.04	0.02	0.03	0.05	0.04	0.09	0.06	−0.12 ***	0.05	0.01	0.03
EPL-T* medium education	−0.12 ***	0.04	0.04	0.03	0.06 ***	0.02	0.00	0.01	−0.01	0.03	−0.03	0.03	0.03	0.02	0.00	0.01

Table 8.7 Continued

| Marginal effects | Secure | | Insecure | | | | | | Successful | | Unsuccessful | | | | | |
| | | | Almost always employed | | Prevalently employed | | In & out | | | | Almost always employed | | Prevalently employed | | In & out | |
	dγ/dx	St. Err.	dγ/dx	St. Err.	dγ/dx	St. Err.	dγ/dx	St. Err.	dγ/dx	St. Err.	dγ/dx	St. Err.	dγ/dx	St. Err.	dγ/dx	St. Err.
EPL-T* high education	−0.10 ***	0.04	0.03	0.03	0.02	0.02	0.02 *	0.01	−0.01	0.03	−0.02	0.03	0.00	0.02	0.02	0.01
EPL-T* female	0.03 **	0.02	0.03 **	0.01	−0.02 *	0.01	−0.01	0.01	0.03 ***	0.01	0.03 *	0.02	−0.02	0.01	−0.01	0.01
EPL-P	0.19	0.18	−0.15	0.16	0.01	0.14	−0.24 *	0.13	−0.15	0.12	0.16	0.18	0.06	0.15	−0.21 *	0.12
EPL-P* medium education	−0.09 **	0.04	0.11 ***	0.04	−0.01	0.02	0.00	0.02	−0.02	0.03	0.07 *	0.04	−0.04	0.03	−0.01	0.02
EPL-P* high education	−0.14 ***	0.04	0.07	0.04	0.01	0.02	0.02	0.02	−0.04	0.03	0.01	0.04	−0.02	0.03	0.01	0.02
EPL-P* female	−0.08 ***	0.02	0.07 ***	0.02	0.02	0.02	−0.01	0.01	−0.01	0.02	0.02	0.02	0.01	0.02	−0.01	0.01
ALMPs	−1.38 ***	0.49	1.76 ***	0.39	0.42	0.29	−0.28 *	0.17	0.18	0.34	1.15 ***	0.46	−0.31	0.33	−0.32 *	0.18
ALMPs* medium education	0.80 **	0.42	−1.26 ***	0.32	−0.12	0.23	0.04	0.13	−0.51 *	0.28	−0.85 ***	0.37	0.47 *	0.26	0.17	0.14
ALMPs* high education	0.78 *	0.43	−1.43 ***	0.32	−0.02	0.24	0.09	0.15	−0.43	0.28	−1.04 ***	0.38	0.54 **	0.27	0.19	0.15
ALMPs* female	−0.08	0.16	0.16	0.13	0.02	0.13	0.03	0.07	0.11	0.10	0.02	0.15	0.01	0.13	−0.01	0.07

Notes: Complete estimation results are available from the authors. Marginal effects for the other trajectory types are comparable to those obtained for employment security (see Table 8.6).
*p < .10.
**p < .05.
***p < .01.
Source: Authors' estimations based on EU-SILC longitudinal data (2006–2012).

have a significantly lower probability of achieving security because, in addition to the usual effects on unemployment and inactivity, they have a higher probability of being prevalently employed but income insecure.

Major gender differences are observed also when we consider the probability of achieving a successful employment condition. Females have substantially lower chances than men of achieving success. This is true both when we consider the unconditional probability and when we compute the probability of being successful conditional on having a stable employment pathway.[30] Again, women in a couple have worse labor market outcomes. They are even less likely to be successful and, among the unsuccessful group, they are considerably less likely to have a stable/continuous pathway and to be prevalently employed.

Thus, gender differences in labor market outcomes emerge quite soon after leaving education, and they are mainly related to the greater difficulties experienced by women in remaining continuously employed, earning high wages, and achieving a good match between education and occupation. This clearly suggests that well-known gender differences in labor market outcomes (career interruptions due to motherhood, job segregation, and wage penalties) have not yet been resolved, given that the younger generation of women encounters similar problems to the older generation of women.

Higher education levels are associated with a significantly higher probability of achieving a secure employment condition. Moreover, young people with a university degree are substantially less likely than low-educated individuals to be in & out and prevalently employed. Education has no effects on the probability of achieving success because of the way in which we have defined it. However, among the unsuccessful group, young individuals with a university degree have a significantly higher probability of being almost always employed and a lower probability of being in & out. Potential labor market experience increases young people's probability of being secure and having a continuous/stable pathway.

The effects of EPL-T on security are very similar to those described at the beginning of this subsection, confirming that the regulation of temporary contracts affects mainly the type of employment trajectory that individuals follow. By contrast, the EPL of regular contracts appears to have some additional effects on income security. Indeed, a higher EPL-P index is associated with a lower probability of being secure not only for university graduates but also for medium-educated individuals, and even more so for females. This additional effect for the latter two groups is driven mainly by an income effect because both high school graduates and females have a higher probability of being always employed but income insecure where the EPL-P index is higher. In other words, a more stringent regulation of individual dismissals generates some problems in terms of employment security for highly educated individuals, but it also generates problems in terms of low income for those high school graduates and females who are able to enter a stable employment trajectory. Higher expenditure on ALMP has a similar income effect for low-educated individuals (and to a much lower extent for

high school graduates). As a result, the positive effect on employment security described at the beginning of this subsection is reversed, and higher ALMP expenditure is associated with lower overall security for low-educated individuals.[31]

The effect of our policy variables is less widespread for the successful dimension of employment quality. Interestingly, a higher EPL-T index increases the female probability of being successful, and higher ALMP expenditure again increases the probability of being almost always employed but unsuccessful for low-educated individuals.

8.6. CONCLUSIONS

This chapter has highlighted the importance of studying various aspects of youth labor market performance from a dynamic perspective. Given that labor markets are increasingly characterized by workers moving quite frequently between jobs, with possible unemployment spells in between, we argue that it is important to go beyond (or to complement) the analysis of jobs' characteristics and to develop new concepts of employment security and employment quality that account for various features of individuals' employment conditions over a certain period of time. Our definition of employment quality encompasses four dimensions: employment security, income security, income success, and a successful match between education and occupation, which are identified using information pertaining to a 2-year period. We have also presented a new methodology with which to analyze ESTs, based on whether they contain a prespecified major outcome and some other minor features that are relevant for the research question being addressed.

We have used this approach for the analysis of young Europeans' labor market experience during the period 2006–2012. We have examined two phases of youth working life: entry into the labor market (i.e., the transition from school to the first relevant employment experience) and the subsequent phase, approximately 5 years after leaving full-time education. For the first phase, we have analyzed the type and the determinants of ESTs followed in the first 3 years after education exit. For the second phase, we have focused on young people's probability of achieving a secure employment condition (employment security and income security) and a successful employment condition (income success and a successful match between education and occupation). For those who were not able to achieve these outcomes, we have examined their employment pathway.

The descriptive analysis shows that successful school-to-work trajectories are more frequent in Nordic countries but that this relative advantage vanishes in the second phase. By contrast, Southern countries record the worst performance in both phases. The impact of the economic crisis on employment trajectories is large in the first phase but negligible in the second phase. In the latter phase, the

crisis has reduced young people's probability of achieving income security and a successful employment condition.

Our econometric analysis shows that although males and females have similar chances of obtaining good employment outcomes immediately after leaving education (they have almost the same chances of accessing paid employment rapidly), the labor market condition of women deteriorates during the following few years. More precisely, women are less likely than men to have achieved employment security approximately 5 years after leaving education; that is, they are considerably more likely to experience career interruptions and have more fragmented career pathways. However, if they are able to follow a stable employment trajectory, they have better chances than men of having a stable labor income above the poverty line. On the contrary, they always have less chances of being successful even when they manage to remain continuously employed.

The regulation of temporary contracts mainly affects the type of employment trajectory followed by individuals, whereas the EPL regarding regular contracts appears to have some additional effects on income security. Stricter rules on the use of temporary contracts tend to reduce the probability of fragmented trajectories in both phases, facilitating the achievement by young people of employment security approximately 5 years after leaving education, with more marked effects over time for women and low-educated young people. A more stringent regulation of individual dismissals generates difficulties in the school-to-work transition for highly educated individuals and for females, who have to cope with a lower probability of entering paid work rapidly. These negative effects remain also in the second phase, reducing the chances of being secure not only for university graduates and females but also for high school graduates. For the latter two groups, stricter rules on individual dismissals seem to have adverse effects on income security. Indeed, a higher EPL-P increases the likelihood of having a labor income below the poverty line when following a continuous employment trajectory. This could be the result of a trade-off between earnings levels and job security. ALMP expenditures have overall positive effects in the first phase, increasing the speed of youth labor market entry, whereas in the second phase (approximately 5 years after education exit), they are associated with an increase in youth employment security but also a decrease in overall security (especially for the low educated), presumably because of an increase in income insecurity. Thus, these policies must be considered with caution because ALMPs seem to improve labor market outcomes in terms of stability and permanence in employment but to have side effects on earnings.

From a policy perspective, our findings suggest that there is still a pressing need to enhance women's chances of remaining continuously in employment and moving up the labor income distribution. Indeed, it appears that the well-known gender differences in labor market outcomes (career interruptions due to motherhood, job segregation, wage penalty, etc.) have not yet been removed.

Relaxing the rules on the use of temporary contracts (as has been done mainly by Southern countries), besides generating more difficulties for women (and low-educated individuals), does not appear to be an effective policy tool with which to improve youth employment outcomes in general. In fact, it reduces the chances of reaching a relevant employment spell within 3 years after leaving education, as well as the chances of achieving a sufficiently secure employment condition within the subsequent few years.

NOTES

1 The International Labour Organization has also developed an analytical framework to study individuals' school-to-work transitions. The school-to-work transition is defined as the passage from the end of schooling to a stable or satisfactory employment condition (Matsumoto and Elder 2010). Young people are classified into three categories: (1) "transited" if the job held at the moment of the survey is either stable/secure or satisfactory; (2) "in transition" if the job is unstable/insecure and unsatisfactory or if the person is unemployed or inactive (aims to work later); and (3) "not started transition yet" if the person is in education or inactive (not aiming to work later). Young people who have transited are further categorized by their "speed" of transition into "short," "middling," and "lengthy" based on the type and the lengths of spells experienced.

2 The OM method calculates the minimum distance between any two sequences by considering the number of steps that must be enacted in order to make both sequences equal, associating a cost with each step. The corresponding matrix of minimum distances is then used in a cluster analysis to group sequences into similar "types" or in a discrepancy analysis (Studer et al. 2011) to examine the association between activity sequences and one or more categorical predictors.

3 See Aisenbrey and Fasang (2010) for a discussion of criticisms of traditional OM. See Cornwell (2015) for a review of the OM technique and an update on the latest methodological improvements.

4 The outcome that drives our grouping methodology in the first phase of youth labor market experience is the achievement of a "relevant" employment spell, whereas in the second phase it is the prevailing labor market status.

5 Other dimensions considered in the literature include education and training, working environment, work–life balance, and gender balance.

6 According to recent estimates, nearly 15% of EU employees aged 25–64 years are overqualified (European Commission 2012, 360, 388 (Annex 2)). The studies reviewed by Quintini (2011)—based on educational

qualifications—estimate that one in four workers in OECD countries could be overqualified and that one in three could be underqualified for their jobs.

7 For the second phase, we consider young people who left education 3–5 years before the first interview, evaluating their labor market performance in the following 2 years (first 2 years of the survey). This means that for some individuals, we evaluate labor market performance at 3 or 4 years after exiting full-time education, whereas for others we refer to 4 or 5 or to 5 or 6 years.

8 IE, LU, NL, and NO are excluded from the analysis because the sample size was too small. BG, CY, LT, LV, MT, and RO are excluded because the policy variables that we use in the econometric analysis are not available for these countries.

9 See Berloffa, Mazzolini, and Villa (2015) and Berloffa et al. (2015) for details about the sample selection rules.

10 EU-SILC does not provide daily data. However, by using monthly information instead of daily data, we have a sample with less noise due to the exclusion of individuals who change their status very frequently. The monthly activity status declared by respondents must have been their status for at least 2 out of 4 week in 1 month. If there are more than two activities, the main activity is the one in which the individual spent the most time.

11 The definition of a relevant employment spell follows the EU-SILC convention, according to which a 6-month period identifies the first regular job and whether individuals ever worked. The time frame of 6 months is a reference length also for some labor market policies, such as the UK government's Youth Contract wage incentive, which was in place from 2012 to 2014, paying an incentive to firms that recruited long-term unemployed young people for at least 26 weeks.

12 We consider a 24-month period in order to have all the dimensions of employment quality referring to the same reference period. Indeed, information about income and monthly employment statuses, which is used to identify income security, income success, and employment security, refers to the calendar year preceding the interview. In contrast, information about the type of occupation, which is used to identify education–occupation success, refers to the year of the interview. Thus, the only overlapping years for information about all four dimensions are the two calendar years preceding the third interview.

13 Employment quality is evaluated during the two calendar years corresponding to the first two interviews. In contrast, ESTs cover a 3-year period that starts in the calendar year before the first interview. This means that we have a time span of 2–4 years between education exit and the beginning of the observation period for second-phase ESTs.

14 We exclude from the analysis those individuals who were inactive for the entire length of the sequence.

15 Countries are grouped on the basis of geographic criteria, largely for presentational purposes. This grouping is used only for the descriptive analysis, whereas the econometric analysis uses country dummies.

16 The data on monthly employment status refer to the year preceding the interview. Thus, for those interviewed in 2006–2008, the ESTs refer to the period 2005–2007.

17 This share is computed over the entire sample (including those who were never employed); if we consider only those who have at least 1 month in employment in both years, the share of income successful young people rises to 27%.

18 See Berloffa, Mazzolini, and Villa (2015) and Berloffa et al. (2015) for further details about the control variables included in the analysis.

19 Because we had a small sample size for some countries (e.g., the Nordic countries), we also estimated our models controlling for country-group dummies instead of country dummies. The results remained consistent across specifications.

20 EPL-P measures the strictness of employment protection against individual dismissals, whereas EPL-T measures the strictness of regulation on the use of fixed-term and temporary-work agency contracts.

21 ALMPs include training, job rotation and job sharing, employment incentives, supported employment and rehabilitation, direct job creation, and start-up incentives. We are well aware that this variable only provides information about the input—that is, how much money was spent and how many people participated—but there is no other information available to account for the efficiency of these ALMP expenditures.

22 Right censoring was considerably more limited in the second phase because we examined the prevalent employment condition and the number of status changes in defining trajectories. Hence, the employment condition at the end of the sequence is less relevant for the definition.

23 The EPL-T index of Spain declined in 2006–2007 and in 2010–2011, that of Portugal and Sweden declined in 2007–2008, and that of Greece declined in 2010–2011 and in 2011–2012.

24 This is in line with the data presented in *Employment and Social Developments in Europe 2014* (European Commission 2014, 77–78), suggesting that reductions in EPL either for permanent workers (during economic downturns) or for temporary contracts do not appear to be clearly correlated with improvements in the transition from unemployment to employment.

25 The estimated coefficients imply that, for example, an increase in ALMP expenditure as a share of per capita GDP from 0.10 to 0.20 increases (decreases) the probability of being speedy (in and out unsuccessful) only by 0.11 (0.07) pp.

26 Instead of controlling for partnership, we could have controlled for parenthood. However, we believe that the decision to have children may be more

endogenous than the decision to form a couple. Indeed, many authors have developed and estimated models of joint fertility and labor supply decisions, whereas few studies have explored the interdependencies between females' labor market participation and the choice of living in a couple.

27   Note, however, that this does not necessarily mean that they stay in the same job. Berloffa et al. (2016) show that an increase in the strictness of the regulations on the use of fixed-term contracts raises the likelihood of staying almost continuously in the labor market, although not with the same employer.

28   An increase in ALMP expenditure as a share of per capita GDP from 0.10 to 0.20 increases the probability of being employment secure by 8.9 pp and decreases the probability of being prevalently unemployed by 5.6 pp.

29   Indeed, estimation of a multinomial logit model specifically for income security shows that males are much less likely to be at the margin of the labor market (the probability of being continuously unemployed/inactive or returning to education is 8% for males vs. 22% for females) but much more likely to be always employed and income insecure (25% vs. 11%). If we compute the probability of being income secure conditionally on having continuous/stable employment, men are actually worse off (the conditional probability becomes 68% for males vs. 80% for females).

30   Thus, when women are able to follow a stable employment trajectory, they are more likely than men to be income secure but less likely to be successful.

31   The magnitude of the effect is larger than that estimated for employment security. An increase in ALMP expenditure as a share of per capita GDP from 0.10 to 0.20 decreases the probability of being secure by 13.8 pp.

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