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Youth survival in the labour market: Employment scarring in three transition economies

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Abstract
The aim of this study is to examine whether the prevalent and fairly long unemployment spell of young Macedonians, Serbians and Montenegrins early in their career has negative effects on their subsequent labour-market performance: the so-called employment scarring. We first model unemployment spell as a function of individual and household characteristics and work attitudes and preferences using a discrete-time duration method. Then, we estimate the survival probabilities to examine the potential existence of employment scarring. The results provide some evidence for the potential presence of employment scarring in the three countries. The scars are largest in Serbia for all durations of the unemployment spell followed by Macedonia; they are weakest in Montenegro.

JEL Codes: E24, J24, J64

Introduction

Macedonia, Montenegro and Serbia, once part of the same state, Yugoslavia, shared the same economic and political systems. After 1991, they embarked on a transition to a market economy with somewhat similar paths, largely shaped by the International Monetary Fund (IMF) and the World Bank, although with country specifics and peculiarities which

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sometimes produced different economic outcomes. Today, the three countries are characterised by malfunctioning labour markets, with persistently high unemployment and low job creation. Young people face disadvantage in the labour market, both relative to the overall population and to their European Union (EU) peers. Their unemployment rates are more than double those of the adults; their activity and employment are very low; about two-thirds of youth face long-term unemployment and their transitions from school to work last for about 2 years.

Although there is a large body of research on youth unemployment across the world, the issue has regained attention (especially in the developed countries) with the rise in youth unemployment amidst the global recession. Some recent papers include Junankar (2015) for Australia, Marelli and Vakulenko (2016) for Italy and Russia, Kokotovic (2016) with a focus on the EU countries with the highest and lowest youth unemployment, Baah-Boateng (2016) focusing on African countries and Tamesberger (2015) for Austria. The high youth unemployment and long school to work transitions present large costs both to the society and to individuals. The costs for the society include lost developmental potential, direct welfare costs and social misbehaviour of youth (Fougère et al., 2009; Raphael and Winter-Ebmer, 2001). From individuals' perspective, unemployment has a direct cost of lost income, as well indirect adverse impact on future employment prospects – the so-called 'scarring' effects. The international evidence on the existence of scarring is relatively well-documented (for example, in, Arulampalam et al., 2001; Cruces et al., 2012; Fares and Tiongson, 2007; Gregg and Tominey, 2005; Ryan, 2001), but the focus of the studies has been on developed countries with tight labour markets.

By contrast, the research and evidence on employment scars in developing and transition countries are sparser, especially in the case of economies whose labour markets are characterised by high unemployment rates and long unemployment spells. Different socio-economic contexts and cultures, inefficient labour-market institutions and the high incidence of informal employment, all may render different scarring effects in slack labour markets. In such contexts, the unemployment spells may be accepted as normal for the society and employers, and hence, any effect of unemployment spells for later employment prospects may be seen as weak or absent. Hence, this study is among the first to investigate such scars in the context of a slack labour market, representing the main contribution to the current complement of global knowledge.

The aim of the study is to explore whether the unemployment experience of young individuals in Macedonia, Montenegro and Serbia, early in their career, has negative effects on their subsequent labour-market performance. In particular, we seek to examine whether employment scarring exists and, if so, whether it follows similar patterns across the three countries. In pursuing our objective, we first examine factors that influence the duration of unemployment spell of a young person and then produce survival probabilities. Recently gathered School to Work Transition Surveys (SWTS) 2014–2015 are used for the three countries from the Western Balkans that were included in a data collection project by the International Labour Organisation (ILO). The advantage of studying this group is that it allows for making a reasonable assumption for apparent similarities in unobserved heterogeneity among youth in terms of labour-market outcomes. Moreover, it may be possible to apply the findings more generally to the whole Western Balkan region, given its shared socialist legacy and similar transition patterns. Even beyond, it

may be possible to apply the results to other developing countries with high total and youth unemployment.

The results suggest that there are common factors affecting the speed of exiting youth unemployment in the three countries: experience, education, financial condition of the household, work while studying and the reservation wage. Survival probabilities offer some evidence of the potential presence of employment scarring in all three countries. Nevertheless, a comparison of the scarring patterns among the three countries suggested potential differences. Scars were found to be the largest in Serbia for all durations of unemployment spell. It is posited that this outcome may be attributed to the worse position of youth relative to prime-age workers in Serbia compared to Macedonia and Montenegro, as well to the lags Serbia experienced in privatisation and structural reforms. Scars were found to be larger in Macedonia than in Montenegro, possibly attributable to the worse labour-market developments in Macedonia relative to Montenegro over the entire transition period, as well by the recent improvements in labour-market flexibility when compared to Serbia. A large internship programme in Montenegro, as well as the more robust development of the Montenegrin economy, likely explains the weakest scars there among the three countries.

The study brings a couple of novelties to the current global literature on these issues. First, it pioneers the investigation of the scarring effects of youth unemployment in transition countries with high youth unemployment. Second, the study is among the few which makes use of the newly produced SWTS data of the ILO. Third, the study utilises a discrete-time duration model, given the nature of the dependent variable, a methodology which has been rarely applied in the literature. Finally and most importantly, the study offers comparative evidence supporting the need to go beyond one-size-fits-all policy prescriptions, demonstrating that for three apparently similar Western Balkan countries, policy action must be tailored to the specific needs of each country, and not simply replicated from country to country.

The study is structured as follows. Section 'Literature overview' provides an overview of the related literature. Section 'Labour markets and youth in Macedonia, Montenegro and Serbia' offers brief stylised facts about the labour markets in the three countries with focus on the position of youth. Sections 'Methodology' and 'Data' present the methodology and the underlying data, respectively. Section 'Results and discussion' presents the results and offers discussion. The last section concludes and offers some policy advice.

Literature overview

The theoretical foundations for the existence of employment scarring are set down in two theories: (a) the human capital theory of Gary Becker (1962) and (b) signalling theory (Spence, 1973). According to the first theory, it is the loss of human capital (skills and knowledge) while a person is unemployed that reduces his or her productivity and leads to long-term reduction of labour market returns. On the other hand, signalling theory predicts that in the presence of information asymmetry, employers face uncertainty about workers' productivity when hiring. Hence, they use statistical screening in the hiring, which is based on the group to which the worker belongs (e.g. age, gender and ethnicity)

(Kollmann, 1994; Lockwood, 1991; Lupi and Ordine, 2002; Mooi-Reci and Ganzeboom, 2014) whereby previous unemployment (its frequency and/or duration) is seen as signalling lower productivity, and therefore, lower employment probability (also called a stigma effect).

An important issue in identifying the potential employment scar has been the treatment of unobserved heterogeneity. As Gregg (2001) argues, 'Some people are always more prone to unemployment because of low education or other less easily observed heterogeneity' (p. 631). In other words, more motivated, talented, capable and enthusiastic individuals may be more inclined to find a job sooner than other youth. If unobserved heterogeneity is not explicitly accounted for, the identified employment scar would actually be a combination of scarring and unobserved characteristics. There are two notable approaches to dealing with unobserved heterogeneity: an instrumental variables (IV) approach and including fixed effects. The IV approach assumes that there is exogenous variation (over time) which affects the unemployment spell but not the subsequent employment condition. Studies (e.g. Gregg, 2001; Petreski et al., 2016) proposed regional unemployment rates at the time the person exited schooling as an instrument. However, its strict exogeneity has been frequently questioned: local employment conditions at the time when the person completed schooling are likely to be related to some parents' characteristics which may be related to shaping the child's subsequent labour-market performance. Further potential correlations between regional instruments and the current employment situation have also been identified in the literature (see Gregg, 2001: 636–637). The fixed-effects approach assumes availability of longitudinal data. Fixed effects do resolve the problem of unobserved heterogeneity, unless the distribution of the latter changes over time. However, such wiping out of the unobserved heterogeneity has been criticised for not making any assumptions about the distribution of heterogeneity. 'It does not really seem possible in practice to identify separately the effect of heterogeneity from that of duration dependence without making very strong assumptions about functional form which have no foundation in any economic theory' (Lancaster, 1990: 157). Hence, the issue of unobserved heterogeneity in the scarring context has never been convincingly resolved.

The empirical evidence generally confirms the presence of employment scars. For instance, Gregg (2001) finds that the early labour-market experience of young persons (as well as the family context, educational attainment and behavioural traits) affects future employment probabilities. Cockx and Picchio (2013) focus on young individuals who are already long-term unemployed in Belgium and find that prolonging unemployment significantly reduces employment probability. The study of Nilsen and Reiso (2011) focuses on young individuals in Norway and finds long-term scars from unemployment (about 10 percentage points higher chance of being unemployed at year 5), which then decreases over time (to about 5 percentage points in year 8 and onwards).

Both the theoretical foundations and the empirical evidence for employment scarring have been found for tight and competitive labour markets such as those in developed countries. There is, on the other hand, very scarce evidence on this phenomenon in developing and transition countries. Different socio-economic environments, institutional frameworks, large grey economies and informal labour markets, different cultures and norms and sometimes very high unemployment in developing countries – all may either

exacerbate or break the link between early unemployment and the long-term employ-ment prospects of young individuals. For instance, in a slack labour market where unem-ployment is widespread and socially accepted as normal, an unemployment spell may not be considered as a signal of worker's low productivity, giving rise to lower or no employment scar. One can expect that unemployment is less costly for the individual in slack labour markets (Lupi and Ordine, 2002). Large informal sectors further confound the link between the unemployment spell and subsequent employment probability. Expectations on this issue may well go into two distinct directions: (a) informality early in a career may extend informality later and negatively impact (the search for) formal employment (Gasparini and Tornaroli, 2009); or (b) informal jobs may provide some training, networks and work experience to young workers, hence, improving their formal employment and wage potentials (Cunningham and Salvagno, 2011).

To our knowledge, there are two micro-studies focusing on employment scarring in developing countries or regions. Fares and Tiongson (2007) found a significant employ-ment scar in Bosnia and Herzegovina: young people who experienced joblessness in 2001 had an 11% greater probability of being unemployed and a 30% higher probability of being jobless (unemployed or inactive) in 2004 compared to their peers who were employed in 2001. Lupi and Ordine (2002) found that the unemployment experience does not produce employment scars in Italian regions with high unemployment rates. In those regions, the majority of workers experienced a period of unemployment which did not necessarily signal low worker productivity.

Overall, while studies focusing on developed countries find evidence for the existence of employment scars, the literature and theoretical predictions suggest that a high unem-ployment context could potentially weaken the link between the early unemployment experience and later labour-market outcomes.

Labour markets and youth in Macedonia, Montenegro and Serbia

Three countries, which were once part of Yugoslavia, started the transition from planned to market economy in the early 1990s. Macedonia gained independence in 1991, while Serbia and Montenegro left Yugoslavia as one country (with the legacy of carrying its name) until they peacefully separated in 2006. Unlike other socialist countries which had zero open unemployment, the ex-Yugoslav republics had relatively high unemployment even at the beginning of the 1990s (prior to the Yugoslav dissolution; Bartlett, 2007; Mojsoska-Blazevski, 2005). There was also large underemployment.[1] Serbia had the lowest unemployment rate (10.5% in 1991), then Montenegro (15.7%), while Macedonia even then had an astonishing 26.6% (similar to the unemployment rate today).[2] Unemployment further increased over the 1990s with economic restructuring, including the privatisation process, whereby new private owners embarked on massive layoffs, coupled with state-offered pre-retirement packages for older workers.

Figure 1 presents the employment rates of the overall population and of youth in the period 2000–2015. Although at the start of the 2000s, the labour market in Serbia was per-forming better than in Macedonia and Montenegro, the recent pick up in the speed of pri-vatisation (IMF, 2015) and the Great Recession significantly worsened labour-market
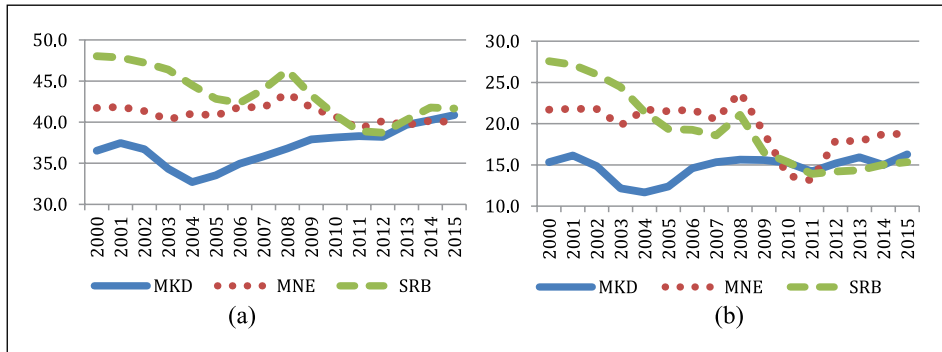
Figure 1. Employment rates, three transition economies 2000–2015 (a) Employment rate (15+) and (b) Employment rate (youth).
Source: Calculated from Key Indicators of the Labour Market (KILM) database of the International Labour Organisation (ILO).
MKD: Macedonia; MNE: Montenegro; SRB: Serbia.

prospects. By 2015, the three countries achieved similar labour-market performance: employment rates are presently close to 40% (Figure 1(a)), still much lower than the EU-28 average of 65.6%.[3] Youth employment rates range between 15% and 19% (Figure 1(b)), compared to 33% in the EU-28. A distinctive feature of the labour market in Montenegro is the large seasonal employment of foreigners in the construction, tourism and hospitality sectors (Ministry of Labour and Social Welfare Montenegro (MLSW), 2015). This phenomenon has been present for a long time, but it has increased in recent years.

In the period 2000–2015, the overall unemployment rate in Serbia increased (from 10.3% to 16.7%), in Montenegro it was constant at 16.8%, while in Macedonia it has recently decreased to 24.5%. Among the three countries, youth are most disadvantaged in Macedonia, facing about 50% unemployment rate (and close to 60% in 2000) (Figure 2).

However, young people in Serbia experienced the worst deterioration in their labour-market position in the observed period. In addition, the youth-to-adult unemployment ratio was the highest in Serbia for the whole period, close to 2.7, while it was close to 2 in Macedonia and Montenegro. Overall, while nowadays the three countries experience comparable labour-market outcomes, they followed different trends over the transition period.

Youth in the three countries are in a worse position than their EU counterparts. The EU-28 average youth unemployment rate in 2015 was 20.4%, although some EU countries have been exhibiting very high youth unemployment rates since the recession (for instance, Greece 49.8% and Spain 48.3%).

Figure 3 presents the participation rates of youth in selected years since 2000. Apparently, in all three countries, youth were less active in the labour market in 2015 compared to 2000, which can be explained by increased enrolments in tertiary education, as elsewhere. Still, the 2015 participation rates of young people were much lower than the EU-28 average of 41.5%.
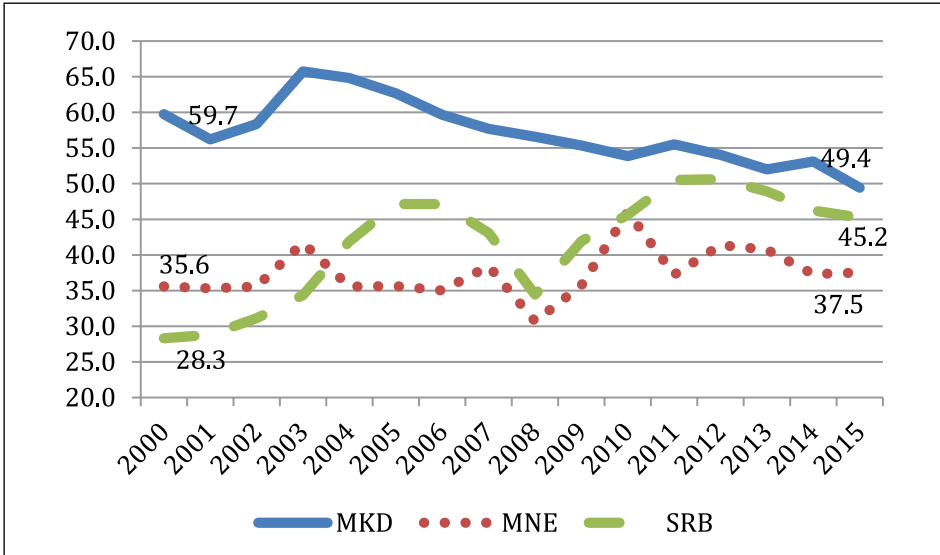
Figure 2. Youth unemployment rates, three transition economies, 2000–2015.
Source: Calculated from KILM database of the ILO.
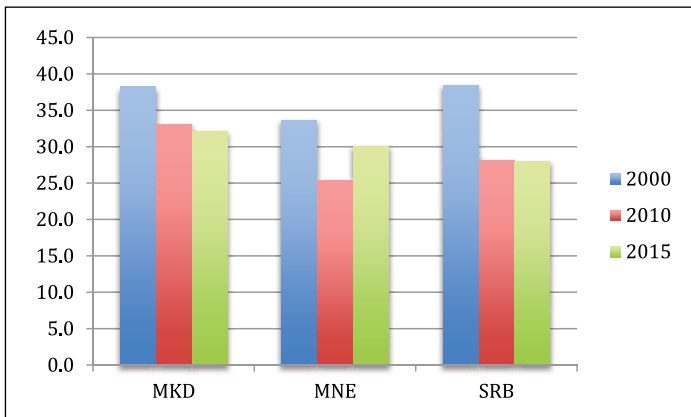MKD: Macedonia; MNE: Montenegro; SRB: Serbia.

Figure 3. Labour market participation rates of youth, three transition economies 2000–2015.
Source: Calculated from the KILM database of the ILO.
MKD: Macedonia; MNE: Montenegro; SRB: Serbia. (See colour version of this figure online at http://journals.
sagepub.com/home/elr).

An additional feature of the labour markets in the three countries is the high level of long-term unemployment. According to data from the Key Indicators of the Labour Market (KILM) database of the ILO (2014 for Macedonia and 2012 for Serbia and Montenegro), about 80% of the unemployed in Macedonia and Serbia were in that status

for more than a year. The share of long-term unemployed in Montenegro was slightly lower at 55.7% in 2013 (MLSW, 2015). Young people are also not immune to long-term unemployment: 67.2% and 64.5% of youth in Macedonia and Serbia, respectively, were unemployed for more than a year. Moreover, youth who acquired their first job were experiencing long transitions from school to work: on average, from about 21 months in Montenegro (Djuric, 2016) to 24 months in Serbia (Marjanovic, 2016) and 25 months in Macedonia (Mojsoska-Blazevski, 2016). It is worthwhile mentioning that all three countries implement active labour-market programmes targeting youth mainly in a form of internship programmes (for tertiary-educated workers), and training (for secondary-educated workers), as well as subsidised jobs. However, the internship programme run in Montenegro is by far the largest, involving half the university graduates and costing 0.3% of gross domestic product (GDP; World Bank, 2014).[4]

Methodology

Our central variable of interest – the unemployment spell – has two specifics: first, it measures duration, that is, the elapsing of time; and second, it is grouped into eight distinct categories rather than being expressed as a continuous phenomenon in units of time. The first characteristic implies usage of a duration model (Hensher and Mannering, 1994; Kiefer, 1988). Duration models, or survival models, typically focus on time-to-event data. In the most general sense, these consist of techniques for positive valued random variables, such as the time to employment, in our case, called the 'survival time'. Typically, survival data are not fully observed but rather censored. Censoring that is random and non-informative is usually required in order to avoid bias in survival analysis. Our dependent variable – duration of unemployment – is composed of two parts: the time to employment and the employment status, that is, if employment occurred or not. Hence, the two functions can be estimated depending on time: the survival and hazard functions. The former gives, at any time point, the probability of surviving (staying in unemployment) up to that moment; the latter gives the potential that employment will happen, per time unit, given the person survived up to that moment.

More specifically, we use a discrete-time duration model, as our dependent variable is rather discrete, grouped into eight intervals, each specifying a certain unemployment duration (see Box-Steffensmeier and Jones (2004: 69) for a textbook explanation for this subgroup of duration models); Muthén and Masyn (2005) provide an application of the model.

The discrete hazard function of the interval-censored unemployment spells, that is, the conditional probability of event occurrence (exiting unemployment; $y = 1$) in the interval t given survival until $(t-1)$ could be written as follows

$$h_{ik}(t) = \Pr\left(y_{ik}(t) = 1 \mid y_{ik}(t-1) = 0\right) \qquad (1)$$

where observations belong to individual i in country k. The discrete-time survivor function for n intervals t is then

$$S(t) = \prod_{n=1}^{t}\left(1 - h(t_n)\right) \qquad (2)$$

Hence, to estimate the employment scars, as well as the impact of vectors of micro-level control variables, we fit a logistic regression model in the following form

$$logit\left[h_{ik}(t)\right] = \alpha(t) + \beta_{1j}\sum indiv_{jik} + \gamma_{1j}\sum socio_{jik} + \delta_{1j}\sum wpa_{jik} + \mu\sum country_{jk} + \varepsilon_i \tag{3}$$

where $\sum indiv_{jik}$ stands for a set j of individual characteristics of person i, in country k, as follows: experience, gender, education and marital status; $\sum socio_{jik}$ stands for a set j of socio-economic characteristics of the household: number of children, the educational levels of the parents and the financial situation of the household; $\sum wpa_{jik}$ stands for a set j of working preferences and attitudes: work, career attitude and internship pursuance during schooling, and the log reservation wage; and $\sum country_{jk}$ stands for a set j of country characteristics: the log of GDP per capita, the share of long-term unemployment in total unemployment and the labour-force participation rate. The latter plays the role of country fixed effects. ε_i stands for the individual heterogeneity.

$\alpha(t)$ is a function of time and represents the baseline hazard in case all covariates take on the value of zero. In our case, we model the functional form of the duration dependence by having groups of time intervals, denoted as D_1–D_8. This model treats the baseline hazard to be rather constant within but it differs between the eight intervals: no spell (1), spell up to a week (2), week to month (3), month to 3 months (4), 3–6 months (5), 6–12 months (6), 1–2 years (7) and over 2 years (8). The functional form of the duration dependence may be written as

$$\alpha(t) = \alpha_1 D_1 + \cdots + \alpha_8 D_8 = \sum_{d=1}^{8}\alpha_d * D_{ijk} \tag{4}$$

Thus, we are able to analyse discrete-time data using logistic regression (3) with indicator variables for each of the unemployment duration periods as in equation (4). Such a methodological approach should enable us to capture the effects of previous unemployment duration on the current employment probability (duration dependence). In the second step, we produce the survival probabilities for the eight categories of unemployment spell duration based on the estimation of the survival function.

Apparently, our methodological approach does not treat the issue of unobserved heterogeneity. Recall from section 'Literature overview' that the literature tried to address this issue by making an instrument of the unemployment spell or by wiping out the unobserved heterogeneity by using fixed-effects panel methods. However, both methods have their critics. Hence, we depart from this approach by being interested in the differences in the scarring effects among the three countries and not in the level/intensity of scarring per country. The underlying assumption in this approach is that the unobserved heterogeneity is the same across youth in the three countries. Unobserved heterogeneity – broadly understood as values, mentality and culture of youth – is considered to have been shared throughout the entire Western Balkans region (e.g. Pejovich, 2006; Vujadinović, 2004). Moreover, we are here considering three countries of this region which, apart from sharing a common past in the state of Yugoslavia, share further common features that are not

shared by all Western Balkan countries. These include the dominant Orthodox Christianity, as well as the shared visions for and similar patterns of EU accession. Moreover, many international institutions, including those shaping labour-market policies, usually have a common approach to these countries.

Data

This article uses the SWTS (ILO, 2014–2015), a representative household survey for young persons aged 15–29 years. Data for Macedonia are for the year 2014, whereas those for Montenegro and Serbia are for the year 2015, but given the absence of large changes in the labour markets in the three countries between the 2 years, we treat them as pooled cross-sections. The sample is largest in Serbia (3508 young individuals) followed by Montenegro (2988) and Macedonia (2544). Although data are cross-sectional, they contain details on the education and employment history of an individual, hence involving some time information.

For our analysis, we focus on active youth (the majority of young people are actually still in education) in each country, leaving us with 1643 observations in Serbia, 1336 in Montenegro and 1248 in Macedonia. Hence, one should be cautious in applying the conclusions of this article to the entire youth population: the unemployment condition of a young person exiting education (inactivity status) depends on whether he or she intends to enter the labour market.

Figure 4 presents the distribution of youth by labour-market status in the three countries (note that these are not employment/unemployment rates). As we can see, about three-fifths of the active Macedonian youth are working, which is the case with about one-half of the active youth in Serbia and two-fifths of Montenegrin ones.

Figure 5 presents the distribution of youth unemployment duration in the three countries. This is the key variable in this article; it is an ordered variable ranging from 1 = no unemployment spell to 8 = a spell of 2 or more years. It has been created by merging two questions available in the survey: 'For how long were you seeking a job before you found the current one?' and 'For how long have you now been without a job and have been actively searching for one?' As the two are mutually exclusive, the aggregate unemployment spell duration variable has been created by their simple sum.

The figure depicts some notable differences among the three countries. First, a fairly large share of the youth sample in Montenegro (30%) found a job immediately after completing school, that is, they experienced no unemployment spell compared to only 4% in Macedonia. Second, for almost all durations of the unemployment spell, the share of Montenegrin youth was smaller than that in the other two countries. Third, Serbia performed better than Macedonia for spells of up to 2 years. Fourth, all three countries experienced large contingents of youth facing transitions more than 2 years, but the situation was the most severe in Macedonia, where this percentage was nearly 40%, compared to about half that figure in Serbia and Montenegro. Hence, this detailed disaggregation of the unemployment spell may be actually suggesting different scarring patterns in the three countries.
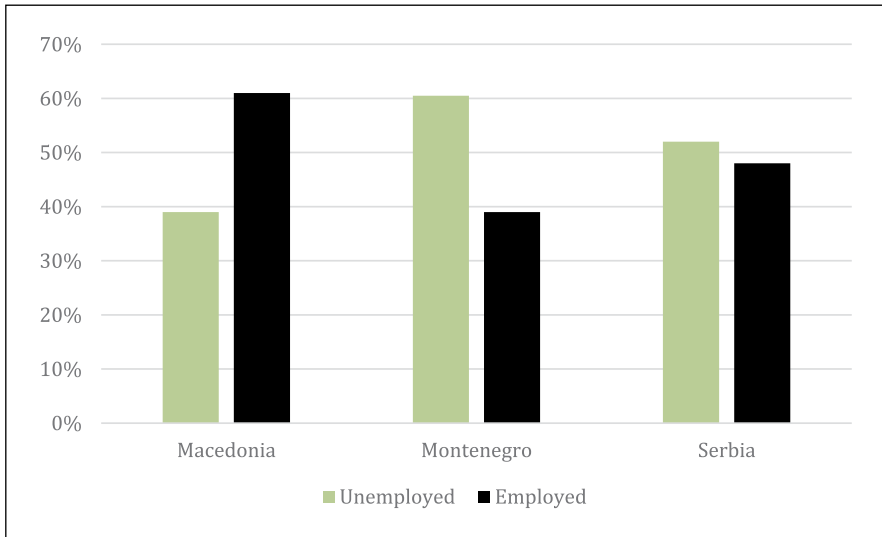
Figure 4. Distribution of youth population by labour-market status, three transition economies 2014–2015.
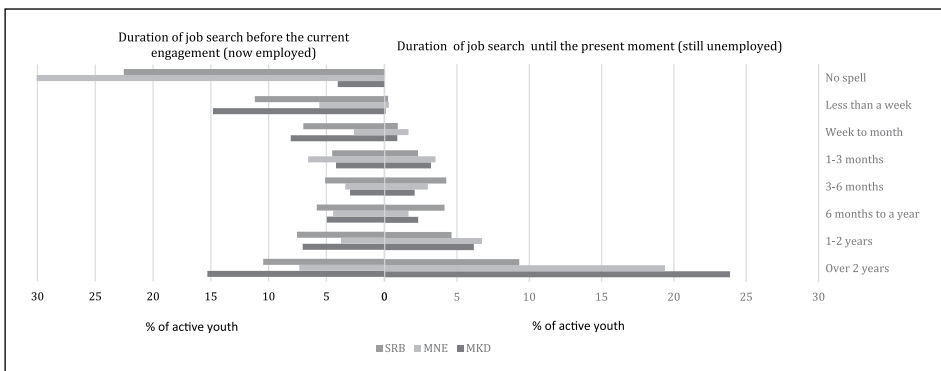Source: ILO School to Work Transition Surveys (SWTS) 2014–2015.

Figure 5. Transition from school to work of youth in the three transition economies.
Source: SWTS 2014–2015. (See colour version of this figure online at http://journals.sagepub.com/home/elr).

Results and discussion

We first present the survival probabilities as function of time, using the Kaplan–Meier non-parametric method. Figure 6 shows the proportion of people who did not experience the event, that is, who are still in the original state, which in our case is unemployment. We present the data by employment status (for those still unemployed – censored – vis-à-vis those already employed) and then disaggregated by country.
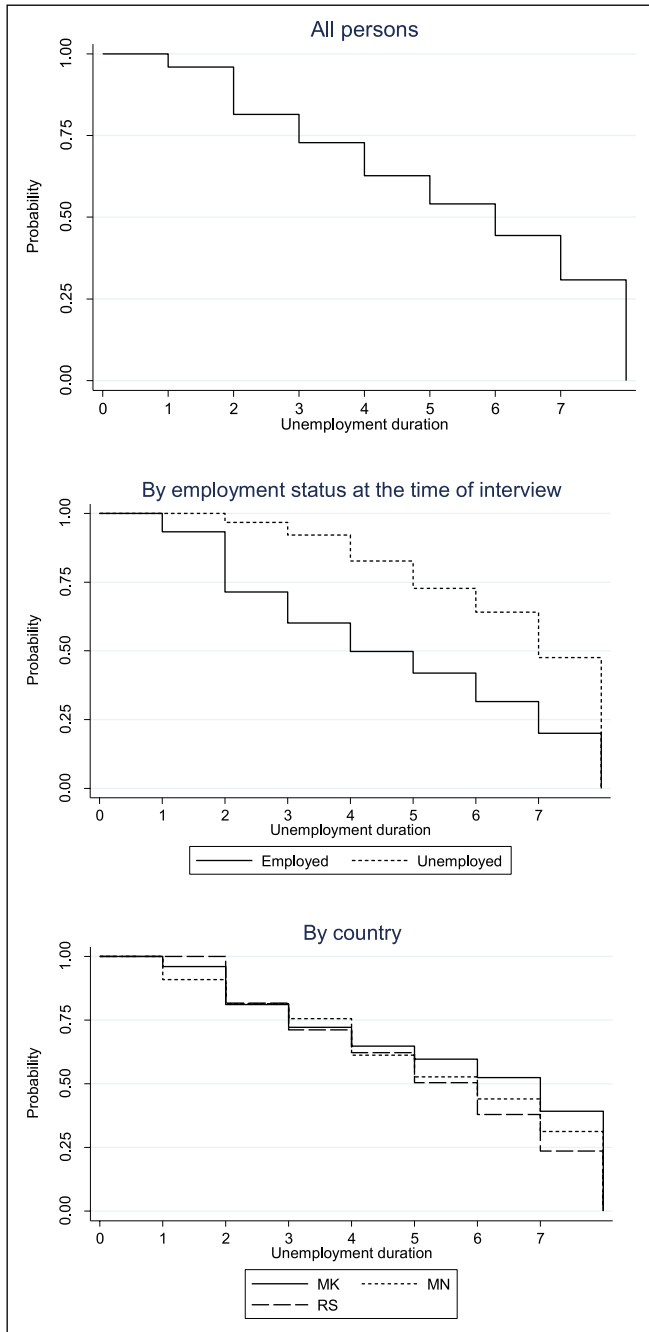
Figure 6. Kaplan–Meier survival estimates.
Source: Authors' estimates.
Horizontal axis shows the durations of unemployment ranging from 1 = no unemployment spell to 8 = a spell of 2 or more years.

The upper graph documents the well-known fact for youth unemployment in the three countries: it tends to be long term, as about 40% of persons search for a job for more than a year, while over 25% search for more than 2 years (upper left graph). Those who are still unemployed have longer unemployment spells than those who found employment (although this is reversed at shorter unemployment spells). The lower panel suggests that there are some differences among the countries, with Macedonian youth having a higher probability of experiencing unemployment spells of any length relative to Serbian and Montenegrin youth.

To give further intuition to the possible separate treatment of the unemployment spell duration in the three countries, as well as of the resulting survival probabilities, we run two tests: a log-rank test, whereby the null hypothesis states that the distribution of the unemployment duration among the three countries *is the same*, and an LR-test (Chow test for discrete-probability functions) whereby the null hypothesis states that all coefficients of a model *do not vary* between disjointed subsets of the data, being the pooled dataset versus the individual countries. Both produce a chi-square probability of 0.000, suggesting that the null hypothesis could be robustly rejected and that the three countries possibly follow different employment scarring patterns and should be potentially treated separately, despite the apparently similar youth labour-market realisations (see section 'Labour markets and youth in Macedonia, Montenegro and Serbia').

We embark on estimating the unemployment spell model (1) in order to be able to disentangle these potentially different patterns. Table 1 provides the estimates: it presents the hazard coefficients. Column (1) presents the results for the entire model, while columns (2)–(4) disaggregate by country. The results suggest that experience, gender, education, household's financial situation, working while studying, the reservation wage of the individual and the country's GDP per capita were significant for employment. More experienced male and more educated individuals were more likely to get employed sooner compared to less experienced female and less educated ones. The better the financial situation in the household, the more probably the person would gain employment earlier rather than later. Working while studying resulted in higher employment prospects, while higher expectations measured through a higher reservation wage also contributed to a more rapid subsequent employment. The richer the country, the more probable it was that the individual gained employment.

Observing columns (2)–(4), there are factors that are found to be significant in all three countries, although most results suggest greater similarity between Macedonia and Serbia compared to Montenegro. More experienced youth had higher chances of getting a job; as experience was most highly valued in Serbia. Young females in Macedonia had a 3.3% lower chance of exiting unemployment than young males; gender did not matter for youth employment in the other two countries. Secondary education mattered only in Serbia and Montenegro but with opposite direction, while tertiary education mattered only in Serbia. In Montenegro, those with secondary education had a lower chance of exiting unemployment relative to those with primary education; this could be related to the more prevalent demand for primary-educated workers in the booming construction sector in Montenegro. On the other hand, in Serbia, the more a person was educated, the higher the chance of getting employment sooner. Marriage and number of children were barely significant. Only mother's education in Montenegro worked positively for the employment of the child.

Table 1. Unemployment spell (marginal probabilities).

Variables	Pooled model	By country		
		MKD	MNE	SRB
	(1)	(2)	(3)	(4)
Experience (in years)	0.0164***	0.0154***	0.00336**	0.0220***
	(0.001)	(0.002)	(0.002)	(0.002)
Sex (1 = female)	−0.0124**	−0.0331***	0.00141	−0.00865
	(0.006)	(0.009)	(0.007)	(0.010)
Secondary education	0.0392***	0.0159	−0.0269***	0.0613***
	(0.010)	(0.013)	0.009)	(0.017)
Tertiary education	0.0572***	0.0199	−0.00656	0.0889***
	(0.012)	(0.019)	0.011)	(0.020)
Marriage (1 = married)	−0.0151*	−0.0148	0.0618*	−0.0151
	(0.009)	(0.013)	(0.034)	(0.015)
Number of children	−0.00811	−0.0166*	0.00483	−0.00844
	(0.006)	(0.009)	(0.011)	(0.010)
Father with secondary education	−0.0223	−0.0262	0.00317	−0.00936
	(0.030)	(0.035)	(0.014)	(0.047)
Father with tertiary education	−0.0128	−0.0276	0.00143	0.00842
	(0.030)	(0.037)	(0.028)	(0.047)
Mother with secondary education	0.00701	0.0088	0.0597***	−0.00349
	(0.016)	(0.016)	(0.011)	(0.040)
Mother with tertiary education	0.00806	0.0211	0.018	−0.00538
	(0.017)	(0.022)	(0.046)	(0.041)
Household financial situation (1 = very good–5 = very bad)	−0.0142***	−0.0128***	−0.0306***	−0.0182***
	(0.003)	(0.004)	(0.004)	(0.005)
Working while studying (1 = yes)	0.0602***	0.0900***	0.0305***	0.0533***
	(0.010)	(0.015)	(0.011)	(0.016)
Career orientation (1 = yes)	0.00611	−0.0025	0.0122	0.016
	(0.006)	(0.009)	(0.008)	(0.010)
Internships while studying (1 = yes)	−0.0244*	−0.0730***	0.0104	0.000917
	(0.013)	(0.020)	(0.012)	(0.020)
Log of the reservation wage	0.00798***	0.00797***	0.0796***	0.0100***
	(0.001)	(0.001)	(0.010)	(0.001)
Log of the GDP per capita	0.0269**			
	(0.013)			
Labour participation rate	−0.00747			
	(0.005)			
Long-term unemployment rate	0.00175			
	(0.003)			
Log-rank test (*p*-value) H0. The distribution of the unemployment duration among the three countries is the same.	0.0000			
LR-test *H0*. All coefficients of the model do not vary between disjointed subsets of the data.	0.0000			
Observations	4227	1248	1336	1643

Source: Authors' calculations. *, ** and *** signify statistical significance at the 10%, 5% and 1% level, respectively. Results are robust to heteroskedasticity and clustered at the individual level. Weights provided with the surveys have been used to account for survey's structure.
Dependent variable: event occurrence (0: event did not happen over that period; 1: event happened, that is, a young person exited unemployment for employment).
MKD: Macedonia; MNE: Montenegro; SRB: Serbia.

Table 2. Survival marginal probabilities (1-hazard rate) – unemployment spell.

Unemployment spell duration	By country			Statistical differences		
	MKD	MNE	SRB	MKD-MNE	MKD-SRB	MNE-SRB
	(1)	(2)	(3)	(4)	(5)	(6)
No unemployment spell	Reference category					
Up to week	0.0897***	0.0528***	0.102***	No	No	Yes
	(0.009)	(0.006)	(0.009)			
Week to month	0.0756***	0.0369***	0.0906***	Yes	No	Yes
	(0.010)	(0.006)	(0.009)			
1–3 months	0.0650***	0.103***	0.0757***	No	No	No
	(0.012)	(0.010)	(0.009)			
3–6 months	0.0436***	0.0707***	0.0965***	No	Yes	No
	(0.009)	(0.010)	(0.011)			
6–12 months	0.0856***	0.111***	0.143***	No	Yes	No
	(0.014)	(0.013)	(0.014)			
1–2 years	0.148***	0.118***	0.243***	No	Yes	Yes
	(0.019)	(0.015)	(0.019)			
2+ years	0.462***	0.321***	0.506***	Yes	Yes	Yes
	(0.024)	(0.023)	(0.026)			
Observations	1248	1336	1643			

Source: Authors' estimations.
*,** and *** denote statistical significance at the 10%, 5% and 1% level, respectively. Results are robust to heteroskedasticity and clustered at the individual level. Weights provided with the surveys have been used to account for survey's structure.
MKD: Macedonia; MNE: Montenegro; SRB: Serbia.

When it came to socio-economic characteristics of the household, only the household's financial condition mattered. In all three countries, the worse the financial situation of the household was, a factor likely also corresponding to the scarcity of family ties and networks, the longer it took to exit unemployment. The effect was strongest in Montenegro.

In the 'working preferences and attitudes' variables, working while studying and the reservation wage were found to be significant. If a young person worked during studies, his or her chance of exiting unemployment increased by 3% in Montenegro, 5.3% in Serbia and 9% in Macedonia. The result that young persons with higher reservation wages had a higher chance of finding a job may be related to their higher motivation and ambition to succeed in their career; however, the result was fairly large in Montenegro and fairly small in Macedonia. Still, this finding is in contrast to the search theory of the labour market, going against the conventional understanding of how reservation wages may influence job search and unemployment.

Table 2 gives the marginal survival probabilities, that is, the chances that a young person stays unemployed given his or her unemployment spell duration (columns 1–3), as well as the statistical differences between each pair of countries (columns 4–6). The results suggest that the employment scar was largest in Serbia for all unemployment

durations. This especially held for the longer spells. Young people in Serbia who were unemployed for 1–2 years had double the probability of staying unemployed than Macedonian and Montenegrin youth, with the differences being statistically significant. Similarly, the survival probability for those unemployed for more than 2 years in Serbia was slightly larger than that in Macedonia and quite a lot larger than in Montenegro, with all three being statistically different from each other. Young individuals in Montenegro seemed to be the least scarred by previous unemployment compared to the youth in the other two countries, especially in the case of medium-term scarring.

The results suggest the presence of employment scarring even in countries with high unemployment. Although labour markets of these three transition countries are similar in their performance, we still find some differences in employment scarring of young persons. This can be related to the peculiar developments during transition and the relatively better performance of the Serbian labour market until the Great Recession. Still, as shown in Section Labour markets and youth in Macedonia, Montenegro and Serbia, the labour market in Serbia has always been harsher for young people than in Macedonia and Montenegro (as seen by the youth-to-adult unemployment ratio), probably giving support to our finding that employment scarring is the largest in Serbia. In addition, Serbia lags behind with the privatisation process, while Macedonia achieved significant progress in labour-market flexibility recently. The slightly better labour-market situation in Montenegro relative to the other two countries, as well as the very large internship programme for young graduates, seems to have lessened the scarring effect in Montenegro.

Conclusion and policy implications

High youth unemployment presents a large cost both for individuals and for society. The rising youth unemployment across developed countries and the persistently high youth unemployment rates in the developing world have led to a revival of the literature on youth unemployment. However, the issue of employment scarring has been considerably under-researched in developing countries with high youth unemployment, where distinct working norms, under-developed labour-market institutions and prevalent informal sectors may produce different scarring patterns.

In this respect, the aim of this study is to assess whether the unemployment experience of young people early in their career has a negative effect on their subsequent labour-market performance in three high-unemployment transition economies: Macedonia, Montenegro and Serbia, providing a case for government interventions. Given the shared socialist legacy of the three countries with the remaining Western Balkan countries, the findings of the study can be extended to the whole region. Moreover, the results may be relevant across all developing countries with high total and youth unemployment.

We first examined the factors that potentially play a role in explaining the duration of the unemployment spell. We used a discrete-time duration method to estimate the model. Then, we produced the survival probabilities for each duration of the unemployment spell to examine the possible existence of employment scarring. We found several factors to be important in explaining how long a young person stays unemployed: work experience, gender, education, financial condition of his or her household, internship pursuance, reservation wage and the development level of the country. Macedonia and Serbia were found to exhibit more similarities with each other than with Montenegro.

The results provide some evidence for the presence of employment scarring: those young persons who stay unemployed over a longer period of time have lower chances of finding a job afterwards. However, as this finding may be plagued by the work of unobservables – more motivated and ambitious young persons may find a job sooner than the others – we focused our attention on the differences among the three countries. Despite similarities in the labour-market performance among the three countries, we document some distinct scarring patterns. The scars are found to be the largest in Serbia for all durations of unemployment spell. This may be attributed to the worse position of youth relative to the prime-age workers in Serbia than in Macedonia and Montenegro. Next, the scars are middle-ranked in Macedonia, which can be explained by the worse labour-market developments compared to Montenegro and by the advances in labour-market flexibility compared to Serbia. The scar is the smallest in Montenegro among the three countries, which can be explained by the very large internship programme for university graduates, as well as by the slightly better overall labour-market situation relative to the other two countries sparked by the blossoming service sector.

The findings provide a useful guide for employment and education policies in the three countries. Persistent employment scarring calls for measures preventing young people from falling into unemployment at the exit from education. Countries should implement early interventions before a young person experiences a protracted spell of unemployment. The interventions can range from internship programmes (through active labour-market policies), flexible forms of employment (for instance, trial work for a limited time period), subsidised employment, training measures and so on. The findings also provide support for larger scale interventions by policymakers, for instance, similar to the youth guarantees among the EU countries.

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Notes

1. More workers being employed at a job that would otherwise require one worker.
2. The data are based on the Key Indicators of Labour Market (KILM) database of the International Labour Organisation (ILO). Because in the early 1990s, labour-market data were based on administrative sources, we cannot fully trust the data to match the methodology of today's indicators. Hence, we mainly focus on the data and developments starting from 2000 onwards.
3. All data on EU-28 are based on the Eurostat database (European Union (EU), 2016).
4. The programme has a very ambitious goal of providing all university graduates with access to work practice through a 9-month internship and with the possibility to pass the state examination after the completion of the internship (the state examination is required to apply for a public sector job only).

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