DOES WORKING DURING STUDIES MATTER?

SCHOOL-TO-WORK TRANSITION IN FYR MACEDONIA, MONTENEGRO AND SERBIA

By

Daria Copil

Submitted to

Central European University

Department of Economics

In partial fulfilment of the requirements for the degree of Master of Arts in

Economic Policy in Global Markets

Supervisor: Professor Gábor Békés

Budapest, Hungary

2016

ABSTRACT

In light of high youth unemployment rates in FYR Macedonia, Montenegro and Serbia, as well as due to the existing policy debate on the introduction of the dual education system, the present thesis estimates the relationship between working during studies and the duration of school-to-work transition in these three former Yugoslav republics. Based on data obtained from the latest wave of the ILO School-to-work transition survey carried out in 2014 and 2015, Tobit and complementary log-log regression results show that working during studies is expected to speed up transition from education to employment for high school graduates and Bachelor's degree holders in FYR Macedonia, as well as for high school graduates in Montenegro. Moreover, those young people are also expected to experience higher school-to-work transition rates than their fellows who did not combine formal education with work. In addition, the research reveals that both grammar and vocational secondary school graduates from FYR Macedonia and Montenegro who worked during studies are expected to complete their transition to employment faster, as well as experience higher transition rates, compared to their fellows who did not work during studies. No statistically significant relationship between working during studies and school-to-work transition for young people from Serbia was identified. In terms of policy response, this thesis recommends to increase the job market relevance of the education systems in the analyzed countries and suggests that the implementation of the dual education system in FYR Macedonia and Montenegro could have a positive impact on the employment chances of young people in these two countries.

ACKNOWLEDGEMENTS

First of all, I am grateful to my supervisor, Professor Gábor Békés, for his guidance and advice during the writing process. I feel indebted for your patience, responsiveness and willingness to help with all the problems that I faced. Working with you made me highly motivated and I am sure that this thesis could not have been written without your selfless support and assistance.

I also thank all other professors at CEU for providing me with knowledge and insights into various aspects of the world of economics. I am sure that the expertise I gained here will be of great help in my future career and I will always be a proud alumnus of this university.

I express my gratitude to all of my friends for many unforgettable moments that we spent together and I hope to continue having many more in the future. This was a wonderful ride and I am sure that many of you will have a place in my heart for the rest of my life.

I am thankful to the International Visegrad Fund for providing me with financial support, without which none of this would be possible. Thank you for trusting in me and even more so for making dreams come true for many other students from around the world.

Most importantly, I am eternally grateful to my parents, Ina and Alexandr, and to my boyfriend, Nikola Kosović, for all their love and support.

Thank you, mama and papa, for your belief in me. Without you as my guides in life, I would not have become the person I am today. You taught me integrity and showed me that nothing in life is impossible when you have faith in yourself. You are always the best examples for me to follow and there are no words to express how thankful I am for everything that you do for me.

Thank you, Nikola, for always being able to cope with me. I am indebted for your help and advice, words of encouragement, and, above all, the love that you so unconditionally have been giving me for the last five years. I am truly blessed to have such a bright, dedicated and kind person in my life.

TABLE OF CONTENTS

INTRODUCTION

There is a common saying that the young generation is the future of every society. This being acknowledged, it seems appropriate to claim that the age from 15 to 30 represents a crucial period in each individual's life. It is a time when personal development and professional skills formation happen not only for the sake of the individual's own well-being, but for the prosperity of the community the individual is a part of. An effective human capital accumulation is expected to lead to stable and productive employment, while failure to acquire a necessary set of abilities and competencies may be conducive to labor market disadvantage throughout the whole career path. Thus, *school-to-work transition* should be regarded as a process of considerable significance for the labor market outcome of an individual pursuing some career-related goals, especially in times when "[i]ncreasingly, people who used to see education as a passport to employment can no longer take it for granted" (Atchoarena 2000, 1). As correctly stated by Garrouste and Loi (2011, 4), "[a]lthough the transition from school to work is only the initial step into the labor market, […] a smooth transition may minimize experiences of unemployment and inactivity, as well as accelerate the speed of convergence to a permanent employment." Moreover, as stated by experts from both the International Labor Organization (ILO) and the UNESCO International Institute for Educational Planning, an effective school-to-work transition is expected to become an important milestone towards adulthood and family creation, as well as security and prosperity further in life (ILO 2015, Durand-Drouhin & Sweet 2000).

However, solely accepting the importance of school-to-work transition is far from sufficient. It is essential to take into account the *duration of labor market transition*, namely the period of time between the end of education and the start day of employment. An important point to note is that a short transition does not necessarily imply an efficient transition, transition

speed not always being an appropriate indicator of a high quality employer-employee match. In addition, according to the ILO (2015), previous research shows that disadvantaged young people usually have the most direct transitions paths from education to employment: they either move directly to irregular or to informal work. However, as Righi and Sciulli (2009, 2) explain, "[o]n the one side, the large use of temporary contracts ma[kes] easier the entry in working positions, on the other side, it ma[kes] longer and, sometimes, harder the transition to stable employment."

This is why qualitative elements of a particular job should also be considered. According to the ILO (n.d.), the school-to-work transition process can be considered completed when a person has "[…] settled in a job that meets a very basic criteria of 'decency', namely a permanency that can provide the worker with a sense of security (e.g. a permanent contract), or a job that the worker feels personally satisfied with." Therefore, it seems reasonable to extend the analysis of the school-to-work transition beyond the first job, and mainly focus on the transition to the first 'decent' job. In this case, following the ILO vision, the duration of transition can be defined as the period of time between the end of education and the start day of a stable/formal/satisfactory employment.

The youth unemployment rates in some of the former Yugoslav countries have been very high over the last couple of decades, reaching 39.5 percent in Montenegro, 49.5 percent in Serbia and 50.8 percent in FYR Macedonia in 2014 (The World Bank 2014). In light of these figures, academic policy-oriented works have been published about labor market issues in these countries. For example, Arandarenko (2011) provides a comprehensive analysis of the labor market in Serbia and proposes policy strategies for job seekers, employers and the social protection system. Milevska Kostova and Kotevska (2011) advocate for policy changes in the Macedonian education system, stating that adjustment of the system to the labor market and co-ordination between institutions is needed in order to ensure a way out of poverty for the country.

At the same time, there is a currently growing policy debate on the domestic political arena regarding the possible introduction of a dual education system in these countries. Some local policymakers and international experts argue that the dual education system is more efficient in preparing qualified young specialists for the labor market, stating that it could become a remedy against youth unemployment, while others remain skeptical towards the above option and question its effectiveness in the circumstances specific to the local labor markets.

The dual education is defined as a system that "combines apprenticeships in a company and vocational education at a vocational school in one course" (UNESCO-UNEVOC 2014). However, in a wider sense, the duality of this system can be perceived from two different perspectives:

> The term 'dual education' is widely used as an umbrella term, referring to the fact that teaching and learning in VET [Vocational Education and Training – D.C.] is characterized by 'duality' in two regards: (i) the duality of learning venues (schools/VET-providers and training companies), sharing the responsibility to provide theoretical and practical training; and (ii) the duality of actors (public and private actors), sharing the responsibility for VET policy and practice. (Chatzichristou et al. 2014, 16).

The dual education system is successfully implemented in countries such as Germany, Austria, Switzerland and Denmark. Historically, these countries have had low youth unemployment rates for decades, compared to other developed European economies (The World Bank 2014). In addition, previous research shows that such a system contributes to a relatively easier labor market transition (Eichhorst 2013). Therefore, supplementing the theoretical education received in school by work-based learning in a company is overall believed to be an efficient mechanism which facilitates the smooth transition of young people into stable employment.

Last, but not least, in these circumstances, it is important to take a tripartite approach and, along with the opinions of experts in the field and local policymakers, to take into account the ever-lasting young people's dilemma concerning work and study combination, the importance

of practical skills to complement the knowledge gained during studies and the uneasy task of finding the study-work balance without undermining the value of education and the academic performance.

In these circumstances, it is imperative to understand whether the professional experience gained during and in combination with studies can influence the duration of transition from education to employment. Therefore, the main **research question** of the thesis can be formulated as follows: ***Does working during studies affect the duration of school-to-work transition?*** The thesis focuses on three former Yugoslav countries, namely FYR Macedonia, Montenegro and Serbia. Since these countries have a common past, similar socio-economic level and common historical development of the education system and labor market, as well as similar labor market problems, it seems interesting to conduct a comparative analysis and check whether there are any differences among these three countries in terms of this aspect of school-to-work transition.

In addition to the main research question, it is important to analyze the feasibility of the potentially beneficial effects of the dual education system in the circumstances that define the labor markets in the three former Yugoslav countries and whether an efficient policy transfer from the developed countries can be achieved. This is why, after the above relationship between the duration of transition and working during studies is identified, the thesis answers *how the issues impeding a timely and successful transition should be addressed.*

The main purpose of the thesis consists in establishing whether young people who combine their studies with work are expected to settle in a stable job faster than their fellows who did not work during their studies and concentrated solely on the experience received in the educational institution. In addition, the thesis provides specific policy options available to local policymakers to decrease youth unemployment, as well as the necessary measures that need to be taken in order to achieve the desired results.

There is a broad literature on the duration of school-to-work transition. Many works focus on labor market transition and issues related to it in the context of the European Union (EU) member states. However, significantly less attention in this regard has been dedicated to non-EU Central and Eastern European (CEE) countries, such as the former Yugoslav ones, despite the fact that youth unemployment rates there are commensurate with the ones in some EU member states, such as Spain and Greece. The existing theoretical and empirical research on school-to-work transition is presented in more detail in the next chapter.

The present thesis adds to the existing scientific and policy debate along several lines. First, it contributes to the topic in terms of the data used. The ILO School-to-work transition survey (SWTS), which is the source of the data used in this thesis, is a relatively new study, unique in the sense that it has the potential to provide not only quantitative and socio-demographic information on young people, but also information on the qualitative aspects of employment. This is the hallmark of the survey which allows to conduct research on the topic of school-to-work transition in a comprehensive manner. Second, to the best of my knowledge, apart from merely descriptive studies dealing with labor market issues and measuring the speed of transition, no recent more sophisticated research has been done on *specific* factors affecting the school-to-work transition in the countries analyzed in this thesis. Therefore, this work contributes to the existing literature by shedding light on the still underresearched topic with regard to the former Yugoslav countries. Third, and most importantly, the thesis brings into light empirical evidence on a highly important policy issue, considerably relevant in the socio-economic context of the analyzed countries.

The thesis is organized as follows. The first chapter presents a thorough review of the existing theoretical and empirical literature on the topic. The second chapter describes the data and methodology used. The third chapter presents the main findings of the research, together with their interpretation. The fourth chapter serves to place the results in a broader policy

context and presents suggestions of adequate policy responses to the difficulties facing youth in finding a decent employment and efficiently completing their school-to-work transition. The final chapter summarizes the research, provides an overall evaluation of the study, stating how the results relate to the existing literature. In addition, it suggests ways to improve and advance the research of this topic in the future.

CHAPTER 1: THEORETICAL AND EMPIRICAL BACKGROUND

The first chapter presents a thorough review of the existing literature on the topic. It covers theoretical research and empirical studies that reveal evidence of different factors affecting the labor market transition. At the same time, this chapter provides information on the extent to which the scientific debate tackles questions similar to the one formulated in this thesis, covering similar publications dealing with dual education systems and vocational education.

1.1. Defining school-to-work transition

School-to-work transition is not a very new concept in the economics scientific community. As rightfully stated by Brzinsky-Fay (2014, 214), "[t]he transition from school to work remains a question of enduring relevance, despite the fact that there is no shortage of policy activities and research in this field within the past 30 years." Despite being quite intuitive in the sense that school-to-work transition literally can mean nothing else than transition from education to employment, it is essential to understand that this is a far deeper and more complex process than it can seem at first sight. Although transition in general, and school-to-work transition in particular, can be analyzed in a basic and technical way in terms of 'origin' and 'destination' statuses, multiple spells of unemployment or economic inactivity in between those two points, as well as a range of important qualitative elements of employment which are discussed in the next chapter of the thesis, make the research of the school-to-work transition process significantly more challenging and demanding.

As pointed out in the works of Raffe (2008) and Brzinsky-Fay (2014), the economics discipline still lacks a unified theoretical foundation in relation to transition processes, hence very diverse perspectives on how to define school-to-work transition and theoretically

fragmented approaches towards analyzing it. Researchers dealing with school-to-work transition usually carry out their analyses based on existing established economic theories, which are to a different extent related to the link between education and labor market. Namely, as both Raffe (2008) and Brzinsky-Fay (2014) argue, among the theories that lay the foundations for the study of school-to-work transition, the most important one is the *human capital theory*. The theory developed by Jacob Mincer and Gary Becker is an obvious choice in analyzing how an individual's education level and professional experience influence her labor market outcomes and earnings later in life (Brzinsky-Fay 2014). Another theory often used in the school-to-work transition research is the *segmentation theory*, a framework that implies the division of the labor market into two segments based on the type of employment, earnings or other characteristics (Brzinsky-Fay 2014). Moreover, according to Brzinsky-Fay (2014), researchers often make use of the dichotomy of *internal and occupational labor markets*. As Paul Ryan (2001, 55) explains, on the one hand, *internal labor markets* are characterized by a high sensitivity of youth employment to fluctuations in aggregate labor demand, "as a result of seniority-based job security ('last in, first out')." On the other hand, young workers' way to employment on *occupational markets* is open as soon as they gain the necessary professional skills and knowledge (Ryan 2001). In addition, Raffe (2008) states that the *insider-outsider theory*, which assumes the existence of two types of people who enjoy differential treatment on the labor market due to one type's pertinence to certain (dis)advantaged groups, is also frequently used by researchers in order to analyze transition.

Even though ample research has been done around this topic, there is still no consensus among authors about the definition of school-to-work transition and the exact way to estimate it. Some researchers use relatively loose criteria when they think about the moment that indicates a completed transition, while others tend to be more conservative in this regard. On

the one hand, for example, Mocanu et al. (2012) analyze the speed of labor market transition by the time period necessary to find the *first* job.

However, increasingly more researchers come to the realization that focusing on the *first* job, whatever and however it is, in most of the cases is not enough and, consequently, try to adopt more strict criteria when it comes to transition from school to work. Thus, Mocanu et al. (2012) supplement their analysis with a measure of duration of the first employment spell, which they take as a proxy for stability of labor market insertion. Quintini et al. (2007) take into account the quality of youth entry jobs and estimate the duration of school-to-work transition both as (i) the period of time an individual who completed her education spends to find her *first* job and (ii) the time period necessary for an individual who ended her education to settle in a *permanent* job.

On the other hand, Garrouste and Loi (2011), as well as Righi and Sciulli (2009), focus exclusively on the time between the end of education and the beginning of the first *permanent* job, which they consider as a suitable proxy for professional stability. At the same time, Mills and Präg (2014, 3) define school-to-work transition duration as the time elapsed between the end of formal education and the moment of entering a job that lasts for at least 3 months, while Klerman and Karoly (1994, 40), for instance, define the transition as completed when an individual settles in 'stable employment', namely a job in which she stays for at least 1 to 3 years.

For the purpose of the present analysis, this thesis accepts the definition formulated by the ILO (2015) in the context of its School-to-work transition survey, according to which school-to-work transition can be considered the period of time between a young person's end of schooling and the beginning of the first stable job, where job stability is defined by the duration of employment of at least 12 months.

1.2. Existing scientific evidence on school-to-work transition

A significant amount of literature has been dedicated to school-to-work transition. Numerous authors deal with both the estimation of the duration of school-to-work transition based on a range of individual characteristics, and attempt to find answers to important policy issues related to the link between youth education and labor market entry.

From a geographical perspective, the coverage of published scientific papers that deal with school-to-work transition is mostly limited to EU member states and other developed economies of the world. For example, Ryan (2001) provides a comprehensive overview of the school-to-work transition from a cross-national perspective based on the examples of seven advanced economies, namely France, Germany, Japan, the Netherlands, Sweden, the United Kingdom and the United States.

Besides estimating the time needed to settle into the first permanent employment by different cohorts, level of experience, sex, and type of education, Garrouste and Loi (2011) analyze the characteristics of young people's transition paths in order to better understand the potential causes of the differences in the duration of school-to-work transition in several European countries. They found that in Italy, chances are high that a fresh graduate will transit directly from education to long-term unemployment before finding a (temporary) job, while in Germany, young graduates have higher chances to transit directly to temporary employment if they do not have a vocational qualification (Garrouste and Loi 2011).

Mills and Präg (2014) analyze school-to-work transition from a gender perspective in the EU-27 member states, as well as Iceland and Norway. They conclude that, despite having a similar duration of transition to the first job in the first several months following education completion, men and women tend to experience different transition speed later in life, and evidence shows that women tend to be disadvantaged compared to men (Mills and Präg 2014).

Even within the EU, however, differences can be observed when it comes to the number of publications dedicated to the CEE countries in comparison to the number of works dealing with the analysis of Western economies. Most importantly, however, a significant difference exists between the number of published scientific papers dealing with school-to-work transition in EU member states and other developed economies, and the number of studies investigating the same issue in non-EU CEE countries.

An important contribution to the school-to-work transition literature in relation to CEE countries can be attributed to Kogan et al. (2011). The book that they edited, "Making the Transition. Education and Labor Market Entry in Central and Eastern Europe", which was written by local experts, is a comprehensive collection of analyses of education and labor market entry in East Germany after reunification, the Czech Republic, Croatia, Serbia, Hungary, Poland, Estonia, Ukraine and Russia.

School-to-work transition in four Eastern European countries is also tackled in the work of Mocanu et al. (2012), who analyze the speed of labor market entry, the stability and the adequacy of labor market insertion in Poland, Hungary, Lithuania and Slovenia. They found that a similar situation is characteristic for Hungary, Lithuania and Slovenia, where about 75 percent of university graduates tend to find their first job within 10 to 12 months after completing their studies (Mocanu et al. 2012). At the same time, Poland exhibits significantly different results, namely 6 months are necessary for 75 percent of graduates to get the first job, and more than 90 percent of young people with higher education manage to enter the labor market within 12 months after graduation (Mocanu et al. 2012). In addition, the authors found country differences in terms of the stability of the first employment. Thus, in Poland and Slovenia, 70 percent of university graduates tend to stay in their first job for at least 3 years, while for Hungary and Lithuania this share is equal to 50 percent (Mocanu et al. 2012).

A valuable source of information on two non-EU CEE countries is the report published by the European Training Foundation (2008), which provides a thorough analysis of the labor market entry of young people from Serbia and Ukraine. The report highlights that Ukrainian youth spends relatively less time in school-to-work transition than those in Serbia. Moreover, around 60 percent of young workers in Ukraine found a stable job within 6 months after leaving education, compared to 30 percent in case of Serbia (European Training Foundation 2008). At the same time, differences can be found with regard to the type and quality of jobs obtained by young people, namely Serbian youth tended to be employed informally, while many of their Ukrainian fellows had formal jobs, but often low-paid ones and for which they were overqualified (European Training Foundation 2008).

Several works have also been written based on the data obtained from the ILO School-to-work transition survey, which is the main source of data for the present thesis. For example, publications Global Employment Trends for Youth for 2013 (ILO 2013) and 2015 (ILO 2015) are two comprehensive reports presenting the main survey findings for all the countries covered by it. Most of the studies based on the ILO results, however, analyze the information obtained in earlier waves of the survey, unlike this thesis, which presents evidence from the latest ILO survey wave.

For example, Manacorda et al. (2014) use duration models to analyze transition both to the first job and to a stable job, as well as study the main factors that affect transition from education to the labor market in 27 countries covered by the ILO survey between 2012 and 2013. Based on the obtained results, the authors predict that in Eastern Europe and Central Asia, a share of young people ranging from 8 percent in the Russian Federation to 31 percent in Armenia are expected to never transit to the first job (Manacorda et al. 2014). At the same time, a share ranging from 14 percent in FYR Macedonia to 84 percent in Moldova are expected to never be able to settle in a stable job (Manacorda et al. 2014).

Elder et al. (2013) present the findings of the ILO School-to-work transition survey conducted in FYR Macedonia in 2012 and come to the conclusion that, at the moment of the survey, only 21.5 percent of young people managed to complete their transition from education to a stable or satisfactory job, while 35.2 percent were "stuck in transition", in other words were either unemployed or employed in a temporary or unsatisfactory job.

Dragan Djuric (2016) provides a comprehensive descriptive analysis of the main findings obtained through the ILO School-to-work transition survey conducted in Montenegro in 2015. He points out that only one quarter of Montenegrin youth are employed currently, and a big share of young employees, especially from rural areas, work in temporary jobs. At the same time, only 15.5 percent of young people managed to complete their school-to-work transition (Djuric 2016).

Moreover, there are numerous publications dealing with dual education systems and vocational education as a potential remedy against youth unemployment. For example, Reinberg and Hummel (2005, as cited in Popiunik & Ryan 2012) show that, based on German data, the probability of being unemployed is three times higher for young people with no vocational education, compared to their fellows with such qualification, and eight times higher compared to young people with higher education.

Based on Hungarian students' data, Horn (2013) also provides empirical evidence that indicates the potential of apprenticeships and workplace-based training to improve the labor market outcomes of young workers. Namely, his study shows that the chances of being employed after completing education are around 10-15% higher for vocational education graduates, who benefited from apprenticeships, as compared to those who received only school-based practical training (Horn 2013).

Mills and Präg (2014) also find that even partially workplace-based vocational education is expected to decrease the duration of transition to the first job, but it seems that men benefit from it to a larger extent than women.

This thesis contributes to the existing literature along two major lines. On the one hand, it reveals additional important evidence on another crucial factor which is expected to affect the duration of school-to-work transition, namely working during studies. Moreover, this thesis puts the obtained results in a broader policy context, linking them to the yet to be solved issues in the education sector and labor market in the analyzed countries, as well as to the local debate concerning the dual education system. On the other hand, from the geographical point of view, this thesis analyzes the school-to-work transition in FYR Macedonia, Montenegro and Serbia, countries which, unfortunately, do not receive much attention when it comes to studies that go beyond descriptive analysis of the school-to-work transition process.

CHAPTER 2: DATA AND METHODOLOGY

The second chapter specifies the main source of the data, describes the data used for the research, together with its advantages and drawbacks. In addition, it presents the variables of interest and the data transformations that were implemented in order to obtain some of the necessary variables. Also, this chapter presents the methodology used, arguing why it is a suitable one given the available data.

2.1. The source of data

The ILO *School-to-work transition survey* (SWTS) represents the source of data used for the research. This survey is a part of the ILO project Work4Youth and was carried out in more than 30 low- and middle-income countries between 2012 and 2015 mostly through national statistics offices. In terms of the geographical coverage, the survey was conducted in a number of Latin American, African and Asian countries, as well as several Balkan countries and members of the Commonwealth of Independent States (CIS). The participants of the surveys are young people aged 15 to 29 years who are either employed, unemployed or economically inactive.

As for the survey structure, it consists of six sections: (i) identification data; (ii) personal, family and household information; (iii) formal education/training and aspirations; (iv) activity history; (v) young workers; (vi) non-working youth. The main objective of the SWTS is to "collect in-depth information concerning the labor market situation of young men and women and quantify the relative ease or difficulty of labor market entry of young people as they exit school" (Elder 2009, 2). In order to track the process of transition from education to employment, the survey includes a range of questions on the past ten activities of the respondent, be it employment in different forms, unemployment or labor market inactivity. Thus, the respondent

is asked to recall the activities in chronological order, which allows to follow the 'milestones' of an individual's transition to the labor market.

According to the ILO, what is unique about the SWTS and what distinguishes it from any labor force survey (LFS) is its special design, with the introduction of some questions specific to the young generation and to the problems facing youth in finding a stable and secure employment. These questions allow to analyze transition from a new perspective, focusing on the qualitative elements of the process. As a result, the SWTS can help formulating an answer to the ever-lasting question: what factors impede a successful school-to-work transition, how they can be dealt with and what is the remedy against high and long-term youth unemployment.

The main limitations of the SWTS can be summarized as follows.

First, the survey was not conducted in any of the EU member states, therefore there is no possibility to carry out a comparative analysis of the selected former Yugoslav countries and of some EU member states, e.g. Romania or Bulgaria, based on the same data and methodology.

Second, the questionnaires for many of the covered countries are usually provided in the local language. It considerably limits the possibility to extend the analysis to all countries where the survey was conducted without knowledge of the language, especially taking into account the fact that in some cases there are discrepancies in the order and formulation of the questions or in the answer options provided.

Third, questions essential to the analysis of the school-to-work transition, for instance, on the type and duration of the employment contract, as well as on job satisfaction, have a very low responsiveness rate. It can be considered one of the most important weaknesses of the SWTS, since the concept of 'decent' work, encompassing different qualitative aspects of the transition (e.g. formal employment, permanent contract, satisfactory job), despite its great potential in the research process, is not fully embedded in the practical implementation of the surveys.

For the purpose of the present thesis, the data obtained from the SWTS conducted in F.Y.R. Macedonia in 2014, in Montenegro and Serbia in 2015 are used.

2.2. Data transformations and selected variables

In order to obtain a dataset which would be clean and consistent across the three countries included in the analysis, and which would help answer the research question raised in the present thesis, important data transformations were needed.

First, it was essential to generate a new variable which would reflect the ***duration of transition***. For this purpose, all activities specified by the respondent in the "Activity history" section of the survey were classified to one of the three categories: 'employment', 'unemployment' or 'economic inactivity'. In practice, the duration of labor market transition duration can be measured in two ways shown below:

1. Time period between the end of education and the beginning of the first job;
2. Time period (number of months) between the end of education and the beginning of the first 'decent' job.

The second method seems more suitable, since it implies a more complex definition of a completed transition. In this context, 'decency', according to the ILO (2015, 53), can be defined as either formal employment, permanent contract, job satisfaction, or a combination of those. Since some criteria of 'decency' are too vague for quantitative research and, most importantly, due to lack of data about them in the SWTS, a specific measurable criterion is defined in this thesis. As Klerman and Karoly (1994, 42) argue, "tenure on the job is one measure of the process of settling down and a possible indicator of the transition to a career job." This is why, for the purposes of the present analysis, a 'decent' job will be considered one in which an individual spent a period equal to or longer than 12 months, as also suggested by ILO (2015).

At the same time, it is important to note that in the analysis of countries with high youth unemployment rates, as the ones analyzed in the present thesis, even the duration of transition to the first job can shed light on important labor market issues. However, for a big part of the respondents the first job lasted less than the above-specified 12 months, most probably due to informal or irregular employment. This is why the present analysis focuses only on the relationship between working during studies and the transition duration to the first 'decent' job.

Due to the nature of the research question, only those young people who already completed their education are analyzed in this thesis. Therefore, all those who were still enrolled in education at the time of the survey were not included in the final sample.

In addition, all the individuals for which there was some obvious data inconsistency between '*age*', '*end of education date*' and '*highest level of education completed*' were discarded from the sample. For example, a person who ended her education at 17 and reported the highest level of education completed as Bachelor's degree, was excluded from the analysis, since it was evident that the respondent did not read the question or answered carefully.

Second, the main independent variable of interest, ***working during studies***, was recoded from a categorical variable to a binary one. The original categories of work and study combination included the following possible answers: (i) work during the school season, (ii) work outside the school season (summer break, holidays etc.), (iii) work during and outside the school season, and (iv) no work during studies. For the purpose of the present thesis the first three categories were merged in one, thus generating a binary variable which takes the value of "1" if the respondent combined studies with work, and the value of "0" if the respondent never worked while studying. It is important to note that the survey question about work during studies was formulated as follows: "Did you ever work while you studied (not including apprenticeship)?" Therefore, one can be assured that the present research differentiates between possible compulsory

apprenticeships of students in secondary vocational education and the work a pupil or student found by herself outside the education system.

Third, the categorical variable expressing the ***level of education*** of the respondent, consisting of 9 categories in case of Serbia, and of 7 categories in case of Montenegro and Macedonia, was recoded into fewer categories. In order to make it consistent across the countries, the following six categories were generated: (i) none, (ii) elementary (grade 1-8), (iii) secondary grammar (grade 9-12), (iv) secondary vocational (3-4 years), (v) Bachelor's or equivalent (vi) Master's degree, PhD. The same transformations were done for the variables showing the education level of the respondent's mother and father, generating the following six categories: (i) none, (ii) elementary, (iii) secondary, (iv) Bachelor's degree or equivalent, (v) Master's degree, PhD, (vi) do not know.

Fourth, the variable showing the ***area of residence*** of the respondent was recoded from a categorical to a binary one in case of Montenegro and Serbia, in order to make it consistent with the same variable in the Macedonian sample. Namely, the Macedonian sample contained a binary variable taking two different values for rural and urban area of residence. At the same time, the similar variable in the Montenegrin sample consisted of three categories: (i) rural area, (ii) small town, (iii) large city, while the variable in the Serbian sample contained the following categories: (i) rural area, (ii) metropolitan area, (iii) capital city. Categories (ii) and (iii) were merged in the case of Montenegrin and Serbian respondents in order to create a binary variable common with the Macedonian sample.

Fifth, the variable showing the ***marital status*** of the respondent was recoded from a categorical variable to a binary one, taking the value of "1" if the individual was married at the time of the interview and the value of "0" if the individual was either (i) single, (ii) engaged to be married, (iii) divorced or (iv) widowed.

Sixth, the variable reflecting the ***household financial situation*** was recoded from (i) well off, (ii) fairly well off, (iii) around the national average, (iv) fairly poor, (v) poor, to an inverse order for a more intuitive interpretation.

The final set of variables used in the present research and the motivation for including them in the analysis is presented below.

The **dependent variable** is the **duration of school-to-work transition**. As explained previously, the present thesis focuses on measuring the duration of transition to the first 'decent' job, namely, the number of months elapsed from the end of education to the moment an individual enters a job in which she stays for at least 12 consecutive months.

The main **independent variable** of interest is a binary variable for **working during studies**. Several additional explanatory variables are included in the analysis (i) in order to control for individual characteristics, (ii) to be able to compare and make inferences about individuals with the same or very similar characteristics and (iii) to get closer to a causal interpretation of the relationship between work during studies and the duration of school-to-work transition.

The *age* of the respondent is included in the analysis in order to be able to differentiate between pupils and students from different generations, as well as to control for possible changes in the economic cycle or employment legislation.

A *female* binary variable (equal to "1" if the individual is a female) is included to control for *sex* and *gender* characteristics of the individuals. Differences could be expected among women and men due to distinctive labor market behavior and labor supply constraints (e.g. pregnancy, childcare).

A variable controlling for household characteristics, namely *household financial situation* was also included in the analysis. The rationale is the following. On the one hand, young people living in poorer households could be expected to take more employment opportunities and work more during their studies in comparison to their fellows from richer households, in order contribute

to the household budget or to become financially independent and decrease the financial burden of their parents. On the other hand, the types of jobs young people from wealthy and less wealthy families tend to settle in after completing their education are often expected to be different. In other words, those who come from richer families may have better access to permanent and formal employment, to high-paid jobs which are in line with the education or training they received. At the same time, those coming from poorer households often settle in irregular or informal jobs with little relevance to the education or training they obtained, for which they feel overqualified.

A variable indicating the *area of residence* of the individual (urban or rural) was also included in the study. Intuitively, young people living in urban areas are expected to find permanent employment easier and faster than their fellows in rural areas, since they are exposed to more job opportunities, can benefit from more social connections which might be helpful in finding a job, as well as have better access to more sources of information about the positions available on the labor market.

The *marital status* of the individual was included among the control variables, as well, since it is expected that (i) usually young people tend to get married only after finding a stable employment, (ii) married people tend to put more effort in the job-finding process in order to support the family and (iii) married women whose husbands are able to provide for the entire family may be more selective in the process of looking for a job and therefore may spend more time in transition from school to work.

Moreover, the *presence of children* is also believed to be a good control variable, because children probably represent an additional factor that induces young parents to find a decent stable job as fast as possible in order to be able to provide for the family. However, small children who need full-time care might also become a reason for some individuals, especially women, to temporarily stop working or looking for a job. Therefore, the presence of children may influence the duration of transition in both directions.

Parents' education levels are also considered suitable control variables in the context of the present analysis. On the one hand, in families where parents have a low education level, the financial situation is likely to be worse compared to households with educated parents. Therefore, children in poorer households are more likely to work during studies in order to contribute to the family budget. On the other hand, in families with highly educated parents, the financial situation is expected to be better, so that children do not have to work for financial reasons and can fully concentrate on their studies. At the same time, however, children in wealthier families are expected to have better access to information regarding the labor market and may look for a job during studies, being driven by other reasons, such as the realization of the importance of skill accumulation or of social contacts for better employment chances in the future.

Finally and most importantly, the entire analysis in this thesis is carried out by *education level*. Respondents who did not complete any commonly accepted level of education and those who completed only elementary education (grade 1-8) were excluded from the analysis. The rationale for keeping them out of the sample is the following: high school dropouts are expected to be intrinsically different in terms of abilities and motivation from those who complete at least secondary education. In addition, since in the Macedonian and Montenegrin surveys young people holding a Master's and those holding a PhD degree were merged into one category, individuals having a level of education higher than a Bachelor's degree were not included in the final sample either. The main reason is that it is impossible to differentiate between a respondent who holds a Master's degree from one who has a Doctoral degree. At the same time, considering those people comparable does not seem reasonable due to considerable differences in the years of education completed and the level of sophistication of the studies. Therefore, the analysis is conducted separately on individuals who completed secondary education and individuals who obtained a Bachelor's degree.

2.3. Final sample and methodology

The final sample used for the present research consists of 3,456 individuals. The country distribution is the following: 1,015 individuals are from FYR Macedonia, 1,133 are from Montenegro, and 1,308 of them are from Serbia. The sample includes 1,622 females, accounting for 46.93 percent of the sample, and 1,834 males, accounting for 53.07 percent. Among respondents included in the sample, 56.60 percent lived in urban areas at the moment of the survey. A share of 22.25 percent were married at that time, and 18.81 percent of young people had children. As for the study and work combination, 15.16 percent of individuals worked during their studies, while 84.84 percent of them did not. By education level, for 76.65 percent the highest level achieved is secondary education. More specifically, 68.87 percent completed secondary vocational education, while 7.78 attended a grammar high school. At the same time, 23.35 percent completed higher education and hold a Bachelor's degree. The average age in the sample is equal to 24 years. The average duration of transition to the first 'decent' job is 24 months, while the median duration is equal to 16 months. Overall, only 39.8 percent of the sample was able to find a 'decent' employment after completing education.

Figure 1 presents the distribution of the duration of transition to the first 'decent' job.

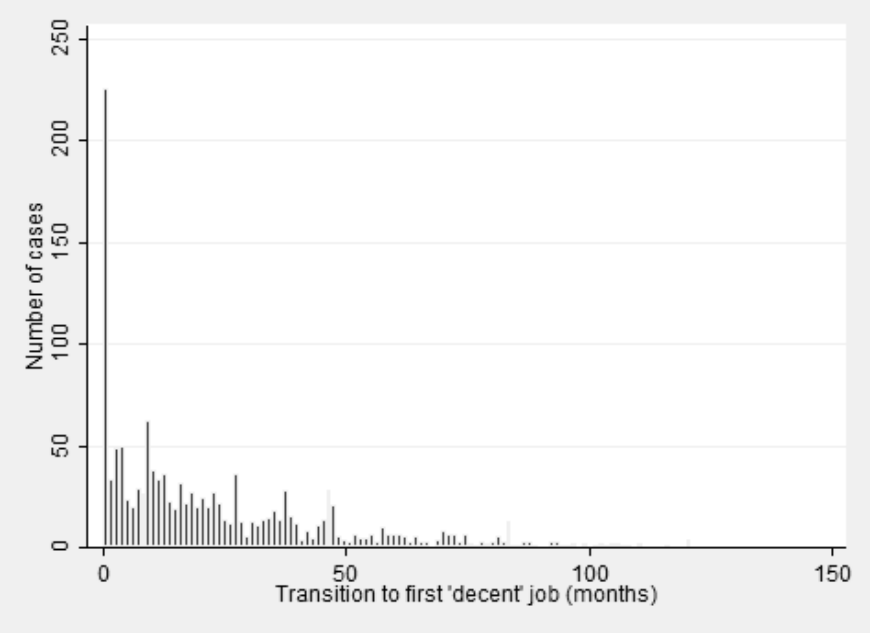

Figure 1. Distribution of the duration of transition to the first 'decent' job (months)

Table 1 presents in details the distribution of the sample by education level and by work during studies. In addition, it shows the average duration of transition to the first 'decent' job in months, as well as the percentage of young people who did not complete their school-to-work transition and do not or did not have a 'decent' job.

Table 1. Distribution of the sample by selected key characteristics

Education level			**Frequency**	**Percentage**	**Average duration of transition (months)**	**Percentage without 'decent' job**
High school	**Grammar**	Work during studies	32	11.90	18.35	37.50
		No work during studies	237	88.10	29.00	72.15
	Vocational	Work during studies	315	13.24	21.74	50.16
		No work during studies	2,065	86.76	27.22	58.40
Bachelor's degree		Work during studies	177	21.93	15.78	64.41
		No work during studies	630	78.07	14.95	66.51

A detailed presentation of the sample distribution by selected individual and household characteristics used in the research is presented in Table A.1 in the Appendix, while the summary statistics of the non-binary variables used in the research are presented in Table A.2 in the Appendix.

There was one important issue that needed to be tackled in the process of final sample construction and methodology selection. Namely, the sample included a considerable number of young people for whom the duration of transition from school to work could not be calculated. This group consisted of those who did not report any job for the entire period from the end of education until the time of the survey, either because of unemployment or economic inactivity. On the one hand, those individuals were still in transition (if at all), therefore measuring the transition duration for them by calculating the difference between the start date of the 'decent' job and the end date of education would be unfeasible. On the other hand, simply

excluding this group from the research would introduce an obvious sample selection bias in the analysis, resulting in inconsistent estimates of the parameter of interest.

Taking into account the issue presented above, a simple ordinary least squares (OLS) regression would be a poor choice of method to estimate the relationship between working during studies and the duration of school-to-work transition for several reasons.

First, one of the assumptions behind an OLS model is the normality of the dependent variable. However, in the context of the present analysis, where the dependent variable is the duration of transition, it is highly unlikely that it would be normally distributed. Usually, duration data exhibit skewedness, which is also the case in the present thesis, as it was shown previously in this chapter.

Second, the OLS regression does not allow to analyze the entire sample, namely both those for whom transition ended, and those for whom it has not ended yet. It should be noted that discarding all the individuals with unfinished transition would cause a sample selection issue, as explained earlier. Therefore, a different method is necessary in order to carry out the analysis outlined above. The methodology used instead of OLS to handle the category of survey respondents described in this section and to pursue a less biased estimation of the parameter of interest is presented below.

The ***Tobit model*** is considered to be a partially suitable alternative to the OLS in this regard, since it allows to keep in the analysis those for whom the transition duration is not observed (McDonald & Moffitt 1980). Due to the lack of information on the school-to-work transition duration for 2,080 individuals who did not have any job in the period from the end of education until the survey time, those individuals, who represent censored observations, were assigned the value of the longest transition duration of the sample. In case of individuals who only completed secondary education, the upper limit is equal to 121 months (≈10 years), while individuals with a Bachelor's degree were assigned the value equal to 75 months (≈6 years).

Moreover, for the purpose of an in-depth analysis of the young people without higher education, the highest transition duration of 116 months (≈10 years) was assigned to those who completed secondary grammar education, while those who completed secondary vocational education kept the threshold of 121 months (≈10 years).

Therefore, the Tobit regression model estimated in this thesis is the following:

$$Y_i^* = \alpha + \beta W_i + \gamma X_i + \varepsilon_i;$$

where:

Y_i^* is latent variable for the duration of transition in months to the first 'decent' job of individual *i*;

W_i is an indicator of working during studies;

X_i is a vector of individual and household characteristics including age, sex, residence, household financial situation, marital status, presence of children, father education level, and mother education level;

ε_i is the error term.

In addition to a Tobit regression, a ***complementary log-log*** regression analysis was carried out. The complementary log-log model is the discrete time version of the proportional hazard models (Jenkins n.d.). It allows to estimate the rate at which the successful school-to-work transition is expected to happen for different groups of young people and whether working during studies can increase the expected rate of transition. For that purpose, an *individual* × *month* panel was created in which each individual was assigned a number of rows N_i equal to the number of months elapsed from the end of education until she settled into the first 'decent' job. Therefore, the obtained panel was unbalanced. A binary variable to reflect the moment an individual found a 'decent' job was also generated, taking the value of "1" for the corresponding month and "0" for all previous months. In case of censored observations, in other words for those individuals who did not manage yet to find 'decent' employment, this binary variable

took the value of "0" for all months. In addition, month binary variables were generated. The complementary log-log model estimated in this thesis is the following:

$$\Pr(Y_i = 1) = F(\alpha + \beta W_i + \gamma X_i);$$

where:

$F(z) = 1 - exp\{-\exp(z)\}$;

$\Pr(Y_i = 1)$ is the probability that the individual *i* finds a 'decent' job;

W_i is an indicator of working during studies;

X_i is a vector of individual and household characteristics including age, sex, residence, household financial situation, marital status, presence of children, father education level, and mother education level.

CHAPTER 3: EMPIRICAL RESULTS

The third chapter presents the main findings of the research, together with their interpretation. In addition, it discusses the implications of the obtained results, as well as their practical importance.

3.1. Cross-country analysis by education level

It seems reasonable to assume that jobs performed during studies in high school and those performed while studying at university can significantly differ in terms of time spent in a job, complexity and career relevance. This is why different results can be expected for groups with different levels of education in all three countries. Therefore, in order to differentiate between those, a cross-country analysis was conducted on groups of individuals by their highest level of education completed, separately for high school graduates and for university graduates with a Bachelor's degree. However, there is a caveat that the design of the survey does not allow to find out at which point in time university graduates worked while studying: in high school or during their university studies.

The results of the Tobit regressions for the baseline model by education level separately for FYR Macedonia, Montenegro and Serbia are presented in Table 2.

As it can be seen from Table 2 below, the Tobit results considerably differ across countries. Apparently, these three former Yugoslav republics are very different, hence they will be analyzed separately throughout the entire thesis. The coefficient on '*work during studies*' is statistically significant for high school graduates in the case of FYR Macedonia and Montenegro, and not statistically significant for Serbia. In addition, it seems that working during studies does not affect in a statistically significant way the duration of school-to-work transition of individuals holding a Bachelor's degree.

Table 2. Tobit regression results for high school and university graduates by country

	Transition to first 'decent' job (months)					
VARIABLES	**FYR Macedonia**		**Montenegro**		**Serbia**	
	High school	**Bachelor's degree**	**High school**	**Bachelor's degree**	**High school**	**Bachelor's degree**
Work during studies	-57.99***	-20.60	-39.17***	-8.930	3.222	12.35
	(11.72)	(12.76)	(11.16)	(12.02)	(9.257)	(11.29)
Age	-11.62***	-14.57***	-13.11***	-14.38***	-13.08***	-17.10***
	(1.100)	(2.087)	(1.305)	(2.539)	(0.927)	(1.888)
Female	-8.767	7.029	-3.635	-14.02	25.73***	5.129
	(8.952)	(10.05)	(9.830)	(11.06)	(6.367)	(9.044)
Constant	422.0***	467.1***	481.3***	498.8***	415.1***	538.9***
	(27.78)	(55.72)	(32.98)	(68.32)	(24.30)	(52.25)
Observations	767	248	863	270	1,019	289
Pseudo R-squared	0.0262	0.0292	0.0211	0.0263	0.0283	0.0389

Dependent variable: duration of transition to first 'decent' job in months
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The interpretation of the Tobit estimates is similar to the interpretation of the OLS coefficients, but it is important to keep in mind that the coefficient of the '*work during studies*' variable in the Tobit model shows the relationship between the main independent variable of interest and the unobserved uncensored latent variable Y_i, not the observed outcome. The Tobit results show that, for example, if we compare two Macedonian individuals who finished only high school and who are of the same age and sex, the individual who worked during studies is expected to finalize her school-to-work transition and settle in a 'decent' job 58 months (≈ 5 years) faster than an individual who did not work during studies. A similar situation, although with smaller magnitude, is observed in Montenegro. No statistically significant relationship between working during studies and transition duration was identified for Serbian high school graduates.

The regression coefficients are also significant for '*age*' across all three countries. They suggest that holding all the other variables constant, or if we compare, for example, two high school graduates from Macedonia who worked during studies and are of the same sex, but differ in their

age by one year, the individual who is one year older is expected to find a 'decent' job faster by 11 and a half months (≈ 1 year), compared to his fellow who is one year younger than him.

At the same time, the coefficient on '*female*' is statistically significant for Serbia. It means that if we compare a Serbian male and a Serbian female of the same age who finished high school and worked during studies, the female is expected to spend almost 26 months (≈ 2 years) more in the process of school-to-work transition than the male.

The results of the Complementary log-log regressions for the baseline model by education level separately for FYR Macedonia, Montenegro and Serbia are presented in Table 3.

Table 3. Complementary log-log regression results for high school and university graduates by country

	Rate of transition to the first 'decent' job					
VARIABLES	**FYR Macedonia**		**Montenegro**		**Serbia**	
	High school	**Bachelor's Degree**	**High school**	**Bachelor's degree**	**High school**	**Bachelor's degree**
Work during studies	0.785***	0.380	0.497***	0.129	-0.0437	-0.268
	(0.178)	(0.253)	(0.136)	(0.243)	(0.139)	(0.247)
Age	0.161***	0.303***	0.158***	0.302***	0.182***	0.359***
	(0.0167)	(0.0508)	(0.0169)	(0.0611)	(0.0142)	(0.0492)
Female	0.159	-0.217	0.0610	0.263	-0.377***	-0.101
	(0.129)	(0.210)	(0.124)	(0.227)	(0.0930)	(0.196)
Constant	-10.06***	-12.80***	-10.17***	-13.36***	-10.39***	-27.29***
	(1.067)	(1.638)	(1.069)	(1.860)	(1.058)	(1.660)
Individuals	767	248	863	270	1,019	289
Individual×month	48,624	7,251	49,070	7,881	60,320	9,417

Dependent variable: rate of transition to first 'decent' job
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Before interpreting the complementary log-log regression results, it is important to note that in this case, the model shows the relative school-to-work transition rate through $\exp(\beta)$. The results of the complementary log-log regression reflect a similar situation to the Tobit results, the estimated coefficients being statistically significant in case of high school graduates for FYR Macedonia and Montenegro and not statistically significant both for Serbia and for young people holding a Bachelor's degree. Namely, if we compare two Macedonian high school graduates who are of the

same age and sex, the rate of finalizing transition and settling in a 'decent' job is higher by 2.2 times for the individual who worked during studies compared to her fellow who did not work.

Besides that, the coefficient on '*age*' is also statistically significant and suggests that, for example, among two Macedonian individuals who finished high school, worked during studies and are of the same sex, but differ in age by one year, the rate of transiting into a 'decent' job is higher by 17.5 percent for the individual who is one year older, compared with the other one. At the same time, compared to a Serbian male of the same age who worked during studies, a Serbian female who also combined studies with work faces a transition rate into 'decent' employment lower by 0.68 times than a male. In more intuitive terms, holding all the other variables constant, a Serbian male experiences a higher transition rate by 45.7 percent than a Serbian female.

Several explanatory variables were added to the baseline model in order to control for individual and household characteristics. Finding confounding variables that could both influence working during studies and school-to-work transition would help get closer to a causal interpretation of the relationship. For example, *household financial situation* could be a suitable determinant of both working during studies and transition to a 'decent' job. Young people from poorer households are expected to work during studies more due to financial reasons, compared to their fellows from wealthier households. Young people from richer households, however, may have better chances to settle in a 'decent' job faster potentially due to a better quality of education, better social connections, more available job opportunities. It is also important to control for the *area of residence*. On the one hand, young people in urban areas are expected to be exposed to more employment opportunities, work during studies driven by the desire to succeed and get more social connections, and therefore settle in a 'decent' job faster. On the other hand, their fellows in rural areas may be compelled to work during studies due to a more modest financial situation. At the same time, despite the fact that they may be expected to find their *first* job faster due to a worse employer-employee match, settling in a '*decent*' job may be more difficult and take more

time for them. Moreover, parents' level of education could also both influence working during studies and transition to a 'decent' job. In addition, marital status and presence of children were also included as control variables. A detailed motivation for including all independent variables in the analysis was presented in the previous chapter, subchapter 2.2.

The results of the Tobit regressions for high school and Bachelor's degree holders are presented in Table 4.

Table 4. Tobit regression results for high school and university graduates by country

	Transition to first 'decent' job (months)					
VARIABLES	**Macedonia**		**Montenegro**		**Serbia**	
	High school	**Bachelor's degree**	**High school**	**Bachelor's degree**	**High school**	**Bachelor's degree**
Work during studies	-54.89***	-21.36*	-26.24**	-8.196	1.270	11.28
	(11.89)	(12.48)	(11.20)	(11.70)	(9.197)	(11.02)
Age	-10.72***	-13.94***	-13.46***	-14.77***	-13.85***	-15.53***
	(1.237)	(2.160)	(1.361)	(2.584)	(0.991)	(2.061)
Female	-9.706	5.554	-2.699	-14.28	22.57***	6.001
	(8.989)	(9.628)	(9.933)	(10.70)	(6.523)	(9.062)
Household financial situation	-12.45***	-11.97***	-22.57***	-13.04**	-13.86***	-16.07***
	(3.068)	(4.309)	(4.435)	(5.510)	(2.749)	(4.199)
Urban residence	-1.608	-1.181	-5.617	-2.509	12.55**	-17.22
	(7.962)	(10.36)	(10.07)	(14.30)	(5.958)	(11.17)
Married	-7.346	-1.856	-8.526	69.57**	12.29	15.06
	(18.23)	(16.18)	(18.47)	(27.52)	(11.70)	(23.34)
Presence of children	-3.357	13.25	17.87	-73.59***	3.821	-14.85
	(18.59)	(20.05)	(19.87)	(26.28)	(12.25)	(23.44)
Father education level	-4.514	-2.880	-2.647	-6.177	1.982	3.231
	(5.921)	(8.683)	(6.302)	(9.156)	(5.251)	(8.818)
Mother education level	-11.20*	-10.22	-21.88***	-14.71*	3.586	-14.61
	(6.257)	(7.581)	(8.187)	(7.546)	(4.736)	(9.666)
Constant	479.7***	528.3***	618.9***	617.8***	444.7***	588.3***
	(34.51)	(60.66)	(42.85)	(76.65)	(30.59)	(62.34)
Observations	767	248	863	270	1,019	289
Pseudo R-squared	0.0317	0.0409	0.0316	0.0446	0.0333	0.0562

Dependent variable: duration of transition to first 'decent' job in months
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The estimated Tobit results of the extended model, presented in Table 4, suggest that, holding all the other variables constant, for instance, a Macedonian high school graduate who worked during studies is expected to complete her school-to-work transition months faster by almost 55 months (≈ 4.5 years) than her fellow who did not get professional experience during studies. In addition, holding all the other variables constant, the transition duration is expected to decrease with age, to be lower for individuals coming from wealthier households in all three countries and to be higher for Serbian women. Moreover, the table shows that there is no statistically significant relationship between working during studies and transition duration in case of university graduates, except for FYR Macedonia. In Macedonia, holding all other variables constant, a young person holding a Bachelor's degree who worked during studies is expected to settle in a 'decent' job 21 months faster than her fellow who did not work. The previously described relationships between age, household financial situation and transition duration hold.

A similar analysis with additional explanatory variables was carried out by using the complementary log-log model. The results for high school and university graduates are presented in Table A.3 in the Appendix. They suggest that, holding the other variables constant, in case of Macedonian young people, for example, the transition rate is expected to be higher by 2.1 times for high school graduates who work during studies, compared to their fellows who did not work. Similarly, holding the other variables constant, the transition rate also increases with age, is higher for young people from richer households in all three countries and is lower for Serbian women.

Similarly to the results obtained by using the Tobit model, the complementary log-log regressions for young people holding a Bachelor's degree show that working during studies does not affect the school-to-work transition rate in the case of Montenegrin and Serbian university graduates. However, for FYR Macedonia, holding the other variables constant, the transition rate is expected to be higher by 56.8 percent for university graduates who combined

studies with work, compared to their fellows who concentrated solely on studies. At the same time, holding the other variables constant, transition rates are expected to increase with age and be higher for individuals coming from wealthier households in all three countries.

3.2. Cross-country analysis by type of education

In addition to the results presented in the previous subchapter, to go further, a deeper analysis was carried out to see whether differences in the duration of school-to-work transition can be found among students who completed secondary *grammar* education and secondary *vocational* education. The regressions exhibit statistically significant results for both grammar high school graduates and for those who completed vocational secondary education in case of FYR Macedonia and Montenegro, while the coefficients on '*work during studies*' for Serbia are not statistically significant.

The country results of the Tobit regressions for the baseline model for high school graduates by type of education are presented in Table 5.

Table 5. Tobit regression results for high school graduates by type of education

	Transition to first 'decent' job (months)					
VARIABLES	**Macedonia**		**Montenegro**		**Serbia**	
	Vocational	Grammar	Vocational	Grammar	Vocational	Grammar
Work during studies	-43.56***	-115.1***	-34.00***	-126.1***	1.593	52.42
	(13.10)	(24.44)	(11.53)	(40.85)	(9.483)	(32.31)
Age	-11.20***	-11.65***	-12.92***	-12.58**	-13.00***	-14.62***
	(1.174)	(2.863)	(1.339)	(5.751)	(0.947)	(5.014)
Female	-12.22	19.18	-4.648	26.84	25.00***	49.76**
	(9.907)	(20.71)	(10.06)	(45.15)	(6.547)	(23.65)
Constant	406.4***	438.3***	472.9***	516.7***	413.8***	425.7***
	(29.92)	(69.83)	(33.89)	(143.1)	(24.79)	(131.9)
Observations	598	169	800	63	982	37
Pseudo R-squared	0.0248	0.0362	0.0202	0.0461	0.0277	0.0558

Dependent variable: duration of transition to first 'decent' job in months
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The Tobit results show that, for example, if we compare two Macedonian *vocational* high school graduates who are of the same age and sex, the individual who worked during studies is expected to find a 'decent' job 43 and a half months (≈ 3.5 years) faster than her fellow who did not work during studies. The situation in Montenegro is fairly similar to the Macedonian one, with some differences in magnitude, while for Serbian vocational school graduates the relation between working during studies and the duration of school-to-work transition is not statistically significant. Holding age and sex constant, the duration of transition is also expected to decrease with age in case of vocational secondary education for all countries and to be higher for female vocational school graduates in Serbia.

At the same time, if we compare two Macedonian individuals who finished *grammar* high school and who are of the same age and sex, the individual who worked during studies is expected to finalize her school-to-work transition and settle in a 'decent' job 115 months (≈ 9.5 years) faster than an individual who did not work during studies. A similar situation can be expected in Montenegro, while no significant relationship is found for Serbia. Analogously to vocational education, the regression coefficients are significant for '*age*' in the case of grammar school for all countries, as well.

The obtained results imply that, in FYR Macedonia and Montenegro, it is extremely difficult for grammar high school graduates without previous labor market experience to find a 'decent' job. In light of the above magnitudes, which reach 126 months for Montenegro, it is very important to understand who those young people who only graduated from a grammar secondary school are. In the context of the present research, it is assumed that those are people who were originally planning to continue their studies at a higher education institution, but for unknown reasons failed to do so or decided to take another life path. Therefore, this group is believed to be strongly self-selected and this should be kept in mind when comparing these

magnitudes with the numbers obtained for other groups of young people. Moreover, the very low sample sizes in Montenegro and Serbia represent an additional reason for caution.

The country results of the complementary log-log regressions for the baseline model for high school graduates by type of education are presented in Table 6.

Table 6. Complementary log-log regression results for high school graduates by type of education

	Rate of transition to first 'decent' job					
VARIABLES	**FYR Macedonia**		**Montenegro**		**Serbia**	
	Vocational	**Grammar**	**Vocational**	**Grammar**	**Vocational**	**Grammar**
Work during studies	0.635***	1.390***	0.432***	1.728***	-0.0378	-0.537
	(0.201)	(0.370)	(0.142)	(0.565)	(0.140)	(0.807)
Age	0.164***	0.131***	0.156***	0.178**	0.179***	0.344**
	(0.0182)	(0.0431)	(0.0173)	(0.0807)	(0.0143)	(0.136)
Female	0.204	-0.146	0.0656	-0.286	-0.358***	-1.176***
	(0.146)	(0.285)	(0.128)	(0.568)	(0.0956)	(0.448)
Constant	-9.846***	-7.873***	-10.04***	-8.262***	-10.28***	-10.41***
	(1.080)	(1.357)	(1.073)	(2.182)	(1.058)	(3.537)
Individuals	598	169	800	63	982	37
Individual×month	35,155	4,522	44,517	683	58,173	394

Dependent variable: rate of transition to first 'decent' job
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The complementary log-log regression suggests that if we compare two Macedonian *vocational* high school graduates who are of the same age and sex, the individual who worked during studies experiences an 88.7 percent higher transition rate compared to the individual who did not work while studying. A similar situation is observed in Montenegro, although with a smaller magnitude. In Serbia no statistically significant relationship between working during studies and the rate of transition to a 'decent' job is identified, be it in the context of a vocational or a grammar high school. Moreover, the coefficients on '*age*' suggest that, holding all other variables constant, older individuals are expected to face higher transition rates in all three countries, while women with vocational education in Serbia are expected to experience lower transition rates compared to men.

As for *grammar* secondary education, if we compare two Macedonian *grammar* high school graduates who are of the same age and sex, the rate of finalizing transition and settling in a 'decent' job is higher by 4 times for the individual who worked during studies compared to her fellow who did not work, and an even higher magnitude is observed in Montenegro. As previously mentioned, no statistically significant relationship is identified for Serbia. Besides that, according to the coefficient on '*age*' which is also statistically significant for all countries, among two individuals who finished a *grammar* high school, worked during studies and are of the same sex, but differ in age by one year, the rate of transiting into a 'decent' job is expected to be higher for the individual who is one year older, compared to the other one. Moreover, holding all other variables constant, women with grammar secondary education in Serbia are also expected to face considerably lower transition rates than men.

Similarly to the previous subchapter, several explanatory variables were added to the baseline model in order to control for individual and household characteristics, as well as to get closer to a causal relationship. The detailed results of the Tobit and complementary log-log regressions with more control variables for individuals who completed vocational and grammar secondary education are presented in Tables A.4 and A.5 in the Appendix.

In case of vocational high school graduates, working during studies is expected to increase the speed of school-to-work transition. Namely, if we compare two vocational high school graduates of the same age and sex from Macedonia, the one who worked while studying is expected to find a 'decent' job 42 months (≈ 3.5 years) faster than the one who did not work. In Montenegro in similar circumstances, the duration of transition is expected to be faster by 21 and a half months. No significant relationship was identified for Serbia. Moreover, holding all the other variables constant, the duration of transition is expected to decrease with age and to be lower for individuals coming from wealthier households.

As Table A.4 shows, keeping all the other variables constant, a Macedonian grammar high school graduate who worked during studies is expected to finish her transition almost 104 months (≈ 8.5 years) faster than an individual who did not gain professional experience while studying. A similar situation with a smaller magnitude can be observed in Macedonia, while no statistically significant results were identified for Serbia.

The complementary log-log regression model reflects a situation similar to the Tobit model. In case of vocational education, working during studies increases the school-to-work transition rates, but the magnitude is smaller compared to the grammar secondary education case. Namely, holding all the other variables constant, the transition rate facing a vocational school graduate from Macedonia who worked during studies is expected to be 90.6 percent higher, compared to her fellow who did not work. A smaller magnitude is identified for Montenegro and no significant relationship was found for Serbia. The transition rates also increase with age and are higher for individuals from richer households.

The results obtained from the extended complementary log-log model also suggest that, keeping all the other variables constant, a Macedonian grammar high school graduate who worked during studies faces a 4 times higher transition rate compared to her fellow who did not work. A grammar high school graduate from Montenegro is expected to experience an even higher rate of transition. Again, results from Serbia do not exhibit a significant relationship between working during studies and rate of transition to a 'decent' job.

In practice, the results presented in this chapter suggest that working during studies mostly matters in terms of the duration of school-to-work transition for young people who only completed secondary education only in FYR Macedonia and Montenegro. At the same time, for Montenegro and Serbia, there is no statistically significant difference in the transition duration in case of individuals holding a Bachelor's degree. This implies that, on the one hand, for those with lower levels of education, the professional experience obtained during studies

plays an important role in the process of finding a permanent and stable employment. In their case, this experience becomes an efficient signaling device which allows employers to "locate" and select those who, despite lack of higher education, were able to gain knowledge and practical skills through previous employment. On the other hand, in the case of young people with higher education, other types of signals are believed to become more important in the process of selection for the job, for example, the field of education obtained, the academic performance of the candidate, the institution where the degree was received.

As for the breakdown of secondary school graduates by type of education, namely grammar and vocational, with different magnitudes, working during studies is significantly important for both groups again only in FYR Macedonia and Montenegro, while no significant relationship is identified for Serbian young people. One should still keep in mind that the Montenegrin and Serbian sample sizes were very low, therefore the obtained results require a lot of caution in interpretation. This breakdown proves that the overall results for high school graduates are not driven by the vocational school students, who might be more willing or more likely to look for a job and work during their studies. In addition, one should keep in mind that, as previously mentioned, the survey question about working during studies is formulated in such a way that it excludes from the scope of this research vocational students' compulsory apprenticeships, which represent an integral, though very limited (in the analyzed countries) part of their education process.

At the same time, the obtained results reveal a very interesting and to a certain extent surprising conclusion, namely that Serbia happens to be very different from its two neighbors in terms of school-to-work transition and the opportunities young people are expected to gain at the moment of entering the labor market. The potential reasons for such differences, as well as policy recommendations for all three countries are discussed in the next chapter.

CHAPTER 4: DISCUSSION AND POLICY RECOMMENDATIONS

The fourth chapter serves to place the results in a broader policy context. It elaborates an adequate policy response to the difficulties facing youth in finding a decent employment and efficiently completing their school-to-work transition for the analyzed countries. It detects the existing problems and proposes a potential remedy for them by suggesting policies aimed at creating suitable employment opportunities for young people, which could improve the latter's chances to achieve better labor market outcomes in the future.

The results obtained through the analysis conducted in the present thesis reveal an important yet to some extent surprising situation. Namely, they show that, despite a historically common development of the education system and labor market, currently, with regard to school-to-work transition, Serbia considerably differs from FYR Macedonia and Montenegro. Working during studies is expected to speed up school-to-work transition and increase the chances of finding a 'decent' job for high school graduates both in FYR Macedonia and Montenegro, as well as for young people with a Bachelor's degree from FYR Macedonia. In case of Serbian youth, however, combining studies with work does not affect the duration of transition from education to employment in a statistically significant way, neither in case of high school graduates, nor in case of Bachelor's degree holders.

Several reasons for lack of relationship between working during studies and school-to-work transition can be identified. With regard to young people who received a Bachelor's degree, as stated in the previous chapter, different signals can be expected to work for employers in the process of selection of candidates for a position, for instance, the institution which issued the degree, the field of studies or the overall academic performance of the individual.

Another possible explanation for the lack of relationship between working during studies and school-to-work transition is the type of jobs performed by young people during their

studies. The design of the survey does not allow to get information on the level of relevance to education and future career of the jobs performed in combination with studies. Due to lack of such data, the idea that the jobs performed during studies were probably not in line with the education field an individual was enrolled in or with the competencies required for the employment positions she applied to after graduation, remains a valid assumption that could explain why employers do not distinguish between those young graduates who have some labor market experience and those who do not. This can be applicable to both high school and university graduates.

Last, but not least, political affiliation is believed to be an important factor in obtaining a job in a public sector institution in all three countries, which may limit the employment opportunities available to young people, as well, irrespective of whether they worked during studies or not.

Specifically for Serbia, a considerable obstacle in securing a 'decent' employment, at least for a part of young graduates, is the law adopted in December 2013, which prohibits additional employment in the entire public sector and restricts it exclusively to cases when a new position becomes available due to someone's retirement (Sluzbeni glasnik 108/13 2013). Thus, public hospitals and medical centers are 'closed' for young people with a medical qualification, limited to nil positions are open for young people aiming for a career in the government sector, and limited to nil employment opportunities in state universities and research institutes are available to young researchers.

Taking into account the obtained results and the above discussion, several important policy recommendations can be formulated.

First, judging by the results obtained for vocational school graduates, it seems that the implementation of the dual education system in FYR Macedonia and Montenegro could be expected to have a positive impact on the employment chances of young people in these two

countries. Based on the evidence revealed in this thesis, working during studies significantly speeds up the school-to-work transition for vocational school graduates. Therefore, those young people should be provided the opportunity to gain professional experience not outside the education system, but rather through a mechanism embedded in it, in order to ensure the labor market and career relevance of the work performed during studies. The obsolete vocational education system characteristic for these countries, which currently provides very limited opportunities for work-based training, should be adjusted to the labor market needs. It is imperative to create a clear and transparent link between the education system and the labor market, which would allow for a needed level of co-ordination between the two. Thus, young people would be able to benefit from 'hands-on' professional training obtained from public and private sector entities, get practical skills and knowledge from a combination of school-based and work-based education. As stated in a UNESCO report on school-to-work transition,

> it is now widely recognized that responsibilities for school-to-work transition must be shared with labor-market stakeholders, particularly employers. More than any other educational issue, this is an area of public policy that requires a strong commitment to partnership. (Atchoarena 2000, 2).

Second, the empirical results presented in this thesis show that working during studies is expected to decrease the duration of school-to-work transition for grammar school graduates, as well, to an even higher magnitude than for those who completed vocational education. This evidence brings up another important channel through which a meaningful dialogue between future graduates and employers could be established. Namely, in the analyzed countries there are institutions in literal translation called "youth community" (*Srb.* "omladinska zadruga") and "student community" (*Srb.* "studentska zadruga"), which act as intermediaries between employers who provide temporary job opportunities, on the one hand, and young people who are members of these communities, on the other hand. However, in most cases, the jobs available there are scarce or not in line with the education or career aspirations of the students who take them, which may not be helpful in smoothing the young people's transition from

education to permanent employment. Thus, in order to make this mechanism work, it is essential to promote this potentially efficient channel among a higher number of more established employers and encourage its use through additional tax incentives. Moreover, career counseling services could be introduced in grammar high schools in order to raise awareness of such opportunities. This policy recommendation is also valid for Serbia, since it has the potential to improve the communication and interaction between employers and grammar school and university students, therefore increasing the level of professional connection between the jobs undertaken during studies and the future professional career of an individual, and preventing skills mismatch.

Third, it is indispensable to increase the job market relevance of the entire education systems in the analyzed countries, by adjusting the curricula and the offered education programs to the labor market needs. Despite the acknowledgement of the fact that education represents the backbone of a prosperous society, the education systems in FYR Macedonia, Montenegro and Serbia often fail to provide the economy with high-skilled workers able to match the employee profiles demanded by employers. According to the 2015-2016 Global Competitiveness Report, inadequately educated workforce is the second most problematic factor for doing business in FYR Macedonia and still among the most problematic factors in Montenegro and Serbia (Schwab & Sala-i-Martín 2015). A higher level of efficiency in the education system can be achieved by establishing long-lasting connections between educational institutions and potential employers through career fairs, students' résumé databases available to employers or increased internship placements.

Based on the empirical results obtained in this thesis, all three recommendations tackle highly important elements on the way towards a smooth and efficient school-to-work transition of young people in FYR Macedonia, Montenegro and Serbia. However, in circumstances characterized by the need to allocate very scarce financial resources, as well as limited

implementation capacity, it is essential for local decision-makers not only to analyze the trade-offs of every possible option, but also to identify the priority actions and focus on them. Since most of the possible measures take time to be implemented and give positive results, short-term returns from different policy measures are not to be expected. Visible results can only be achieved when a high level of understanding, accountability and co-operation between all stakeholders is reached.

CONCLUSION

In light of high youth unemployment rates in FYR Macedonia, Montenegro and Serbia, as well as due to the existing policy debate on the introduction of the dual education system, it is essential to identify both the underlying causes of this highly important economic and social issue, and adequate policy responses that would have the potential to provide a remedy against it. The present thesis raised an important question: Does working during studies affect the duration of school-to-work transition? A comparative analysis was conducted on the examples of the above three former Yugoslav republics. Since these countries have a common past, similar socio-economic level and common historical development of the education system and labor markets, as well as similar labor market problems, it was interesting to see whether there were any differences among these three countries in terms of this aspect of school-to-work transition.

The research was based on the data from the ILO School-to-work transition survey (SWTS), a survey focusing on young people aged 15 to 29 years, conducted in more than 30 low- and middle-income countries from Africa, Asia, Europe and Latin America between 2012 and 2015. Based on a sample of 3,456 individuals from FYR Macedonia, Montenegro and Serbia, a comparative cross-country analysis was carried out using Tobit and complementary log-log regression models.

Since it seems reasonable to assume that jobs performed during studies in high school and those performed while studying at university can significantly differ in terms of time spent in a job, complexity and career relevance, the analysis was conducted on groups of individuals by their highest level of education completed, separately for high school graduates and for university graduates with a Bachelor's degree.

The estimated Tobit results of the extended model with additional control variables, such as age, sex, household financial situation, residence, marital status, presence of children and

parents' education level, suggest that, in FYR Macedonia and in Montenegro, a high school graduate who worked during studies is expected to complete her school-to-work transition months faster than her fellow who did not get professional experience during studies. The magnitudes range from 26 months in Montenegro to 55 months in FYR Macedonia. An interesting yet surprising finding was that no relationship between working during studies and duration of school-to-work transition was identified for Serbia. Moreover, no relationship was found between working during studies and transition duration in case of university graduates, except for FYR Macedonia. It seems that in case of Bachelor's degree holders, different signals work for employers in the process of candidate selection.

The complementary log-log regressions reflect a similar situation. They suggest that in case of Macedonian and Montenegrin young people, the school-to-work transition rate is expected to be higher for high school graduates who worked during studies, compared to their fellows who did not work, while no significant relationship was found for Serbia. It also seems that working during studies influences the transition rate of young people holding a Bachelor's degree only in FYR Macedonia.

In addition, a cross-country analysis of high school graduates by type of secondary education, namely grammar or vocational school, was conducted. It reveals that both grammar and vocational school graduates from FYR Macedonia and Montenegro who worked during studies are expected to complete their transition to employment faster, as well as experience higher transition rates, compared to their fellows who did not work during studies.

Based on the obtained empirical results, several important policy recommendations can be formulated. First, the results obtained for vocational school graduates show that the implementation of the dual education system in FYR Macedonia and Montenegro could be expected to have a positive impact on their employment chances. A dual education system would allow to provide young people with work-based training that would ensure the career

relevance of the jobs performed by them during studies. Second, it is important to promote the potentially efficient mechanism of the so-called "youth communities" and "student communities" among a higher number of more established employers and encourage its use through additional tax incentives. Moreover, career counseling services could be introduced in grammar high schools in order to raise awareness of such opportunities to connect with employers. Third, it is essential to increase the job market relevance of the entire education systems in the analyzed countries, by adjusting the curricula and the offered education programs to the labor market needs through an efficient collaboration with employers.

Overall, this thesis represents a valuable contribution to the existing literature from two perspectives. On the one hand, it presents additional evidence on another important factor which is expected to affect the duration of school-to-work transition, namely working during studies. On the other hand, from the geographical point of view, this thesis analyzes the school-to-work transition in countries which receive limited attention when it comes to empirical studies of the school-to-work transition.

This topic brings up numerous possibilities to . For example, expanding the research to include the analysis of qualitative elements of the jobs performed by young people during studies, studying the young people's paths from education to a stable employment through sequence analysis, represent only several ways to improve and advance the research of this topic in the future.

In conclusion, I firmly believe that this kind of analyses as the one carried out in this thesis are indispensable for promoting reliable evidence-based policy-making in countries such as FYR Macedonia, Montenegro and Serbia.

APPENDIX

Table A.1. Distribution of selected binary variables.

#	RHS variable	Value	Frequency	Percentage
1	Sex	Female	1,622	46.93
		Male	1,834	53.07
2	Residence	Urban	1,956	56.60
		Rural	1,500	43.40
3	Marital status	Married	769	22.25
		Not married	2,687	77.75
4	Presence of children	Children	650	18.81
		No children	2,806	81.19
5	Work during studies	Yes	524	15.16
		No	2,932	84.84
6	Country	FYR Macedonia	1,015	29.37
		Montenegro	1,133	32.78
		Serbia	1,308	37.85

Table A.2. Summary statistics of selected non-binary variables.

#	RHS variable	Obs.	Mean	Median	Std. Dev.	Min.	Max.
1	Transition to 'decent' job (months)	1,376	24.15	16	24.60	0	121
2	Age	3,456	24.21	24	3.17	16	29
3	Education level	3,456	3.54	3	0.85	3	5
4	Household financial situation	3,456	2.79	3	1.13	1	5
5	Father education level	3,456	2.96	3	0.68	1	6
6	Mother education level	3,456	2.75	3	0.68	1	6

Table A.3. Complementary log-log regression results for high school and university graduates by country

	Rate of transition to first 'decent' job					
VARIABLES	**FYR Macedonia**		**Montenegro**		**Serbia**	
	High school	**Bachelor's degree**	**High school**	**Bachelor's degree**	**High school**	**Bachelor's degree**
Work during studies	0.747***	0.450*	0.320**	0.157	-0.0170	-0.309
	(0.181)	(0.254)	(0.143)	(0.248)	(0.142)	(0.246)
Age	0.152***	0.318***	0.164***	0.327***	0.196***	0.336***
	(0.0186)	(0.0550)	(0.0180)	(0.0657)	(0.0155)	(0.0512)
Female	0.182	-0.170	0.0416	0.265	-0.372***	-0.0211
	(0.134)	(0.216)	(0.129)	(0.232)	(0.102)	(0.205)
Household financial situation	0.171***	0.300***	0.283***	0.286**	0.228***	0.317***
	(0.0438)	(0.0944)	(0.0577)	(0.122)	(0.0408)	(0.0993)
Urban residence	0.0344	0.00472	0.0383	0.0658	-0.223**	0.466*
	(0.116)	(0.226)	(0.132)	(0.312)	(0.0898)	(0.268)
Married	0.00785	0.0213	0.168	-1.866***	-0.118	-0.231
	(0.300)	(0.337)	(0.224)	(0.681)	(0.157)	(0.438)
Presence of children	0.130	-0.418	-0.175	1.932***	-0.0665	0.240
	(0.303)	(0.388)	(0.238)	(0.576)	(0.167)	(0.426)
Father education level	0.104	0.0360	0.0770	0.131	-0.00541	0.111
	(0.0793)	(0.207)	(0.0772)	(0.175)	(0.0759)	(0.219)
Mother education level	0.0951	0.246	0.263***	0.248*	-0.0753	0.308
	(0.0875)	(0.176)	(0.0930)	(0.134)	(0.0702)	(0.235)
Constant	-10.90***	-14.96***	-12.03***	-16.17***	-10.92***	-28.69***
	(1.112)	(1.818)	(1.130)	(2.098)	(1.093)	(2.007)
Individuals	767	248	863	270	1,019	289
Individual×month	48,624	7,251	49,070	7,881	60,320	9,417

Dependent variable: rate of transition to first 'decent' job
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.4. Tobit regression results for high school graduates by type of education

	Transition to first 'decent' job (months)					
VARIABLES	**Macedonia**		**Montenegro**		**Serbia**	
	Vocational	**Grammar**	**Vocational**	**Grammar**	**Vocational**	**Grammar**
Work during studies	-41.99***	-103.8***	-21.39*	-89.09*	-0.197	64.22
	(13.20)	(24.38)	(11.60)	(45.98)	(9.441)	(40.61)
Age	-11.08***	-10.93***	-12.89***	-11.94**	-13.74***	-15.32**
	(1.179)	(2.954)	(1.322)	(5.568)	(1.010)	(5.860)
Female	-10.10	19.20	-2.685	62.33	22.11***	44.30
	(9.859)	(20.51)	(9.812)	(49.23)	(6.701)	(34.71)
Household financial situation	-10.42***	-19.48***	-21.94***	-44.21**	-14.59***	10.58
	(3.353)	(6.686)	(4.486)	(18.29)	(2.788)	(14.48)
Urban residence	-5.817	13.37	-6.271	-28.55	11.42*	28.85
	(8.546)	(19.88)	(10.38)	(42.73)	(6.101)	(31.41)
Married*					12.16	-11.11
					(12.16)	(40.88)
Presence of children*					3.541	29.04
					(12.75)	(34.46)
Father education level	-4.473	11.74	-5.152	68.89*	1.997	-7.127
	(6.104)	(17.08)	(6.250)	(39.68)	(5.436)	(21.59)
Mother education level	-9.507	-16.36	-21.02**	-50.45**	2.840	9.151
	(6.539)	(15.51)	(8.950)	(19.76)	(4.911)	(18.29)
Constant	470.5***	476.2***	606.3***	555.9***	447.4***	393.6**
	(37.22)	(81.76)	(43.72)	(186.6)	(31.58)	(148.3)
Observations	598	169	800	63	982	37
Pseudo R-squared	0.0286	0.0481	0.0303	0.0802	0.0329	0.0702

Dependent variable: duration of transition to first 'decent' job in months
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Note:
*Since model convergence was not achieved in the regression for grammar school graduates in FYR Macedonia and Montenegro due to the fact that the variables '*married*' and '*presence of children*' make up for a very small percentage of the sample size for these two countries, these two variables were excluded from this model in this case.

Table A.5. Complementary log-log regression results for high school graduates by type of education

	Rate of transition to first 'decent' job					
VARIABLES	**FYR Macedonia**		**Montenegro**		**Serbia**	
	Vocational	**Grammar**	**Vocational**	**Grammar**	**Vocational**	**Grammar**
Work during studies	0.645***	1.401***	0.256*	1.585*	-0.0145	-0.434
	(0.204)	(0.374)	(0.150)	(0.913)	(0.143)	(0.774)
Age	0.152***	0.153***	0.163***	0.154*	0.193***	0.392**
	(0.0200)	(0.0533)	(0.0185)	(0.0875)	(0.0157)	(0.191)
Female	0.225	-0.126	0.0657	-1.070	-0.354***	-1.116*
	(0.149)	(0.331)	(0.134)	(0.849)	(0.105)	(0.593)
Household financial situation	0.134***	0.236**	0.281***	0.552**	0.235***	0.00241
	(0.0504)	(0.100)	(0.0597)	(0.269)	(0.0411)	(0.373)
Urban residence	0.0607	-0.106	0.0498	0.484	-0.201**	-0.866
	(0.123)	(0.286)	(0.137)	(0.810)	(0.0913)	(0.576)
Married	0.536**	-14.95***	0.130	11.12***	-0.113	0.585
	(0.272)	(0.711)	(0.225)	(1.509)	(0.163)	(0.914)
Presence of children	-0.335	14.82***	-0.167	-10.60***	-0.0693	-0.683
	(0.274)	(0.768)	(0.241)	(1.480)	(0.173)	(0.632)
Father education level	0.129	-0.187	0.0992	-0.619	-0.00927	0.0514
	(0.0828)	(0.246)	(0.0753)	(0.528)	(0.0777)	(0.358)
Mother education level	0.0803	0.239	0.254**	0.544**	-0.0618	-0.0514
	(0.0949)	(0.224)	(0.107)	(0.230)	(0.0716)	(0.425)
Constant	-10.58***	-8.941***	-11.97***	-8.990***	-10.86***	-11.09**
	(1.129)	(1.544)	(1.139)	(2.811)	(1.098)	(5.306)
Individuals	598	169	800	63	982	37
Individual×month	35,155	4,522	44,517	683	58,173	394

Dependent variable: rate of transition to first 'decent' job
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

BIBLIOGRAPHY

Arandarenko, Mihail. 2011. *Supporting strategies to recover from the crisis in South Eastern Europe: country assessment: Serbia*. Budapest: International Labor Organization, Decent Work Technical Support Team and Country Office for Central and Eastern Europe.

Atchoarena, David. 2000. "Introduction". In *The transition of youth from school to work: issues and policies*, edited by David Atchoarena, 1-12, Paris: UNESCO: International Institute for Educational Planning.

Brzinsky-Fay, Christian. 2014. "The Measurement of School-to-work Transitions as Processes". E*uropean Societies* 16(2): 213-232.

Chatzichristou, Stelina, Daniela Ulicna, Ilona Murphy, and Anette Curth. 2014. *Dual Education: A bridge over troubled waters?* Brussels: European Parilament, Policy Department B: Structural and Cohesion Policies.

Djuric, Dragan. 2016. *Labor market transitions of young women and men in Montenegro*. Geneva: International Labor Office.

Durand-Drouhin, Marianne and Richard Sweet. 2000. "From initial education to working life: making transition work". In *The transition of youth from school to work: issues and policies*, edited by David Atchoarena, 13-36, Paris: UNESCO: International Institute for Educational Planning.

Eichhorst, Werner. 2013. "Apprenticeships/dual education system – is the German model universal?" [conference presentation]. ENEPRI/CEPS conference *Youth unemployment after the Great Recession: Evidence and lessons of national policies*, Brussels, 21 June 2013.

Elder, Sara, Blagica Novkovska, and Violeta Krsteva. 2013. *Labor market transitions of young women and men in the Former Yugoslav Republic of Macedonia*. Geneva: International Labor Office.

Elder, Sara. 2009. *ILO school-to-work transition survey: A methodological guide. Module 1: Basic concepts, roles and implementation process*. Geneva: International Labor Office.

European Training Foundation. 2008. *Transition from Education to Work in EU Neighbouring Countries*. Luxembourg: Office for Official Publications of the European Communities.

Garrouste, Christelle and Massimo Loi. 2011. *School-to-work transitions in Europe: Paths towards a permanent contract*. Luxembourg: Publications Office of the European Union.

Horn, Daniel. 2013. *School-based Vocational or Workplace-based Apprenticeship Training? Evidence on the School-to-Work Transition of Hungarian Apprentices*. EUI Working Paper MWP 2013/10. Florence: European University Institute.

ILO. 2013. *Global Employment Trends for Youth 2013: A generation at risk*. Geneva: International Labor Office.

———. 2015. *Global Employment Trends for Youth 2015: Scaling up investments in decent jobs for youth*. Geneva: International Labor Office.

———. n.d. "School-to-Work Transition Survey (SWTS)". *www.ilo.org*, available at: http://www.ilo.org/employment/areas/youth-employment/work-for-youth/WCMS_191853/lang--en/index.htm (accessed on 20 May 2016).

Jenkins, Stephen P. n.d. "Lesson 6. Estimation: (ii) discrete time models (logistic and cloglog)". *Essex Summer School course 'Survival Analysis'*, available at: https://www.iser.essex.ac.uk/files/teaching/stephenj/ec968/pdfs/ec968st6.pdf (accessed on 1 June 2016).

Klerman, Jacob Alex, and Lynn A. Karoly. 1994. "Young men and the transition to stable employment". *Monthly Labor Review* 117(8): 31-48.

Kogan, Irena, Michael Gebel, and Clemens Noelke (eds.). 2011. *Making the transition: Education and labor market entry in Central and Eastern Europe*. Stanford, California: Stanford University Press.

Manacorda, Marco, Marco Ranzani, and Furio Camillo Rosati. 2014. *Pathways to work in the developing world: An analysis of young persons' transition from school to the workplace* [draft working paper]. Rome: Understanding Children's Work.

McDonald, John F., and Robert A. Moffitt. 1980. "The Uses of Tobit Analysis". *The Review of Economics and Statistics* 62(2): 318-321

Milevska Kostova, Neda, and Biljana Kotevska. 2011. "Macedonia: education vs. unemployment–a way out of poverty?" *SEER: Journal for Labor and Social Affairs in Eastern Europe* 14(2): 251-264.

Mills, Melinda, and Patrick Präg. 2014. *Gender inequalities in the school-to-work transition in Europe*. Brussels: Rand Europe.

Mocanu, Cristina, Ana-Maria Zamfir, Eliza-Olivia Lungu and Eva Militaru. 2012. "School-To-Work Transition of Higher Education Graduates in Four Eastern European Countries". *Working paper no. 2012/15,* Maastricht School of Management.

Piopiunik, Marc, and Paul Ryan. 2012. *Improving the transition between education/training and the labour market: What can we learn from various national approaches?* EENEE Analytical Report No. 13 prepared for the European Commission.

Quintini, Glenda, John P. Martin, and Sébastien Martin. 2007. "The changing nature of the school-to-work transition process in OECD countries". *IZA Discussion Paper No. 2582*.

Raffe, David. 2008. "The concept of transition system". *Journal of Education and Work* 21(4): 277-296.

Reinberg, Alexander, and Markus Hummel. 2005. "Höhere Bildung schützt auch in der Krise vor Arbeitslosigkeit". *IAB Kurzbericht* 9: 1–6.

Righi, Alessandra, and Dario Sciulli. 2009. "The timing of the school-to-permanent work transition: A comparison across ten European countries". *Quaderni del Dipartimento di Economia, Finanza e Statistica* 65.

Ryan, Paul. 2001. "The school-to-work transition: a cross-national perspective". *Journal of economic literature* 39(1): 34-92.

Schwab, Klaus, and Xavier Sala-i-Martín (eds.). 2015. *The Global Competitiveness Report 2015-2016*. Geneva: World Economic Forum.

Sluzbeni glasnik Republike Srbije 108/13 [Official Gazette of the Republic of Serbia 108/13]. 2013. Zakon o izmenama i dopunama budzetskog sistema [Law on Amendments and Supplements of Budgetary System; in Serbian]. 7 December 2013.

The World Bank. 2014. *World Development Indicators: Unemployment, youth total (% of total labor force ages 15-24) (modeled ILO estimate).* Washington, D.C.: The World Bank, available at: http://data.worldbank.org/indicator/SL.UEM.1524.ZS (accessed on 20 May 2016).

UNESCO-UNEVOC. 2014. *TVETipedia*, available at: http://www.unevoc.unesco.org/tvetipedia.0.html?&tx_drwiki_pi1[keyword]=dual%20system (accessed on 21 May 2016).