

VALUING HUMAN CAPITAL IN BALKAN TRANSITION COUNTRIES

Mihail Arandarenko, Faculty of Economics, University of Belgrade

Mariana Kotzeva^{*}, Department of Statistics and Econometrics, University of National and World Economy – Sofia and Association for Analyses and Co-operation

Bianka Pauna – Center for Research and Modeling, Bucharest

(NON-TECHNICAL SUMMARY)

Valuation of human capital has attracted a great deal of attention in the studies on the pro-market reforms in post-socialist economies. Despite the growing number of empirical studies however, literature on the value of human capital in transition economies has tended to concentrate on several Central European countries (Czech and Slovak Republics, Hungary, Poland) and Russia. Balkan countries have been disproportionately presented in publications on wage determination and still little is known about the role of education and experience in this process for Bulgaria, Romania and Serbia¹.

In an attempt to fill in the information gap concerned with the value of human capital in Balkan transition countries this paper seeks: i) to provide recent estimates of returns to education and experience in Bulgaria, Romania and Serbia using an extensive and comparable data sets collected in 2002 and 2003; ii) to test whether the labour markets reward education obtained after the reforms more than the skills gained under central planning. In addition, comparing the results across the three countries the paper seeks to provide some explanation of the observed differences in the valuation of human capital within standard labour supply and demand framework and to relate them to the pace of economic development and degree of economic restructuring.

The three Balkan countries resemble the characteristics of the educational system and wage settings observed in most Central and Eastern European economies under central planning. The educational system strongly emphasized vocational training and engineering relevant to the high demand in the large industrial sector. Wages were paid under the highly centralized wage grids and little variation has been observed with the level of education and occupation. In addition there is a common perception in the

Corresponding author, email: Kotzeva@ac-association.org.

This research was supported by a grant from the CERGE-EI Foundation under a program of Global Development Network. Additional funds have been provided by the Austrian Government through WIIW, Vienna. All opinions expressed are those of the authors and have not been endorsed by CERGE-EI, WIIW, or the GDN. We are grateful for the comments from Stepan Juraida and Randall Filer and for excellent research assistance from Alexandra Noikovic and Alexander Naidenov.

¹ Strong representations of the empirical literature on the Balkan countries in the field are Milanovic (1998), Ognjenovic (2002) and Lokshin and Jovanovic (2003) for Serbia and Montenegro; Jolliffe (2002), Falaris (2004) and Dimova and Gang (2004) for Bulgaria; Paternostro and Sahn (1999) and Skoufias (2003) for Romania.

literature to view Bulgaria, Romania and Serbia as countries where reforms have proceeded more slowly compared to the advanced reformers of Central Europe.

While sharing common issues and pace of economic development the three Balkan countries differ in number of aspects thus providing a particularly interesting combination for measuring earnings associated with education. Romania is a country with a large agricultural sector while Serbia is confronted with a delayed transition and an erosion of skills (the lost generation problem). Bulgaria and Romania have displayed common patterns in the changing size and composition of the labour supply generated by the higher education reforms. Booming in tertiary education in the two countries² resulted in a steady increase in the relative share of university graduates in the labour force. Similar to the most CEE countries a shift in enrolments from vocational schools towards general secondary education has occurred in Bulgaria and Romania where in Romania it has been particularly fast. In recent years the two countries have also showed considerable interest in the development of private sector as a provider of education including higher education. Serbia differs from Bulgaria and Romania with respect to the speed and scale of the educational reforms and their impact on the individual labour market outcomes. Since 1999, tertiary enrollment rates have fallen (OECD, 2002) in Serbia while at the same time the low general secondary enrolment rates go along with high vocational/technical enrolment rates Unlike Romania and Bulgaria in Serbia the private institutions have still played a modest role as providers of higher education. The selected countries can be seen to characterize different stages of transition, hence allowing for some degree of variation in the returns to education and experience conditional on the overall progress of the economic and educational reforms. Observed differences in the degree and structure of expansion of tertiary education and in the pace of economic restructuring between Bulgaria and Romania on the one hand and Serbia on the other provide a fruitful basis of thorough studying of the impact of human capital on the individual's labour market performance and on wage determination in particular.

In Bulgaria and Serbia, the research makes use of Living Standards Measurement Surveys (LSMS) while in Romania the analysis draws on data from Integrated Household Budget Survey. In Serbia the survey was conducted in June 2002, in Bulgaria in October in 2003 and throughout the whole year 2002 in Romania. LSMS were implemented as the Governments' own studies supported by the World Bank advisory teams³. The data sources were chosen because they contain abundant set of personal, household and local environment characteristics as well as rich information on both labour market status and welfare of individuals and households. In fact, the used data sources are considered the largest and most

² . In the first half of 90s the number of students increased by 59% in Romania and as much as 4 times in Bulgaria.

³ In Serbia the primary data collection was conducted by the Strategic Marketing and Media Research Institute (SMMRI), local research firm with an outstanding record in the survey data collection, in June 2002. In Bulgaria the field work was done by National Statistical Institute.

comprehensive studies of living standards in the last decade in all three countries⁴. Similar structure of the questionnaire and sample design as well as the coincidence of timing makes feasible comparative analyses across the three countries.

We apply classical Mincer-Becker semi-log earnings function as the framework for studying educational outcomes. All wage regressions were run for the sample as a whole and for men and women separately. We first estimate semi-log earnings function and then to test whether the “new” education gained after the beginning of the educational reforms is valued more than the education obtained under previous system we run extended wage regressions including various interaction terms. In the present study, we employed both FIML and two-stage Heckman methods in order to correct for selectivity bias. It turned out that the results are quite close. Therefore, we report here only the estimates⁴ from the two-stage Heckman estimation. The results indicate that there are significant differences in the “marketability”⁵ of different types of education. Tertiary education is highly and increasingly rewarded in all three countries for both sexes. Despite the largest relative supply of higher educated in the labour force in Bulgaria, they receive much higher wage premium than their counterparts in Serbia and Romania. So, the outward shift in the relative demand for more educated workers in Bulgaria must have been large enough to offset the down-pressing effects on the returns to skilled labour from the supply side.

In all three countries, males who graduated from vocational schools earn much less than those who obtained general secondary degree, thus supporting the view that skills received in such schools are too narrow and inadequate to the modern labour market demands. However, as regards to women the results do not provide evidence that secondary general education brings significantly higher wages than the secondary vocational education. Indeed the finding that labour markets in Serbia and Romania provide higher rewards to education for men than for women is one of the most interesting results stemming from the current study. In both countries for men, each succeeding educational level brings wage premium but for women only the higher education brings a significant wage premium. Further explanation of the differences in valuating human capital between men and women in Romania and Serbia may be found in the different employment compositions and chances of salaried employment across gender. The analysis also reveals significant positive contribution of the individual post-graduate training to the wage determination. This finding hints at the existence of some imperfections in the formal educational systems and their incapability to respond fully to the current labour market demands.

The returns to experience are the highest in Romania for both men and women and only there, as predicted by human capital theory, the earning-experience functions have well expressed concave shape. In Bulgaria and Serbia, overall return to experience is approximately the same but while in Bulgaria, the

⁴ Previous studies of wage determinants in Bulgaria (Falaris (2004) and Jolliffe(2002) and Romania (Paternostro (1999) and Skoufias (1999)) use micro data from the same sources for previous years.

⁵ The term is adopted from Boeri and Terrell (2002).

experience appears to be insignificant wage determinant for men in Serbia it is insignificant factor for female wages. Using interaction dummies in the wage regressions, we do not find evidence supporting the popular view that the skills of young people acquired after the reforms in the educational system are much higher valued compared to those obtained prior to the reforms. On the other hand, the found decline in the returns to experience is a crude indication of the increasing appreciation of “new education”.

Comparing our results with previous studies suggests that being in similar position in terms of valuation of human capital in 1995, Romania and Bulgaria ended with completely different situation in 2003, more than 10 years after the starting of the reforms. Empirical results obtained in the current study place Bulgaria close to the group of transition countries with the highest rates of returns – Czech Republic, Hungary, Slovenia and Slovakia while the estimates for Romania and Serbia are lower and close to those obtained for Estonia and Poland. Lower returns to human capital in Romania and Serbia than in Bulgaria and in particular, their lower pace of increase between 1995 and 2002 maybe explained by the low speed of economic restructuring in these countries. While since 1997 Bulgaria has implemented a package of substantial reforms, in Romania and Serbia the process of economic restructuring gained speed after 2000. At the same time, the differences in the pace of economic restructuring in Bulgaria and Romania are not so pronounced. The two countries face similar economic patterns of development and challenges caused by the EU accession. Together with Serbia, they are classified in the group of countries lagging behind in the reforms, compared to the advancers from Central and Eastern Europe. Therefore, one can not attribute the differences in the returns to more skilled labour among the three Balkan countries solely to the different pace of economic restructuring. Higher returns to education in Bulgaria may due to the much more rapid adjustment of its labour market as well as to the shift in the demand triggered by skill-biased technological change including both physical capital and organizational practices. It would be expected that the returns to education would continue rising in Bulgaria, Serbia and Romania. However in order to shed light of the magnitude and the factors driving these changes further research is necessary based on the data for more cross-sections over time.