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Schooling ain't learning in Russia either:
High level of student employment as an
indicator for slow human capital
accumulation



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Abstract

This paper discusses the weakness of average years of schooling as a measure of human capital stock. We consider the example of Russia with its large-scale tertiary education and extensive student employment. Building on Lant Pritchett's observation (Pritchett, L., 2013), we consider insufficient quality of education and relatively low demand for human capital as potential causes of the "earning while learning" expansion. While the latter is likely to reduce the pace of human capital accumulation, it nevertheless may leave average years of schooling untouched.

Keywords: Human capital, student employment, higher education.

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1. Introduction

While average years of schooling are widely accepted by social scientists as a useful measure of the human capital stock, there is growing dissatisfaction as to how well it actually performs (see Hanushek and Woessmann, 2015, Pritchett, 2013). Like other commonly used measures such as school enrollment or adult literacy rates, it loses its value as a measure of human capital as economies converge with respect to average years of schooling (Pritchett, 2006).

Countries are graduating, so to speak, from this indicator (Hidalgo, 2010). Indeed, Sweden and Bulgaria have already done so. The average number of years of schooling are almost the same for both economies,¹ but GDP per capita in PPP constant dollars is more than 2.5 higher in Sweden than in Bulgaria.² Thus, one could conclude that human capital is not that important for economic growth or average years of schooling do not properly measure the quality of human capital.

Under the Northian view, human capital accumulation is considered to be an automatic response to positive institutional shocks (Acemoglu et al., 2005). It denies the role of human capital as an autonomous cause of economic growth. While this may be correct over the very long run, there is little empirical evidence to support this view in shorter time frames. Moreover, while many economies have managed to improve the quality of their institutions, they have failed to sustain high growth rates (Rodrik, 2007).

According to Hausmann et al., (2011), know-how, which is close, but not identical to human capital, is a good predictor of growth rates. Therefore, within shorter time spans such as years or decades, institutions and human capital are more likely to complement, rather than substitute, each other as determinants of economic growth.

The latter suggests average years of schooling is a relatively weak predictor of growth rates (see Hanushek and Woessmann, 2015), and that this failing is more likely related to its limited level of informativeness than to the low importance of human capital per se.

Here, we do not discuss alternative measures of human capital such as PISA scores (see Hanushek and Woessmann, 2015) or ECI (see Hausmann et al., 2011, Hidalgo, 2015), but instead focus on a particular phenomenon, labelled in the literature as “earning while learning,” to support our assertion that years of schooling is an imperfect measure of the level of human capital. The empirical literature reveals that “earning while learning,” i.e. student employment, results in lower educational performance (see Neyt et al., 2017 for a survey of relevant literature).³ This, in turn, supports a zero-sum theory that employment and education are substitutes.

The literature is less ambiguous where the link between student employment and post-graduation earnings is concerned. For instance, applying sophisticated empirical methods and using data on developed economies, Häkkinen (2006) shows that student employment increases earnings in the year immediately after graduation, but has no effect for further years. In contrast, Hotz et al. (2002) and Baert et al. (2016), find a long-run negative and neutral effect, respectively.

We shall now address earning while learning in Russia, where many students work full time and thus have less time for acquiring human capital. As they eventually graduate in most cases, earning while learning can reduce the pace of human capital accumulation while leaving the average years of schooling unaffected.

¹ <http://hdr.undp.org/en/content/mean-years-schooling-females-aged-25-years-and-above-years>

² <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD>

³ This result is established for a relatively high work load, i.e. more than 10–15 hours a week.

2. Intuition

Working while studying should not necessarily result in slower human capital accumulation. Working hours and class hours could, for example, complement each other and help the student gain relevant professional skills and methods. Using Swiss data, Geel and Backes-Gellner (2012) show that field-related work is positively linked to future earning. An internship at a central bank, for example, is likely to be helpful for a student of Dynamic Stochastic General Equilibrium (DSGE) models, the main tool of analyzing the effects of various shocks on macroeconomic variables (unemployment, income, interest rates, etc.). An internship could provide a valuable opportunity to acquire tacit knowledge that is unavailable in textbooks or papers on DSGE modelling. In such a case, work clearly complements studies by providing relevant know-how.

This kind of complementarity between work and studies could be more typical of developed countries, even though Neyt et al. (2017) argue that the zero-sum game theory, which suggests that student employment and education are substitutes, is still more relevant for these economies. As more developed countries export complex products (see Hausmann et al., 2011), they have a variety of advanced jobs in such fields as engineering, architecture, management, medicine, IT, etc., where even a junior position may require a high entry level of competence. Given this requirement, it is likely that a student will dedicate more time to studies, complementing them with work that connects theory and practice, and operationalizes her knowledge.

Now consider a world-class higher education program in a less developed economy. It also aims at helping students achieve a high level of professional performance in a complex and highly competitive company. However, companies in less developed economies are not that complex. When a student receives an internship at a company, a public bureau, or a hospital, the complexity of methods might lag far behind his or her expectations. The student may not realize that the gap between expectations and the observed level of complexity during his or her first work experience is unrelated to scientific overdevelopment, but is the manifestation of economic underdevelopment. As his or her colleagues know little of complex methods (likely the case even at graduation), the need to master such methods seems irrelevant. The student thus has incentive to substitute his or her studies with work, studying only as much as is necessary to graduate (a formal requirement in the job market).

To summarize, education and employment are not perfect complements or perfect substitutes, they are both. Thus, the level of economic development might be a relevant determinant of the likely role they take. As education is more important in complex economies, work and studies are likely to better complement each other. Students may prefer to acquire more courses and complement them with a field-related work. In a less-developed economy, employment and education might be more substitutes rather than complements, implying that students might prefer to take less courses and start working earlier.

3. Russia

World-class education is relatively rare in less developed economies. This does not imply, however, that higher education institutions are generally rare in such countries. In the 2014/2015 school year in Russia, there were as many as 950 higher education institutions with more than 5.2 million students enrolled.⁴ At the same time, according to Rudakov (2016), 65 % of Russian students start working before they graduate.

⁴ http://www.gks.ru/free_doc/new_site/population/obraz/vp-obr1.htm

Rudakov (2016) studies earning while learning in the context of signalling. Given the ubiquity of higher education in Russia, he argues that it is unlikely that attending school per se is a reliable signal of high ability. Therefore, students may use complementary signals to improve their employment opportunities. Rudakov (2016) suggests earning while learning, i.e. pre-graduation employment experience.

This suggestion implies complementarity between employment and education, which contradicts zero-sum theory. We admit some complementarity between education and employment in Russia. Indeed, there is empirical evidence pointing at positive wage premium for higher education (see Belskaya et al., 2014), and the latter cannot be the case if work and studies are perfect substitutes. We suggest that employment imperfectly substitutes for education, and that the scale of this substitution is substantial.

We consider two channels which can establish a link between economic development and earlier substitution between education and work.

We label the first of these two links as a supply-induced channel. Since the quality of higher education is on average low in less developed economy, students can barely acquire complex knowledge, but nevertheless are supposed to spend years studying before they can graduate. As a result, many students in low-quality higher education institutions will seek to start working earlier rather than attend classes. They still care about graduation, but they do not regard the task of graduating to be all that challenging.⁵

Our second link is a demand-induced channel. As the level of economic complexity is relatively low in less developed countries, employers may encourage students to start working before graduation as the jobs do not require complex skills.⁶

We briefly consider both channels in terms of possible approaches to testing them empirically.

4. Empirical insights

If higher education is not particularly useful for one's career, this should be reflected in the wage difference of those who spent time earning while learning and those who dedicated themselves to full-time studies. Using data from the Russia Longitudinal Monitoring Survey, Rudakov (2016) shows that such a difference is positive and significant in Russia.

At the same time, Rudakov (2016) finds positive association between the quality of higher education institutions and the likelihood of student employment. This result may contrast with our supply-induced channel, which suggests that low-quality higher education encourages students to start working earlier. This result could be spurious. Many of Russia's low-quality higher education institutions are in poor regions where employment opportunities are scarce. This potential driver of low student employment might be captured by regional fixed effects. As the study employs cross-sectional data (even though the database is longitudinal), fixed effects cannot be added to the specification.

⁵ History may explain why some Russian higher education programs attract students at all. The expansion of higher education in the USSR was mainly achieved in terms of quantity, not quality. For instance, many programs in engineering narrowly prepared students to work with a specific piece of equipment, even if such skill acquisition can arguably be considered as higher education (Firsov, 2016). Without the opportunity to spend time in world-class engineering schools, individuals were unaware of the quality of their education. Considering themselves as a part of educated professional elite, they encouraged the generation of their children to enroll in higher education programs. Military conscription could be another reason that young men decided to become students in post-Soviet years. Students could get deferments to military service, and possibly avoid military service altogether.

⁶ We realize that financial constraints may also motivate students to take a job (see Theune, 2015), but one can control for such effects.

Rudakov (2016), however, provides greater support for our demand-induced channel. In more developed economies, grades serve as an important discrimination criteria on the labour market and are positively linked to earning opportunities.⁷ Perhaps, *ceteris paribus*, a higher grade reflects a higher level of human capital? If one earns a higher grade in linear algebra than one's classmates, then it is likely that the student's understanding and ability to apply linear algebra is higher. As the average grade might reflect the size of human capital, then its irrelevance for earnings indicates that a larger size of human capital is unimportant for employers. Such a result was found in a survey conducted among HSE graduates six months after their graduation (see Rudakov 2016). Grades were not relevant to their starting salaries. We realize, of course, that a longer time span is needed to establish this result properly.

Even though the above work leaves a room for alternative intuition, data and methods, it can, nevertheless, be considered as a good starting point for studying the role of earning while learning in human capital accumulation in Russia.

5. Concluding remarks

To summarize, less developed, low-complexity economies can nevertheless establish many higher education entities. It does not assure, however, that these institutions will recruit high-quality lecturers and enrol high-quality students. It is also difficult for a low-complexity economy to establish many high-quality jobs. High-quality lecturers, students and jobs, not higher education institutions *per se*, correspond to higher levels of economic development.

One might compare the situation of having many high education institutions to having many bookshelves. The latter are of course important if one wants to have a library; books clearly need space to be properly stored. What matters most, however, is what books are placed on the bookshelves. Only when books are of such quality that they can effectively guide the interested reader through complex fields can one call the collection of these bookshelves a library.

⁷https://www.washingtonpost.com/news/wonk/wp/2014/05/20/heres-how-much-your-high-school-grades-predict-how-much-you-make-today/?utm_term=.db21a785a09b

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