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University Graduates in the Labor Market

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Dear colleagues,

This issue of *Higher Education in Russia and Beyond* is devoted to the analysis of the labor market for university graduates. This topic is central for analyzing the relevance of higher education to the needs and requirements of the labor market. The relevance of this topic is emphasized by the fact that the higher education systems in many post-Soviet countries have experienced significant massification, which was accompanied by the underfinancing of the education sector. Massified and underfinanced systems of higher education may lead to strong differentiation in the returns to higher education and the employability of graduates, a decrease of the graduate wage premium, and the problems of overeducation and job-education mismatches.

The articles included in this issue are divided into four sections according to the issues they address. The first section focuses on the impact of educational characteristics, such as university quality, the level of educational programs on labor market outcomes of university graduates. The second section is devoted to the impact of individual characteristics, including gender and non-cognitive skills, on the salaries of university graduates. The third section presents opinions on and cases of the impact of educational systems on graduate outcomes and the perceptions of employers towards university graduates. The last section highlights possible data sources to analyze the labor market for university graduates and presents a reading list on labor market outcomes of university graduates in Russia and CIS countries.

This issue is a joint project of Center for Institutional Studies and Laboratory for Labour Market Studies of HSE University and is based on the results of several research projects on the labor market of university graduates, which were carried out by these research centers and their partners.

Wishing you insightful reading,

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National Research University Higher School of Economics

National Research University Higher School of Economics is the largest center of socio-economic studies and one of the top-ranked higher education institutions in Eastern Europe. The University efficiently carries out fundamental and applied research projects in such fields as computer science, management, sociology, political science, philosophy, international relations, mathematics, Oriental studies, and journalism, which all come together on grounds of basic principles of modern economics. HSE professors and researchers contribute to the elaboration of social and economic reforms in Russia as experts. The University transmits up-to-date economic knowledge to the government, business community and civil society through system analysis and complex interdisciplinary research. Higher School of Economics incorporates 97 research

centers and more than 50 international laboratories, which are involved in fundamental and applied research. Higher education studies are one of the University's key priorities. According to recent QS World University Ranking, HSE is now among the top 150 universities in the subject of "Education". This research field consolidates intellectual efforts of several research groups, whose work fully complies highest world standards. Experts in economics, sociology, psychology and management from Russia and other countries work together on comparative projects. The main research spheres include: analysis of global and Russian higher education system development, transformation of the academic profession, effective contract in higher education, developing educational standards and HEI evaluation models, etc.

Center for Institutional Studies

The Center for Institutional Studies is one of HSE's research centers. CInSt focuses on fundamental and applied interdisciplinary researches in the field of institutional analysis, economics and sociology of science and higher education. Researchers are working in the center strictly adhere to the world's top academic standards.

The Center for Institutional Studies is integrated into international higher education research networks. The center cooperates with foreign experts through joint comparative projects that cover the problems of higher education development and education policy. As part of our long-term cooperation with the Boston College Center for International Higher Education, CInSt has taken up the publication of the Russian version of the "International Higher Education" newsletter.

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Does University Prestige Lead to Discrimination in the Labor Market?

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In this article, I highlight why we should think critically about the effects of university prestige in the labor market. I present evidence from a recent study to make the case that employers in skill-intensive sectors of the labor market do not pay particular attention to university prestige when hiring for entry-level jobs.

Evidence and intuition suggest that prestige matters in the labor market

Multiple studies show that if you attend a more prestigious university, you are more likely to do well in the labor market. One study linked attending a flagship university in the US to having 20 percent higher earnings [1]. Getting your dream job may also be limited by the university you attended. Some elite companies use reverse recruitment processes. They do not wait for qualified applicants to apply for positions. Instead, they headhunt students on university campuses directly, but only at a handful of select universities.

People often say they believe that students and graduates of elite universities deserve to have better labor market outcomes. This preference has also been shown in studies on meritocratic priming — a phenomenon in which people show preference for groups or individuals that are perceived as more privileged or meritorious. In experiments, people from less prestigious universities preferred to be associated with those from more prestigious universities. This outgroup favoritism was not seen among people that attended prestigious universities [2]. Many people think that attending an elite institution is a proxy for ability, and because of this the use of university prestige in the labor market and beyond is fair and a reflection of merit.

The litmus test

As a researcher, I am not persuaded by this line of argumentation. First, because prestigious institutions sometimes do not admit the best candidates. The use of legacy admission and donations to get a coveted spot at an elite university is well documented in some stratified education systems [3]. Second, many factors, including undermatching — a phenomenon in which people apply for and attend less selective universities than the ones they would be qualified for — make it so that all universities could have outstanding students. Third, I see the use of university prestige in the labor market as a question of justice.

Because students from underrepresented backgrounds are less likely to be admitted, less likely to persist, and less likely to graduate from an elite university, the use of university prestige by employers may be yet another mechanism through which inequality gets reproduced. However, it is hard to design a study that challenges peoples' intuition about fairness. In my research, I set up a litmus test that would problematize the use of university prestige in the labor market. If employers care about university prestige above relevant skills in sectors of the labor market where skills matter, university prestige is a source of discrimination in the labor market.

The mechanism

This test serves as a normative framework to observe the mechanism(s) through which university prestige matters in the labor market. Are added benefits for attendees of elite universities in the labor market a reflection of human capital (skill-match), are they a function of networks (who you know, and the information gathered at elite institutions), or are we looking at signaling (use of the name of the university by the labor market, not necessarily backed by human capital)?

Using a field experiment of the labor market

In order to implement the litmus test and gather evidence on the mechanism(s) that may explain the use of university prestige among employers, I conducted a field experiment of the labor market. I sent 2,400 fictitious job applications to IT and accounting entry-level jobs, in three countries with some degree of higher education stratification: US, UK, and Australia. The IT and accounting sectors were chosen because these are sectors of the labor market where measurable skills matter. These sectors also make it easier to operationalize high-skill match and low-skills match on resumes. Prestige was measured using a combination of global and national university rankings as well as subject rankings. In each country, one high-prestige (or high-ranked) university and one low-prestige (or low-ranked) university were chosen. To each job opening, I sent one high-skill match resume and one low-skill match resume (human capital mechanism). On these resumes, I randomly assigned the names of the high-prestige and low-prestige universities (signaling mechanism), as well as the sex of the applicant. I assumed that fictitious applicants did not have social networks, and as such the experiment is able to distinguish between the human capital and signaling mechanisms while controlling for the effect of networks.

The results: employers choose skills over prestige

The fictitious applications with high-skill match were 79 per cent more likely to receive a call-back than applications that had low skill match with the job description. The main finding was not that employers valued skill-match, but that they did not pay attention to university prestige. Fictitious applicants were as likely to get a call-back from employers

regardless of the university they graduated from. This held true for both accounting and IT jobs, for female and male applicants, and across countries. The experiment also detected no differences in callbacks between female and male fictitious applicants. I found no evidence that employers prioritize university prestige above relevant skills in sectors of the labor market where skills matter. On the mechanism question, the findings of my study suggest that skills (human capital), and not university prestige (signaling), predict recruitment outcomes for applicants with a bachelor's degree in skill-intensive sectors of the labor market. In short, the study found no evidence of prestige-based or sex-based discrimination [4].

Do these findings mean that university prestige does not matter?

While no prestige effect was found in this study, these findings cannot be generalized to the less skill-intensive sectors of the labor market or other important labor market outcomes, such as final hiring decisions, promotion, and salary. It may also be the case that other mechanisms beyond those considered in this study — including social capital — may facilitate the importance of university prestige in the labor market. Beyond these limitations, I believe the study highlights the importance of the teaching mission of universities.

Implications

If human capital matters most to employers, a focus on skill-building may compensate for the limited academic prestige of universities. The results of this study suggest that — at least in skill intensive sectors of the labor market — what is learned is more important than where it is learned. Resources at less prestigious institutions would be better spent on supporting their teaching mission, rather than advancing in university rankings.

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A preprint version of the article is available online at <https://osf.io/preprints/socarxiv/jx8qv>



Differentiation in Starting Salaries of University Graduates According to Higher Education

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The development of Russian universities are characterized by different national and regional priorities. Despite the intensification of efforts by Russian universities to improve their competitiveness in the international market, their obligations to develop the human resources of their region remain.

Developing human potential is one of the most important factors in the socio-economic development of a region. Traditionally, researchers [1, 2] identify the contribution of universities to the regional environment as the third mission. Therefore, producing qualified staff by universities and their education and training for the regional labor market is still relevant.

Salaries as a key impact of higher education

The importance of studies reflecting the impact of higher education on the effectiveness of employment and starting wages is noted in the literature [3, 4, 5]. This formulation of the problem allows a deeper study of the contribution of higher education to the professional trajectories of graduates immediately after graduation. The socio-economic impact of the Covid-19 pandemic has increased the focus on salaries of young graduates, who can be classified as a vulnerable social group that does not have significant experience in interacting with employers.

In the Russian context, one indicator for assessing the quality of higher education is the level of graduate employment a year after graduation (as part of the monitoring of Russian universities since 2012) [6]. However, in the data published at the initiative of the Russian Ministry of Science and Higher Education in 2015-2017 [7], the starting salaries aroused more interest from the leadership of universities.

Considering the experience of “official” monitoring, the authors expanded the research and focused on the value of

the institutional research of graduates based on feedback mechanisms measuring the relationship between educational, professional, and career trajectories of graduates immediately after graduation. In this sense, salaries can be considered as a differentiating feature to identify differences in the trajectories of university graduates depending on the university education they received (level of education, field of study, cost of study, academic performance).

Scalable research approach

We use data from the 2017-2020 online alumni graduation survey, six months after graduation from the Ural Federal University, a leading university included in the state support programs for Russian universities: Project 5-100 in 2013-2020, Priority 2030 in 2021 (research track).

In total, 5,214 graduates took part in the survey, which is an average of 35% of the graduates (with control of the response in each direction of training — at least 20%). The sample included 58% bachelor's graduates and 42% full-time masters, 73% of those surveyed were state financed. 33% studied engineering, 27% humanities, 16% economics and management, 12% natural sciences, 12% mathematics and IT. 62% of respondents were women. The average age among the surveyed bachelor's graduates was 23, and for master's 25.

The study design provides for the formation of a single database of survey and administrative data through the use of individual links to the online questionnaire for subsequent comparison, which distinguishes it from other cross-sectional or monitoring studies.

The basis for classifying data into financially (un)successful graduates is an open question about salaries for the last 2 months, divided into groups according to the regional subsistence minimum:

1. “financially successful” had starting salaries of more than 4 times the subsistence minimum,
2. “financially unsuccessful” had wages of no more than 2 times the subsistence minimum,
3. “unemployed”,
4. “left the region”, whose wages are usually higher because the outflow of young professionals is associated with an improved quality of life,
5. “others” had wages between 2 and 4 times the subsistence minimum.

Who is financially (un)successful?

Studying the relationship between starting salaries and the characteristics of educational trajectories of university graduates, we note that the key factor of differences among them is the level of education.

First, there is a differentiation of starting wages by the level of education of graduates in absolute terms. Among bachelor's employed in the Ural region six months after graduation, this parameter increased from 31,930 rubles in 2017 to 38,913 rubles in 2020 with a regular increase, for master's graduates from 34,425 rubles to 40,547 rubles,

for the same period. However, the first economic effects of the pandemic were reflected in the salaries of master's graduates, whose average incomes decreased in comparison with the data of 2019.

Secondly, even at the start of a career, there is a positive return on higher education. The salary premium of a master's degree in 2017 was 7%, in 2018 — 12%, in 2019 — 13%, but in 2020 — only 4%. During the pandemic, employers have been trying to reduce the costs of salaries by not paying a premium for a higher level of education and employing bachelor's graduates who can perform a larger amount of work for a small surcharge.

Thirdly, given that most of the graduates remained in the region after graduation (in the Sverdlovsk region), we note that in 2017-2020, on average, the starting salaries of master's graduates are comparable to the average monthly salary in the region for the same period [8]. Upon leaving the university, master's graduates get a successful financial start as a result of their education (89% combined work and study). In contrast, bachelor's starting salaries are up to 11% less than the regional average.

Fourth, the general structure of the differentiation of the professional trajectories of graduates is 15% financially successful, 10% financially unsuccessful, 16% unemployed (7% continue their studies), 10% left the region, 34% other; 15% of responses were dropped due to insufficient data for classification. For example, 11% of bachelor's graduates are financially successful, and 20% of master's graduates. Despite the fact that no significant differences in the level of unsuccessful wages were found, among bachelor's graduates a much larger proportion (20%) are unemployed, in contrast to master's graduates (10%). This is primarily due to the continuation of education by bachelor's graduates.

Next, we consider other characteristics of the educational trajectories of those who are financially successful and unsuccessful.

First, IT graduates (31%) and engineering sciences (15%) are the most financially successful groups. 14% of economists and managers are financially successful, but this group has a high proportion of unemployed (18%), mainly from among bachelor's graduates. Among the financially unsuccessful, there are more who study natural sciences (15%) and humanities (14%). There is also a significant share of the unemployed (19% and 21%, respectively), mainly bachelor's graduates. For these specialties, in particular, a master's degree reduces the risks of unemployment.

Secondly, no clear differences were found in the success of bachelor's graduates who studied on a scholarship or by paying fees. There are more unemployed among fee paying graduates in the sample as a whole (23%), which could be due to the financial support of parents. There is also a paradoxical situation for master's graduates, among those with scholarships, there are more financially successful (20%) and financially unsuccessful (11%). Fee-paying master's graduates less often become financially successful at the start of their careers (16%), but also less often finan-

cially unsuccessful (5%). It seems there are combination of factors: financial support from parents and the tendency for fee-paying master's graduates to move out of the region (up to 15%).

Third, no significant differences were found between successful and unsuccessful graduates in terms of academic performance, when measured by the analysis of averages or when divided into groups whose score is below 4 or from 4 to 5. In Russian master's programs, the process of grade inflation is acutely felt. For financially successful graduates with a bachelor's degree 34% have a grade below 4, and 66% from 4 to 5; among the financially unsuccessful bachelor's graduates 28% and 72%, respectively. For graduates with a bachelor's degree, there are other factors that make it possible to achieve success in the labor market, for example, combining work and study, which is an attempt to gain experience with employers regardless of specialty.

Conclusions

The research design is recommended for scaling up at other universities, as the basic way of interacting with graduates, based on the best international practices [9], is to involve them in feedback mechanisms regarding employment status and starting salaries, and taking into account characteristics educational trajectories.

The results showed that specialists in engineering sciences and ICT are in short supply in the regional labor market, so employers are ready to offer higher salaries to graduates immediately after graduation. A significant proportion of those who have low wages or are unemployed (on average 33% and 45%, respectively) continue their studies in a master's program, a postgraduate program, an additional education. This group invests in their professional future, with a focus on personal self-development, which in the long term can give higher chances of professional success.

It should be borne in mind that the research was undertaken during the Covid-19 pandemic, the deregulation of labor relations, and the precarization of the employment of young graduates. Monitoring the proportion of the unemployed and the financially unsuccessful based on their starting wages can help identify ways to mitigate the socio-economic impact of the pandemic among young people.

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The Return to a Master's Degree in the Russian Labor Market

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A master's degree is a relatively recent phenomenon for the Russian labor market. The system inherited from the Soviet Union was a single-step structure of higher education — the specialist degree. However, 10 years ago the mass transition of most fields of study to "the Bologna process" marked the emergence of a two-step structure, consisting of a bachelor's and a master's degree. This innovation quickly gained popularity among students: in 2020, there were 185,000 graduates from master's programs which is three times more than in 2013. However, there is a popular belief that the Russian labor market has not yet adjusted to the new educational structure and employers do not differentiate between graduates with bachelor's and master's degrees, which makes investment in graduate education senseless in terms of economic returns.

Whether to complete a master's degree has remained an open question for a long time. Lack of data related to the employment of recent master's degree graduates has im-

peded research in this field. However, in 2021 the emergence of unique nationwide administrative data about the employment of Russian graduates made it possible to investigate the returns to master's degrees in the labor market. These data were collected by the Russian Ministry of Labor and Social Protection and the Federal Service for Labor and Employment (Rostrud). Information about degrees issued is reported by universities and is added to a federal register of educational documents. This information is passed to the Russian Pension Fund where it is merged with employment data via the individual insurance account number. The final dataset is anonymized and can be used for analytical and scientific purposes. The new data made it possible to compare the early-career labor market results of those with bachelor's degrees with their peers who pursued their master's.

Master's degree graduates: are they different?

On average, roughly 30% of bachelor's graduates pursue a master's degree without a gap year. Master's degree graduates significantly differ from those who entered the labor market with just a bachelor's degree. First, doing a master's is common among men: males constitute 45% of master's graduates but only 37% among those with just a bachelor's degree. Secondly, students who received a bachelor's with honors are more likely to pursue a master's degree. Thirdly, an early career start during bachelor's studies is negatively correlated with doing a master's. Although students in Russia often combine study and work, the proportion is significantly higher among the graduates with only a bachelor's degree (46% compared to 35% among those who continued their education). However, most master's degree graduates combined study and work at some point of their graduate studies (87%) and almost half of them (45%) graduated with honors. This can either signal self-selection of the most able students into graduate studies or a lower quality of education which allows them to dedicate more time to other activities.

Introducing the two-cycle degree structure has provided flexibility in the educational path of students. They have the opportunity to change their university and major when applying for a master's degree. However, most graduate students do not take this chance: 83% of master's graduates continue studying in the same university and only 22% change their major.

Labor market outcomes of master's degree graduates

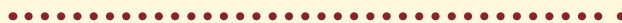
A master's degree increases the probability of employment by 12% among women and by 3% among men while a master's with honors further increases this probability by 3% for women and by 4% for men. In terms of wages, a master's degree is associated with a 10% premium for females and a 2.5% premium for males. As master's degree is more in demand in management positions and obtaining a master's degree may provide access to high-paying jobs.

Having combined study and work during master's studies is positively associated with the probability of employment, increasing it by 5% for men and by 10% for women. In terms of wages, females who combined study and work earn a premium of 8%, while for males it is 3%.

The return to a master's degree varies dramatically depending on the choice of major. While for women any master's degree increases the probability of employment, the effect ranges from 8% in agricultural studies and arts to 14% in economics and management. For males, a master's degree in economics and management is also associated with the highest increase of employment probability (5%) while for a master's degree in agricultural sciences the probability of employment only goes up by 2%. A master's degree in education, humanities, arts, or social sciences other than economics and management, does not bring any positive labor market returns to male graduates. From a wage perspective, both men and women enjoy wage premium for their master's degree in math and computer sciences (15% for women, 6% for men) and economics and management (20% for women and 12% for men). While computer science implies in-demand ICT skills, a degree in economics and management can provide access to management positions and the financial sector. Women also get positive returns from a master's degree in life sciences (5%), engineering (8%), agriculture (6%), education (6%) and law (7%). Changing the field of study in master's degree is associated with 2–3% decrease in probability of employment for both genders.

Conclusion

Although a master's degree has only recently been introduced to the Russian education system, its holders already receive labor market returns. The observed premium consists of three components. The first component is the return to skills either obtained or enhanced during master's studies. The wage penalty for switching major in graduate school suggests that having a bachelor's and a master's in different fields may impede the improvement of the professional skills and raise doubts in potential employers concerning the level of qualification of the jobseeker. The second component of the return is ability. The third component is work experience gained during the master's degree. Although the Russian higher education system is often criticized for the lack of practice and outdated skills, the widespread practice of combining study and work shows that a master's can be an instrument of labor market integration.



The Impact of University Quality Characteristics on Early-Career Salaries of Russian University Graduates

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During the last two decades, the Russian higher education system experienced considerable massification [1,2]. This could potentially lead to a decrease of the significance of a university degree as a signal of ability in the labor market. The massification of higher education was accompanied by the underfinancing of higher education sector and thereby contributed to the differentiation of higher education by quality. This emphasizes the relevance of studying of the differentiation in returns to higher education by university quality.

Data

This study used the RLMS database [3] and the Monitoring of the universities effectiveness data [4] between 2010 and 2017. For 2010-2011, the indicators of universities effectiveness for 2012 were used. It is assumed that these factors did not change sharply over these 2-3 years. We focus on a sample of people under 35 and the period 3-7 years after graduation. After combining these two datasets, 42.499 respondents remained in the total sample. The average age of respondents is 28 years; 39% were men and 61% women; 54% of the sample studied full-time. Approximately half of the sample worked full-time during their studies, 21% of graduates worked part-time and 29% did not work. The highest average salaries are received by those who combined study and full-time work.

Salary determinants

To study the effect of university quality on salaries, it is necessary to control for other factors in the model: the respondent's sex, type of education (full-time/part-time), the number of working hours per week, the region, the fact of working during studies, and industry of employment. The following results were obtained: male graduates receive salaries which are 30% higher than female graduates' salaries; full-time students earn 10-11% more than part-time students during the 3-7 years after graduation. Immediately after graduation, part-time students earn more, as they have more work experience. However, we analyze the period of 3-7 years after graduation, which allows full-time students to gain sufficient work experience. The number of working hours per week has a positive effect on income: more working hours provides a higher salary. There

is considerable regional differentiation in salaries: salaries in Moscow and Saint-Petersburg are 60-65% higher than salaries in other regions. Combining work and study also had a positive impact: graduates who were working full-time during their studies earn 11-12% more than those who did not work during their studies. The most profitable industries in terms of salaries are IT, services, transport, real estate, industry, trade and finance.

University quality

University quality is a combination of many factors, such as the quality of education, the quality of the faculty, technical equipment and the students themselves. The following factors were used to assess universities: the average USE (university entrance exam) score for full-time university admission (university selectivity), the proportion of foreign students, the proportion of foreign teachers, financial indicators (teachers' salaries relative to the average regional salary, university income), the size of the university premises and the number of computers per student. The highest influence on the student earnings is exerted by university selectivity, that is, the quality of the students themselves. This is not surprising as this factor includes both the university quality and the demand for educational services (the high reputation of the university creates a higher demand for admission and, as a result, higher competition and USE scores). If we compare university A and university B, where the average entrance exam score is at 10 points higher in university B, then graduates of university B will earn 9% more than graduates of university A. Universities were divided into quartiles for this indicator. Students from universities that are included in the 1st and 2nd quartiles earn 19% and 15% more, respectively, compared to graduates of the universities from the 4th quartile (with the lowest in the average USE scores). The financial indicators of the university have a positive effect on the graduate's salary, but this effect is very small. All other factors of university quality do not contribute to graduates' income.

Abilities

In addition to the observable characteristics of individuals, there are also unobservable factors that affect an individual's salary. The ability of graduates is just such a component. They are believed to be innate and have a positive effect on income. If these are not taken into account, then the impact of university quality may be overestimated. Consequently, this study used the instrumental variable approach to delineate the impact of ability and the quality of the institution on salaries.

The effect of university quality over time

Does the premium from the university quality change over time? There are two options: 1) we observe the bonus immediately after the graduation, which decreases. This means that high-quality universities are a signal for the employer about the graduate's abilities during the hiring process; 2) this bonus does not decrease over time, which

means that at such universities, students receive an education that will further help them be successful at work. After the analysis of the period 3-7 years after graduation, this premium varies from 8–10% and does not decrease over time. Selective universities maintain their reputation for quality, which further helps graduates in the labor market.

Conclusion

Studying at selective universities positively impacts graduates' salaries. Such universities have high selection criteria, recruiting the best students. Thereby, demand for higher education, and especially at high-quality universities, is maintained because education in such universities brings a positive return on salaries. This experience and knowledge does not diminish its relevance and brings a return on the individual salary not only in the first year after graduation, but also in the longer term.

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The Gender Wage Gap among University Graduates: Evidence from Russia

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Introduction

The gender dimension of the school-to-work transition is an issue of the relevance since the evaluation of the early-career gender wage gap lets us study the formation of

gender inequality during the first steps of graduates in the labor market. Graduate labor markets have specific features: graduates have limited work experience and the role of educational characteristics may prevail over other characteristics. In addition, during the first years after graduation, individuals are less likely to be burdened with family responsibilities, which may decrease wage inequality between men and women in this group. There are some specific features of gender inequality in Russia: despite gender equality in access to higher education and the prevalence of women among people with university degrees, the average wages of women are lower than of men. However, it is known that the graduate labor market works differently — data from other countries show that sometimes there is no difference in wages between men and women at the start of a career, and it accumulates as families are established and maternal responsibilities are fulfilled [1] one of the 50 poorest countries of the world. Design/methodology/approach – The analysis takes advantage of an ad hoc school to work survey (SWTS).

When and why does this difference appear? The most obvious answer is connected with discrimination by employers and restrictions by labor market institutions. When entering the labor market, graduates of different gender face different stereotypes and limitations, receive job offers with different frequencies, encounter different obstacles (the attitude of superiors, lack of infrastructure for parents with children, etc.). Knowing about the restrictions in the industry, women can adjust their educational and career plans, including lowering salary expectations. Counterarguments are that the gender wage gap is due to the free choice of individuals, unobservable personality characteristics and personal attitudes (so-called self-selection). These determinants are described below.

The determinants of the gender wage gap

First, a significant contribution to the gender wage gap is made by horizontal segregation by university majors and the consequent segregation by occupation and industry. Men and women study different majors at universities (for example, our research data demonstrates that in Russia women more often choose Education and Economics and Law, and men choose ICT), and therefore work in different industries with different salary distributions.

Secondly, vertical segregation in the same industry is also important. After completing their studies, due to different circumstances, graduates of one major may start working in different positions: for example, a man after studying software engineering may choose programming, a woman — product management. Different starting positions imply different career paths and growth prospects and additional discriminatory restrictions (“sticky floor” and “glass ceiling”). Studies demonstrate that men and women show different success in salary negotiations, and in the future, they may receive different increases in earnings when changing jobs. There is evidence that it is easier for employers to evaluate the skills of male employees than female employees [2].

Thirdly, the choice of place of work can be based on different parameters: the financial aspect is more important for men; the flexibility of working hours, proximity to home and other non-pecuniary benefits are more important for women. In other words, men and women demonstrate contrasts in compensating wage differentials: women are less likely to choose risky jobs with a higher probability of injuries or damage to health to get a wage premium.

Fourthly, women's wages are influenced by household duties. Due to the traditional distribution of roles, women sacrifice working time and advanced training to maintain the household and take care of children and elderly relatives. The birth of children entails a break in work, a slowdown in the build-up of work skills and a subsequent slowdown in career growth. In the "grey economy", maternal leave often means dismissal with a subsequent search for a new job. In this article, we discuss how the gender pay gap is formed and changing in Russia.

Early-career gender wage gap

We used Russian Federal State Statistic Service survey (VTR Rosstat) of the employment of graduates to examine salary determinants and the gender wage gap among university graduates. There are about 8,000 observations of the salaries of the target groups. We used regression analysis (for the sample and subsamples) and gender wage gap decomposition techniques (measuring explained and unexplained parts of wage differences).

The models include control variables: gender, marriage, type of degree, major, work experience and squared work experience, the sector of the economy, position, federal district, type of settlement, the logarithm of the workweek duration, combining work and studies, and the number of children.

We found that the average wage of recently graduated women is 78.6% of the salary of the average of recently graduated men. We also noted a significant predominance of men in some groups of majors (ICT, Engineering). Almost 80% of graduates of these specializations are male and these specializations are also associated with high salaries. The regressions show that female gender is connected with a "penalty" of 21–23%. That is, despite the difference associated with the university major, gender itself brings a difference in wages.

Decomposition shows that the observable characteristics explain only 43% of the gender wage gap, while 57% remains unexplained and can be attributed to discrimination, self-selection and other unobserved characteristics. The main role in the explained part is attributed to university major (49%), industry (41%), work experience (7%), position (6%), workweek duration (5%) and a number of children (1%). This means that the early-career gender wage gap in Russia can be explained largely by horizontal segregation by university major and industry of employment, and the fact that men are more likely to work in well-paid fields and occupations.

The comparison of the results of the decomposition for different age groups demonstrates that the gender wage gap appears in the earliest career stages: in 22–23 year-olds who have up to one year work experience. An additional result is the widening of the gap over time after graduation along with the accumulation of work experience.

An analysis of wage distribution quantiles shows that gender inequality among well-paid graduates is higher than among low-paid graduates. Women who work in low paid positions are offered wages that are similar to male wages. Thus, as professionalism increases and wages increase, the wage gap between men and women increases.

Policy implications

Our analysis suggests that the gender wage gap among recent university graduates may be identified at the early career stage. Most of the gap is produced by horizontal segregation (differences in gender distribution by university major and industry), but more than 50% of the gap remains unexplained. Although the gender wage gap widens with the accumulation of work experience, the wage gap exists immediately after graduation.

The results suggest possible actions to support women during education and when entering the labor market. The gender wage gap in Russia is produced by horizontal segregation, so the solution could be related to involving women in the high-paid industries occupied by men. To overcome the gender wage gap, university administrators and policymakers should provide a supportive environment for female students, eliminate stereotypes during education [3], establish scholarships and assistance for women in STEM, and programs for leadership and self-confidence training which can help in salary negotiations. Resolving conflicts between career ambitions and family duties (special programs and infrastructure for parents and those on parental leave) may also help to overcome the origins of differences.

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The Effect of Non-Cognitive Skills on Higher Education and Labor Market Outcomes in Russia

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Traditionally human capital included education, intelligence and the technical and professional skills closely related to job productivity. Later research shifted the focus towards other individual factors which affect everyday behavior and decision-making but cannot be measured by IQ, ability, or achievement tests. These factors have come to be known as non-cognitive skills, also referred to as personality traits in psychology.

Non-cognitive skills represent relatively stable ways of thinking, feeling, and behaving in certain circumstances. These traits are partially inherited genetically and partially shaped during the early stages of socialization. Parental investments enable the development of these skills, which further affects the development of cognitive abilities. Their ultimate establishment occurs in early adulthood and, thereafter, non-cognitive skills remain stable throughout one's working life. The early development of positive non-cognitive skills has long-term effects on adult outcomes and they can serve as an effective tool against the intergenerational transmission of inequality.

Measures

Non-cognitive skills are a seemingly vague concept which require clear instrumentalization for research purposes. Survey data where non-cognitive skills are self-assessed represent the main source of information. Such questionnaires are designed by psychologists and are based on psychological concepts, most notably the Big Five and locus of control. The Big Five is a well-accepted personality taxonomy which describes any individual from the perspective of five broad categories: 1) conscientiousness, which includes diligence, attention to detail, and perseverance; 2) extraversion, or sociability; 3) neuroticism, which reflects emotional instability; 4) openness to experience, which is related to curiosity and creativity; and 5) agreeableness manifested as compromise, friendliness, and tact. Locus of control reflects one's tendency to attribute responsibility for events either to oneself (internal locus of control) or

external forces (external locus of control). Sometimes risk attitudes are also used as a measure of non-cognitive skills. Though the Big Five remains a prevalent way to address non-cognitive skills, the choice of instrument depends on data availability.

Non-cognitive skills and individual choice in higher education

The choice of whether to pursue higher education defines one's further labor market advancements. The decision to study at university is determined by personal estimates of the costs and benefits associated with the acquisition of education and is formed by family and social surroundings. Educated and financially stable parents are more inclined to invest in their children in terms of time and financial resources, supporting the development of more productive non-cognitive skills: conscientiousness, openness, emotional stability, and internal locus of control. All these skills are positively associated with academic performance at school, the desire to pursue higher education, and graduation from university. Evidence from the Russian panel survey RLMS-HSE suggests that conscientiousness and neuroticism are positively associated with the probability of graduating from the most selective Russian universities. However, if these skills are not formed properly, and in a timely manner, then the chances of pursuing higher education decrease dramatically.

Non-cognitive skills and labor market outcomes

Non-cognitive skills are proven to affect labor market performance beyond education and other traditional components of human capital. Digitalization has drastically changed the demand for qualifications and skills. New jobs require both hard professional competences and soft skills such as communicative abilities and adaptation, which are closely linked to non-cognitive characteristics. Other possible mechanisms which link labor market outcomes and personality include productivity and self-selection in particular jobs and industries.

Openness, conscientiousness, and neuroticism appear to be strong predictors of wages in the Russian labor market. A one-standard-deviation increase in openness and conscientiousness is associated with a 5% and 3% rise in wages, while a one-standard-deviation increase in neuroticism implies a 3% wage penalty. Conscientiousness is positively correlated with a higher probability of employment, increasing it by 6%, while neuroticism and agreeableness each have a 2% decrease in employment probability.

Can non-cognitive skills explain the gender wage gap?

Since non-cognitive skills are predictive of labor market outcomes, they are also partly responsible for the gender wage gap. Men and women demonstrate systematic differences in their psychological attributes. For instance, women exhibit significantly higher levels of all the Big Five person-

ality categories: they are more conscientious, extraverted, open to experience, agreeable, and neurotic. In contrast, males are more inclined to take risks and responsibility for their actions which implies more internal locus of control.

In Russia, the Big Five and risk preferences jointly explain from 2% to 4% of the gender wage gap depending on the percentile of the wage distribution, with personality being more relevant for high-paying jobs. While high endowments of openness and extraversion observed in females help reduce the gap, higher levels of neuroticism and risk aversion, generally typical for women, increase it. Locus of control accounts for 7% of the raw gap at the mean and explains up to 8% of the gap at the top of the wage distribution. These estimates mean that though non-cognitive skills are both economically and statistically significant for the labor market, there are other key factors affecting the gender wage gap which are yet to be discovered.

Conclusion

Non-cognitive skills are an important determinant of behavior, productivity, educational and labor market outcomes, representing an important addition to traditional components of human capital, which have long been ignored by economists. Since non-cognitive skills remain receptive to external influences up until early adulthood, they can be used as targets for policy interventions in education. As the effect of non-cognitive skills on any important social or economic outcomes is cumulative, such interventions should be introduced as early as possible - at least at school. An originally low level of openness to experience and conscientiousness, or presence of external locus of control may lead to low academic achievement, consequently reducing the probability of entering higher education and leading to lower probabilities of employment, lower income levels and the reproduction of social inequality.



Higher Education and Labor Market Outcomes: The Case of Kazakhstan

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Country context and the institutional reforms

Kazakhstan's higher education appeared around 100 years ago as a part of the Soviet higher education system that was "built into a larger economic planning system" [1]. Higher education and the labor market were centralised and fully

subordinated to the Soviet ideology with its favouritism of the working class. Despite the economic returns to higher education being low [2], which likely reflects wage compression due to wage grids and the centralised allocation of the labor force, access to higher education was highly competitive. In Kazakhstan during the Soviet era, there were 226 higher education admission applications per 100 places [1].

The situation changed dramatically with the disintegration of the Soviet Union and the move toward liberalisation and a market economy. During the years of reform, education policymakers in Kazakhstan were trying to find a balance between over-estimating the power of markets in achieving efficiency and using purely administrative instruments. The liberal agenda of the 1990s allowed many new universities to open and the vast majority of them were private HEIs; eventually, Kazakhstan had the largest share of higher education students studying in the private sector among post-Soviet countries [3, 4]. While public HEIs were inherited from the Soviet era, private ones were either those newly established or those which appeared with the privatisation and corporatisation of public institutions, the separation of their faculties [5], or the upgrade of former TVET institutions, often without regard to their capabilities. This was done in an attempt to mitigate the pressure on the public budget: setting tuition fees lower than the public universities, they were believed to play the social role of widening access to higher education [5] in the face of declining jobs, decreasing population incomes, and credit constraints. With the severe economic recession of the 1990s, the increased access to higher education created an associated demand, and educational attainments witnessed a counter-cyclical increase. The number of students grew from 287,367 in 1990/91 to 514,738 in 2001/02 [6]. This mostly occurred in admission on a fee-paying basis, as opposed to state-funded higher education. The share of privately funded students increased from 47% in 1999 to 86% in 2002 [7]. This might, however, have been driven by easier access to higher education through its "massification" [8] and "marketization".

The early 2000s were a turning point for policymakers, whose agenda changed toward putting administrative pressure on higher education providers in an attempt to improve their quality. This was likely a response to the widely perceived declining quality and over-education causing public concerns. As a result of restrictive government policies, which seem to target primarily private higher education providers, their number dropped. Educational attainments, however, continued to grow with the fast economic growth of the 2000s, caused by the oil-boom-driven labor market revival, though at a much lower rate, eventually stabilising at a current number of around 600,000 students.

This massive increase in the quantity of education was not accompanied by an associated increase in funding, which was poor even given the economic growth of the first decade of the 2000s. Total public spending for education was 3.6% of GDP in 2014, of which only about one-tenth was

allocated to higher education [9]. Consequently, HEIs were heavily reliant on private funding through tuition fees, which comprised 70% of total expenditure on education [9]. Along with that, tough competition for students due to long-term adverse demographic trends and the policy initiatives attempting to improve quality through tightening access to higher education limited the opportunities available to most universities to raise tuition fees. As a result, private funding is limited as well - it made up 0.7% of GDP. 1% of GDP in total “does not bring the country up to levels anywhere near those of most of its peers”, as the OECD country report concludes [9].

Partially as a result of under-funding, the average quality of higher education is low, facilities are often inadequate, and the content of higher education is widely criticised for being outdated and unable to meet labor market demands. This was confirmed by the OECD Survey of Adult Skills documenting that in Kazakhstan the increased completion of tertiary education for 25- to 34-year-olds (50% versus 27% for 55- to 65-year-olds) has not “translated [into] a corresponding increase in the skills [...], possibly because of a decline in the quality of education” [10].

Main determinants of the returns to education

Surprisingly, despite the soaring enrolment in higher education, which likely compromised its quality, the returns to education (for which the earliest estimates available are for 2002) are relatively high and internationally comparable at around 7-13%, apparently due to the removal of the restrictions imposed by the planned economy. However, national statistical data suggests they having been decreasing over time. The rate of returns to schooling in 2016 were 2-5 p.p. lower than in 2002. This trend is more pronounced in the younger generations, for whom the returns to a university degree are heterogeneous, mirroring the country's diverse higher education landscape.

Estimations of the returns to attending different types of HEIs with the representative sample of 90,329 individuals who graduated in 2014-2016 from four-year full-time bachelor's programmes at 104 universities across the country revealed that the returns to higher education are driven by university type rather than by subject. This confirms the findings of Kirkeboen, Leuven, and Mogstad who suggest that “the effects of institutions may be larger in settings with more private financing of higher education” [11].

The highest returns, in a form of higher salaries and the likelihood of being employed in the formal sector of economy, were gained by graduates of the most expensive private universities delivering mostly business-focussed curricula and concentrated in the two largest and economically successful cities — the former and the current capital. By contrast, the lowest returns were found amongst graduates of the remaining private universities recruiting the least able students, as measured by their centralised university entry test scores. Within the group of the most prestigious and expensive universities, both private and

public, higher returns are associated with higher tuition fees. One should note that the causal paths between the “elite” status of these HEIs and the better labor market outcomes of their graduates are not clear and could not be disentangled using existing data. However, for the public universities among them, higher returns seem to be fully driven by their selectivity.

The current public higher education hierarchy [12] includes state universities and 10 national universities granted special status in 2001 as those “considered as having the best potential for training and research” [13], in return for relatively better public funding, additional administrative support and the privilege to raise their tuition fees. According to these expectations, in 2012, the national universities were forced to increase the entry requirements to improve the quality of their student intake. This was possible due to the centralised admission introduced in 2004, with the aim of reducing the corruption associated with higher education enrolment and unifying the minimum requirements. The increased selectivity of the national universities from 2012 onwards allowed exploiting the fuzzy regression discontinuity design (FRDD) to estimate the returns to attending them vs. other public HEIs. Unlike simple OLS, the results from FRDD did not reveal a returns premium to be gained by attending national universities, at least for the first affected cohort and during their first year in employment. One should note, however, that alternative explanations for this could arise from the methodological limitations (particularly, from the local nature of RDD) or data constraints.

Concluding remarks

There are several policy implications arising from this study.

First, the quality of education reflected in the better labor market outcomes is a complex phenomenon and there is no single, straightforward way to improve it. The impact of peer effects in educational attainments should not be underestimated; as Winston and Zimmerman [14] emphasize, they constitute a specific feature of the technological process in higher education — “customer-input technology”. However, the quality of students enrolling alone is not sufficient to ensure the quality of education. Moreover, despite the possible link between institutional quality and poor funding in Kazakhstan, the country's experience suggests that better funding per se is also not enough to ensure quality, as measured by the value added by a given institution.

Second, a simple consideration of the graduates' raw wages to evaluate the quality of institutions without considering the many intervening factors is a questionable policy as it might lead to biased conclusions. For Kazakhstan, this sort of comparison was one of the rationales for the current policy of privatisation and consequently restricting access to public funding for state universities which might lead to an ineffective redistribution of public resources.

Third, the overall picture raises questions about the equal-

ity of higher education opportunities in Kazakhstan. Some recent reforms, such as the emergence of the Nazarbayev Intellectual Schools and Nazarbayev University offering free, high-quality education on a highly competitive basis possibly mitigates the inequalities, however, the inequality in educational opportunities refer to not only the financial constraints but many other factors.

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Employers' Perspectives on Employing Graduates from Russian Universities

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Introduction

A key issue for universities is the relevance of their output to the reality of the modern job market. This often relates to the mismatch of university programs to labor market requirements and the lack of practical and soft skills among university graduates [1]. Being in different institutional domains in terms of organizational culture and agenda, universities and companies have a different pace of change and it is challenging to synchronize the expectations from the job market and the quality of university graduates.

This paper focuses on the employer's perspective of employing graduates from Russian universities and highlights the results of a survey conducted among HR professionals and senior management in 70 Russian companies with a minimum of 500 employees, including leading companies in IT and digital ecosystems, consulting, and production. The survey was conducted in October 2021 and collected 81 responses overall (11 responses were excluded from the analysis due to incomplete survey data, irrelevant industry sector, or small company size); 85% of the responses come from companies located in Moscow and Saint-Petersburg, the rest of respondents represent companies located in Russian regions [2].

Data and insights

While the quality of university preparation for the challenges of the job market may be questioned by scholars and employers, the match between the academic specialization and a position remains the key factor during CV screening in Russian companies (indicated as the most important factor by 58% of respondents). Other important factors are foreign language proficiency (31%), and active academic engagement such as participation in research, conferences, and international exchange programs (30%). Another important factor that positively affects the decision of an employer is participation in case studies and hackathons (28%). The relevance of this factor may be twofold: first, it provides evidence of a graduate's interest in professional development, and second, it demonstrates that a graduate has experience in problem-solving and the practical application of academic knowledge. Finally, the last two important factors are relevant work experience and the prestige of the university (24% for each factor).

The data show that at later stages of selection (after CV screening), employers pay more attention to soft skills and the attitude of candidates. The top-5 factors considered by employers as important at this stage of selecting graduates are candidate motivation (58%), the potential for professional growth and capacity for project/product ownership (46%), analytical skills (45%), ability to work as a part of a team (37%), and professional knowledge (34%). Among other factors are leadership potential (11%) and relevant work experience (10%).

The survey showed that one of the main concerns of employers is the low level of academic preparation of university graduates, this factor is rated as the second biggest challenge when recruiting young candidates (35%). The biggest challenge for the employers is, however, the increased competition for talent (38%). The survey showed that other tangible difficulties associated with the employment of university graduates include retaining young employees (27%), high expectations from graduates (23%), demographic challenges (20%), and the high cost of attracting talent (14%).

University responses to demand in the job market

For decades, scholars and job market representatives have pointed out that dialogue and cooperation between industry and universities is essential when it comes to educating talent for the labor market. Changes in industry are very rapid, and there is high demand for new skills in, for example, analytics or programming.

Critical thinking, problem-solving skills, the capacity for project ownership, and other soft skills remain in high demand. The expectation is that the skills obtained at university will allow graduates to approach and handle any new task within their professional area. The data from the research supports the conclusions from other works which emphasized the importance of universal competencies in the job market [3].

While it is crucial to maintain a dialogue between different academic and industry actors, there are initiatives that can be implemented at the university level, such as extracurricular academic activities, international exchange programs (including virtual exchange which can be more accessible for students from different financial backgrounds). However, while these initiatives address professional skills, universal competencies remain one of the unsolved issues when it comes to preparing graduates for the realities of the modern job market. One way to develop soft skills such as critical thinking, capacity for teamwork, problem-solving skills and strengthen hard skills, is the use of a case-study approach in the university curriculum. The case study instructional method means that the knowledge is not given to a student in a "ready-to-use" format; instead, based on scenarios and problems, students are to observe, analyze, cooperate, discuss, and offer solutions. The method originally came from law, business and medicine, and spread to other fields of studies in the 2000s. Research shows the benefits of this type of learning as a constructivist approach to teaching where the central idea is that human learning is constructed rather than passively absorbed and that learners build new knowledge and construct meaning through active engagement and building on the foundation of previous learning. While the idea is not new [4], it is still far from being widely adopted in Russian universities. There are many reasons for this – from a weak emphasis on universal competencies in educational outcomes to a poor understanding of how to develop universal competencies in practice [5]. However, with methodological support of university teachers and well-designed case studies, this can be a potential solution to the shortage of soft skills among university graduates.

Conclusion

Overall, the insights from the survey show that while motivation of the graduates is a key factor for positive perception by recruiting companies, employers expect graduates to have strong analytical skills and well-developed soft skills which would allow them to take ownership of their responsibilities and act in a rapidly changing economy.

Despite the challenges, Russian universities are responsive to the demands of the job market to a degree. The number of international exchange study programs, events for extracurricular academic engagement, and other initiatives to enrich student experiences have been growing during recent years. However, this relates mostly to high-ranked institutions and there is still a long journey ahead in building a curriculum that meets the transforming demands of the economy.

It is curious that private education actors (such as EdTech platforms or private business schools) across the globe actively use case studies and other forms of constructivist curriculum design. This may be related to the fact that students who pay a significant tuition fee expect to obtain skills that are in high demand on the job market and to receive a higher return on their investment in their education. In order for future students to stay competitive, uni-

versities in Russia could benefit significantly from using the case-study approach and other instruments to develop soft skills in future graduates.

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The Employability Agenda in Higher Education: Drivers and Controversies

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Employability is an issue of concern to most national higher education systems and for students employability has become a priority and the main reason for pursuing higher education. Mass higher education and the postindustrial technological shift in the labor market have undermined the job security once associated with tertiary qualifications. Graduates are experiencing higher rates of unemployment and precarious employment worldwide. The skills gaps narrative also contributes to the alarmism over the youth labor market.

The concepts of employability and job readiness are not homogeneous and vary across states, regions, and universities. The common view is that higher education institutions play a role in fostering employability. Universities are expected to be well informed about the changes in the labor market and ensure relevant learning outcomes, equipping students with marketable and employable skills.

Underpinnings of the employability agenda

Linking higher education and the labor market has been a perennial topic in the literature. A functional perspective of education, the idea of education attuning itself to the changing labor market, has dominated the thinking since the last half of the 20th century. Initially, graduate employability had the straightforward meaning of getting a job upon graduation. However, since the 1980s, the concept of graduate employability has expanded to providing relevant skills and ensuring overall job readiness. Employability has shifted from being a primarily demand-side to a supply-side construct, and discussions on how to make students more job-ready have moved to the forefront of higher education institutions' agendas.

Employability can be interpreted in broad terms as the personal characteristics and abilities to get and retain employment, or in a narrower sense — possessing marketable, in-demand skills. The former interpretation implies employability skills, which are similar to the so-called “soft” skills and 21st-century skills but in a practical workplace setting. Amongst them are decision-making, problem-solving, self-management, teamwork, and communication skills. Employability skills are rapidly gaining acknowledgment and are in national skill frameworks strategies. Despite being comparatively less acknowledged, the latter interpretation of employability as marketable skills is also used.

Employability is documented as a catalyst for higher education reform in many advanced economies and in the shift to a more utilitarian focus of higher education. Researchers attribute the expansion of the employability agenda to the massification and vocationalization of higher education. The rapid growth of higher education has led to a more diverse composition of the student body in terms of talents, background, and expectations, as well as a differentiation of institutions and programs. Another rationale behind the employability agenda is the reduction of university autonomy and the rise of employer-university collaboration. Accordingly, mass higher education is “designated” to meet employers' needs for a skilled workforce, ensuring graduates are job-ready, with little or no further workplace training needed. Researchers also acknowledge the external factors driving the employability agenda — the changing world of work and growing labor market uncertainty in particular.

Demand for employable credentials

The massification of higher education results in university degree being reduced to a minimum entry requirement rather than a filter in recruiting (except degrees awarded by elite universities). In the face of degree inflation and the lengthening queue of job seekers with university degrees, there is a need for other credentials to be assigned to high-ranked jobs. A university degree certifies the academic performance of a candidate, while employers are increasingly interested in job readiness and skills matched to the

workplace. Many of those skills are not necessarily covered in a university program, thus a degree is not a sufficient credential for employability.

The employability agenda therefore transfers risk to the individual. It is no longer enough just to be a graduate. Rather, graduates are expected to showcase their employability and job readiness. Students are aware of this shift and build strategies to gain a competitive advantage in the job market and to add value to their academic credentials. For instance, students combine work and study, study abroad, take internships and courses outside the university to match the skills requirements. At the same time, employers increasingly encourage credentials for employability and marketable skills, especially when hiring for entry-level positions. This is fueled by the changing landscape of tertiary education and the emergence of alternative credentials, e.g., digital credentials, micro-credentials, and industry-recognized certificates.

The employability narrative is also stimulated by skill-biased technical change. Automation and computerization are progressively replacing human labor in routine and manual tasks. Task changes have also occurred within occupations. This has implications for skill requirements, manifested in increasing demand for higher-order cognitive skills, social skills, and the continuous updating of technical skills, which are prone to obsolescence.

Who is responsible for employability?

The employability agenda mostly relies on supply-side constructs in education (students' skills and their match with employers' needs), understating the significant demand-side factors from the labor market which influence employability. However, the skill shortage alarmism that fuels the employability agenda in higher education does not fully match labor market theories or empirical evidence. A skill surplus, manifested by overeducation and overskilling, is a widely proliferated phenomenon across OECD countries on par with underskilling. A skill surplus exemplifies the underutilization of skills, which results in wage penalties and lower job satisfaction. Overeducation or overskilling cannot be solved by the means of education but a change in the supply of highly productive jobs and the task composition of existing jobs. Accordingly, labor economists acknowledge the surplus of skills as a more challenging issue compared to undereducation or underskilling.

There is empirical evidence that skills gaps, typical for graduates when starting a job, are less costly for workers. Small skill deficits could be good for workers, as they show more skill growth (through learning on the job and other informal learning activities) than workers who start in a well-matched job. Thus, skills gaps — except severe skill deficits — could be short-term and moderated by learning at the workplace. Skills gaps are almost inevitable and appear throughout a career when changing job or position.

Summary

The employability agenda is driven by the shifting relationship between higher education and the labor market and should include both parties. The workplace is increasingly turning into a learning place. This puts the responsibility on employers to keep jobs at a challenging level and provide training, and on policy makers to promote highly productive jobs and improve incentives for skills development. For higher education, the most relevant interpretation of employability is the readiness for a flexible career and lifelong learning rather than being fitted to short-term requirements. In the face of the “race between technology and education”, enhancing employability and managing skills gaps have become the shared responsibility of higher education, employers and individuals.



Education-Job Mismatch and Employment Issues of Youth in Kyrgyzstan

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What is education-job mismatch?

Education-job mismatch is defined as a situation where the education of employed persons does not correspond to the qualifications required for their particular job. This discrepancy can be horizontal or vertical. Horizontal mismatch refers to a situation where the level of education meets the requirements of the job, but the field of specialization is not appropriate for the given job [1]. For instance, an employee may have higher education, which is required for that particular position, but the degree that they hold does not match the requirements of the job. This may be a law graduate working in economics, or a graduate of social science working in a pharmacy etc. A vertical mismatch occurs when the level of education does not correspond to the level of qualifications required to perform a given job. Hence an employee may possess appropriate field of education (economics, law, tourism, biology, etc.) but not have required level of education (a bachelor's, master's or PhD degree). There are two vertical mismatches; one may be undereducated or overeducated for a position.

The education-job mismatch reveals an imbalance of supply and demand in the labor market. A highly educated

population is the key to the development of human capital and makes a positive contribution to the long-term economic development of the country. The discrepancy between the level of education and the needs of the labor market can have a negative impact on employment indicators and, as a consequence, on economic growth. Inconsistency between educational services and labor market requirements can lead to lower wages, the dissatisfaction of workers, decreased productivity, a lengthening of the period of job search and an increase in the level of unemployment.

Higher education and labor market features of Kyrgyzstan

Kyrgyzstan has a high level of access to secondary and tertiary education. In particular, over the past thirty years, there has been rapid growth in the number of higher education institutions. However, this increase does not satisfy the demand for qualified labor in the labor market. According to official statistics more than 40% of unemployed in Kyrgyzstan are young people, while the highest share of unemployed with higher education (44.8%) are 25-29 [4]. The significant proportion of young unemployed graduates indicates an imbalance between the labor market needs and the competencies of young employees, which in turn lowers the value of obtaining a higher education for employment.

The education-job mismatch in Kyrgyzstan

According to education-job mismatch analysis by Karymshakov & Sulaimanova [3], which is based on School-to-Work Transition Survey (SWTS) data, conducted by International Labor Organization in Kyrgyzstan in 2013, higher education does not always guarantee employment corresponding to the level of education. Graduates of technical (secondary vocational) educational institutions, however, have a higher probability of being employed in a relevant job [3]. More than a third of young people in Kyrgyzstan are overeducated for their jobs, and they are mostly in the hospitality, trade, agriculture or financial intermediation sectors. While a significant proportion of undereducated youth work in public administration, education and healthcare sectors [5]. In general, overeducated youth receive lower wages, and this is highly significant for males; most of the overeducated are employed with permanent employment contracts and reside in rural areas [2].

Conclusion and policy implications

The employment of youth in Kyrgyzstan is one of the main socio-economic problems of the country. In recent years, there has been a reformation in state policy regarding the higher education system in Kyrgyzstan. Policy measures are focused on improving the effectiveness of higher education, increasing youth participation in the vocational education, updating curricula and integration with the international education system. Nevertheless, the discrepancy between the skills acquired in educational institutions and the needs of the labor market remains unsolved.

A possible policy recommendation to reduce the labor market supply and demand imbalance is to develop a continuous education system or an advanced training program for company employees. Based on current demand for labor, educational policy in Kyrgyzstan should focus on technical education, rather than tertiary education. An important direction for further research is the horizontal education-job mismatch. This would help to understand priority of education programs and guide the reforms in the tertiary education system.

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Data on University Graduates in the Labor Market: Opportunities and Limitations

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There is a widespread opinion that universities do not prepare students in the way employers need them. This is either a discrepancy between the set of skills and competencies that university students learn, and the skills and competencies that employers are willing to pay for, or the

different degrees of mastery by students of certain competencies and their accordance (or not) with the requirements of employers. To assess the requirements of employers for the knowledge and skills of graduates, research and the monitoring of the market positions of university graduates are used. According to a survey conducted by Headhunter in July-August 2021, the vast majority of employers (93%) consider the level of professionalism of Russian university graduates to be average or below average [1]. The beneficiaries of employment information are graduates of higher education institutions, students, applicants, their parents, and the authorities. However, today there are few data in the public domain that allow us to assess the demand for graduates in the labor market. Known sources include:

- A website for monitoring the employment of graduates of 2013-2015 [2]. The service gives information about the share of the employed, the level of wages, the geography of employment and movement. Among the shortcomings are the fact that the data take into account the legal address of the employer (rather than the actual place of employment) in some regions. In addition, in some areas of training (for example, jurisprudence), due to the specific jurisdiction of employers, there may be an underestimation of employed university graduates.
- Selective observations of the employment of university graduates of 2010-2015, conducted by Rosstat in 2016 and 2018 [3]. These data do not allow the analysis of the position of graduates in the labor market in the context of a specific university and field of study.
- The alumni database collected as part of the Graduate Employment Monitoring project (GEM) by the Ministry of Labor, and Rostrud [4]. This project is for the development of employment research of the Ministry of Education and Science (2013-2016). Access to this data is still limited.
- The project “Trajectories in Education and Profession” (TREC), implemented since 2009 by the Institute of Education of HSE University, combines several longitudinal studies of educational and professional trajectories [5]. TREC includes a national, and several regional, cohort panels. The availability of data from the TIMSS 2011 and PISA 2012 questionnaires for research participants makes it possible to correlate the long-term achievements of individuals with the level of competence measured in international comparative studies.
- Data from the Russian longitudinal monitoring survey (RLMS) of the economic situation and public health [6]. In contrast to TREC, RLMS is built as a sample of households, rather than a cohort and allows only a limited study of the educational trajectories of individuals and their entry into the labor market. The subsample of university graduates is small.

The study of the professional trajectories of young graduates makes it possible to assess the quality of higher education and to adjust educational programs. A significant source of such information is online surveys of graduates. Similar polls are used by other Russian universities, in particular, the HSE University, Novosibirsk State University, and the Ural Federal University.

In 2021, Tyumen State University, as part of the HSE Mirror Laboratories project, adapted the methodology and tools of HSE University Graduate Monitoring [7] to study the employment of Tyumen State University graduates. In particular, an online survey of 2020 graduates was conducted to analyze their positions in the labor market [8]. An invitation to take part in the survey was sent to graduates of the university in 2020. Thesis committees contacted some graduates, and an announcement with a request to take part in the survey was posted on the social networks of Tyumen State University. In total, more than 2,000 graduates received an invitation to take part in the survey. Answers were received from 686 respondents. The survey was conducted using the EnjoySurvey online survey service with methodological and technical support from the HSE University Center for Internal Monitoring. The study showed that 82% of graduates have a paid job, while 42% of employed graduates work in a commercial organization, 27% in an educational/scientific institution, and 13% in government bodies. 76% of employed graduates are satisfied with their working conditions, 72% with their job content, and 53% with their wages. Interestingly, the actual wages were higher than expected. Further work with students and alumni will expand the forms and intensity of interaction with those who have graduated from the university, because according to the results of the survey, only 12% are ready to exchange experience with students, and 7% of the respondents expressed their readiness to participate in scientific and project activities of students and to promote their employment. In general, an online survey of graduates is an excellent opportunity for a university to receive feedback. In Tyumen State University, almost 19% of those who answered the questionnaire left comments and suggestions on problems and ways improving the organization of education at the university, which is valuable information for the university.

Note that, with all the advantages, conducting online surveys has a number of drawbacks. First, the small percentage of graduate coverage: on average, across different universities, about 20-30% of graduates respond to such surveys. This may be due to the fact that people, in principle, do not like to waste time taking part in surveys (and the graduate survey is a detailed questionnaire), and that for the majority of graduates the university is in the past, and they do not see the point in maintaining any kind of contact. Secondly, among the surveyed respondents there is a bias towards females (73.4% among respondents versus 67.6% in the general graduate population) and those who demonstrated high academic performance (average score 4.5 versus 4.3). Females with the best academic per-

formance demonstrate the greatest loyalty to the university after graduation, which in itself is a fact worthy of a separate study.

Despite the problems and limitations, regular surveys of Tyumen State University alumni using the methodology and tools of the HSE University Graduate Monitoring are planned [3]. In the future, the complete educational trajectories of graduates from admission to graduation and employment, including academic performance, will be analyzed to assess their impact on career trajectories and positions in the labor market. The mechanisms of interaction between the university and graduates, the degree of involvement of graduates in support of educational and other social projects for the development of the university, and measures to involve up to 80% of graduates in the survey need to be improved.

The value of feedback from graduates lies in the analysis of their professional trajectories, depending on the field of study. The data makes it possible to assess the quality of educational programs and the impact of the university on the employment of graduates, as well as to use the data in promoting the university among target audiences, in particular, to attract potential applicants.

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Reading list

We have prepared a selective list of articles which explore the problem of the labor market for university graduates and the differentiation of returns to higher education by the educational and individual characteristics of graduates, and the peculiarities of educational systems and labor markets in Russia and CIS countries.

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