The Non-Bypass Trajectory, or The Boom in Demand for TVET in Russia

V. A. Maltseva, A. I. Shabalin

Received in December 2020

Vera Maltseva, Candidate of Sciences in Economics, Associate Professor, Research Fellow, Center for Vocational Education and Skills Development, Institute of Education, National Research University Higher School of Economics. Email: vamaltseva@hse.ru (corresponding author)
Alexey Shabalin, Expert, Center for Vocational Education and Skills Development, Institute of Education, National Research University Higher School of Economics. Email: ashabalin@hse.ru

Address: 20 Myasnitskaya St, 101000 Moscow, Russian Federation.

Abstract

Since the mid-2010s, Russia has been witnessing a redistribution of student flows between higher education and TVET (Technical and Vocational Education and Training), more and more school leavers applying to TVET institutions. Postsecondary educational choices are closely associated with socioeconomic status of the family, so changes in the patterns of educational transitions may indicate both changes in the education system and shifts in the national socioeconomic system. In available literature, the growing enrollment in TVET is mostly explained by "push" factors repulsing students out of secondary and higher education systems, and by the so-called "bypass maneuver" of accessing college via TVET that is popular among Russian school leavers.

This article attempts to find out whether the demand for TVET is actually increasing, what may stand behind it apart from the factors within the education system, and whether there is a socioeconomic dimension to this change. Research results allow debunking the myth of the TVET sector growing by virtue of using TVET programs as a springboard to college. Demand for vocational educational trajectories is growing beyond the "bypass maneuver"—not only among middle-school graduates, who are at the main fork in educational trajectories, but also among high-school leavers. Changes in the demand for TVET programs has exposed rigidity of the TVET system, which manifests itself in enrollment capacity being unable to satisfy the demand for particular specializations, excessive growth in tuition-based enrollment, and the "invisible" demand from high-school leavers. The increasing popularity of the vocational track results from the mutually reinforcing factors in the education system, negative economic growth, and labor market situation. The most important trigger behind the growing demand for TVET is the shrinkage of household disposable income: coupled with reduced access to higher education, it "pushes" school leavers with low socioeconomic status out of the academic track.

Keywords

bypass maneuver, higher education, postsecondary educational choices, socioeconomic inequality, transit educational trajectory, TVET.

For citing

Maltseva V. A., Shabalin A. I. (2021) Ne-obkhodnoy manevr, ili Bum sprosa na srednee professional'noe obrazovanie v Rossii [The Non-Bypass Trajectory, or The Boom in Demand for TVET in Russia]. *Voprosy obrazovaniya / Educational Studies* Moscow, no 2, pp. 10–42. https://doi.org/10.17323/1814-9545-2021-2-10-42

Vocational school or college? The dilemma seems farfetched, given the persisting high social demand for higher education[1] and the greater returns to college degrees [Melianova et al. 2020]. However, since the mid-2010s Russia has been witnessing a redistribution of student flows between higher education and TVET (Technical and Vocational Education and Training), more and more school leavers applying to TVET institutions. TVET students accounted for over 50% of tertiary enrollment[2] in 2020. The growing popularity of TVET and the shrinkage of the academic track are not only a signal to the education system but also an important indicator of the socioeconomic situation in the country. Postsecondary educational choices are closely associated with the socioeconomic status (SES) of the family [Khavenson, Chirkina 2019; Yastrebov, Kosyakova, Kurakin 2018], and changes in the patterns of educational transitions may indicate a worsening of socioeconomic inequality.

Shifts in the balance of TVET and college enrollment among youth and the growing number of TVET institutions throughout the 2010s have already been addressed in a number of studies [Dudyrev et al. 2019; Konstantinovsky, Popova 2020; Klyachko et al. 2019; Malinovsky, Shibanova 2020]. Experts predict that the proportion of TVET students in tertiary enrollment will continue increasing as high school is growing more selective [Dudyrev, Romanova, Shabalin 2017] and higher education is getting less geographically and economically accessible [Malinovsky, Shibanova 2020]. However, in addition to "push" factors within secondary and higher education, experts also identify external, or "pull" factors, such as changes in the value of college degrees for youth in the context of labor market transformations [Konstantinovsky, Popova 2020].

Other scholars explain the TVET sector expansion by the popularity of the middle school–TVET–college transit trajectory among Russian school students as a less risky path to higher education [Belyakov, Klyachko, Polushkina 2018; Konstantinovsky, Popova 2018]. Thirty percent of Russian TVET graduates go to college. However, the popularity of this transit trajectory does not explain the decline in college enrollment. Debate over the "bypass maneuver" shifts the focus of attention to middle-school leavers' educational choices, although the fork after high school and changes in the choices of graduates from selective high school are of no less importance in this context. High-school leavers choose directly between TVET and college, so socioeconomic factors have a greater impact in this case [Khavenson, Chirkina 2018].

[1] According to a national survey of Russian citizens aged 18 or over conducted by Public Opinion Foundation (FOM) in July 2020: https://fom.ru/Nauka-i-obrazovanie/14436

[2] Tertiary education embraces programs in postsecondary education: TVET (except skilled-worker programs) and higher education.

Translated from Russian by I. Zhuchkova.

If educational choices after high school are not considered, it will remain unclear whether there is a "real", non-transit vocational track. Is it only "push" factors within the secondary and higher education systems that stand behind the growing popularity of TVET among Russian youth? The growing demand for TVET programs can be a response to the worsening economic situation and the decreasing access to higher education as well as an indicator of young people' trust in the vocational track and changes in their study and career trajectory preferences. This article provides no exhaustive explanation of the observed growth in the popularity of TVET programs among Russian school leavers, yet it seeks to add to the existing explanations by responding to the following questions:

1. Have there been significant changes in school leavers' demand for TVET programs? Is there a real increase in the interest for the vocational track? How is the TVET system responding to the growing enrollment?
2. What can stand behind the changing demand for TVET among youth apart from the "push" factors within the secondary and higher education systems? Is there a socioeconomic dimension to the redistribution of student flows between TVET institutions and colleges?

School students' demand for different educational tracks is analyzed using the statistics on the number of applicants and admitted students[3] obtained from Federal Statistical Monitoring Forms SPO-1 and VPO-1. Admissions statistics are restricted to candidates applying immediately (the same year) after completing middle school (nine grades) and high school (eleven grades), which is especially important when analyzing the TVET sector with its highly heterogeneous student composition.

The article consists of six parts. Part one presents a review of the academic discourse on postsecondary educational choices. Part two describes the expansion of the TVET sector in Russia and the growing youth participation in TVET during the 2010s. Part three examines the growing popularity of TVET by analyzing the flows of candidates — recent middle and high-school graduates. Part four offers analysis of the TVET system's response to the increasing enrollment and the structural changes in school leavers' demand. Part five investigates the reasons for the increased popularity of the vocational track through the prism of socioeconomic factors. The final, sixth part of the article looks into the prospects for TVET in the face of new challenges.

[3] While the number of applications to colleges is regulated and varies from year to year, it is not limited in the TVET system. For this reason, the number of applicants specified in Federal Statistical Monitoring Forms SPO-1 can be treated as an adequate indicator of demand.

1. Review of Literature on the Motivations for Choosing the Vocational Track

Education is a key mechanism for social mobility, so research on postsecondary educational choices constitutes a significant part of the socioeconomic inequality discourse [Chirkina 2018]. The reasons for, and the context of, choosing the academic (high school–college) or vocational (TVET institution) track are often discussed within the theoretical frameworks of maximally maintained inequality [Raftery, Hout 1993] and effectively maintained inequality [Lucas 2001]. The choice of a postsecondary educational trajectory depends not only on academic achievement but also on family resources, motivations, and values. Family socioeconomic status (SES) can serve as an integrated indicator of postsecondary educational trajectory. SES is understood as parents' level of educational attainment, income, and occupation. According to the longitudinal panel study Trajectories in Education and Careers (TrEC), children of college-educated parents account for 65.2% of Russian school leavers choosing the academic track, for 42.1% of those preferring the middle school–TVET–college transit trajectory, and only for 25% of those opting for the vocational track [Yastrebov, Kosyakova, Kurakin 2018]. TVET is believed to be a compelled trajectory followed by the least socioeconomically advantaged social groups [Alexandrov, Tenisheva, Savelyeva 2015; Konstantinovsky, Popova 2018].

Russia-based empirical studies [Khavenson, Chirkina 2018; 2019; Bessudnova, Malik 2016; Popov, Tyumeneva, Larina 2013] show that the choice of the vocational track by middle-school graduates is explained by the primary effects of socioeconomic stratification [Boudon 1974], i. e. by the academic achievement that is largely mediated by family SES. Meanwhile, the transit trajectory can be an option for high-SES school students who are not academically successful enough: Russia-based studies demonstrate that this trajectory is often chosen by students from high-SES families as a lower-risk strategy of accessing college [Yastrebov, Kosyakova, Kurakin 2018].

The decisive role in high-school graduates' educational choices belongs to secondary effects of socioeconomic stratification, i. e. family SES itself [Khavenson, Chirkina 2018]. Secondary effects imply a direct influence of family SES on the choice of trajectory [Boudon 1974]. College education is highly valued in affluent families with well-educated parents, whose children internalize the family values and develop a motivation for obtaining a college degree. This way, family socioeconomic characteristics directly affect educational choices of high-school graduates.

SES is also indicated indirectly by whether the family lives in a rural or urban area. Urban high-school graduates are more likely to go to college as they have better physical access to universities, while moving from a rural area is fraught with extra costs and challenges [Konstantinovsky et al. 2006; Kondratenko, Kiryushina, Bogdanov 2020]. Selective colleges are unavailable in one third of Russia's regions, which makes it considerably more difficult for school leavers to achieve their academic potential [Gromov et al. 2016]. However, this

aspect of college distribution in the country may play no significant role for students choosing the vocational track, i. e. children from relatively low-SES families who are less likely to enter selective colleges [Prakhov, Yudkevich 2012].

Some scholars believe that personal motivations for choosing TVET have been changing as well: from compelled to rational choice [Konstantinovsky, Popova 2018]. If school leavers of the 2000s were motivated predominantly by the need to enter the labor market as soon as possible, many TVET students of the 2010s made their choice out of interest for the selected profession as well as financial necessity. Remarkably, motivations of students enrolled in mid-level professional programs (MLPP) and college programs are very similar, whereas students in skilled-worker programs (SWP) have different priorities: easiness of getting a job and decent wages [Ibid.]. However, opposing the compelled and rational choices in educational decisions appears to be unjustified. It follows from rational action theory [Goldthorpe 1996] that, even though choices are made rationally and with due regard to probable costs and benefits, they are always made in specific socioeconomic contexts. Therefore, a rational and informed choice of the vocational track can still be compelled by socioeconomic status.

Sociological surveys show that the main reasons for choosing TVET are "earlier access to the labor market and lack of money for college" [Klyachko 2019]. Significant generation gaps are observed: lack of money for college as the main motivation for choosing the vocational track is more significant for students aged 23–29 (26.6% of the sample) than for those aged 41–46 (17.9%). A greater significance of high school selectivity for the younger generation cannot be disregarded either: 9.8% of the older age group were motivated by the desire to avoid high school, as compared to 15.9% of the respondents aged 23–29. It follows from the above that the financial factor has become key in making postsecondary educational choices. However, the problem of the lack of money for college education is much less acute in Moscow than in other regions. Data from sociological surveys also demonstrates the role of SES, family income, and place of residence as important factors when choosing a postsecondary educational trajectory.

Our search for the reasons behind the increasing popularity of TVET among Russian youth during the 2010s will be premised on the fundamental principles of the theories described above. First of all, household disposable income will be used as an indicator of the socioeconomic context of educational choices. The proportion of children with college-educated parents is growing: in 2019, 32.8% of Russians aged 35–49 had a college degree,[4] as compared to 27.7% in 2010.[5] Thus, par-

[4] Based on the representative sample from the 28th round of the Russia Longitudinal Monitoring Survey — Higher School of Economics (RMLS-HSE) (2019).

[5] Based on the Russian Census 2010: https://rosstat.gov.ru/bgd/regl/b12_13/isswww.exe/stg/d2/07–03.htm

ents' educational attainment as a factor of postsecondary educational choices may gradually lose its strength as more and more people who studied during the boom of higher education in the 2000s become parents. Secondly, the logic of rational choice will be analyzed within the framework of rational action theory by assessing the balance between the costs and probable benefits for school leavers and their families.

2. TVET in the 2010s: Growing Enrollments and Participation Rates

TVET is an extremely heterogeneous educational sector which includes programs ranging from ISCED (International Standard Classification of Education) level 3 to ISCED level 5,[6] from secondary education for middle-school graduates to tertiary non-university professional education, from worker training[7] to hi-tech and creative professional training. TVET programs are pursued by recent middle- and high-school graduates as well as people who completed middle or high school some time ago and those who already have a TVET diploma in another field or even a college degree. However, the core of TVET enrollment is school leavers, who accounted for 76% (850,000) of all admitted candidates in 2020.

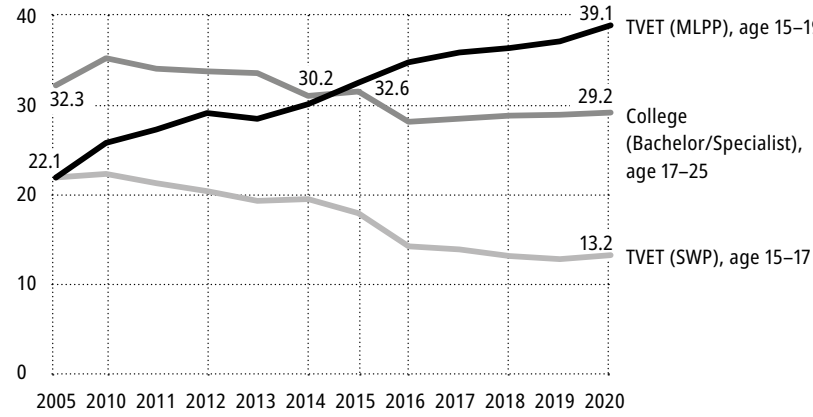
TVET remains the most popular type of professional education among adult population in Russia. According to the 2015 microcensus, nearly 45% of Russians aged 25–64 had TVET diplomas, while college degree holders accounted for only 30.4% of the same age group — the popular myth about universal higher education in Russia has already been debunked in earlier studies [Bessudnov, Kurakin, Malik 2017]. In a younger age group (25–34), college degrees were held by 40.5%, which was probably the outcome of massification of higher education that had swept through the 2000s [Bondarenko et al. 2020]. However, a change of trend occurred in the 2010s, and now youth participation in higher education is permanently reducing amid the growing MLPP participation rates (Figure 1). The tipping point was reached in 2015, when participation in MLPP exceeded participation in higher education.

The redistribution of youth flows between TVET and higher education is vividly reflected in admissions statistics. Amid the stagnant enrollment in Bachelor's and Specialist's degree programs, enrollment in MLPP is steadily growing (Figure 2). TVET students already account for over half of all tertiary admissions. In 2020, the number of students admitted to MLPP alone exceeded the number of students admitted

[6] Skilled-worker programs are classified as ISCED level 3–4 and are not included in tertiary education. Mid-level professional programs are classified as ISCED level 3–5, depending on duration (for middle- or high-school graduates) and specific characteristics.

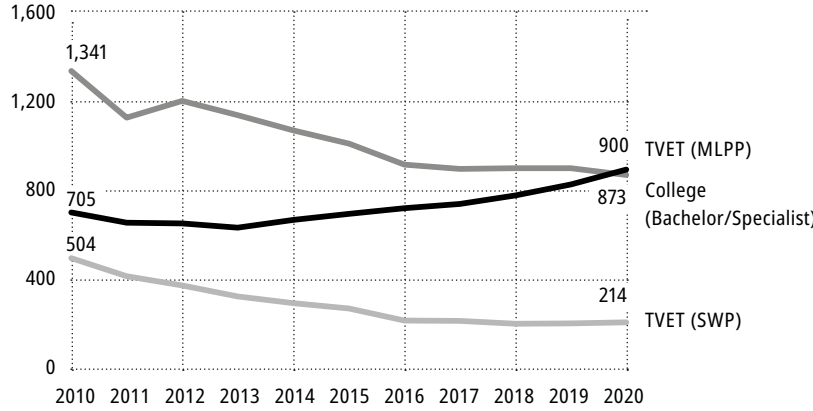
[7] Primary vocational education (PVE) and secondary vocational education (SVE) were merged into TVET by Article 108 of Federal Law No. 273-FZ "On Education in the Russian Federation" of December 29, 2012. Former PVE programs became skilled-worker programs, and former SVE programs became mid-level professional programs.

Figure 1. **Youth participation in TVET programs**, % of relevant age cohort.



Source: Compiled by the authors using the data from Federal Statistical Monitoring Forms SPO-1 and VPO-1 and Federal State Statistics Service (Rosstat) demographics for the relevant years.

Figure 2. **The number of students admitted to college and TVET programs**, thousands.



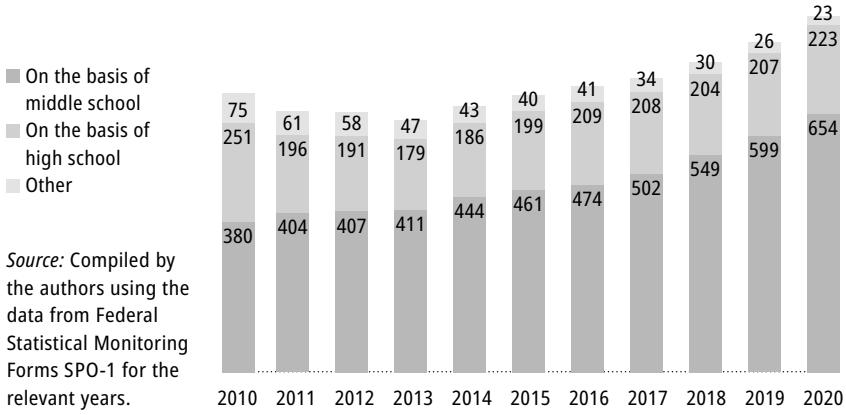
Source: Compiled by the authors using the data from Federal Statistical Monitoring Forms SPO-1 and VPO-1 for the relevant years. SWP admissions statistics are cleansed of admissions to PVE programs in educational institutions of the Federal Penitentiary Service (FSIN).

to colleges (Bachelor's and Specialist's degree programs): 900,000 vs. 873,000, respectively.

The growth of TVET enrollment is driven by mid-level professional programs, in particular those on the basis of middle school (Figure 3). In 2020 alone, 654,000 students were admitted to such programs, which is 72% more than in 2010. A noticeable increase in TVET enrollment has been observed in all regions of Russia except Krasnoyarsk Krai. In 39 regions, growth rates are higher than the national average.

Mid-level professional programs, which correspond to ISCED levels 3–5, are deliberately analyzed separately from skilled-worker programs, i. e. former primary vocational education programs attract-

Figure 3. **The number of students admitted to MLPP, by educational attainment**, thousands.



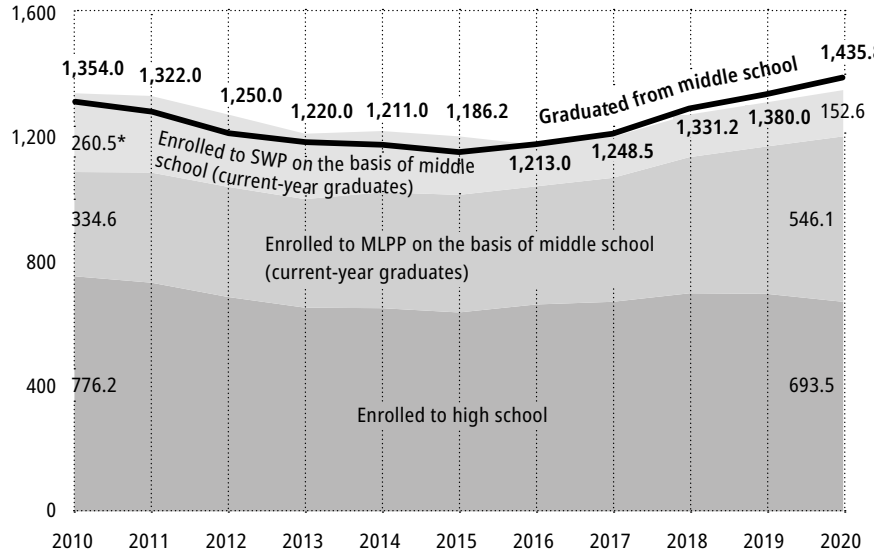
Source: Compiled by the authors using the data from Federal Statistical Monitoring Forms SPO-1 for the relevant years.

ing students with specific socioeconomic characteristics [Dudyrev et al. 2019]. Gradually shrinking participation and stagnant enrollment in SWP are explained first of all by the objective decrease in demand for blue-collar workers in the context of structural changes in the Russian economy and labor market [Gimpelson, Kapelyushnikov, Roshchin 2017]. Skilled-worker programs remain an important but small and isolated segment of TVET, involved the least in the redistribution of student flows between vocational schools and colleges. The increase in TVET enrollment and the redistribution of student flows in favor of TVET are driven by participation in MLPP, so only this sector of TVET will be analyzed further in this article.

3. The Growing Popularity of the Vocational Track and the Non-Bypass Strategy: Middle and High School Graduates

The end of middle school is the major fork in students' educational choices in Russia [Bessudnova, Malik 2016; Khavenson, Chirkina 2019]. After completing middle school, students either proceed to high school and then most often to college or opt for TVET, reserving the opportunity to enter college in the future without taking the Unified State Exam (USE). It is this fork after middle school that has undergone structural changes over the past decade. Although the country is gradually getting out of the "demographic trough" and the population of 15-year-olds is increasing, high school enrollment remains stagnant (Figure 4), more and more middle-school graduates choosing the vocational track. In 2020, 38% of middle-school leavers enrolled in MLPP, compared to only 25.4% in 2010 (Figure 5). Overall, 48.6% (698,700) of all middle-school graduates opted for TVET programs in 2020. As a result, the academic and vocational tracks of middle-school graduates have become comparable in the size of enrollment.

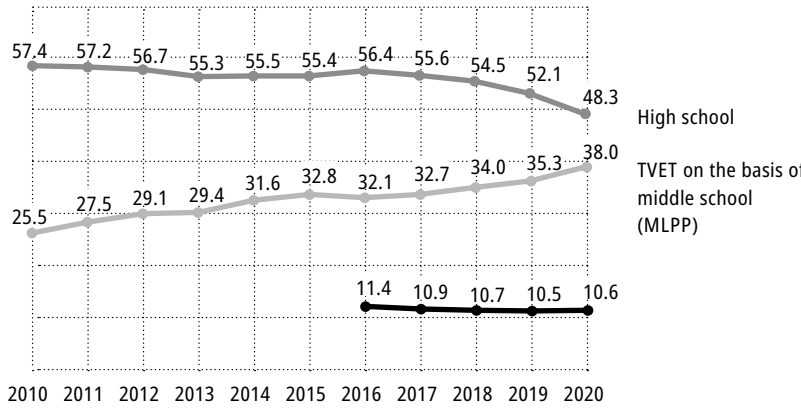
Figure 4. **The dynamics of middle school graduations, TVET enrollment on the basis of middle school, and high school enrollment**, thousands of students.



Source: Compiled by the authors using the data from Federal Statistical Monitoring Forms OO-1 and SPO-1 for the relevant years.

Note: Up to 2016, data on SWP admissions on the basis of middle school includes same-year middle-school graduates as well as those who graduated earlier.

Figure 5. **Educational choices after middle school: students proceeding to high school or choosing TVET**, % of middle-school graduates.



Source: Compiled by the authors using the data from Federal Statistical Monitoring Forms OO-1 and SPO-1 for the relevant years.

At first glance, the observed increase in MLPP enrollment on the basis of middle school (Figure 3) can be explained by the actively discussed middle school–TVET–college transit trajectory [Alexandrov, Tenisheva, Savelyeva 2015]. TVET graduates enter colleges without taking the USE, so this trajectory is often referred to as the "bypass maneuver". However, this explanation is not supported by statistics on the actual number of TVET graduates going to college right after obtain-

Table 1. **The dynamics of student flows in the TVET–college transit trajectory.**

Indicator	2013	2015	2016	2017	2018	2019	2020
"Transit" graduates of MLPP	117,536	139,743	123,716	127,923	126,775	123,235	116,514
% of "transit" MLPP graduates in college admissions	10.3	13.8	13.5	14.2	14.0	13.7	13.3
% of MLPP graduates admitted to college the same year	26.8	31.3	26.4	25.2	23.9	22.8	21.1
"Transit" graduates of SWP	17,035	16,176	18,351	18,835	18,177	16,803	16,331
% of SWP graduates admitted to college the same year*	5.2	6.1	9.2	9.7	10.8	10.2	11.5
% of "transit" SWP graduates in college admissions	1.5	1.6	2.0	2.1	2.0	1.9	1.9

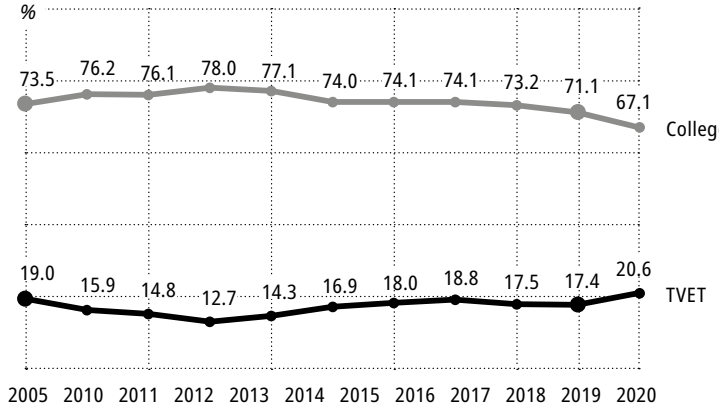
Source: Compiled by the authors using the data from Federal Statistical Monitoring Forms SPO-1 and VPO-1 for the relevant years.
Note: *Graduates of PVE programs at FSIN educational institutions are excluded from the 2013–2015 statistics.

ing their vocational diplomas. "Transit" student flows are not growing; moreover, they are shrinking even in absolute numbers despite the increasing TVET enrollment on the basis of middle school (Table 1). The number of "transit" students — TVET graduates who enter college the same year they graduate from TVET institutions — dropped from 139,700 in 2015 to 116,500 in 2020, their proportion decreasing from 26.8 to 21.1%. This data also disproves the widespread belief shaped by surveys of TVET students that most of them are going to obtain college degrees as soon as they graduate: according to the 2015 Monitoring of Education Markets and Organizations (MEMO), such students account for 53.6% of total MLPP enrollment. Therefore, the observed increase in TVET enrollment is not explained by the expansion of the transit trajectory of accessing college via TVET.

The bypass strategy of accessing college via TVET has been widely discussed in research literature, but the structure of transit student flows remains understudied. For instance, little attention is paid to the 2019 HEI Performance Monitoring statistics that 14.1% of TVET students (440,200) were enrolled in college-based vocational schools which secure smooth transition to related college degrees. Straightforward inferences are impossible due to the lack of credible data, but ample indirect evidence (colleges running application campaigns to attract students to their vocational schools and pursuing accelerated TVET-college training strategies) allows assuming that the college-based segment of TVET contributes essentially to the TVET–college transit trajectory.

Transition to high school is classified under the academic track, so educational trajectories of high-school graduates are hardly discussed

Figure 6. **Educational choices after high school: % of high-school graduates enrolled to TVET institutions and colleges.**

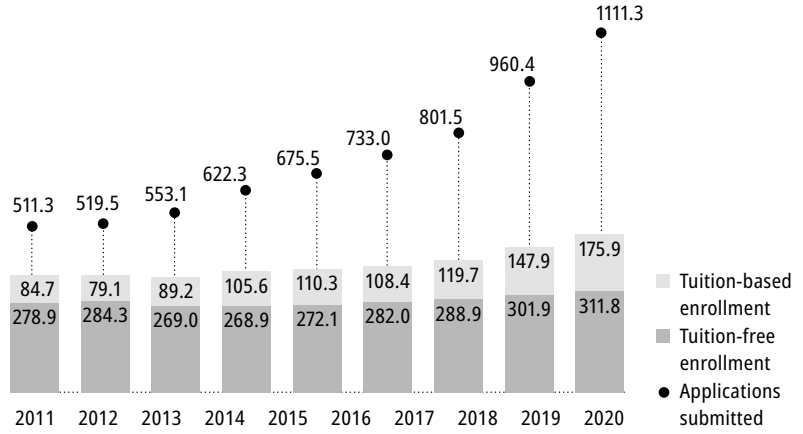


Source: Compiled by the authors using the data from Federal Statistical Monitoring Forms OO-1, SPO-1, and VPO-1 for the relevant years.

in the context of TVET. However, high-school leavers also find themselves at a crossroads, their educational choices undergoing some major shifts. The percentage of high-school graduates proceeding to college has decreased from 78% in 2013 to 67% in 2020 (Figure 6), while the percentage of those choosing TVET has increased from 12.7 to 20%. High-school leavers choose between college and TVET, while choices made after middle school are not rigorously dichotomous, given that one third of TVET graduates enter colleges the same year they receive their vocational diplomas. For high-school graduates, TVET is certainly not a means of avoiding selective high school and the USE test, but a real alternative to college — a decision compelled by their socioeconomic status [Khavenson, Chirkina 2018] or a deliberate choice. However, the 2020 statistics should be interpreted with certain caution, as the considerable growth in the popularity of TVET among high-school leavers can be not only a continuing trend but also a response to the COVID-19 pandemic. This issue needs further investigation.

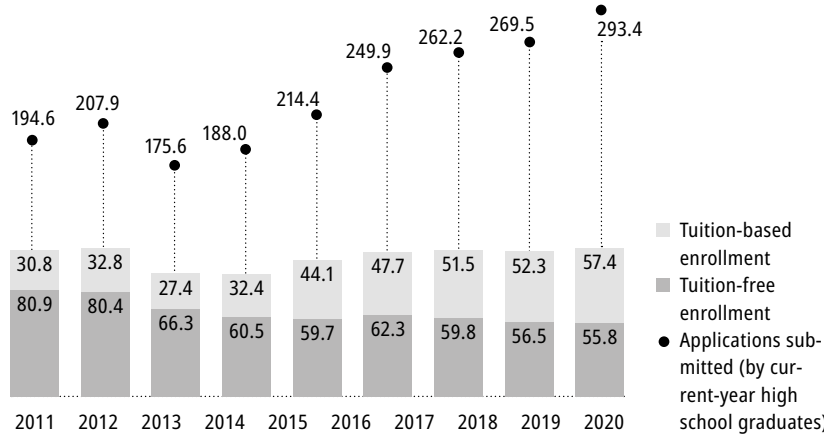
The redistribution of youth flows over the past decade has increased TVET enrollment and participation significantly. The TVET sector is expanding by virtue of MLPP on the basis of middle school, but the demand for MLPP is not explained by the growing popularity of the bypass strategy of accessing college via TVET. At the same time, the number of high-school graduates going to college is gradually reducing. Therefore, one could say that there is a real growth in the popularity of the vocational track among youth beyond using TVET as a springboard to college.

Figure **7. The number of students enrolled to MLPP on the basis of middle school (the year of graduation from middle school)**, thousands.



Source: Compiled by the authors using the data from Federal Statistical Monitoring Forms SPO-1 for the relevant years.

Figure **8. The number of students enrolled to MLPP on the basis of high school (the year of graduation from high school)**, thousands.



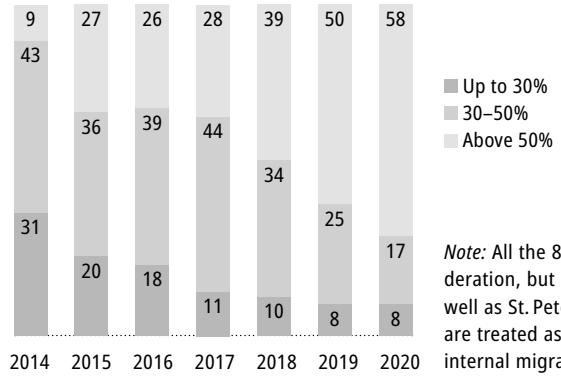
Source: Compiled by the authors using the data from Federal Statistical Monitoring Forms SPO-1 for the relevant years.

4. TVET Response to Changes in Student Flows: "Bubbles" of Demand and Within-System Barriers

The increase in demand for the vocational track among school leavers has affected the main characteristics of the TVET system. Only five years ago, there were no barriers in the TVET trajectory: competition was close to zero, and most students were enrolled to government-funded places. Essential changes have occurred to the system since 2015.

First, the rapid increase in the number of applicants has made admissions competitive: on average, there are from 2.3 applications per admission place in programs for middle-school graduates to 2.6 in programs for high-school graduates (Figures 7–8). In 2019, according to

Figure 9. **The number of regions by the percentage of tuition-based enrollment to MLPP for high-school graduates (current-year graduation).**



Source: Compiled by the authors using the data from Federal Statistical Monitoring Forms SPO-1 for the relevant years.

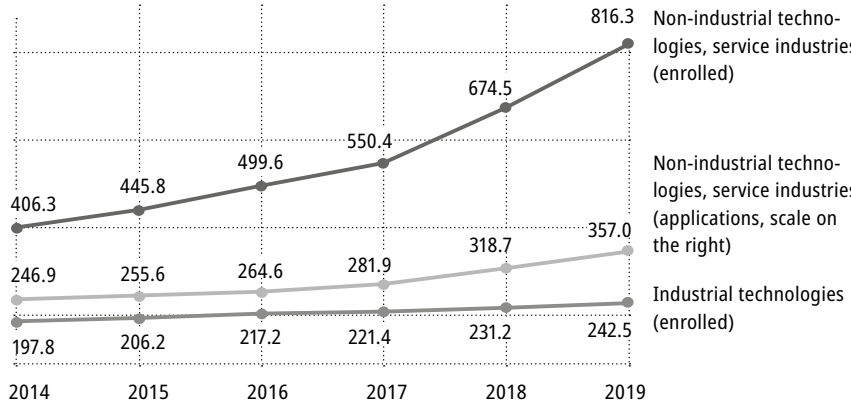
Note: All the 85 regions are taken into consideration, but Moscow and Moscow Oblast as well as St. Petersburg and Leningrad Oblast are treated as two macroregions due to heavy internal migration.

Federal Statistical Monitoring Forms SPO-1, admissions for high-school graduates were competitive in 47 regions of Russia, as compared to 28 in 2014, while competition for admission to programs on the basis of middle school reached six applications per admission place in some regions, e. g. Tyumen Oblast.

Second, there has been a growth in the number of self-funded TVET students, who accounted for 36% of total enrollment in programs for middle-school graduates. The segment of TVET programs on the basis of high school has seen an unusual situation where enrollment of self-funded students exceeds that of government-funded ones. In 2020, tuition-based enrollment exceeded tuition-free enrollment in 58 regions of Russia, as compared to only nine regions in 2014 (Figure 9). This situation in the segment of MLPP for high-school graduates is due to stagnant enrollment limited by admission quotas, combined with the outpacing growth in demand for TVET which is manifested in the number of applications.

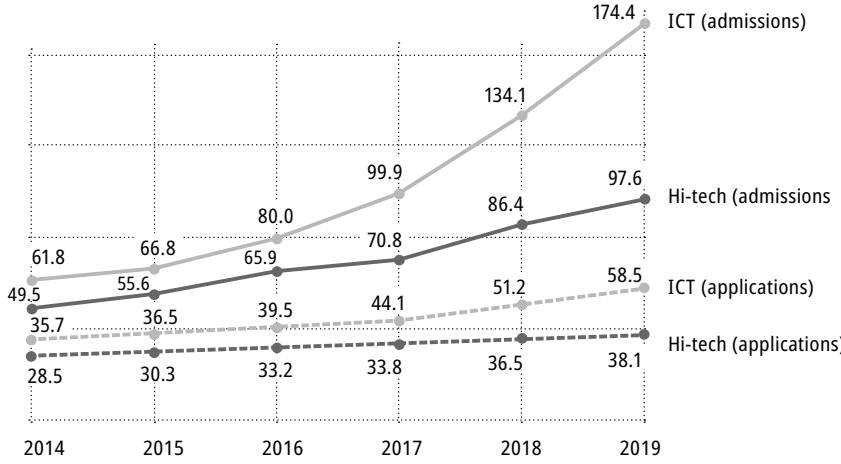
Third, there have been qualitative changes in TVET enrollment on the level of fields of study. Over the past five years, the tertiary sector has gained a foothold as the main field of study in MLPP, accounting for 60% of total admissions in 2019 (Figure 10.1). Enrollment to industrial technology specializations is not decreasing, but programs in service industries and other non-industrial technology fields have become a source of growth in the overall TVET enrollment through generating additional demand for TVET among middle-school leavers. ICT specializations are the driver of this demand (Figure 10.2), which is echoing the demand for mass education in the field of digital technologies. The number of applications for ICT-related TVET programs is 2.8 times higher than five years ago, yet admissions have only grown by a factor of 1.6.

Figure 10.1. **Middle-school graduates applying and enrolled to TVET programs (MLPP) by field of study**, thousands.



Source: Compiled by the authors using the data from Federal Statistical Monitoring Forms SPO-1 for the relevant years.

Figure 10.2. **Middle-school graduates applying and enrolled to MLPP in ICT and High-tech specializations**, thousands.



Source: Compiled by the authors using the data from Federal Statistical Monitoring Forms SPO-1 for the relevant years.

A similar situation is observed in the segment of TVET programs on the basis of high school. High-school graduates express a strong demand for service industries and specializations with no rigid qualification levels, such as IT or mass media (Table 2). Specializations with non-competitive admission include "traditional" manufacturing ones such as mechanical engineering or chemical technology as well as "old" service industries such as law, veterinary medicine, or zootechnics.

The situation with "bubbles" of demand for particular specializations and virtually no competition in others is very symptomatic. This

Table 2. **The dynamics (growth rate and competition) of the number of applicants to MLPP on the basis of high school, by fields of study.**

Field of study	2015	2017	2019	Growth rate between 2015 and 2019,%	Applications per admission place, 2019
Information Security	1,228	2,130	3,133	155	3.5
Mass Media and Library and Information Studies	969	1,519	2,221	129	2.8
Information and Computer Sciences	13,144	18,423	25,535	94	2.9
Aeronautics, Aircraft and Spacecraft Operations	3,186	43,05	5,942	87	2.8
Services and Tourism	12,585	16,238	19,898	58	2.2

Source: Compiled by the authors using the data from Federal Statistical Monitoring Forms SPO-1 for the relevant years.

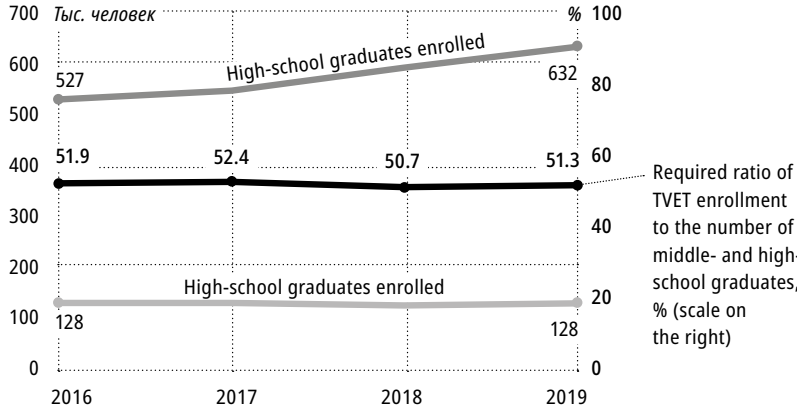
discrepancy between regionally controlled enrollments and the demand from school leavers and their families throws the system's readiness to respond to the changing demand into question. In particular, enrollment in MLPP for middle-school graduates remains unchanged despite the growing demand, which has already led to fierce competition not only for government-funded places but for self-funded ones as well.

In 2016, the Ministry of Education and Science of the Russian Federation adopted a regulatory document[8] prescribing regions of Russia to ensure that 50% of middle- and high-school graduates aged 15–19 are enrolled in TVET programs (SWP and MLPP), both tuition-based and tuition-free. The need to comply with this requirement during the final phase of the "demographic trough" has sharpened the existing limitations and priorities in TVET.

As high school was growing more and more selective, the TVET system was turning into an equipotent institution of secondary education [Dudyrev, Romanova, Shabalin 2017]. Performing an important social function, vocational institutions have become the "second-chance school" for less academically successful students who have to withdraw from secondary education after middle school. For this reason, regions of Russia have to prioritize middle-school graduates in establishing their TVET admission quotas to comply with Article 43 of the Constitution that guarantees "universal access <...> to secondary vocational education", while admission quotas for high-school leavers are determined by residual principle (Figure 11). Thus, compliance with the Ministry's requirement has not affected enrollment to programs for

[8] Methodological Guidelines on Developing a Network of Educational Institutions to Provide Educational Services to Population... No. AK-15/02 VH of May 04, 2016.

Figure 11. **Enrollment of middle- and high-school leavers to vocational schools since the adoption of the requirement for youth participation in TVET, thousands of students.**



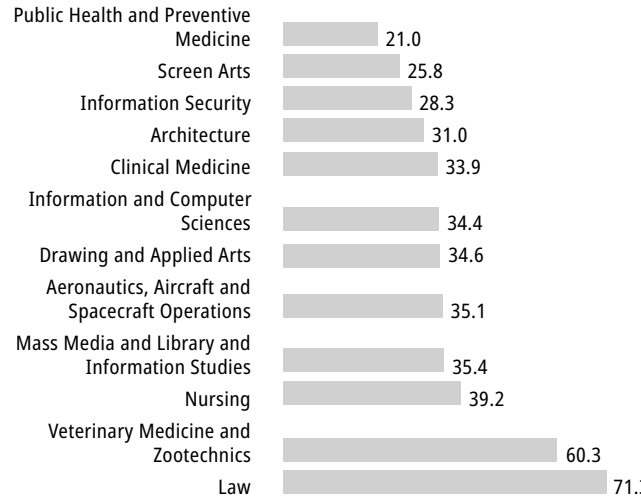
Source: Compiled by the authors using the data from Federal Statistical Monitoring Forms SPO-1 and OO-1 for the relevant years.

middle-school graduates but has "frozen" the segment of TVET programs on the basis of high school.

Rigidity of the TVET system in the face of the changing demand manifests itself not only in the ratio of middle to high school graduate enrollment quotas but also in the emerging "bubbles" of demand for particular specializations. Relying on the existing methods of forecasting staffing needs, regions focus on providing workforce for large enterprises [Dudyrev et al. 2019] and preparing a sufficient number of workers in education and social services. As a result, the growing demand of youth for creative, tertiary-sector, and IT specializations is not reflected in enrollment quotas (Figure 12). In this situation, the most economically advantaged households tend to vote with their wallets, increasing the proportion of tuition-based enrollment, as it happens in the segment of TVET programs for high-school graduates, which in its turn leads to the redistribution of government-funded places in favor of more socially significant programs on the basis of middle school.

Changes in young people's demand for TVET have exposed the limitations of the existing TVET system structure. A guarantee of universal access is preserved for socially significant programs on the basis of middle school. However, this segment exhibits low responsiveness to structural changes in demand for specializations. The segment of TVET programs for high-school graduates, relatively small compared to programs on the basis of middle school, turns out to be the most rigid one. As higher education is getting less accessible and enrollment to programs on the basis of high school is getting "frozen", high-school leavers from low-SES families become especially vulnerable. Emergency measures taken during the 2020 pandemic exacerbat-

Figure 12. **Acceptance rates in MLPP on the basis of high school in 2019**, %.



Source: Compiled by the authors using the data from Federal Statistical Monitoring Forms SPO-1 for the relevant years.

ed the problem, and today's high-school graduates applying for TVET include not only those who deliberately choose the vocational track but also those who have been "pushed" out of the academic track for whatever reason.

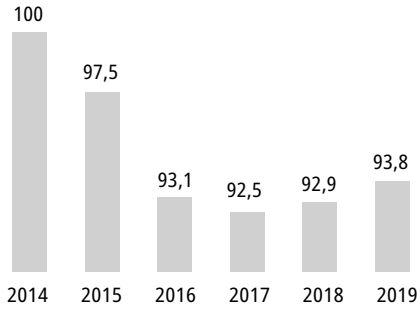
5. New Attractiveness of the Vocational Track: In Search of the Economic Rationale

The observed changes in young people's postsecondary educational choices are complex and cannot be reduced to a single underlying factor. Instead, one can talk about the interplay of different factors, both internal and external to the education system.

On the one hand, school leavers' growing interest for TVET derives from changes in the adjacent levels of education. Increasing selectivity of high school and decreasing accessibility of higher education contribute essentially to the redistribution of student flows between vocational schools and colleges. For example, institutionalization of the USE as a high-stakes test and inclusion of the mean USE score into regional authorities' key performance indicators (KPI) have affected the dynamics of middle to high school transitions [Dudyrev et al. 2019]. At the same time, the network of colleges is reducing, admission quotas for government-funded places are shrinking, and access to higher education is decreasing in most regions of Russia [Malinovsky, Shibanova 2020]. The secondary and higher education systems "push" students out, reducing low-SES school leavers' chances of getting onto the academic track.

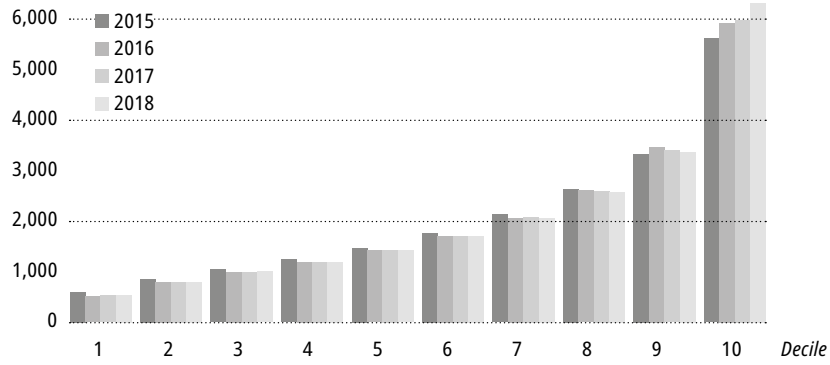
On the other hand, the growth in demand can also indicate a real surge of interest and trust in the vocational track under the influence

Figure 13. **The dynamics of household disposable income in Russia in 2014–2019**, % (2014=100%).



Source: Compiled and calculated by the authors using the data from the Sample Survey on Household Budgets for the relevant years: https://obdx.gks.ru/

Figure 14. **The dynamics of household disposable income per 100 household members in 2015–2018 by income deciles**, thousand rubles (based on the 2015 CPI).



Source: Analytical Center for the Government of the Russian Federation (2020) The Dynamics of Household Disposable Income: https://ac.gov.ru/uploads/2-Publications/rus_feb_2020.pdf

of "pull" factors. WorldSkills, international championships of vocational skills, has received governmental funding in Russia since 2012. Competitions aimed at raising the prestige of blue-collar jobs in the world have become a real tool for TVET development in Russia [Dudyrev et al. 2019] due to implementation of advanced industrial standards, re-equipment of vocational schools and workshops, teacher retraining, and the introduction of "demonstration exams". This and other initiatives under the auspices of WorldSkills Russia have been assigned 30.2%[9] of the budget allocated for the Young Professionals federal project, designed to promote vocational and higher education, for the period up to 2024.[10] Refreshment of the TVET image with

[9] Including funding for the WorldSkills Kazan 2019 International Competition.
[10] Calculated based on the Young Professionals Federal Project Passport: https://

the WorldSkills project has not been assessed in academic literature so far. However, there is no denying the fact that the initiatives of the recent decades have generated a positive media coverage for the development of TVET.

Since differentiation of postsecondary educational choices is largely determined by differences in family SES, changes in household disposable income are an important external factor in making decisions and balancing the probable costs and benefits. Household disposable income has been declining in Russia since 2014 (Figure 13) across all income groups except the top 10th decile. In 2015–2018, household disposable income declined in all income groups broadly classified as middle class (deciles 3 to 9) [Solimano 2008]) (Figure 14).

The ongoing decline in household disposable income could not leave family spending on education unaffected. Changes in household expenditure on vocational and higher education by income deciles are shown in Figures 15.1 and 15.2.

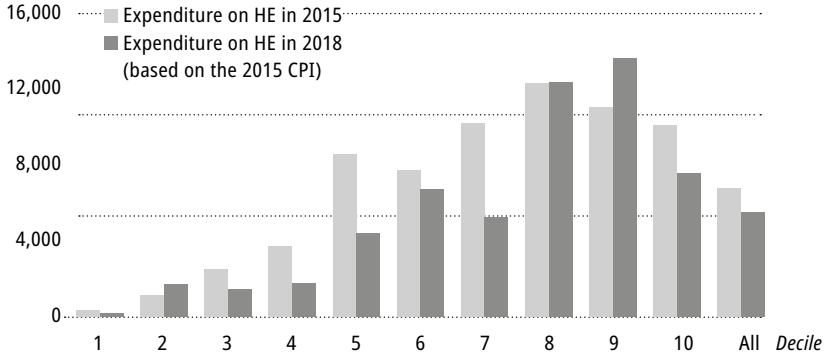
Current trends contravene the familiar thesis that higher education is the choice of the middle class while TVET is more likely to be pursued by lower-income groups. Household expenditure on higher education has shifted to the highest-income deciles, while plummeting in middle-class families (deciles 5–7). At the same time, the middle class is beginning to spend more on TVET. Of particular remarkability is the outpacing growth in expenditure on TVET in the 8th decile, which represents the upper range of the middle class and is often used as a reference group in assessing consumer behavior of the "real" middle class [Ovcharova et al. 2013]. Similar trends were documented by the Sample Survey on the Quality and Accessibility of Educational, Healthcare, Social Welfare, and Employment Assistance Services conducted by Rosstat in 2017. The highest-income groups (quintiles 4 and 5) accounted for only 31% of TVET enrollment in 2013, as compared to 52% in 2017.[11] Thus, the TVET sector has expanded by attracting children from middle-class families — an entirely new socioeconomic category of students for this system.

Based on the above, there are grounds for assuming that the vocational track (specifically MLPP) becomes a real alternative to college for a number of families in the context of constantly decreasing household disposable income. Furthermore, the existing socioeconomic situation works as a "pull" factor for not only low-income social groups [Abankina, Abankina 2020] but also middle-income families. Natural-

minobr.gov-murman.ru/files/Nach_proekty/molodye_prof/fp_molodye_professionaly_09102019.pdf

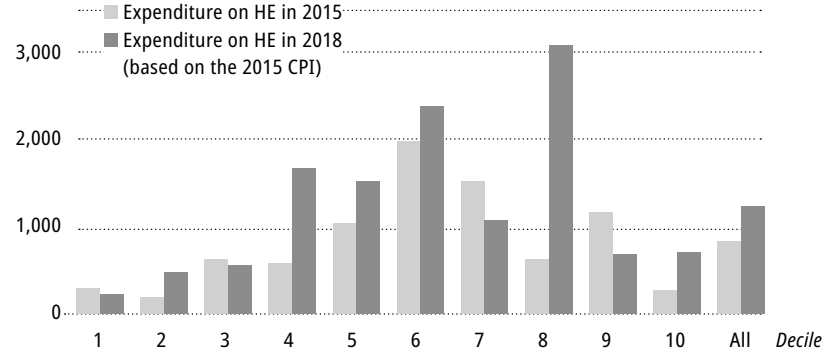
[11] As estimated by the Laboratory for University Development (Institute of Education, National Research University Higher School of Economics) based on the data from the Sample Survey on the Quality and Accessibility of Educational, Healthcare, Social Welfare, and Employment Assistance Services conducted by Rosstat in 2017.

Figure 15.1. **Changes in monthly household expenditure on higher education per 100 household members by income groups (deciles) in 2015–2018**, rubles.



Source: Compiled and calculated by the authors using the data from the Sample Survey on Household Budgets for the relevant years: https://obdx.gks.ru/

Figure 15.2. **Changes in monthly household expenditure on TVET per 100 household members by income groups (deciles) in 2015–2018**, rubles.



Source: Compiled and calculated by the authors using the data from the Sample Survey on Household Budgets for the relevant years. https://obdx.gks.ru/

ly, further research is needed to find out whether opting for TVET is a mid-term decision that indicates a deferred demand for higher education or whether it is a substantial shift in the expectations from educational and career trajectories. The existing statistics on TVET graduates entering college show no sign of pent-up demand. The percentage of TVET graduates in college enrollments has remained unchanged at the level of 35% since 2015.[12]

Why can TVET be a rational choice in the context of decreasing household disposable income and other "pull" factors? There can be three fundamental reasons for this.

[12] According to Federal Statistical Monitoring Forms SPO-1 and VPO-1.

5.1. Tuition

Higher education requires objectively more investments than TVET. First, according to MEMO data, tuition fees are on average twice as low in TVET than in higher education, and program duration in TVET is a little under three years for high-school graduates or around four years for middle-school leavers, compared to four years in Bachelor's degree programs. Second, cumulative expenditure on higher education often includes moving and accommodation expenses: colleges are much less numerous than TVET institutions and are distributed unevenly across the country. (According to the Training Quality Monitoring and the College Performance Monitoring, there were 4,627 vocational schools and only 1,264 colleges, including branch campuses, in 2019 in Russia.) As a result, additional expenses account for over 70% of annual expenditure on higher education [Gromov et al. 2016]. Third, there is another item of expenditure among those choosing the academic track: preparing for college admissions exam. Fifty percent of college students report having attended college preparatory courses, and 28% attended tutoring sessions prior to the admissions exam [Klyachko et al. 2019:6]. It is also important to bear in mind that less expensive, lower-risk ways of obtaining a college degree are largely blocked off: the past five years have seen numerous closures of college branch campuses (the number of colleges reduced by 1,000 in 2015–2018) and cuts in tuition-free admission quotas in part-time programs [Malinovsky, Shibanova 2020].

5.2. Job–Education Match

Engaging in TVET or higher education is about choosing not only an educational but also a career trajectory. Motivations related to salary and occupational prestige are key in both tracks [Konstantinovsky, Popova 2016]. No doubt, a college degree generates higher returns than a TVET diploma, specifically in 3–5 times [Melianova et al. 2020]. Following this logic, the choice seems obvious: college. On the other hand, school leavers should be guided in their educational choices by whether they will be able to find an education-matching job after they graduate and whether there will be enough job offers of acceptable quality in the labor market. Overqualified workers experience a wage penalty, earning less than workers who fill jobs matching their skills. According to the Russia Longitudinal Monitoring Survey — Higher School of Economics (RLMS-HSE), one in four workers in Russia are overqualified for their jobs and experience wage penalty associated with overqualification of up to one third of their salaries [Gimpelson, Kapelyushnikov, Lukyanova 2010]. In this case, to what degree is the observed redistribution of youth flows between TVET and higher education justified from the perspective of changes in the labor market?

Research on the changes that occurred to the occupational structure of employment in Russia in 2000–2015 shows that increased demand for higher education during that period can be considered economically justified [Gimpelson, Kapelyushnikov, Roshchin 2017]. An increase in the employment rate among college-educated people

(from 20.6 to 32.2%, according to Rosstat) was caused not only by supply-side factors, namely the growing college graduation rates, but also by demand-side factors, specifically the rearrangement of the industrial structure of economy which boosted the demand for high-skilled workers, in particular in the tertiary sector. However, the potential of structural shifts as boosters of demand for high-skilled professionals has been almost depleted, as the new industrial structure of economy has "solidified". As economic stagnation persists, the "jam" of high-skilled workers becomes a real threat. It is also important to make allowance for the probable effects of job polarization observed in many modern economies [Gimpelson, Kapelyushnikov 2015]. Job polarization happens when middle-skilled jobs — jobs that involve routine (including mental) labor — decline, i. e. the large segment of college graduate employment is vanishing. No such effects have been observed in Russia so far, but job polarization and worsening of the problem with overqualified workers are highly probable over the medium term [Gimpelson 2019].

However, school leavers and their parents barely have any access to this information, which means that their rationality in making educational choices is limited. On the other hand, it is TVET students' families, given their socioeconomic profile, that are most likely to deal with the challenges described above — routine jobs and wage penalty associated with overqualification — and signal their unmaterialized expectations of returns to college degrees, directly or not. As a result, the labor-market reality of school leavers' parents collides with the strategy of avoiding downward social mobility — i. e. ensuring that children's educational attainment is at least as high as that of their parents — as a prerequisite for rational educational choices [Breen, Goldthorpe 1997].

5.3. An Alternative to College in Particular Specializations

To a certain extent, treating the vocational and academic tracks as alternative options is a debatable approach in itself, given the dependence of educational choices on socioeconomic factors as well as the differences in expected career paths and salaries. If there is any alternativeness at all, it should be searched for on the level of specializations and fields of study with no rigid qualification levels or in programs that qualify graduates with the closest possible levels of skills, i. e. mid-level professional programs that are classified as ISCED level 5 (in global practice, this level is represented by Associate and Applied Science degrees) and are close to Bachelor's degrees in higher education (ISCED level 6).

High-school graduates applying to TVET institutions and colleges express a strong interest in the same fields of study (Table 3), mostly giving preference to creative specializations in the tertiary sector, i. e. those with no rigid qualification levels. There is international empirical evidence that in many of those career fields, college degrees do not guarantee access to jobs and are used less and less often as a filter in the selection process [Brown, Souto-Otero 2020; Chevaillier, Duru-Bel-

Table 3. **The most popular specializations in vocational (MLPP) and higher education programs, by the rate of growth in the number of applications submitted between 2015 and 2019.**

Field of study	MLPP on the basis of high school		Bachelor's/Specialist' degree programs	
	Growth rate ranking	Growth rate between 2015 and 2019,%	Growth rate ranking	Growth rate between 2015 and 2019,%
Information Security	2	155.1	5	73.6
Mass Media and Library and Information Studies	4	129.2	9	53.6
Veterinary Medicine and Zootechnics	5	102.0	11	46.6
Information and Computer Sciences	6	94.3	3	86.9
Aeronautics, Aircraft and Spacecraft Operations	7	86.5	6	63.4
Physical Education and Sports	9	62.0	15	39.1
Drawing and Applied Arts	11	52.5	18	36.2
Nursing	12	46.5	10	49.5
Architecture	15	38.5	14	41.0

Source: Calculated by the authors using the data from Federal Statistical Monitoring Forms SPO-1 and VPO-1 for the relevant years.

lat 2017]. Moreover, work experience remains the main employment barrier for TVET and college graduates in Russia [Lopatina et al. 2020].

Tuition-free education in a number of creative and in-demand tertiary-sector specializations is getting increasingly less accessible. In 2019, 83% of students enrolled to college programs in social sciences were self-funded [Abankina, Abankina 2020]. In this situation, the revealed similarities in school leavers' preferences between the vocational and academic tracks can hardly be explained by the assumption that students only apply for TVET programs as a plan B in case they fail to get into college.

Lower returns in TVET are the main argument for not treating higher and vocational education as alternatives. While the general trend is not disputed, it appears important to make it clear that returns to higher education are not homogeneous and depend, among other things, on college education quality.[13] Graduates from the most selective Russian colleges earn 23% more than those from the lowest-quality institutions [Roshchin, Rudakov 2016]. School leavers with relatively low socioeconomic characteristics are more likely to go to nonselec-

[13] The demarcation line between selective colleges (those of relatively high quality) and nonselective ones is the mean USE score of students enrolled, which should be at least 70 in a selective college [Dobryakova, Kuzminov 2016].

tive colleges [Prakhov, Yudkevich 2012; Prakhov 2015]. Therefore, those who opt for TVET after high school, i. e. high-school graduates with a relatively low SES [Khavenson, Chirkina 2018], do not just choose between TVET and higher education; rather, they choose between a vocational school and a nonselective college. In this case, the difference in returns between a TVET diploma and a college degree may not be that dramatic, given the specific features of popular specializations and the decreasing role of qualifications as a filter for candidate selection in the relevant industries.

The growing popularity of TVET is the outcome of mutually reinforcing factors within the education system, negative economic growth, and the situation in the labor market. Families and individuals make rational decisions under new circumstances by rebalancing the probable costs and benefits. In the existing socioeconomic context, middle-income groups have lower access to the academic track and are pushed to choose TVET over college. At the same time, more and more barriers and selection criteria emerge in the vocational track, generating tension for vulnerable social groups.

6. Discussion

A real growth in young people's demand for TVET is observed in Russia, and it cannot be explained by the "bypass" strategy alone anymore. School leavers and their families make informed and rational choices when they opt for TVET as a postsecondary trajectory. However, this shift in preferences can hardly be credited to the TVET sector, even though it has undergone some major positive transformations in the recent years, including reputation gains. Educational choices are made in specific socioeconomic contexts, which determine the balance of probable costs and benefits when choosing between TVET and college. Since the mid-2010s, there has been a permanent decline in household disposable income and access to higher education, which generates a threat of an excess of high-skilled workers in a stagnant economy. Those factors "push" low-SES school students out of the costlier and longer academic track into TVET. In terms of inequality of educational opportunity, the most vulnerable group is high-school leavers from low-SES families who cannot afford college but also suffer from decreasing access to TVET. These troubling trends were exacerbated by the COVID-19 pandemic.

The expanding TVET sector seems to have gained a second wind, yet it demonstrates unpreparedness for shifts in demand. Rigidity of institutional structure and interactions with the labor market, multiplied by the monumental proportions of the system, does not allow the sector to respond promptly to changes in the population's demands. TVET programs are not reorganized to meet the demand for specific careers, and tuition-based enrollments are growing despite the universal access requirement, while the growing demand for TVET among high-school graduates remains "invisible" to the sector. Having attract-

ed a new flow of students from the middle class in the recent years, the TVET system has become even more heterogeneous — serving both as the "second-chance school" and as a way of preparing hi-tech and creative professionals — while maintaining its institutional structure and functions. In a situation where the TVET system is still the largest producer of workforce in the country that actively attracts middle-school graduates, the old problems such as the quality of secondary education may come to the fore again with a vengeance.

The fork between the academic and vocational tracks is a crucial watershed and a space for inequality reproduction. The third, "transit" trajectory of transferring from vocational school to an accelerated college program without taking the USE was institutionalized in the 2010s. Obviously, this track is neither academic nor vocational in essence — but a chimeric educational trajectory, a choice compelled by the rigidity of the existing tracks.[14] The gap between TVET and higher education in Russia could be filled with relatively short-term programs for high-skilled technicians, by analogy to such global examples as Associate and Bachelor of Applied Science degrees [Chugunov, Vasilyev, Froumin 2010]. Potentially viable fields of study for such programs could be inferred from high-school leavers' demand for similar specializations in higher education and TVET. An attempt to integrate Bachelor of Applied Science degrees in Russia by means of top-down initiatives went down the drain. Perhaps, the emerging market situation and the population's demand will become better beacons in creating this "buffer zone" in the education system as well as an indicator of its completeness.

This article is an output of a research project implemented as part of the Basic Research Program at the National Research University Higher School of Economics (HSE University).

We are grateful to Irina Abankina, Viktor Bolotov, Fedor Dudyrev, Ivan Kravchenko, Dmitry Kurakin, Sergey Malinovskiy, Daria Platonova, Pavel Travkin, Isak Froumin, and Ekaterina Shibanova for their substantive comments on this article.

References

Abankina I. V., Abankina T. V. (2020) Ravenstvo prav vs ravenstvo vozmozhnostey v sfere vysshego obrazovaniya [Equality of Rights vs Equality of Opportunities in Higher Education]. *Journal of the New Economic Association*, vol. 47, no 3, pp. 205–214.

Alexandrov D., Tenisheva K., Savelyeva S. (2015) Mobilnost bez riskov: obrazovatelnyy put «v universitet cherez kolledzh» [No-Risk Mobility: Through College to University]. *Voprosy obrazovaniya / Educational Studies Moscow*, no 3, pp. 66–91.

Analytical Center under the Government of the Russian Federation (2020) *Dinamika dokhodov naseleniya* [Dynamics of Income of the Population]. Available at:

[14] It remains possible that direct transition from TVET to higher education can be a comfortable trajectory in the context of career development. This track can also be pursued by students seeking to improve their competencies within one profession, which is often the case in teaching and medicine.

https://ac.gov.ru/uploads/2-Publications/rus_feb_2020.pdf (accessed 4 April 2021).

Belyakov S. A., Klyachko T. L., Polushkina E. A. (2018) *Srednee professionalnoe obrazovanie. Sostoyanie i prognoz razvitiya* [Secondary Vocational Education. State and Forecast of Development]. Moscow: Delo.

Bessudnov A., Kurakin D., Malik V. (2017) Kak voznik i chto skryvaet mif o vseobshchem vysshem obrazovanii [The Myth about Universal Higher Education: Russia in the International Context]. *Voprosy obrazovaniya / Educational Studies Moscow*, no 3, pp. 83–109.

Bessudnov A., Malik V. (2016) Sotsial'no-ekonomicheskoe i gendernoe neravenstvo pri vybore obrazovatel'noy traektorii posle okonchaniya 9-go klassa sredney shkoly[Socio-Economic and Gender Inequalities in Educational Trajectories upon Completion of Lower Secondary Education in Russia]. *Voprosy obrazovaniya / Educational Studies Moscow*, no 1, pp. 135–167.

Bondarenko N. V., Borodina D. R., Gokhberg L. M. et al. (2020) *Indikatory obrazovaniya: 2020. Statisticheskiy sbornik* [Education Indicators: 2020: A Statistical Compendium]. Moscow: HSE.

Boudon R. (1974) *Education, Opportunity, and Social Inequality: Changing Prospects in Western Society*. New York: John Wiley & Sons.

Breen R., Goldthorpe J. H. (1997) Explaining Educational Differentials: Towards a Formal Rational Action Theory. *Rationality and Society*, vol. 9, no 3, pp. 275–305.

Brown P., Souto-Otero M. (2020) The End of the Credential Society? An Analysis of the Relationship between Education and the Labour Market Using Big Data. *Journal of Education Policy*, vol. 35, no 1, pp. 95–118.

Chevaillier T., Duru-Bellat M. (2017) Diploma Devaluation. The Ins and Outs. *Encyclopedia of International Higher Education Systems and Institutions* (eds J. C. Shin J. C., P. Teixeira), Dordrecht: Springer, pp. 1–5.

Chirkina T. A. (2018) Sotsialno-ekonomicheskoe polozhenie i vybor obrazovatelnoy traektorii uchashchimisya: teoreticheskie podkhody k izucheniyu vzaimosvyazi [Review of Theoretical Approaches to the Study of the Relationship between Students' Socio-Economic Status and Educational Choice]. *Journal of Economic Sociology*, vol. 19, no 3, pp. 109–121.

Chugunov D., Vasil'ev K., Froumin I. (2010) Vvedenie programm prikladnogo bakalavriata v rossiyskuyu sistemu obrazovaniya: zachem i kak? [Introduction of Applied Bachelor Programs in Russian Education System: How and What For?]. *Voprosy obrazovaniya / Educational Studies Moscow*, no 4, pp. 247–267.

Dobryakova M. S., Kuzminov Ya.I. (eds) (2016) *Kachestvo priyoma v rossiyskie vuzy — 2015* [Quality of Admission to Russian Universities-2015]. Moscow: HSE.

Dudyrev F., Froumin I., Maltseva V., Loshkareva E., Tatarenko E. (2019) *WorldSkills Approaches to Comparable Skills Assessment in Vocational Education*. Moscow: HSE.

Dudyrev F. F., Romanova O. A., Shabalin A. I. (2017) *Starshaya shkola i eyo alternativy v sovetskoy i rossiyskoy praktike* [High School and Its Alternatives in Soviet and Russian Practice]. Moscow: HSE.

Dudyrev F. F., Romanova O. A., Shabalin A. I., Abankina I. V. (2019) *Molodye professionaly dlya novoy ekonomiki: srednee professionalnoe obrazovanie v Rossii* [Young Professionals for the New Economy: Secondary Vocational Education in Russia]. Moscow: HSE.

Gimpelson V. (2019) The Labor Market in Russia 2000–2017. *IZA World of Labor, Germany*, no 466, pp. 1–13.

Gimpelson V. E., Kapeliushnikov R. I. (2015) Polyarizatsiya ili uluchshenie? Evolyutsiya struktury rabochikh mest v Rossii v 2000-e gody [Polarization or Upgrading? Evolution of Employment in Transitional Russia]. *Voprosy Ekonomiki*, no 7, pp. 87–119.

Gimpelson V. E., Kapeliushnikov R. I., Luk'yanova A.L. (2010) *Uroven obrazovaniya rossiyskikh rabotnikov: optimalny, izbytochny, nedostatochny?* [The Level of Edu-

cation of Russian Employees: Optimal, Excessive, Insufficient?]. Working paper WP3/2010/09. Moscow: HSE.

Gimpelson V. E., Kapeliushnikov R. I., Roshchin S. Yu. (eds) (2017) *Rossiyskiy rynok truda: tendentsii, instituty, strukturnye izmeneniya* [Russian Labor Market: Trends, Institutions, Structural Changes]. Moscow: HSE.

Goldthorpe J. H. (1996) Class Analysis and the Reorientation of Class Theory: The Case of Persisting Differentials in Educational Attainment. *British Journal of Sociology*, vol. 47, no 3, pp. 481–505.

Gromov D. P., Platonova D. P., Semyonov D. S., Pyrova T. L. (2016) *Dostupnost vysshego obrazovaniya v regionakh Rossii* [Accessibility of Higher Education in the Regions of Russia]. Moscow: HSE.

Khavenson T. E., Chirkina T. A. (2018) Effektivno podderzhivaemoe neravenstvo. Vybor obrazovatel'noj traektorii posle 11-go klassa shkoly v Rossii [Effectively Maintained Inequality. The Choice of Postsecondary Educational Trajectory in Russia]. *Economic Sociology*, vol. 19, no 5, pp. 66–89.

Khavenson T. E., Chirkina T. A. (2019) Obrazovatelny vybor uchashchikhsya posle 9-go i 11-go klassov: sravnenie pervichnykh i vtorichnykh effektov sotsialno-ekonomicheskogo polozheniya sem'I [Student Educational Choice after the 9th and 11th Grades: Comparing the Primary and Secondary Effects of Family Socioeconomic Status]. *The Journal of Social Policy Studies*, vol. 17, no 4, pp. 539–554.

Klyachko T. L., Avraamova E. M., Loginov D. M., Polushkina E. A. et al. (2019) *Trudoustroystvo molodyozhi. Vybor v polzu srednego professionalnogo obrazovaniya* [Youth Employment. Choosing a Secondary Vocational Education]. Moscow: RANEPA.

Kondratenko V. A., Kiryushina M. A., Bogdanov M. B. (2020) *Obrazovatelnye prityazaniya rossiyskikh shkolnikov: factory i vozrastnaya dinamika* [Educational Aspirations of Russian Schoolchildren: Factors and Dynamics]. Moscow: HSE.

Konstantinovskiy D. L., Popova E. S. (2020) Srednee vs vysshee [Vocational vs Higher Education]. *Universe of Russia*, vol. 29, no 2, pp. 6–26.

Konstantinovskiy D. L., Popova E. S. (2018) Rossiyskoe srednee professionalnoe obrazovanie: vostrebovannost i spetsifika vybora [Russian Secondary Professional Education: Demand and Specificity of Choice]. *Sociological Studies / Sotsiologicheskie Issledovaniia*, no 3, pp. 34–44.

Konstantinovskiy D. L., Popova E. S. (2016) Otnoshenie molodyozhi k obrazovaniyu v sovremennoy Rossii [The Intention of Young People to Higher Education as an Important Resource of Innovative Development of Russia]. *Social Sciences and Contemporary World*, no 1, pp. 5–19.

Konstantinovskiy D.L, Vahshtajn V. S., Kurakin D. Yu., Roshchina Ya.M. (2006) Dostupnost' kachestvennogo obshchego obrazovaniya v Rossii: vozmozhnosti i ogranicheniya [The Accessibility of Quality Education in Russia: Opportunities and Restrictions]. *Voprosy obrazovaniya / Educational Studies Moscow*, no 2, pp. 186–202.

Lopatina M. V., Leonova L. A., Travkin P. V., Roshchin S. Yu., Rudakov V. N. (2020) *Vypuskniki srednego professionalnogo i vysshego obrazovaniya na rossiyskom rynke truda* [Graduates of Secondary Vocational and Higher Education in the Russian Labor Market]. Moscow: HSE.

Lucas S. R. (2001) Effectively Maintained Inequality: Education Transitions, Track Mobility, and Social Background Effects. *American Journal of Sociology*, vol. 106, no 6, pp. 1642–1690.

Malinovskiy S. S., Shibanova E. Yu. (2020) *Regionalnaya differentsiatsiya dostupnosti vysshego obrazovaniya v Rossii* [Regional Differentiation of Access to Higher Education in Russia]. Moscow: HSE.

Melianova E., Parandekar S., Patrinos H. A., Volgin A. (2020) *Returns to Education in the Russian Federation. Some New Estimates.* Policy Research Working Paper no 9387. Washington, DC: World Bank.

Ovcharova L. N., Popova D. O., Pishnyak A. I., Shepeleva E. V. (2013) Ot standarta vyzhivaniya k otvetstvennomu vyboru [From the Standard of Survival to Responsible Choice]. *Pro et Contra*, vol. 17, no 6 (61), pp. 6–34.

Popov D., Tyumeneva Y., Larina G. (2013) Zhizn' posle devyatogo klassa: kak lichnye dostizheniya uchashchikhsya i resursy ikh semey vliyayut na zhiznennye traektorii? Na materialakh longityudnogo issledovaniya [Life after 9th Grade: How Do Personal Achievements of Students and their Family Resources Influence Life Trajectories]. *Voprosy obrazovaniya / Educational Studies Moscow*, no 4, pp. 310–334.

Prakhov I. (2015) Bar'ery dostupa k kachestvennomu vysshemu obrazovaniyu v usloviyakh EGE: sem'ya i shkola kak sderzhivayushchie faktory [Barriers Limiting Access to Quality Higher Education in the Context of the USE: Family and School as Constraining Factors.]. *Voprosy obrazovaniya / Educational Studies Moscow*, no 1, pp. 88–117.

Prakhov I., Yudkevich M., (2012) Vliyanie dokhoda domokhozyaystv na rezul'taty EGE i vybor vuza [Effect of Family Income on USE Performance and the Choice of University]. *Voprosy obrazovaniya / Educational Studies Moscow*, no 1, pp. 126–147.

Raftery A. E., Hout M. (1993) Maximally Maintained Inequality: Expansion, Reform, and Opportunity in Irish Education 1921–1975. *Sociology of Education*, vol. 66, no 1, pp. 41–62.

Roshchin S. Yu,, Rudakov V. N. (2016) Vliyanie "kachestva" vuza na zarabotnuyu platu vypusknikov [The Effect of University Quality on Graduates' Wages]. *Voprosy Ekonomiki*, no 8, pp. 74–95.

Solimano A. (2008) The Middle Class and the Development Process. CEPAL — Serie Macroeconomía del desarrollo no 65. Santiago, Chile: United Nations. Available at: https://repositorio.cepal.org/bitstream/handle/11362/5432/1/S0800297_en.pdf (accessed 2 April 2021).

Vishnevskaya N. T., Gimpelson V. E., Zudina A. A., Kapelyushnikov R. I., Luk'yanova A.L, Sharunina A. V. (2017) *Professii na rossiyskom rynke truda* [Professions on the Russian Labor Market]. Moscow: HSE.

Yastrebov G., Kosyakova Y., Kurakin D. (2018) Slipping Past the Test: Heterogeneos Effects of Social Background in the Context of Inconsistent Selection Mechanisms in Higher Education. *Sociology of Education*, vol. 91, no 3, pp. 224–241.