Expected return on education in Russia: empirical analysis

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According to human capital theory investment in education is carried out by agents on the basis of their expectations of possible costs and benefits of such a decision. Consequently, expected future earnings are among the most important factors of demand for higher education. In this paper we study the factors that influence expectations about future earnings of university entrants and their families. In our research we use results of a survey of college entrants' families carried out by Laboratory for Institutional Analysis of Economic Reforms, State University – Higher School of Economics (Moscow) in 16 largest cities of Russia. We show that expected earnings of university entrants are determined by a complex of variables, among which the most important are (a) family income, (b) education of parents, (c) types of institutions, in which respondents get their secondary education, (d) availability of preferred speciality (major) at chosen university, (e) perspectives of getting a well-paid job after graduation. We control for gender and territorial differences. Our research provides evidence that college entrants' expectations about future earnings in Russia are influenced by the effects of illusions, income and awareness. These effects are similar to those, disclosed by researchers in other countries.

1. Introduction

According to human capital theory earnings of each individual depend on investments in education, which in their turn are determined by rational estimation of costs and benefits connected with it (Becker, 1964). In other words, decisions about investments in human capital are taken by agents on the basis of their expectations concerning market returns to education. Thus, expected earnings can be considered as one of the main determinants of demand for education. This raises the question of factors forming these expectations. What are expected earnings determined by? Which characteristics of a university entrant and his/her social environment influence the estimation of expected returns to education? The answers to these questions help clarify a process of choosing the university, speciality and level of education by university entrants and their families. Manski (1993) claims that progress in this sphere of research can be achieved only if educational statistics data will be supplemented with the analysis of empirical data of the survey. This will help understand better causes of decision-making, factors of students' expectations and preferences and assess objectively returns to education.

Smith, Powell (1990) mention another two reasons why it is important to understand how the expectations of future earnings are formed. Firstly, expected earnings are very important for self-identification because students' earnings are less differentiated than that of middle-aged and elder people and returns to education become apparent only in a few years. That's why determination of their social status is for young people "is more a function of income expectations than it is of current income" (Coleman, Rainwater, 1978, p.247). Secondly, expected earnings influence significantly the origin of such phenomenon as overeducation. In most cases college students are unrealistic in their expectations about returns to education. This motivates them to enter universities

and increases the length of studies (the level of education), which can lead to variances between the needs of an employee and the requirements of an employer. Thus, an answer to the question how the expectations are formed and how realistic they are can reveal the reasons of existence of overeducation phenomenon.

The purpose of this paper is to study main social, economic, demographic and other factors that influence expectations about future earnings of university entrants and their families.

In the next part we present a brief overview of the main works based on this topic. In the third part we provide the data of the research, after that we describe methods of analysis. In the fifth part we reveal the results and their correlation with similar foreign researches. In the end we present the conclusions.

2. Theoretical and Empirical Background

In the early 1960s classics of human capital theory presented the idea that rational agents consider education not as consumer goods, but as long-term investments and their decision concerning this investment is based on the supposed size of future earnings (Shultz, 1962; Becker, 1964). However, by the late 1970s there were no direct proofs of this hypothesis. On the one hand, this could be linked to the fact that the economists are traditionally conservative and reluctantly include subjective information and the results of the survey in their analysis. On the other hand, questions about expected earnings were rarely included in the standard questionnaires of school-leavers and college students. Dominitz, Manski (1996) note that the lack of knowledge about this subject reflects the fact that "rather than collect data on student expectations, economists have preferred to impose assumptions" (p.2).

Approximately since the early 1980s (McMahon, Wagner, 1981) researchers have been actively using sociological data to analyze expected personal earnings, their correspondence with real income and to determine the factors of deviation[1]. In the work of Dominitz, Manski (1996) mentioned above, besides the analysis of expectations, much attention is paid to method of data collection. The authors raise the question how informative could be the subjective evaluations of respondents. The usage of interactive computer-assisted survey (CASI) with the possibility of future additional comments of the respondents (besides answers to the questions) allows to reveal more necessary information about expected earnings and their distribution. On the basis of these data the authors come to the conclusion that the results of the present survey demonstrate the inner logicality, consistency and "that respondents are willing and able to respond meaningfully to questions eliciting their earnings expectations in probabilistic form" (Dominitz, Manski 1996, p.1). The main conclusion of their research is as follows. Despite high variation in the forecasts of specific values, respondents in general are sure in positive returns to education and in increase of

[1] Brief overview of the main empirical works based on this topic is presented in Appendix 2.

their earnings between the ages of 30-40 years. Moreover, the respondents are uncertain about the possibility to predict their earnings and overestimate the spread in values compared to the real one.

Smith and Powell (1990) reveal the most important determinants of expected earnings on the basis of survey carried out among the students of two American universities: the income of parents influences the expectations positively, with increase in the level of parents' education expected earnings of students are decreasing. A higher university rating increases expected absolute earnings and make no influence on relative earnings (ratio of personal expected earnings to the earnings of fellow students). Gender differences also influence absolute earnings – men expect higher income than women 10 years after graduation. But gender differences are unimportant speaking about the ratio of personal earnings to the earnings of fellow students. The work of Betts (1996), which is based on the survey of 1,000 students from University of California (San Diego), confirms positive influence of parents' income and reveals the effect of awareness. Senior students expect lower earnings than junior students and their mistakes in evaluations (compared to the real figures) diminish as they continue to study. Moreover, students specialize in obtaining information about their future earnings in accordance with their major speciality and they invest more actively in information search in the final year at university. This effect is confirmed by the work of Wolter, Zbiden (2001), which is a part of the European project on estimation of returns to education (PURE)[2]. Gender differences also verify the results of the previous researches – women expect less return than men and tend to be more realistic in their estimations. Speciality and progress in studies are also significant variables. Students of humanities overestimate return on education, while economic, medical and engineering students are closer to the facts. Students with higher progress in studies expect higher returns. In the research of Brunello, et al. (2001), also based on a survey of European Universities' students, the effect of progress is filled up with effect of self-appraisal. Students with high appraisal of their progress, intending to finish the university on time, expect higher earnings and are more optimistic about their employment. At the same time, expected benefits of education on average are significantly higher than the real rate of returns.

The work of Webbing, Hartog (2004) besides determinants of expected earnings analyzes the real income of university graduates. The students from well-to-do families expect higher earnings, which can explain longer length of their education, but they earn as much as other students. Progress in studies has shown a positive influence not only on expectations, but also on real earnings (especially in humanities). Authors' main conclusion is as follows: the value of coefficients, which determine students' expectations are very close to that of determining the real earnings of graduates. Thus, the authors confirm conclusion of Dominitz, Manski (1996) that respondents are able to asses correctly their future earnings not only at the average, but also at the

[2] PURE project (Public Fundings and Private Returns to Education) was carried out in 1998-2000 with the aim to estimate returns to education in 15 European countries, to determine the influence of differences of university entry rules and financing systems between the countries in order to assess the optimal level of investments in human capital. To find out the results of this research click: www.etla.fi/pure/

individual level. However, the researchers are cautious to apply their results to the entire population, because distribution of those who refused to answer the question about future earnings (missings) is not fully random and it is determined by fixed variables.

A few Russian researches of returns to education have so far been concentrated on analysis of factual results of getting high education. In Nesterova, Sabiryanova (1998) based on the series of national surveys (database of about 500 characteristics, more than 10,000 people) confirms the hypothesis that deregulation of salaries and liberalization of labour market lead to significant growth of rate of return to education. Similar results were achieved in other papers about East European countries with transition economy (Flabbi, Paternosto, 2007; Strawinski, 2007). Moreover, the authors have created profiles "salary – age – level of education", which showed that average income of better-educated employees not only exceeds the income of less-educated employees, but it also increases much faster. At the same time the authors noticed significant reduction of returns to work experience and specific human capital, which was gained by the employees working at one company. This could be explained by high dynamics of changes, which Russian economy has undergone in the transition period. Experience and skills of planned system turned out to be less essential than flexibility and ability to adapt to changing environment. This hypothesis was proved by results of analysis rates of return depending on the type of the enterprise. In sector of public and privatized enterprises (which used to belong to the government) the rate of return to work experience is higher than to the other rates. However, in the young and fast-growing private sector return to work experience are less important than return to general education. Despite that authors assume that further development of the private sector will be accompanied by experience and specific human capital accumulation, which will presumably lead to increase of returns to them.

In work of Denisova, Kartseva (2005) studied for the first time return to education depending not only on its level, but also on obtained specialities. This research has revealed significant differences in returns to education according to gender and speciality. High returns to economics and law specialities, which were expected, were supplemented with high appeal of engineering and technical knowledge and this fact presents alternative ways of its application. A degree in engineering is a significant component of common knowledge, which is rewarded by labour market. High returns to economics and engineering specialities can be also explained by the fact that only people with good abilities and high productivity are study there. In this case market reacts to signaling (the degree) and rewards an employee for high productivity. This is partly proved by large contest to enter economic and law faculties and by the complicated program of studies in technical universities (departments). The difference is that in the first case it is difficult to enter and in the second case it is difficult to study. Thus, higher productivity is better-paid and with the promotion of market reforms the rate of return to educational investments increases considerably.

In work of Emtsov, Cnobloch, Mete (2006) assesses factual return to investment in nine countries with transition economy (Belorussia, Bulgaria, Georgia, Hungary, Moldavia, Poland, Romania, Russia and Tajikistan). The results of this research showed that the rate of return in transition countries is lower than in the developed countries but it grows steadily during the whole period of transition. Comparatively high return in the private sector are presented in the countries with the successful process of transition. Experience, obtained in the socialistic system is less valuable and young specialists can find a job easier than older generations. Nevertheless, the negative effect of "old-school" skills and gender distinctions in earnings are not that considerable to explain the differences in the rates of return in the transition economies. Major part of thr differences is explained by intensity of market reforms and institutional conditions of labor market.

Thus, the conclusions of Russian researchers concerning the changes in rates of return to education mainly prove basic concepts of human capital theory and correspond to the results of empirical research of return to education in other transition economies.

3. Data Description

Our data are based on survey of Russian university entrants' families, that was developed by the Laboratory for Institutional Analysis of Economic Reforms, State University – High School of Economics.[3] The survey was carried out in spring 2008 in 16 cities of Russia with the population of over 800 thousand people. Both university entrants and their parents took part in the survey. Interviewers questioned senior pupils and their parents separately in accordance with previously prepared questionnaires. The peculiarity of this excerption is that the survey covers the families, whose children are planning to enter the university this year. The questions in the questionnaires were distributed between parents and senior pupils in accordance with their contents. The data obtained from the respondents from different cities were weighed. The weight of observations was calculated proportionate to the number of secondary school leavers in the present city in 2005. Territorial characteristics of the excerption are presented in Table 1.

Table 1.

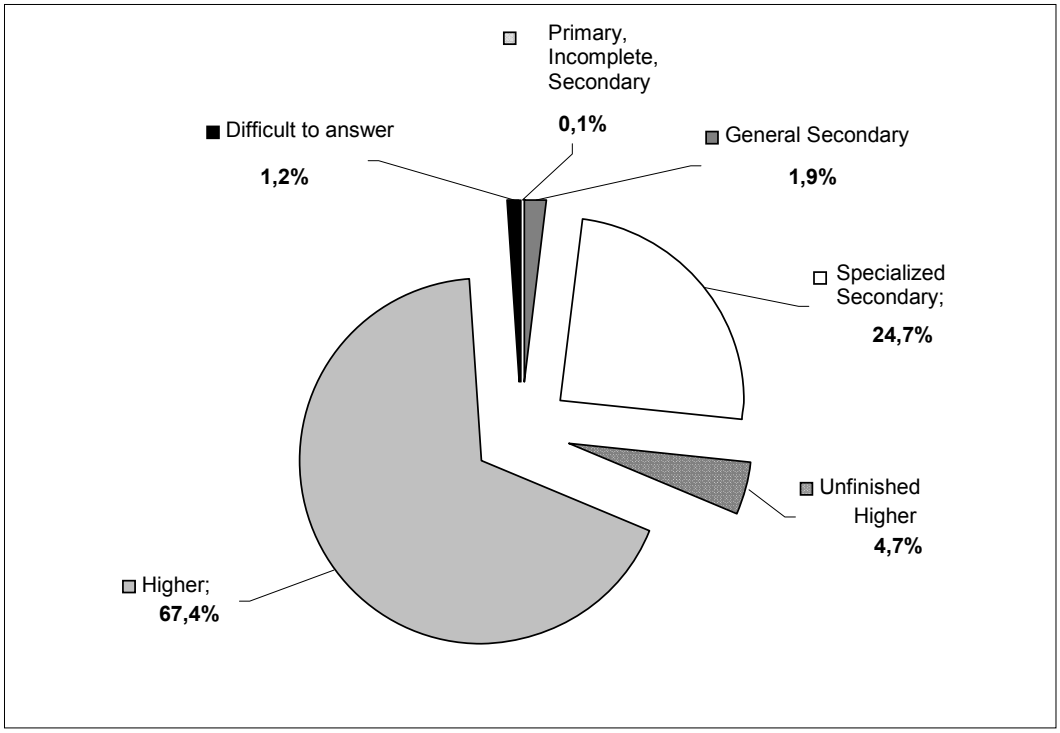
Territorial Characteristics of the Excerption

City	Quantity of families (people)	Percentage of families (%)
Volgograd	56	3,5
Voronezh	50	3,1
Yekaterinburg	68	4,3
Kazan	68	4,2

[3] For more detailed results of the survey and analysis of the answers of entrants and their parents see G.V. Androushchak, I.A. Prakhov, M.M. Yudkevich Strategies of Choosing and Preparation to Enter the University. Informational Bulletin. Moscow: Vershina.2008 (Андрущак Г.В., Прахов И.А., Юдкевич М.М. Стратегии выбора высшего учебного заведения и подготовки к поступлению в вуз. Информационный бюллетень. М.: Вершина. 2008).

Krasnoyarsk	56	3,5
Moscow	497	31,1
Nizhniy Novgorod	73	4,6
Novosibirsk	79	4,9
Omsk	68	4,3
Perm	58	3,6
Rostov-on-Don	56	3,5
Samara	64	4,0
St. Petersburg	233	14,6
Saratov	47	3,0
Ufa	64	4,0
Chelyabinsk	63	4,0
Total	**1601**	**100,0**

Main social-demographic characteristics of the respondents besides place of residence should include education, income, type of secondary educational institution, where a university entrant studies. Highest level of education – higher education – is demonstrated by 67% of respondents. Almost a quarter of respondents has specialized secondary education as the highest level of education in their families. So the total share of respondents with specialized secondary and high education makes up 92%.

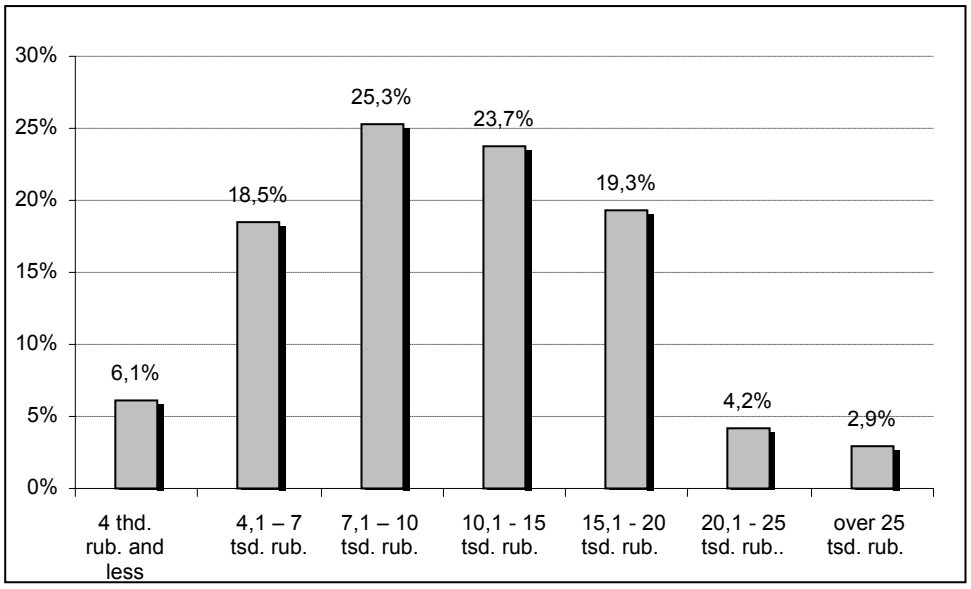


Picture 1. The highest level of education in a family

Majority of families (48,5%) belongs to the middle-income group. It means they have enough money to buy food, clothing, household appliances, but buying a car or expensive vacation seems to be a serious burden for family' budget and they can't afford it.[4] Significant share of respondents

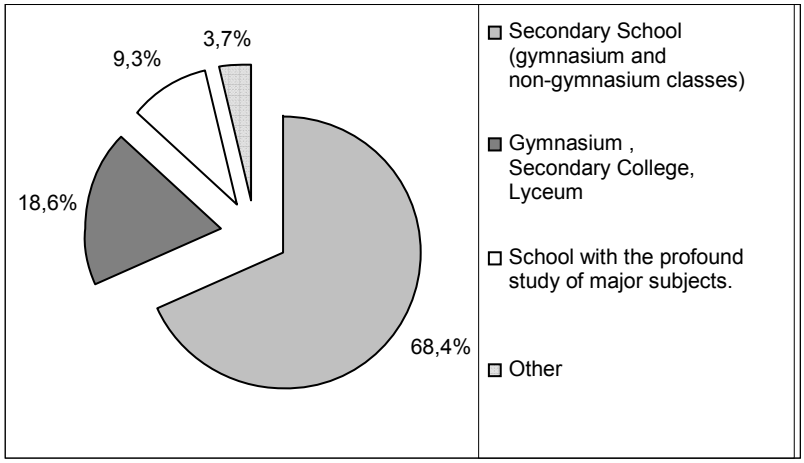
[4] When creating the variety of answers we didn't take into account the answer "difficult to say", about 6% of families gave this answer. The distribution is standardized, only families that have chosen answers 1-6 are presented in the chart.

consider they belong to the category of families that have enough money for food and clothing, but in order to buy expensive long-term goods they have to get into debts. If we collect the answers of the lowest-income groups, we will find out that on average 11% of families limit their expenses. Differences in the income are considerable. For example, half of the respondents in Moscow said that the average income per capita in their family makes up 15,000-20,000 rubles a month, whereas in Volgograd this figure makes up 10,000-14,999 rubles. Picture 2 presents summary income data of the households that took part in the survey.



Picture 2. Households' Income Distribution

The most widespread way of getting secondary education is to study at secondary schools (about 68% of respondents consider so). This is followed by education in gymnasium, secondary college or lyceum (about 19% of respondents) and by schools with the profound study of major subjects (9%).



Picture 3. Types of Educational Institutions

Besides collecting general social-demographic data, one of the tasks of the survey was to find out preferences of the respondents concerning the choice of educational institution, speciality, the

aim of getting higher education. That's why questionnaires of senior pupils contain groups of questions concerning reasons of entering a university and criteria for choosing it, school studies, and methods of preparation to enter universities. Moreover, the choice between different strategies of preparation for university entrance (individual preparation, access course, tutors, etc.) was considered. The questionnaires for parents include groups of questions about financial support of preparation, ability to finance university studies in the future, and also there are questions concerning a choice of educational institutions and ways of preparation to enter universities. Duplication of these questions is essential because of the task to take into account a differences in parents' and children's expectations of values of higher education.

4. Methodology

The most widespread method of estimation private return on education is the earnings function method (Psacharopoulos, 1995), which describes the dependence of a person's earnings on his/her level of education, seniority, number of hours worked and other factors. This method is also known as the Mincer's method (Mincer, 1974) who was one of the first to apply the concept of human capital for empirical estimation of return on education. In Mincer's equation earnings of an individual are seen as a dependent variable and are presented in the logarithmic form. Similar methods are used to estimate expected benefits from education (Smith, Powell, 1990; Wolter, Zbiden, 2001; Brunello, et al.,2001).

Taking this experience into account we use two variables to analyze the determinants of expected earnings:

1. Natural logarithm of expected earnings after graduation (*L-EXP)*;

2. Natural logarithm of ratio of expected earnings after university to expected earnings after finishing school (*L-RET)*.

The list of independent variables and their measurements based on the results of parents' and children's survey data is presented in Appendix 1 (Table 1).

Thus, the analysis of expected benefits from education was carried out using two econometric models:

$$L\text{-}EXP = \beta_0 + \beta_1\ ln\mathrm{W} + \beta_2\ x_2\ + \beta_3\ x_3 + \ldots + \beta_n\ x_n\ ;$$

$$L\text{-}RET = \beta_0 + \beta_1\ ln\mathrm{W} + \beta_2\ x_2\ + \beta_3\ x_3 + \ldots + \beta_n\ x_n\ ;$$

in which lnW is the logarithm of income per family member,

$x_2 \ldots x_n$ - other dummy-variables.

The regression analysis results are presented in Appendix 1 (Table 2).

5. Results

5.1. Parents' Education

Earnings' expectations after graduation turned out to be negatively dependent on level of parents' education. Parents with higher educational level expect lower earnings than families, in which parents' education doesn't exceed specialized secondary education. Probably this result is due to the "illusion effect": parents who didn't get higher education expect more from it for their children. This hypothesis is confirmed by the results of cross-tables analysis. In families with higher level of education parents have formed their decision about preferred university, consider particular speciality as a priority for their children and much less of them purposes to get a higher education as it is regardless any particular university or speciality. In these families children more often attend access course at the chosen university and preparing for entrance with private tutors. In families with specialized secondary and lower levels of education, on the contrary, children prepare for university exams individually or at schools. They are less aware of the questions for entrance examinations. 28% of respondents from families with specialized secondary education and 36,5% respondents from families with higher education claim that they are familiar with the questions for entrance exams on all subjects (Table 3.1., Appendix 1). 27,1 % of respondents from the families with specialized secondary education and only 18% of respondents with high education are totally unfamiliar with the possible questions. The illusion effect at a lower level is also revealed in the research of Webbing, Hartog (2004). Low educational level of parents leads to overestimation of expected earnings by the students and it doesn't influence at real earnings after finishing college.

5.2. Type of secondary educational institution

Type of secondary educational institution, in which a university entrant studies, influences greatly the expectations of earnings. Pupils of ordinary (non-gymnasium) classes of secondary schools expect relatively higher earnings than the pupils of gymnasiums and specialized colleges. This can be explained by lower level of awareness: pupils of non-gymnasium classes are worse informed about the questions of entrance examinations – only 30% of them know some questions on all the subjects, while in gymnasiums and colleges this figure makes up 40-45% (Table 3.2., Appendix 1); 23% of non-gymnasium pupils are not aware of the questions for entrance examinations, while in gymnasiums this figure doesn't exceed 8%.

Participation in school and university contests can prove that the students are more involved in the process of education and consequently, they are better-informed. The most active are pupils of colleges and lyceums (45,7% of them took part in school contests and 22,9% - in university contests) as well as of gymnasiums (41,3% and 6,7% correspondingly). The highest percentage of non-participants in school and university contests belongs to the pupils of non-gymnasium classes of secondary schools (almost 55%). The most part of the participants of the contests, who passed on

to the next round and won prizes are the pupils of lyceums and colleges (17,1% and 25,7% correspondingly). This figure is much higher than among pupils of secondary schools (8,2% and 12,7%). About 10% of lyceum and college pupils and only 2% of secondary school pupils were recommended for the university enrolment on the results of such contests.

Approximately 80% of the pupils of specialized colleges (lyceums) and 65,7% of the pupils of secondary colleges (lyceums) have taken a decision concerning which university to enter by the time of the survey. This figure for secondary school pupils doesn't exceed 55%. The situation is similar with open house days at universities – 77% of lyceum pupils and 64% of secondary school pupils were present at these events.

The connection with the family income level is noticeable. With the growth of income per family member the share of pupils in ordinary classes of secondary schools decreases and consequently the share of pupils of gymnasiums and gymnasium classes rises (Table 3.3., Appendix 1).

5.3. Family income

Family income influences greatly and positively the expectations of respondents. On average one thousand rubles increase per family member leads to 27,5% earnings increase of the expected earnings after graduation[5]. Smith and Powell (1990) got similar results during the survey of students of two universities of the Mid West of the USA. With $1,000 increase of income per family member the expectations concerning personal income of students in 10 years time increase by $268. The work of Betts (1996) showed that students from the families with the income of less than $50,000 expect lower returns, than from the families with the income of $75,000. Streufert (1991) explains this effect by the influence of the social environment – the students base their expectations on the income of people surrounding them. Partly the social environment effect can be proved by comparing mean figures from our survey. In groups, where more than half of the fellows intend to enter a university, mean expected earnings 15% higher than in classes, where only several pupils have such a plan. (Table 3.4., Appendix 1).

5.4. Speciality

Choice of the speciality also influences the expectations of return to education. Those willing to get a law specialization expect to earn 20% more after graduation than the representatives of

[5] The figures in the text differ from that of in the Table 2 because the effects of the significant variables were calculated in accordance with the formula (e^D - 1)*100%, in which D – is the coefficient in the equation. See L. Belokonnaya, V. Gimpelson et al. Salary Formation: View through the Prism of Profession// Preprint WP3/2007/05 – Moscow: State University – High School of Economics, 2007, p.44 (Л.Белоконная, В.Гимпельсон et al.Формирование заработной платы: взгляд через «призму» профессии // Препринт WP3/2007/05 – М.:ГУ-ВШЭ, 2007, 44 с) and Halvorsen R., Palmquist R. The Interpretation of Dummy Variables in Selilogarithmic Equations // American Economic Review. 1980/ Vol.70.

other specialities. The same group of respondents expects highest returns to education – expected earnings after university graduation are 47% higher than expected earnings after finishing school. This effect is closely linked to the peculiarities of lawyers' income and also could be seen in the research of Webbing, Hartog (2004) – students of this profession expect and earn more that their fellow students of humanities faculties.

5.5. University characteristics and entrance priorities

Education fee turned out to be insignificant in the regression equation. Apparently this reflects the intention of respondents to enter budgetary financed departments of universities, which is confirmed by cross tables (Table 3.5). Fee for education isn't an important characteristic of the university for 79% of students entering budgetary financed departments. Among those entering commercial departments only 66,7% consider this unimportant. Main determinants of expected earnings from university characteristics are availability of the chosen speciality and possibility to find a well-paid job after graduation. Typically, when explaining expected return to education (dependent variable *L-RET*) coefficients by these variables turned out to be even higher. Moreover, the number of respondents who consider chosen speciality an important university characteristic, is equally high for all specialities including law and economics (specialities with the highest expected returns).

As for entering priorities respondents were offered the following options: 1) it is important to enter a particular university regardless speciality; 2) a particular speciality at any university; 3) a particular speciality at a particular university and 4) higher education as it is regardless any particular speciality or university. A willingness to get higher education regardless any particular university or speciality was significant and negatively linked to expected income. Among respondents who gave this answer there was the lowest number of A-pupils (1,4%). On the contrary, the group with the priority to enter a particular speciality at a particular university included the largest number of A-pupils (7,1%). Taking into account that the variable "progress in studies at school" also turned out to be negatively linked to expected earnings it is possible to speak about effect of progress – less progressive university entrants expect higher earnings.

5.6. University entrance preparation and cultural capital.

Tutor preparation influences positively on earnings expectations. Such families suppose that their children will earn 12% more after graduation. This result corresponds to human capital theory: people intend to compensate larger investments in education with higher earnings.

Link between expected earnings and cultural capital became visible through the variable "reading in addition to school home tasks". In the families that expect comparatively higher returns

to education, children read more fiction and specialized literature. Major part of these children studies at musical and art schools, attends sports and other clubs.

5.7. Gender differences

Results of this analysis as well as of many other similar researches show that gender differences are rather significant. Expected earnings right after graduation of male respondents are 16% higher. The work of Webbing, Hartog (2004) shows that women expect 5% lower earnings and in fact get 6% lower. In general female expectations are more realistic than male. The work of Brunello, et al. (2001) finds out that women expect not only lower income after graduation, but also lower increasing rates in the next 10 years. Blau, Ferber (1991) concentrated their research on the reasons of gender differences in expectations and they found out that women plan shorter terms of employment for themselves and consequently less returns to specific human capital (work experience at one place of employment).

6. Conclusions

The research based on the survey of university entrants and their parents showed that expected earnings of respondents are determined by quite a number of factors. The most important determinants of expected earnings are (a) family income, (b) parents education, (c) type of the educational institution, in which respondents get secondary education, (d) availability of the chosen speciality, (e) perspectives of getting well-paid job after graduation, as well as gender and territorial differences. The results of the regression analysis confirmed some of the effects found out during similar foreign researches. Thus, the effect of illusion or overestimation of expected earnings by the families with low income level, which was described on the work of Webbing, Hartog (2004), has been confirmed. Significant positive effect of a family income explained in the works of Smith, Powell (1990) and Betts (1996) has also been proved by Russian research data. Gender differences concerning expected earnings are similar to conclusions made by Brunello, et al. (2001) and Blau, Ferber (1991) that female respondents expect lower income after graduation and less return to education. The nature of the survey doesn't allow us to confirm directly the effect of awareness revealed by Betts (1996), which demonstrates that senior students expect lower income compared to junior students and the mistakes in their estimations become insignificant as they study. However, the significance of the type of educational institution could be indirect proof of these conclusions because it is closely connected with students' awareness of entrance examinations and their participation in school and university contests. A number of other significant factors of expected earnings such as characteristics of the chosen university, entrance preparation strategy and cultural capital has been found out in the course of the present research.

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Appendix 1

Table 1. List of independent variables based on parents' and children's survey

Parents		Children	
Question	**measure**	**Question**	**measure**
The highest level of education in a family	dummy	Sex	dummy
Size of a family	quantity	Class specialization (major)	dummy
Type of secondary educational institution	dummy	Time (average) to reach school?	minutes
Family income	rubles	The reasons you decide to inter university?	dummy
Do you decisided to enter a particular university?	dummy	Studies at musical and art schools, attending sports and other clubs	dummy
Most important university characteristics for you	dummy	Reading in addition to school home tasks	dummy
What is more important for you: to inter in particular university of particular speciatily?	dummy	Specialization after graduation (university diploma)	dummy
Budget or commercial department?	dummy	Progress (in studies) at school	rate from 1 to 5
Education costs	rubles	Time (average) to make homework	hours
Burden on family budget. How strong?	dummy	Additional studies at school	dummy
Does your child take a preliminary courses at college?	dummy	Time (average) to additional studies at school	hours
Does your child take a courses private tutor?	dummy	Participation in school and university contests	dummy
Parents' age	years	Results of school and university contests	dummy
Both parents live with a child. Yes/No	dummy	Do you chosen a university you wish to enter	dummy
		Preparation to entering university	dummy
		How do you estimate your knowledge relative to others as a result of additional studies at school?	dummy

Table 2. OLS regression results

Independent variables	Dependent variables			
	Log Income Expectations L-EXP		Log Ratio L-RET	
Variable name	Coeff.	P>|t|	Coeff.	P>|t|
Education level in family: secondary	-0,4907	0,0600	-	-
Education level in family: specialized secondary	-0,3728	0,0090	-	-
Education level in family: higher	-0,4032	0,0030	-	-
Size of a family	0,0911	0,0020	-	-
Secondary school, gymnasium class	-	-	0,7052	0,0140
Secondary school, non-gymnasium class	0,1873	0,0020	1,0343	0,0000
Gumnasium	-	-	0,8180	0,0030
Log family income	0,2387	0,0000	-	-
Parents' choice: particular university	-	-	-	-
Parents' choise: several universities	-	-	-	-
Univer. characteristics: location	-	-	-	-
Univer. charact: availability of preferred speciality	0,1853	0,0030	0,3134	0,0010
Univer. charact: well-paid job after graduation	0,2238	0,0000	0,2971	0,0020
Priorities: particular university and speciality	-	-	-	-
Priorities: higher education	-0,1742	0,0720	-	-
Burden on family budget: appreciable	-	-	-	-
Burden on family budget: acceptable	-	-	-	-
Burden on family budget: unnoticeable	-	-	-	-
Courses with private tutor	-	-	0,1881	0,0290
Parents' age	-	-	-	-
Child's sex	0,1476	0,0220	-	-
Time to reach school	-0,0195	0,0060	-0,0285	0,0140
Time to reach home	0,0151	0,0030	0,0213	0,0130
Reasons to enter:	-	-	-	-
Reasons to enter: change the location	-	-	0,6175	0,0300
Reasons to enter: family tradition	-	-	-0,3216	0,0960
Reasons to enter: not to inter military service	0,2636	0,0770	0,4180	0,0500
Учеба помимо школы: art school	-	-	-	-
Учеба помимо школы: others	-	-	-0,3013	0,0510
Reading in addition: poetry	0,1885	0,0430	-	-
Preferred speciality: law	0,1892	0,0660	0,3895	0,0080
Progress (in studies) at school	-0,0719	0,0490	-0,0968	0,0540
Childrens' choise: several universities	-	-	-0,2856	0,0010
Preparing to entrance: with tutor	0,1173	0,0380	-	-
Preparing to entrance: in school	-	-	-0,2188	0,0410
Preparing to entrance: self-reliant	-	-	0,1670	0,0700
Self-rating (additional studies at school): upper middle	-	-	-	-
Krasnoyarsk	-0,5763	0,0000	-1,5763	0,0000
Rostov-on-Don	-0,2549	0,0900	-1,0728	0,0000
Novosibirsk	-	-	-1,0095	0,0000
Moscow	-	-	-1,1739	0,0000
Chelyabinsk	-0,3116	0,0130	-1,2964	0,0000
Omsk	0,2742	0,0020	-	-
Yekaterinburg	-	-	-1,0040	0,0000
Samara	-0,2386	0,0180	-0,8852	0,0000
Volgograd	-0,5908	0,0000	-1,1901	0,0000
Saratov	-0,6276	0,0000	-1,0318	0,0000
Kazan	-0,5514	0,0090	-1,1388	0,0010
Perm	-	-	-0,9228	0,0000
Saint-Petersburg	-	-	-1,1589	0,0000
Const.	7,5098	0,0000	0,7903	0,0080
R-square	0,4913		0,4524	
R-square corrected	0,4383		0,3718	
Number of observations	266		227	

3. Cross-tables

Table 3.1. Education level and awareness about the entrance examination questions

		1. Yes, approximately I know entrance examination questions for all subjects		
		No	Yes	Total
Highest educational level in your family	Higher	63,5%	36,5%	100,0%
	Unfinished Higher	75,6%	24,4%	100,0%
	Secondary Specialized	72,0%	28,0%	100,0%
	Secondary general	70,0%	30,0%	100,0%
	Primary, Incomplete, Secondary	100,0%		100,0%

Table 3.2. Type of secondary educational institution and awareness about the entrance examination questions

		1. Yes, approximately I know entrance examination questions for all subjects		
		No	Yes	Total
Type of secondary educational institution	Specialized College, Lyceum	60,0%	40,0%	100,0%
	School with the profound study of major subjects	77,4%	22,6%	100,0%
	Secondary College	45,7%	54,3%	100,0%
	Gymnasia	60,0%	40,0%	100,0%
	Secondary School (gymnasium classes)	56,0%	44,0%	100,0%
	Secondary School (non-gymnasium classes)	69,9%	30,1%	100,0%

Table 3.3. Income distribution and type of secondary educational institution

Income per person, rubles	Type of secondary educational institution								
	Secondary School (non-gymnasium classes)	Secondary School (gymnasium classes)	Gymnasia	Secondary College	School with the profound study of major subjects	Specialized College, Lyceum	Other	No answer	**Total**
	139	20	51	8	33	4	4	5	**264**
100 - 3 000	52,7%	7,6%	19,3%	3,0%	12,5%	1,5%	1,5%	1,9%	**100,0%**
	114	14	15	5	24	5	4	0	**181**
3 500 - 5 000	63,0%	7,7%	8,3%	2,8%	13,3%	2,8%	2,2%	0,0%	**100,0%**
	75	5	14	7	17	5	1	2	**126**
5 500 - 7 000	59,5%	4,0%	11,1%	5,6%	13,5%	4,0%	0,8%	1,6%	**100,0%**
	87	15	31	8	25	4	2	0	**172**
7 500 – 10 000	50,6%	8,7%	18,0%	4,7%	14,5%	2,3%	1,2%	0,0%	**100,0%**
	43	11	18	5	10	0	0	0	**87**
11 000 - 15 000	49,4%	12,6%	20,7%	5,7%	11,5%	0,0%	0,0%	0,0%	**100,0%**
	18	7	7	0	5	1	0	0	**38**
17 000 - 20 000	47,4%	18,4%	18,4%	0,0%	13,2%	2,6%	0,0%	0,0%	**100,0%**
	12	3	9	2	1	1	0	0	**28**
25 000 - 50 000	42,9%	10,7%	32,1%	7,1%	3,6%	3,6%	0,0%	0,0%	**100,0%**
Total	**488**	**75**	**145**	**35**	**115**	**20**	**11**	**7**	**896**

Table 3.4. Mean expect earning after graduation and social enviroment

Do your fellows intend to enter a university?	Mean expect earnings	Number of observations	Standard deviation
Yes, more than half a class	11 002,81	674	11 160,595
Yes, from 25 to 50 per cent	14 039,31	126	13 176,351
No, only few of them intend to enter a university	9 545,06	33	8 990,279
No answer	6 119,31	35	8 953,773
Total	11 191,26	868	11 410,253

Table 3.5. Education costs and financing the education (budgetary or commercial)

		Education costs		Total
		Unimportant	Important	
На какое место – бюджетное или коммерческое – Ваш ребенок будет подавать документы в первую очередь?	Budgetary	78,9%	21,1%	100,0%
	Commercial	66,7%	33,3%	100,0%
	No answer	83,0%	17,0%	100,0%
Total		76,6%	23,4%	100,0%