

THE SHORT-TERM WAGE GROWTH RATE AFTER UNEMPLOYMENT: THE CASE OF
UNEMPLOYMENT IN RUSSIA

by

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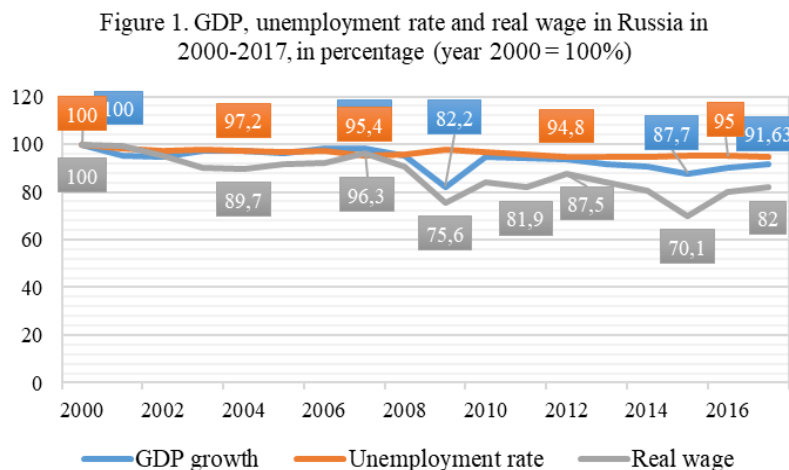
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Abstract

There is plenty of research that reveals that unemployment causes a negative effect on reemployment outcomes, especially there is a wage fall after unemployment. This research is different from others in that it aims to find the effect of unemployment duration on the short-term wage growth rate when a person becomes reemployed, focusing on two groups: people who had at least one-year work experience and people who were students before unemployment. The individual-level cross-sectional data from a 2004-2018 Russian Longitudinal Monitoring Survey is used to conduct this research. Overall, one year of unemployment decreases wage growth rates by 10.8%.

Introduction

The prominent feature of the Russian labor market is the relative permanence of fairly high unemployment rates despite the GDP growth (Kapelyushnikov, Kuznetsov, and Kuznetsova 2012). Generally, in Russia, there have been no severe issues regarding the fluctuations of the unemployment rate as the rates remained constant over time (World Bank 2018b). From 1991 to 2018 the unemployment rate has not been responsive to the constant GDP fall in the 1990s and the moderate fall of GDP in 2008-2009 (World Bank 2018a). However, such stable unemployment is obtained because of wage fluctuations (Gimpelson 2017). According to Figure 1, when there is economic growth or downturn, the wages, consequently, rose or fell. This wage volatility has been a major concern in



Source: GDP and unemployment rate (World Bank, 2018), Real wage (Rosstat, 2018)

the Russian labor market.

From the individual point of view, unemployment can have a significant effect in explaining the individual changes of post-unemployment outcomes. The

most vivid example is its prevalently negative effect on wages (Arulampalam 2001). There is a large number of studies that examine unemployment from different perspectives in labor

economics (Kroft, Lange, and Notowidigdo 2013; Dieckhoff 2011; D. T. Mortensen and Pissarides 1994; Dale T. Mortensen 1986; Kahn and Low 1982). Nevertheless, the amount of quality research done on Russia, as well as on the wage transformation several years after the unemployment ends, is scarce.

This research studies the effect of unemployment duration on the short-term wage growth rate during the reemployment period among two groups: people with at least one year of work experience before unemployment and people who were students before unemployment. For this I use the individual-level cross-sectional data from the 2004-2018 Russian Longitudinal Monitoring Survey.

The next section presents theoretical and empirical findings of research conducted on unemployment factors and post-unemployment effects. The unemployment duration and wage effects are briefly mentioned there. Then, I describe the information about the data source, sample selection procedure, descriptive statistics and the econometric model in the data and methodology part. The main findings of the effects on the wage rate in the results and the discussion parts follow. The research ends with a conclusion where I summarize the main findings and provide limitations and lines for further research.

Literature review

Not all people can have work experience without any employment gaps. Unemployment leaves a scarring effect on further reemployment outcomes depending on the duration, causes, and type of unemployment.

According to human capital theory (Becker 1994), people invest in themselves, for instance, in education for obtaining returns in the form of better employment opportunities, while unemployment is associated with the devaluation of the human capital (Hamermesh 1987). Certain skills and knowledge of unemployed people might be forgotten or irrelevant in further work.

Not only does unemployment have negative consequences in the form of skills and knowledge reduction, but also unemployment can signal the inefficiency of an unemployed person for potential employers (Winter-Ebmer 1991). The outcomes of the job search while being employed and unemployed are different. Being employed during the job search is associated with greater returns (Black 1980). In other words, when a person has a job and knows there are possibilities to earn more income at another job, this person might act upon becoming unemployed to find a better job fit. When the occupation status is reverse, the probability to find a better job decreases. The longer unemployment lasts, the fewer chances individuals have to get to the interview stage (Kroft, Lange, and Notowidigdo 2013). It leads to a more challenging and prolonged job search. Thus, due to the costs of finding a job and financial losses during the unemployment period, no rational person can stay at the stage of job search for a very long time.

In consequence, wage decrease happens due to long unemployment duration, in addition to the low wage level at the previous work (Quintini and Venn 2013). Unemployed people are more likely to agree to lower-paid work after a certain period of joblessness (Dale T. Mortensen 1986). Empirically, it was found that a spell of unemployment results in a 6% fall in wages in the UK. If unemployment lasts three years, the next wage decreases by 14% in comparison to the past employment wage (Arulampalam 2001). In France and the USA, the monthly wage fall is 9% and 8-16% several years after displacement, respectively (Quintitni and Venn 2013). Generally, being unemployed is not totally under the control of an individual. There is the asymmetry of information in the labor market as well as signaling unproductivity among job searchers for potential employers. It results in the minimization of unemployment duration and wage decline during reemployment.

There are many studies made on the effect of unemployment on different outcomes of pre- and post-unemployment. However, the effect of unemployment on short-term or long-term reemployment wages is not well studied. There are several references mentioned in research related to this issue.

For displacement cases the wage growth rate diminishes over time in the US, the UK, and Nordic countries, while in Germany and Portugal considerable changes in wage growth rates remain during five years after displacement (Quintini and Venn 2013). Additionally, in Germany the decrease in wage by 3.4 % is due to unemployment. This trend persists during the following four years of reemployment (Burda and Mertnes 2001). Next, among white male workers who were laid off, the wage growth rate decreases by 1.5% for each 10% rise in the unemployment

period and this was positively correlated with the average working hours (Seninger 1997). Moreover, a special job-search workshop conducted during a randomized experiment did not affect on the wage growth rate. Compared to males, females worked less hours, had lower wages and lower wage growth rate during reemployment for consecutive two years following the workshop (Vinokur et al. 2000).

In many countries there are unemployment benefits which are given to people who are unemployed for more than one month. The period of receiving these benefits lasts from several months to several years depending on the country. The duration of unemployment benefits changes the post-employment outcomes. The longer the unemployment benefit lasts the higher probability to get higher wage and remain unemployed. Since unemployed people who receive unemployment benefits have some time to find a better job, they can find a better-paid job and, consequently, stay at chosen work for a longer period than those whose benefits last shorter (Caliendo, Tatsiramos, and Uhlendorff 2013; Gangl 2004).

In Russia the unemployment benefit is relatively small compared to the average wage. In 2004 the range of minimum and maximum monthly unemployment benefits was 720-4900 rubles which then steadily increased to 2880-4900 rubles by 2018 (Sobranie zakonodatel'stva Rossiiskoi Federatsii 1991). Among the unemployed Russian population who are eligible to receive unemployment benefit, only 20-25 % receives the benefit. It is explained in part by the great amount of unofficial employment (Quintini and Venn 2011). Amount of unemployment benefits does not play a role in the choice to exit unemployment (Nivorozhkin 2006). Therefore,

in Russia the unemployment duration can last not because of receiving unemployment benefit, but probably because of the inability to find work or having an unofficial job.

As the focus of this research is to analyze two groups: people with work experience and people who were students before unemployment, it is necessary to refer to age and experience as a determinant factor of unemployment outcomes.

People with at least one year of experience can find a job more easily than people without experience (Karceva 2002). Fresh graduates are prone to have difficulties in finding a job because of not having professional experience. However, it was empirically found that strong academic performance, special work training and internship can facilitate entry into the labor market for university graduates (Borra, Gómez-García, and Salas-Velasco 2009, 1487). Therefore, those who make an effort to become employed can successfully be offered a job. In Russia, the youth unemployment rate was greater compared to the total unemployment rate in 2000-2009 (Demidova and Signorelli 2012, 204). It means that there are difficulties for young people in Russia to find employment and enter the labor market.

Comparing the youngest and the oldest population, it was empirically found that being older leads to a longer unemployment spell in Russia (Karceva 2002). For the youngest it is easier to find work; however, future employment is not as stable as among the oldest population (Quintini and Venn 2013). Moreover, it was found that young unemployed males can find a job where they can earn 10% more income comparing to the previous job (Kahn and Low 1982). This means the job search while being unemployed gives more probability to have more job

offers among the young population who seek to maximize their earnings. Thus, young people can have better-paid reemployment chances rather than the oldest population.

Moreover, not only do endogenous factors affect the probability of finding a job for young people, long-term labor market conditions such as unemployment rates can also play a significant role in unemployment. Rise of the unemployment rate by 1% during the pre-employment period (16-24 years old) can result in an increase of unemployment rate by 0.14 % during the first labor market entry period (25-29 years old) and 0.03% in the consecutive employment period (30-34 years old) among 20 OECD countries (Kawaguchi and Murao 2014, 113). In other words, the unemployment rate during a young age can have a scarring effect on future employment opportunities.

There can be gender differences in unemployment rates and spells as well. In Russia, for women, one additional year of unemployment leads to 2% less reemployment probability while men experience a 4 % fall in reemployment probability (Nivorozhkin 2006; Karceva 2002). However, in Turkey there is a lower probability to find work for women. This difference in Turkey decreases with having better education and a higher age for both genders (Tansel and Taşçi 2010). For men and women in Russia, it is important to have higher education to be reemployed as well (Karceva 2002)

Besides, the unemployment duration is also determined by marital status and number of children. Regarding the duration in the Czech Republic, Slovakia, and Russia, married men tend to have lower unemployment periods than unmarried ones (Ham, Svejnar, and Terrell 1998) (Karceva 2002). It might occur because having a partner or a family can encourage men to find a

job quicker to provide for his family. Then, married men have better chances to leave unemployment compared with married women in Turkey (Tansel and Taşçi 2010). Further, married women tend to reemploy slower than unmarried ones (Karceva 2002). The number of children positively impact on unemployment duration. Among women having two children decreases reemployment probability by 28% compared with having one child. For men having children positively affects the reemployment chances (Karceva 2002).

Unemployment can have a stigma effect on work conditions during reemployment. In four European countries: Austria, Spain, the UK and Denmark unemployment leads to having worse work contracts and a higher probability to experience further unstable employment patterns in the future (Dieckhoff 2011). It also should be noted that long unemployment may also have permanent negative psychological consequences (Clark, Georgellis, and Sanfey 2001). Even though the results are related to non-monetary aspects of job conditions such as job security, authority, and contract satisfaction and psychological state of individuals, which will not be used in this research, it still supports the results of previous research on unemployment scarring effects.

From these studies I expect unemployment is going to have prevalently negative reemployment outcomes, and an especially negative effect on the wage growth rates or at least the effect will remain unchanged. The focus of the research is to find to what extent the unemployment duration has an impact on the short-term wage growth rate after unemployment among the Russian population in 2004-2018.

Data & methodology

For the analysis I use individual micro panel data from the 2004-2018 Russia Longitudinal Monitoring Survey - Higher School of Economics (RLMS-HSE) to construct cross-sectional data. The RLMS-HSE is a set of ongoing nationally representative surveys that have been recording economic, social, political, and health issues of the population of Russia since 1992. The RLMS-HSE was conducted by the National Research University Higher School of Economics and ZAO “Demoscope” together with the Carolina Population Center, the University of North Carolina at Chapel Hill and the Federal Center of Theoretical and Applied Sociology of the Russian Academy of Sciences. The collected data include individual information on demographic factors, employment, and job characteristics.

I selected a sample of 1027 individuals. To maximize the number of observations I took the data starting from 2004. The data of the 2004-2018 period avoids the 1993 recession, but the results may include the shock of the 2008 crisis (World Bank 2018).

The sample includes 18-59 years old individuals who experienced at least one year of unemployment, where rehired and worked for two consecutive years. I analyzed two groups: “previously employed” and “students”. “Previously employed” is a group of people who had at least one year of work experience before unemployment. “Students” is a group of people who studied before unemployment.

Figure 2 illustrates an example of the sample selection. Suppose a person A and a person B worked for three years and a person C was a student since 2004. Then in 2007 person A lost his job, person C graduated from university and they both become unemployed. After two years of

unemployment, they find a job and begin to work in 2009. During the period of unemployment experienced by person A and person C, person B was constantly employed. Then, for this research I would select person A for the “previously employed” group and person C for the “students” group. Person B is not in the sample, because he was not unemployed.

Figure 2. Example of sample selection

	Year 2004	Year 2007	Year 2009	Group
Person A	Work	Unemployed	Work	“Previously employed”
Person B	Work	Work	Work	Not in a sample
Person C	Student	Unemployed	Work	“Students”

There are 1027 individuals left after cleaning the sample. The reason for such a small sample is that people with a certain pattern of employment are selected for this research. Firstly, they should have at least one year of unemployment. Secondly, after unemployment they need to work for two consecutive years. Thirdly, before unemployment, they should be either “previously employed” or “students”. Furthermore, due to the fact that the data is not fully panel, it is necessary to select individuals who participated in the survey for at least four consecutive years. Therefore, there is a small number of such respondents left in this research.

The focus of the research is the unemployed working-age population. Consequently, I used the question “What is your current occupation”. If a respondent replied that she “works at an enterprise/company/organization” or “works, but not at an enterprise/company/organization” then I define her as employed. Then I define unemployed as a person who replied “unemployed and wants to find a job” or “unemployed and not searching for a job”. Unfortunately, “housewives” are not included in the research, because they significantly affect the results and I could not make a separate group for them as there are few of them left after sample selection. I did not include

people who took “paternity/maternity leave” as the number of them was very small after cleaning the sample. The “students” group includes people who study at “school”, “college” or “university”.

Next, I eliminated people who were retired or disabled as their unemployment outcomes might significantly differ from the average working person. Then I dropped people working in the military, church, skilled agriculture, farming or who were entrepreneurs, because there is a small probability of direct unemployment impact on wage growth rate in these sectors.

I selected ‘years of unemployment’ as the main independent variable and ‘monthly wage’ as the dependent variable. The other explanatory variables include ‘years of education’, ‘age’, ‘gender’, ‘partner’, ‘number of children’, ‘type of residence’ and ‘population of residence’, ‘occupation’, ‘economic region’ and ‘years’.

Due to the fact that there was an insufficient number of responses for the question ‘number of days since unemployment registration’, I derived an independent variable ‘years of unemployment’ by calculating the difference between ‘the year before unemployment’ and ‘the year of finding the job’. Thus, there might be possible measurement bias as selected individuals might have been temporarily unemployed or employed between the time of conducting the annual surveys. Moreover, ‘years of unemployment’ might probably show the frequency of unemployment occurrence.

The dependent variable ‘monthly wage’ was constructed as the sum of ‘after-tax wage’ and ‘bonus’ earning for the last 30 days during the time of the interview. For calculating the short-term wage rate after unemployment it was necessary to select the wage of two consecutive years

during the reemployment. For example, if after two years of unemployment an individual finds a job and his wage for the first year is 15000 RUB, for the second year is 16000 RUB and for the third year is 17000 RUB, I would use 15000 RUB and 16000 RUB to calculate the wage rate and analyze how two years of unemployment affect this wage rate during reemployment.

The 'years of education' was obtained by assigning value according to finished grade or course at school or university and making dummy variable '12 and more years of education'. Since the average number of years for completing school is 11, then '12 and more years of education' indicates that an individual graduated school and at least attended the university. For example, if the individual responds having finished "3 and more years at university", then he is in '12 and more years of education' category.

I identified an individual as 'having a partner' if the individual was 'married' or 'living together and not in a registered marriage'. If a person has 'never been married', 'married and not living together', 'divorced' or 'widower or widow', I defined her as a person who does 'not have a partner'. For 'type of residence', I created 'rural' by merging 'rural' and 'urban-type settlement' data and I identified 'urban' by merging 'town' and 'regional center' data. As there might be towns with less than 100 000 that can be assigned as an urban area, there is another dummy variable 'population > 100 000' which shows if an individual resides in an area with more than 100 thousand people. 8 'economic regions' were created from 40 regions according to the geographic and economic characteristics in order to control for the differences between regions in Russia. 'Years' are used to control for structural changes that could happen across the years.

Descriptive data

Figure 3 shows the mean, the standard deviations and Figure 4 represents the shares of men, women and overall population in each category of all variables used in the research. There are 1027 individuals of whom people in “previously employed” group are 76% and “students” group are 24%.

Conditionally being employed or studied for at least one year before the unemployment, the unemployment period, on average, lasts for 1.36 years. “Students” have 29 days less of unemployment duration than “previously employed” people. According to Figure 5 the short-run wage rate during reemployment is 40.5%. For “previously employed” and “student” groups, the rate was 43.1% and 32.3%, respectively.

The average age is 34.36 years. Among “previously employed” individuals and “students” the average age is 38 and 23 years, respectively. The average number of children is 0.93 where “previously employed” people and “students” have 1.19 and 0.11 children. Overall, 61.9% of the people have a partner. There are 43.6% more single “students” than “previously employed” people. There are approximately equal numbers of people living in areas with more (47.6%) and less (52.4%) than 100 thousands of people. There are 37.2% fewer people live in rural areas than in rural ones.

The largest portion of the sample (20.8%) works as ‘Service and sales workers’. This portion is dominated by “students” and it is where the largest share of “students” (22.9%) work. The next largest shares of population (18% and 16.2%) work as ‘Plant, machine operators, and assemblers’ and ‘Craft and related trades workers’, respectively. This field is very popular among

“previously employed” group. There are 19.2% and 16.1% of men working in these fields. There are more “students” who work as ‘Technicians and associate professionals’ than “previously employed” people.

Figure 3. Descriptive statistics for independent variables (Number of individuals = 1027)

Variable	Total (N=100%)		“Previously employed” (N=76%)		“Students” (N=24%)	
	Mean	S.d.	Mean	S.d.	Mean	S.d.
Years of unemployment	1.36	.86	1.34	.86	1.42	.87
Age	34.36	10.94	37.98	10.09	23.02	2.54
Number of children	0.93	1.00	1.19	1	.11	.37

Figure 4. Descriptive statistics for independent variables (Number of individuals = 1027)

Variable	Category	Total (%)	“Previously employed” (%)	“Students” (%)
Years of education	0-11 years	27.8	30.3	19.7
	12 and more years	72.2	69.7	80.3
Partner	No partner	38.1	27.5	71.1
	Partner	61.9	72.5	28.9
Residence	Urban	68.6	69.7	65.1
	Rural	31.4	30.3	34.9
Population	< 100 000 residents	52.4	51.7	54.6
	> 100000 residents	47.6	48.3	45.4
Professional group	Legislators, senior officials and manager	3.1	3.9	.8
	Professionals	10.3	9.1	14.1
	Technicians and associate professionals	14.9	14	17.7
	Clerical support work	7.1	7.3	6.4
	Service and sales workers	20.8	20.2	22.9
	Craft and related trades workers	16.2	16.1	16.5
	Plant and machine operators and assemblers	18.0	19.2	14.5
	Elementary occupations	9.5	10.3	7.2
Economic region	Moscow and St. Petersburg	15.3	16.1	12.9
	North and North-Western	6.4	6.6	6
	Central and Central Black Earth	12.8	12.6	13.3
	Volga-Vyatski and Volga Basin	19.3	19.4	18.9
	North Caucasian	12.6	10.3	19.7
	Ural	13.6	13.4	14.5
	Western Siberia	10.5	12	6
	Eastern Siberia and Far East	9.5	9.8	8.8

Figure 5. Descriptive statistics for the dependent variable 'wage rate during reemployment'

Sample	Wage change rate (%)
"Previously employed"	43.1
"Student"	32.3
Total	40.5

Econometric model

The random effect model is used for econometric analysis, because I want to find the rate of change in the time-variant dependent variable (wage growth rate) and since there are time-invariant variables in the model, especially in the main independent variable (years of unemployment).

The following random effects model is used:

$$\ln(\text{wage}_{it}) = \beta_0 + \beta_1 \text{yunemp}_i + \beta_2 \text{yeduc12}_i + \beta_3 \text{age}_{it} + \beta_4 \text{age}_{it}^2 + \beta_5 \text{male}_i + \beta_6 \text{partner}_{it} + \beta_7 \text{nchild}_{it} + \beta_8 \text{occup}_{it} + \beta_9 \text{urban}_{it} + \beta_{10} \text{popul100k}_{it} + \beta_{11} \text{ecregion}_{it} + \beta_{12} \text{year}_t + \alpha_i + \varepsilon_{it}, \text{ where}$$

i – individual;

t – time period ($t=1,2$);

b_0 – constant term;

$\ln(\text{wage}_{it})$ - the logarithm of wage of individual i at time t , i.e. $\ln(\text{wage}_{it})$ measures the rate of monthly wage change during consecutive two years of reemployment;

yunemp_i – years of unemployment of individual i ;

yeduc12_i – dummy variable for 1, if individual i finished at least 12 years of education and 0, if finished less than 12 years of education;

age_{it} – age of individual i at time t ;

age_{it}^2 – age squared for individual i at time t ;

male – dummy variable for 1, if individual i is male and 0, if female;

partner_{it} – dummy variable for 1, if individual is married and 0, if not married at time t ;

nchild_{it} – number of children of individual i at time t ;

occup_{it} – categorical variable for the occupation type of individual i at time t ;

urban_{it} – dummy variable for 1, if individual i lives in urban area and 0, if lives in rural area
at time t ;

popul100k_{it} – dummy variable for 1, if individual i lives in area with more than
100 thousand people and 0, if otherwise;

eregion_{it} – categorical variable for the economic region where individual i resides at time
 t ;

year_{it} – year of conducting a survey of individual i at time t ;

α_i – unobserved individual specific;

ε_{it} – unobserved individual random error term at time t .

Results

One year of unemployment spell reduces the monthly wage growth rate by 10.8%. An increase by one year of unemployment decreases short-term wage growth rate by 12.5% for men. All of the results on the total population and males are significant at 1 percent level.

Due to one year of unemployment, wage growth rate decreases by 12.7% among people who had at least one year of work experience before unemployment (“previously employed” group), while among people who were students before unemployment (“students” group) there is 6.5% decrease in wage growth rate. Thus, “students” have a 6.2% less fall in wage growth rate than the “previously employed” group.

In both “previously employed” and “students” groups men experience higher falls in wage growth rate, but for females from “students” group results are not significant. One year of unemployment reduces the wage growth rate by 15.1 % among “previously employed” males and by 9.6% among male “students”. The results are significant at 5 and 1 percent level.

Females in the “previously employed” group experience 5.2% more loss in income growth rate due to a one-year increase of unemployment spell compared to males. The results are significant at 5 and 1 percent level for women and men, respectively.

Years of education are significant at 1 percent levels for the total population and “previously employed” group. Having studied for more than 12 years increases the male income growth rate by 13% and, especially, female one by 16.6%. Thus, men experience 3.6% less income growth rate than women by having more than 12 years of education.

Figure 6. Results of the regression for all groups

<i>Dependent variable: Difference between ln(wage)</i>						
<i>Variable</i>	<i>Total</i>	<i>p-value</i>	<i>Male</i>	<i>p-value</i>	<i>Female</i>	<i>p-value</i>
Years of unemployment	-.108***	0.00	-.125***	0.00	-.058	0.11
	(.02)		(.024)		(.036)	
12 and more years of education	.13***	0.00	.13***	0.00	.166***	0.00
	(.034)		(.044)		(.054)	
Age	.049***	0.00	.0105	0.52	.101***	0.00
	(.012)		(.016)		(.019)	
Age ²	-.0007***	0.00	-.0002	0.29	-.001***	0.00
	(.0002)		(.0002)		(.0003)	
Male	.334***	0.00	-	-	-	-
	(.038)					
Partner	-.012	0.73	.079	0.14	-.097**	0.04
	(.036)		(.053)		(.047)	
No. of children	-.024	0.28	-.002	0.94	-.084**	0.04
	(.022)		(.027)		(.04)	
Occupation						
Professionals	-.171**	0.05	-.145	0.23	.225*	0.08
	(.087)		(.121)		(.127)	
Technicians and associate professionals	-.214***	0.01	-.173	0.14	-.272**	0.02
	(.083)		(.116)		(.119)	
Clerical support workers	-.276***	0.00	-.135	0.35	-.359***	0.00
	(.09)		(.143)		(.124)	
Service and sales workers	-.447***	0.00	-.508***	0.00	-.428***	0.00
	(.082)		(.113)		(.122)	
Skilled manual workers	-.277***	0.00	-.222**	0.04	.501***	0.00
	(.085)		(.109)		(.155)	
Plant and machine operators, assemblers	-.193**	0.02	-.127	0.24	.432***	0.01
	(.084)		(.108)		(.153)	
Elementary occupations	-.514***	0.00	-.414***	0.00	-.716***	0.00
	(.089)		(.117)		(.138)	
Constants	7.424***	0.00	0	-	6.505***	0.00
	(.235)				(.349)	
Sigma_u	.443		.434		.436	
Sigma_e	.387		.417		.34	
Rho	.567		.52		.623	
R ² within	.1		0.094		0.147	
R ² between	.552		0.522		0.584	
R ² overall	.496		0.46		0.539	
Observations	2054		1210		844	
No. of individuals	1027		605		422	

*, ** and *** denote significance at the 10; 5 and 1% level, respectively.

Note: The regression is controlled for years (2004-2018) and economic regions

Figure 7. Results of the regression for “previously employed” group

<i>Dependent variable: Difference between ln(wage)</i>						
<i>Variable</i>	<i>Total</i>	<i>p-value</i>	<i>Male</i>	<i>p-value</i>	<i>Female</i>	<i>p-value</i>
Years of unemployment	-.127***	0.00	-.142***	0.00	-.09**	0.03
	(.023)		(.029)		(.042)	
12 and more years of education	.148***	0.00	.151***	0.00	.175***	0.00
	(.04)		(.052)		(.061)	
Age	.044***	0.01	.011	0.6	.091***	0.00
	(.016)		(.021)		(.025)	
Age ²	-.0006***	0.00	-.0002	0.4	-.001***	0.00
	(.0002)		(.0003)		(.0003)	
Male	.307***	0.00	-	-	-	-
	(.045)					
Partner	.003	0.95	.111*	0.1	-.1*	0.07
	(.043)		(.068)		(.054)	
No. of children	-.021	0.36	.0005	0.99	-.09**	0.03
	(.023)		(.029)		(.042)	
Occupation						
Professionals	-.133	0.18	-.099	0.47	-.226	0.11
	(.099)		(.139)		(0.14)	
Technicians and associate professionals	-.172*	0.06	-.114	0.39	-.269**	0.04
	(.092)		(.133)		(.129)	
Clerical support workers	-.269***	0.01	-.079	0.66	-.369***	0.01
	(.1)		(.177)		(.132)	
Service and sales workers	-.414***	0.00	-.497***	0.00	-.422***	0.00
	(.091)		(.13)		(.131)	
Skilled manual workers	-.234***	0.01	-.162	0.18	-.467***	0.01
	(.094)		(.122)		(.166)	
Plant and machine operators, assemblers	-.157*	0.09	-.079	0.51	-.406***	0.01
	(.093)		(.121)		(.163)	
Elementary occupations	-.522***	0.00	-.377***	0.01	-.736***	0.00
	(.099)		(.134)		(.147)	
Constants	7.469***	0.00	8.283***	0.00	6.74***	0.00
	(.31)		(.407)		(.468)	
Sigma_u	.451		.437		.446	
Sigma_e	.405		.445		.344	
Rho	.553		.491		.626	
R ² within	.089		0.086		0.139	
R ² between	.552		0.54		0.573	
R ² overall	.493		0.472		0.528	
Observations	1556		902		654	
No. of individuals	778		451		327	

*, ** and *** denote significance at the 10; 5 and 1% level, respectively.

Note: The regression is controlled for years (2004-2018) and economic regions.

Figure 8. Results of the regression for “students” group

<i>Dependent variable: Difference between ln(wage)</i>						
<i>Variable</i>	<i>Total</i>	<i>p-value</i>	<i>Male</i>	<i>p-value</i>	<i>Female</i>	<i>p-value</i>
Years of unemployment	-.065*	0.09	-.096**	0.04	.073	0.38
	(.039)		(.048)		(.084)	
12 and more years of education	.027	0.71	-.017	0.85	.086	0.56
	(.071)		(.088)		(.148)	
Age	.132*	0.06	.128	0.14	.093	0.79
	(.07)		(.086)		(.343)	
Age ²	-.002	0.14	-.002	0.23	-.002	0.84
	(.001)		(.002)		(.008)	
Male	.361***	0.00	-	-	-	-
	(.074)					
Partner	-.007	0.91	.024	0.77	-.04	0.71
	(.065)		(.085)		(.107)	
No. of children	-.053	0.59	-.068	0.54	.15	0.64
	(.099)		(.112)		(.324)	
Occupation						
Professionals	-.506**	0.03	-.492*	0.08	-.294	0.53
	(.227)		(.277)		(.468)	
Technicians and associate professionals	-.561***	0.01	-.528**	0.04	-.392	0.39
	(.218)		(.262)		(.455)	
Clerical support workers	-.526**	0.03	-.502*	0.08	-.398	0.4
	(.235)		(.289)		(.475)	
Service and sales workers	-.772***	0.00	-.785***	0.00	-.603	0.2
	(.223)		(.266)		(.466)	
Skilled manual workers	-.634***	0.01	-.59**	0.03	-1.01*	0.08
	(.226)		(.264)		(.58)	
Plant and machine operators, assemblers	-.492**	0.03	-.427*	0.1	-.959*	0.09
	(.224)		(.261)		(.558)	
Elementary occupations	-.711***	0.00	-.698***	0.01	-1.05*	0.07
	(.235)		(.275)		(.576)	
Constants	6.61***	0.00	-	-	6.7*	0.08
	(.936)				(3.87)	
Sigma_u	.412		.428		.409	
Sigma_e	.32		.318		.331	
Rho	.625		.645		.604	
R ² within	.182		.193		0.289	
R ² between	.59		.5		0.662	
R ² overall	.546		.462		0.624	
Observations	498		308		190	
No. of individuals	249		154		95	

*, ** and *** denote significance at the 10; 5 and 1% level, respectively.

Note: The regression is controlled for years (2004-2018) and economic regions.

Regarding the demographic features, age is statistically significant for women and the total population. For females the wage increases with an additional one year of age by 10.1%, but at the decreasing rate of 0.001% per year. “Students” being 1 year older increases the wage rate by 13.2%.

Being male increases the wage rate by 33.4% compared to females. Being male for “students” increases the wage rate by 5.4% compared to being a “previously employed” male. The results are significant at 1 percent level.

Next, having a partner is an important factor to explain changes in the wage rates of “previously employed” people. Generally, having a partner increases the wage rate by 11.1% for men and decreases by 10% for women from “previously employed” group, respectively. Then, having one more child for women from the “previously employed” group decreases the wage rate by 9%. These results are statistically significant at the 5 and 10 percent level.

The results on occupation types are given in comparison to people who work as legislators, senior officials or managers. People working at elementary occupation, service and sales, skilled and manual workers, and clerical support, have 51.4%, 44.7%, 27.4%, 27.7% and 27.6% less income growth, respectively, comparing to legislators, senior officials or managers, respectively. Among service and sales and elementary occupations men have around 46.1% less wage growth comparing to men in managerial positions, while women in those occupations have 57.2% less wage growth than female managers. Among the “previously employed” group there is approximately two times greater loss in wage growth rate returns of people employed in elementary occupations, service and sales workers compared to managerial occupations. Among

“students” there is more than two times higher income growth rate in managerial occupations compared to other occupations after unemployment. Overall, there is more than a 19% difference in the wage growth rate between the same occupations among “students” and “previously employed” people.

Discussion

Longer unemployment duration reduces the wage growth rate approximately ten times in the short-term. Especially, men experience a decrease in the wage growth rate by more than ten times due to one year of unemployment. Among people who have at least one year of work experience before unemployment men are more vulnerable to unemployment effects than women. Men have a 33.4% higher income growth rate than women. It supports the findings of the Russian empirical studies which state that due to one year of unemployment men have less probability to find a job than women (Nivorozhkin 2006; Karceva 2002). It might be because the demanded amount of wage tends to be higher among men than women (Babcock and Laschever 2009). Thus, men need more time to find a suitable job. Then, such a difference between male and female earnings might be due to greater selectivity for staying in the labor market for women relative to men, especially as they age. Women may leave the labor market to raise children.

Education plays a positive role when a person wants to exit unemployment. This corresponds with the human capital theory (Becker 1994) which states that education can be an investment in future employment. In the case of this research getting a higher education can reduce possible negative effects of unemployment on reemployment outcomes. It should be noted that education could be correlated with unobserved characteristics.

Occupation effect differences of more than 30% which was mentioned above (in “Service and sales”, “Clerical support” and “Elementary occupation”) can be explained by the fact that “previously employed” people can earn more than their “students” colleagues. Consequently,

“previously employed” and “students” have different wage growth rate outcomes which can be attributed to the differences in work experience.

Students are less vulnerable to longer unemployment spells than people who worked before unemployment. It was found that “previously employed” individuals have 1.5 times less income growth rate during two-years of reemployment than students in Russia, i.e. students tend to have higher wage growth after unemployment. It might occur, because the most explicit difference in wages occurs during young age when an individual, usually, starts a career, while among aging individuals the wage growth is not relatively considerable (Quintini and Venn 2013). Being at the beginning of a career can be a significant factor to explain different wage growth rates among these two groups.

Next, for women, having a child can profoundly impact the post-unemployment outcomes (Karceva 2002). Having children might signal about low efficiency at the potential workplace. Therefore, employers can tend to pay women with children less than men in Russia.

Then, men take advantage of having a partner. Men have slightly more income growth rates after unemployment. This discrepancy can to some extent complement the study which found that married men are exposed to shorter unemployment periods (Ham, Svejnar, and Terrell 1998) which in this case leads to higher income growth.

Conclusion

Among Russian people who were at least once unemployed in 2004-2018, one year of unemployment results in the decline of wage growth rate by 10.8% during the first two years of reemployment. Males are sensitive to the unemployment duration. Short-term wage rate decrease can occur due to longer unemployment spell, while its rise can happen, because of having higher education.

People who studied before unemployment have a greater wage growth rate during reemployment, due to, generally, being at the beginning of their career compared to people who already worked before unemployment. Nevertheless, people with work experience can earn more in the same occupations than people who were students before unemployment.

It should be noted that men having a partner tend to have more short-term income growth during reemployment than by not having a partner, while, for women who had work experience before unemployment, having a partner or one more child reduces short-term wage growth rate by 10.4% and 9% during reemployment period, respectively.

There are rapid changes in wages in response to economic shocks, while unemployment rates stay constant in Russia. Even though variable 'year' is used to control for these exogenous changes, wage growth rates, to a certain degree, can be overestimated.

There can be a problem with defining unemployment. Due to the reason that there are not enough responses about the unemployment duration, the made-up variable on years of unemployment might not indicate the duration, but a frequency of being unemployed.

Moreover, there is a limited number of individuals for cross-sectional data to conduct quality research. Unfortunately, in order to study the effect among people who stayed in the same workplace or changed it, there are insufficient observations for such analysis. As there are a lot of missing observations in the research this can mean that people who answer questions can be systematically different than those who do not. Therefore, the sample can be biased.

For further research, in addition to “previously employed” and “students”, it would be interesting to include people who always worked and who were unemployed after studying. Taking them as control and treatment groups would allow to make a randomized experiment, consequently, expand the research. It would be also interesting to implement such research on other countries and compare them with the Russian results.

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