JOB INSECURITY AND EMPLOYEES' MOTIVATION TO ENGAGE IN PROFESSIONAL EDUCATION

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ABSTRACT

Current economic slowdown in Russia can cause significant problems with employment in a number of national economy sectors. The article presents results of econometric analysis of employees' confidence levels in finding comparable new jobs in case of termination of current employment as well as of probability to be temporarily laid off without pay, projected onto employees' participation in professional education programs for different branches of the Russian economy. Sample used in the analysis represents Russia's working population. Results demonstrate that those employed in agriculture, manufacturing, transport and communications are the most vulnerable while at the same time they are least of all involved in professional development programs. Personal characteristics of employees emerge as important determinants of their job security: Residents of large cities, the younger ones, those with shorter length of employment as well as with higher level of education, those better paid feel less vulnerable. All the aforementioned characteristics are also positively related to active investment in building up the employees qualifications.

Keywords: Employment, Job Insecurity, Professional Education, Advanced Training

1. INTRODUCTION

A slump in annual growth rate of Russian economy from 4.5% in the first half of 2012 to 1.4% in the first half of 2013 (WB, 2013), substantial risks of external shocks combined with import tariffs reduction (Shepotylo and Tarr, 2008) and general increase in competition on goods markets resulting from Russia's accession to WTO can lead to significant problems with employment in a number of sectors. In addition, low level of Russian economy diversification can be transmitted into higher volatility of growth rate (Moore and Walkes, 2010).

Low labor productivity in Russia, averaging less than half of that of OECD member-states and about one quarter of that of United States (Hanouz, 2011) with even larger gaps in a number of economy sectors (Kreishan, 2011), acts as a factor constraining more dynamic growth. Certain increase in labor productivity which took place in the pre-crisis years, with annual growth rate averaging 5.8% between 1999 and 2005 (Alam *et al.*, 2008), in 2013 gives way to a substantial drop (WB, 2013).

We suggest the inefficient system of incentives for employees in Russia to invest in their specific capital to be one of the major contributors to the aforementioned reversal of the trend, at the same time comprising huge potential for improvement in labor productivity. While the proportion of employees with tertiary education in Russia is among the highest in the world (OECD, 2012), the quality of education is in many cases quite low and substantial disproportions between employees' with university education job roles and their professional qualifications are widespread (Ankudinov and Lebedev, 2013).

In this study we investigate how the employees in different sectors assess their competitiveness in labor market as well as how tense in relative terms the employment situation might become in case the negative economic scenario comes into effect. Comparative analysis is also performed of incentives to invest in professional development in different sectors of national economy. The analysis is based on actual as well as planned participation of employees in professional training programs.

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2. MATERIALS AND METHODS

This research is based on the longitudinal study "The Russia Longitudinal Monitoring Survey" (RLMS), which is a series of nationally representative surveys designed to monitor the effects of Russian reforms on the health and economic welfare of individuals in the Russian Federation. In this study we present an analysis of the data for the year 2010 (the authors can provide the data upon request).

The following binary variables were used as dependent ones:

- Respondent's confidence in obtaining a comparable job in case of loss of his or her current position. The variable was formed according to respondents' answer to the following question: "Imagine a rather unpleasant situation when a company or an organization where you are currently employed for certain reasons cease to exist and all employees are fired. How sure you are that you will be able to find another job not inferior with respect to the current one?" (1 = I am sure or generally sure; 0 = I am rather not sure or by no means sure)
- Forced unpaid leave during the last year. The variable was formed according to respondents' answer to the following question: "Have you been forced by your employer into an unpaid leave in the last 12 months?" (1 = yes; 0 = no)
- Attending advanced training courses. The variable was formed according to respondents' answer to the

following question: "Have you been attending any kind of advanced professional training courses, refresher courses or any other courses on-the-job training in the last 12 months?" (1 = yes; 0 = no)
- Intention to continue education. The variable was formed according to respondents' answer to the following question: "Are you going to continue your education in courses, technical college or university in the coming 3 years?" (1 = yes; 0 = no)

Logit models estimation for individual number i was based on following general structure (dependent variables have been listed above):

$$\begin{aligned}
y_i = {} & \beta_0 + \beta_1 oil\_gas\_ind_i + \beta_2 constr_i + \\
& \beta_3 transp\_comm_i + \beta_4 govern\_agencies_i + \\
& \beta_5 science\_education_i + \beta_6 healthcare_i + \\
& \beta_7 manufactur_i + \beta_8 finance_i + \beta_9 energy_i + \\
& \beta_{10} army\_security_i + \beta_{11} agricult_i + \\
& \beta_{12} utilities_i + \beta_{13} consumer\_food\_ind_i + \\
& \beta_{14} military\_industr\_compl_i + \beta_{15} sex_i + \\
& \beta_{16} large\_city_i + \beta_{17} age_i + \beta_{18} empl\_length_i + \\
& \beta_{19} educ_i + \beta_{20} wage_i + \varepsilon_i
\end{aligned}$$

A group of 15 economy-sector dummies were used as independent variables with trade and services serving as a criterion variable. The choice of the latter can be explained by sheer numbers of employed (descriptive statistics is presented in **Table 1**).

Table 1. Descriptive statistics

Variables	Mean	Std. Dev.	N
Confidence in employment case of loss of current job (1 = yes; 0 = no)	0.41	0.49	8941
Staying on forced unpaid leave (1 = yes; 0 = no)	0.04	0.16	9101
Attending advanced training coursers (1 = yes; 0 = no)	0.07	0.23	10055
Intention to continue education in the coming 3 years (1 = yes; 0 = no)	0.20	0.40	7316
Sex (1 = male; 0 = female)	0.46	0.50	10055
Large city (1 = yes; 0 = no)	0.44	0.50	10055
Age, years	39.54	12.44	10055
Length of employment, years	7.24	8.78	9945
Education, years	13.33	2.25	10055
Hourly wage, roubles	85.86	73.43	8224

Economy-sector dummies (mean): Oil and natural gas industry (0.03), construction (0.09), transport and communications (0.10), government agencies (0.03), science and education (0.13), healthcare (0.08), manufacturing (0.06), financial sector (0.02), energy sector (0.02), army and security agencies (0.05), agriculture (0.05), utilities (0.04), consumer goods and food industry (0.06), military-industrial complex (0.02), trade and services (0.21)

To reduce the endogeneity problem control variables of respondents' sex, age, length of employment, education level, wage rate and type of settlement were introduced.

Estimates of logit models β coefficients were obtained using maximum likelihood estimation method, MLE. Formulae for calculation of β and percentage change in odds can be found in (StataCorp LP, 2009). All calculations as well as data management were performed using software package STATA12.0.

3. RESULTS

Table 2 documents the results of logit regressions. Wald statistics allows us to reject the zero hypothesis on joint insignificance of all models' factors with high level of reliability: P-values<0.001. Values of McFadden's R^2 indicate significant degree of statistical quality of models (it should be noted that the use of R^2 symbol can be somewhat misleading: Despite formal similarity, the McFadden's R^2 has nothing in common with standard R^2 in linear regressions).

Formally interpreting the logit estimates it can be concluded that the probability of positive answer to the question about whether the respondent is confident in finding a new job of the same quality in case of losing the current one, is respectively 46.7, 36.8, 28.3, 18.5% lower in agriculture, manufacturing, military-industrial complex, transport and communications than in trade and services sector.

Also less confident in finding a job not inferior to the current one are the respondents employed in oil and natural gas sector, energy sector and government egencies (probability of positive answer is, ceteris paribus, respectively 25.7, 21.8 and 31.4% lower than in trade and services sector). The results demonstrate, on the one hand, certain doubts on the part of those employed in the aforementioned sectors about their personal competitiveness, while on the other hand, oil and natural gas sector as well as government egencies are generally viewed in modern Russia as most attractive for employment for the evident reason of relatively high level of personal earnings.

At the same time it is only in the healthcare that respondents are more than in trade and services sector confident in employment for a comparable position in case of loosing the current one. The most plausible explanation of this result is generally low level of wages in Russia's healthcare combined with unattractive working conditions in many health care facilities. The sign at sector dummies of science and education and finance is also positive, however the estimates are unreliable. In all the remaining sectors confidence in successful employment is of generally the same level as in services and trade sector (coefficients at dummy variables statistically insignificantly differ from zero).

As for the control variables, it is the men who are more confident in finding a comparable job in case of loosing the current one (the conclusion being of no particular surprise taking into account high level of gender inequality in Russian economy). Age and length of employment are negatively, while wage rate is positively related to the confidence in finding a comparable job. Residents of large cities too demonstrate much higher levels of confidence in obtaining positions not inferior to the currently occupied. The latter conclusion is also of no surprise since low geographic mobility of Russians is well known.

Analysis of probability for employees to be forced into an unpaid leave during last 12 months also presents certain features of interest. Ceteris paribus, the probabilities of respondents staying in a forced unpaid leave in manufacturing, consumer goods and food industries and construction are respectively 215.6, 152.5 and 107.9% higher than in trade and services sector. At the same time in healthcare, science and education, security agencies the probabilities of forced unpaid leaves are respectively 78.5, 55.3 and 80.3% lower than in trade and services sector. The results are in line with basic economic logic: The employees in economy sectors oriented towards meeting the investment demand (like machine-building and construction), which rapidly declines during economic slowdown, experience much higher probability of being forced into unpaid leaves than those in mostly state financed healthcare, science, education, which are much less sensitive towards the upturns and downturns of economic cycles. The conclusion closely follows the classical pattern of risk-return trade off, while not exactly for contributors of financial capital, but for those, who invest their specific capital: In less volatile sectors the returns are generally much lower compared to those in more risky ones; however the latter are much more prone towards temporary redundancies of workforce.

Less frequently than in trade and services, employees were laid off in government agencies and power-generating (probabilities are lower by 70.4 and 77.2% respectively). It is noteworthy that not a single representative of financial sector was forcibly laid off, though in the sample, representing Russia's population, 214 respondents were employed in that particular sector. For this particular reason the related logit estimate is not presented here. Coefficients at other sector dummies are statistically unreliable. As for control variables, age is positively, while wage rate is negatively related to the likelihood of an employee being temporarily laid off.

Table 2. Logit regressions estimates (broken down by sectors of economy). The table contains percentage changes in odds, with t-statistics adjusted for heteroscedasticity given in parentheses. Also presented is the number of observations (N. of obs.). McFadden's R2 allows comparing likelihood coefficients of model incorporating only fixed term (β_0) as compared to a model including all regressors. Wald statistics is used to test the hypothesis on joint significance of independent variables)

	Confidence in employment in case of loss of current job (1 = yes;0 = no)		Staying on forced unpaid leave (1 = yes;0 = no)		Attending advanced training coursers (1 = yes;0 = no)		continue Intention to education in the coming 3 years (1 = yes;0 = no)	
Economy-sector dummies	odds %	t-stat robust	odds %	t-stat. robust	odds %	t-stat. robust	odds %	t-stat. robust
Oil and natural gas industry	-25.7	(2.0)*	-29.1	(0.6)	236.3	(5.3)**	95.4	(3.4)**
Construction	-7.6	(0.8)	107.9	(2.8)**	2.0	(0.1)	-9.4	(0.6)
Transport and communications	-18.5	(2.1)*	-40.8	(1.6)	38.0	(1.6)	10.9	(0.8)
Government agencies	-31.4	(2.4)*	-70.4	(1.7)	57.8	(1.7)	85.7	(2.9)**
Science and education	9.9	(1.1)	-55.3	(2.6)**	202.9	(7.2)**	137.9	(7.0)**
Healthcare	23.5	(2.1)*	-78.5	(3.2)**	146.5	(5.7)**	77.9	(4.0)**
Manufacturing	-36.8	(4.0)**	215.6	(4.9)**	39.8	(1.4)	20.2	(1.1)
Financial sector	1.7	(0.1)	-	-	11.3	(0.3)	40.8	(1.4)
Energy sector	-21.8	(1.3)	-77.2	(1.9)*	126.3	(2.7)**	71.9	(2.2)*
Army and security agencies	-2.5	(0.2)	-80.3	(2.2)*	2.8	(0.1)	74.5	(3.4)**
Agriculture	-46.7	(4.3)**	-25.2	(0.8)	-16.6	(0.5)	-65.1	(3.4)**
Utilities	4.8	(0.4)	36.4	(1.1)	17.9	(0.5)	-26.7	(1.2)
Consumer goods and food ind.	-3.3	(0.3)	152.5	(3.9)**	-34.7	(1.4)	-11.9	(0.8)
Military-industrial complex	-28.3	(1.7)	5.9	(0.1)	41.4	(0.9)	12.2	(0.4)
Control variables								
Sex (1 = male; 0 = female)	23.8	(3.8)**	0.4	(0.1)	-14.8	(1.6)	-25.5	(3.5)**
Large city (1 = yes; 0 = no)	79.5	(11.5)**	2.0	(0.1)	8.3	(0.8)	66.1	(6.8)**
Age	-3.5	(16.1)**	1.0	(1.8)	-2.0	(4.6)**	-11.5	(20.5)**
Length of employment	-2.4	(6.8)**	0.7	(0.9)	1.1	(2.0)*	0.7	(0.9)
Education	0.6	(0.5)	-1.7	(0.5)	18.6	(7.4)**	-8.8	(5.4)**
Hourly wage	0.3	(7.2)**	-0.6	(3.1)**	0.1	(2.2)*	0.3	(4.7)**
N. of obs.		8022		7981		8211		5828
McFadden's R^2		0.09		0.08		0.07		0.16
Wald Chi^2		791.7**		120.5**		264.3**		638.6**

**p<0.01; *p<0.05

Analysis of actual as well as planned participation of employees in professional training programs has produced the following results. The highest probabilities of respondents' involvement in some kind of professional training programs are observed in oil and natural gas industry, science and education, healthcare and energy sector: They are respectively 236.3, 202.9, 146.5 and 126.3% higher than in trade and services sector. While healthcare, science and education are generally characterized by higher levels of employees' competence requirements in the first place, the relevant oil and natural gas industry and energy sector characteristics indicate high intensity of workforce retraining activity. Differences in levels of participation of workforce in professional

development programs for other types of activities and economy sectors are insignificant (coefficients at other sectoral dummies statistically insignificantly differ from zero). Similar estimates have been received with respect to planned continuation of professional training by the employed in those sectors.

Briefly addressing the influence of control variables it should be noted that age is negatively while length of employment is positively related to the likelihood on an employee taking some kind of advanced training courses. Education level of a respondent acts as an important determinant of him or her taking part in professional development programs: Each additional year of education, ceteris paribus, adds 18.6% to the likelihood of such an undertaking. Well paid employees

are also more likely to plan or to get actually involved in some kind of professional development activities. Women, large cities' residents and younger employees are also more likely to get involved in professional development programs in the future.

To ensure reliability of obtained results a number of diagnostic tests were performed. Variance Inflation Factor test (VIF-test) results indicate that large number of variables included in the model does not lead to the multicollinearity problem. The heteroscedasticity effect exposed by the Breusch-Pagan test was eliminated by t-statistics adjustment. Inclusion of wide range of control variables into the model makes it possible to assess the influence of the sector-specific effects as opposed to the possible effects of other concurrent factors.

4. DISCUSSION

First of all it has to be noted that according to the results obtained the assessments of their job security levels by the employees in different economy sectors are closely related to labor productivity (Alam *et al*., 2008; Bakatina *et al*., 2009) as well as to disproportions in skilled labor resources utilization (Ankudinov and Lebedev, 2013) in the very same sectors.

Previous studies of degree of economic insecurity of employees in Russia, performed in terms of levels of job satisfaction, consumption and savings, have demonstrated similar relation to individual characteristics of respondents: Women, residents of rural areas, those less educated and unskilled feel more vulnerable (Linz and Semykina, 2010).

The studies also show that the laid-off employees in Russia face foregone earnings following their displacement, which also differ depending on individual characteristics of an employee. The likelihood of getting another job is much higher for those in the informal economy who have lost their positions not long ago (Lehmann *et al*., 2013). The situation is aggravated by low geographic mobility of Russia's working population, though the literature provides some evidence that reallocation of labor across sectors is contributing to aggregate productivity growth in Russia (De Vries *et al*., 2012) thus producing at least some mitigating effect.

At the same time despite possible future economic hardships, in the long run it is expected that labor supply will substantially fall due to demographic factors, even taking into account active recruitment of immigrants (Bakatina *et al*., 2009).

It also has to be noted that while for a number of economy sectors Russia's integration into WTO will have a limited effect (Shepotylo and Tarr, 2008), agriculture and manufacturing might suffer significantly as a result of increased competition in the goods markets. Under such circumstances it is the targeted support for employees rather than shareholders of inefficient companies in those sectors that should be considered as the preferred direction of the state policy.

Accumulation of relevant data with ensuing opportunity to form panel data bases would make possible further empirical analysis of perception of economic insecurity by employees in different sectors of Russian economy in WTO post-integration period. Further study of relation between investment in qualification enhancement and increase in labor efficiency during the period of economic stagnation might also be of substantial academic interest.

A number of limitations of the analysis performed have to be mentioned: Some dependent variables, such as confidence in obtaining a comparable job are formed according to respondents' value judgments and as a result can be to a certain extent endogeneous. Definition of economy sectors is also quite aggregative and brings together somewhat different types of activities. Besides, regressions identify the correlation itself, but not the causality.

5. CONCLUSION

Among the performance indicators of particular sectors of national economy the perception of job security by their employees is among the most important. The evidence provided by the analysis performed allows us for the following conclusions.

Employees in agricultural and manufacturing sectors of Russian economy are more than those in other sectors concerned about their competitiveness on the labor market. Besides, these very sectors are characterized by exceptionally low level of labor efficiency as well as by rather low availability of professional development programs for workforce.

Employees in military-industrial complex, oil and natural gas industry, energy sector and government agencies are also less confident in getting another job of the same quality, however for somewhat different reasons.

Those employed in manufacturing, consumer goods and food industries and construction most frequently, while the employees in healthcare, science and education, government agencies and financial sector least frequently were forced into unpaid leaves during the post-crisis period.

Personal characteristics of employees emerge as important determinants of their economic security: Residents of large cities, the younger ones, those with shorter length of employment as well as higher level of education, those better paid feel less vulnerable. All the aforementioned characteristics are also positively related to active investment in building up the employees qualifications.

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