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Natalia Smirnova

Job search behavior of unemployed in Russia

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Contents

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Abstract

This paper explores the determinants of job search behavior, search intensity and choices of search methods of the unemployed workers in transitional Russia. We use pooled data from rounds 5-9 of the Russia Longitudinal Monitoring Survey (RLMS) to estimate the effects of socio-economic factors on the choices workers make while looking for a job. The results show that women are significantly less likely than men to engage in job searches, lag significantly behind men in search intensity, and significantly differ from men in their search strategies. The job search behavior of workers living in metropolitan areas of Moscow and St. Petersburg differs substantially from the behavior of workers living elsewhere in Russia. The most frequently used search strategy in Russia, as in other countries, is contacting friends and relatives for job leads.

JEL Code: J64, P23

Key Words: Russia, Transition, Job Search, Search Intensity, logit

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Tiivistelmä

Tässä tutkimuksessa käsitellään työnhakua, sen intensiteettiä sekä menetelmiä Venäjällä. Tutkimuksessa käytetään Venäjän kotitalouskyselyn (Russia Longitudinal Monitoring Survey) kierroksien 5–9 tietoja työnhakupäätöksiin vaikuttavien tekijöiden selvittämiseen. Tulosten mukaan miehet etsivät enemmän töitä kuin naiset ja sukupuolten työnhakutavat poikkeavat toisistaan. Työnhakutavat Moskovassa ja Pietarissa ovat erilaisia kuin muualla maassa. Kaikkein yleisin tapa hakea työtä on käyttää ystäviä ja sukulaisia työpaikkatietojen saamiseen. Tämä on yleisin tapa myös muissa maissa.

Asiasanat: Venäjä, transitio, työnhaku, hakuintensiteetti, logit-malli

1   Introduction

The economic transformation in Russia has made searching for a job an integral part of labor market activity. Although the majority of workers use personal contacts as their primary job search method, other forms of matching job vacancies and job seekers have emerged. Between 2001 and 2002, applications to commercial employment agencies nearly doubled, and almost tripled between 2000 and 2002.[1] Other job search methods, such as online searches, are also finding favor.[2]

This paper explores the determinants of job search behavior, search intensity, and the search methods preferred by unemployed workers in transitional Russia. Analysis of search behavior may be useful in uncovering mechanisms underlying the duration and rate of unemployment. From an economic policy perspective, the analysis of search methods may also suggest ways to improve the matching of employees with jobs.

The paper is organized as follows: Section 2 offers a short description of labor market development in Russia in 1993-2002 and a summary of empirical literature. Section 3 describes the data. Section 4 identifies the theoretical model and Section 5 describes the statistical model and estimation procedure. Section 6 discusses empirical results and Section 7 concludes.

2   Background

2.1   Labor market development in transitional Russia

To put Russia's labor market development in a global perspective, Table A.1.1. in Appendix 1 compares labor market indicators among current European Union members (EU-15), countries slated for accession to the EU in 2004 (ACC-10), the United States, and the Russian Federation. The employment rate in Russia for persons 15-64 years of age stands at 58.6%, which is lower than in the EU or US, but higher than in the ACC. The unemployment rate in Russia (8.9%) is also higher than in the EU or US, but lower than in ACC. The duration of unemployment is similar to EU countries, where nearly half of people are unemployed less than six months (45% in Russia and 42% in the EU). The proportion of people unemployed for more than a year in Russia is similar to EU as well (36% in Russia and 40% in the EU). This pattern is quite different from the US, where 81% of unemployed find jobs within the first six months of unemployment, and from the ACC, where the majority of people are unemployed for longer than twelve months.

In comparing Russia with other transition countries, some common features of labor market transformation should be identified. (1) Lower-educated single individuals, women and young people are more likely to become unemployed. The first two groups tend to stay in unemployment pool longer. (2) Married women are worse off in terms of job loss and length of unemployment than single women. (3) Returns on a year of education have increased during transition, and the gender gap in education premia has narrowed. (4) Returns on experience have declined. (5) Regional asymmetries persist.

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[1] International Monetary Fund, 2003. IMF Country Report No. 03/145. Russian Federation: Statistical Appendix, p.17.
[2] Roshchin and Markova (2003).

In addition to these common features, the labor market adjustment paths in the transitional arena vary significantly. Boeri and Terrell (2002) conclude that Central and Eastern European Countries (CEECs) have experienced significant employment adjustment, rapid structural change, high unemployment rates, and high long-term unemployment (except the Czech Republic). Countries of former Soviet Union (FSU) have had low responsiveness of employment to output changes, strong and persistent wage declines, slower structural change, gradual build-ups of unemployment (except Estonia) and high turnover rates. A peculiarity of the Russian labor market has been accumulation of wage arrears (unpaid wages or outstanding pay), which allowed wages, but not employment, to adjust downwards. In this sense, the Russian labor market has been seen be some as a "neoclassical dream" or the textbook example of a "flexible labor market."[3] Overall, wages adjusted more in the FSU countries and employment adjusted more in CEE countries, which contributed to the faster structural change in Eastern Europe.

The main focus of this study is the job search process of unemployed in Russia. Table A1.2. in Appendix 1 presents the distribution of unemployed by search methods. Contacting friends, relatives and acquaintances was the most frequently used search method during the period 1993–2002. Its use steadily grew from 37% of searchers utilizing it in 1993 to 60% in 2002. Applications to state employment services and direct contacts of employers competed for the second place in frequency of use. In 1993, 1999, and 2000, applications directly to firms surpassed applications to the state employment service. In other years, the state employment service was more frequently utilized. Placing ads and responding to ads rose steadily from 13% in 1993 to 24% in 2002. Applying to commercial or private employment services was the least-utilized method of finding a job. Its use gained momentum between 1993 and 1996, then declined in 1997 and 1999, and finally increased three-fold from 2000 to 2002.

The reasons for the sustained high level of unemployment and substantial level of long-term unemployment duration in Russia are not immediately apparent, but job search behavior is clearly a factor influencing the duration and level of unemployment. Thus, the study of the determinants of choices that people make while searching for a job and the factors influencing their job search may provide valuable insights into the matching function of the labor market. In the next section, we summarize the theoretical underpinnings and practical applications of the job search literature motivating the empirical part of this study.

2.2   Literature overview

Mortensen (1986, 1999) provides a good summary the job search literature. Our main interest here is the "matching approach" to labor market analysis, where the goal is to explain worker and job flows and levels of unemployment within a rational, forward-looking agent paradigm. Success in a job search depends, among other things, on the intensity with which the worker searches for a job and choices he or she makes when searching. We apply the stationary job search model, whereby individuals choose search methods and search intensity to influence the arrival rate of job offers with a view to maximizing their utility functions.

This aspect of job search theory has been empirically tested on labor markets in different countries. Holzer (1988), Blau and Robins (1990) examine the job search

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[3]   Layard and Richter (1995).

behavior of unemployed persons in the US. Gregg and Wadsworth (1996) study the efficiency of search methods in the UK. Addison and Portugal (2001) assess the effects of job finding methods on escape rates from unemployment and on earnings using Portuguese data. Weber and Mahringer (2002) compare the quality of job matches of several search methods in Austria in terms of wages and job duration. Osberg (1993) finds a relationship between the probability of finding a job and the business cycle for employment services in Canada. Lindeboom *et al.* (1994) ascertain large differences in the effectiveness of search channels for the Dutch labor market. Eriksson, Lilja, and Torp (2002) evaluate the determinants of search intensity in Denmark, Finland, and Norway.

For CEECs, the search literature tends to focus on the duration of search (unemployment) and the effect of the unemployment benefits system on duration. Ham, Svejnar, and Terrell (1998) apply a proportional hazard model to the Czech and Slovak labor markets. Vodopivec (1995) assesses the unemployment insurance effect on unemployment duration for Slovenia. Lubyova and Van Ours (1997) estimate the hazard function for the Slovak Republic. Hinnosaar (2003) examines the dependence of the duration of unemployment spell on reservation wage and job search intensity in Estonia.

Russia's labor market transformation has also received attention. Foley (1997) examines the duration of unemployment and labor force mobility between labor market states. Sabirianova (2000) analyzes the occupational mobility of Russia's labor force. Earle and Sabirianova (2002) explain the effects and consequences of wage arrears. Stillman (2001) assesses Russian unemployment rates. Gimpelson and Lippoldt (1999) evaluate job creation in the private sector. Geishecker and Haisken-DeNew (2002) study job creation and job destruction and inter-industry wage structure. Grogan and Van den Berg (1999) estimate the duration models for four sub-groups of the unemployed and marginally employed. Denisova (2003, 2002) and Schűle (2003) evaluate the management practices of the Federal Employment Services.

To date, only Roshchin and Markova (2003) have performed a rigorous analysis of the search strategies used in the Russian labor market. Their research focuses on the time intensity and cost intensity of the search methods, unemployment duration, and the "learning effect" dependence of the job search process. Their study distinguishes the behavior of the unemployed from "on-the-job" searches of those with jobs. Nevertheless, the specific choices unemployed individuals make when deciding whether to search for a job, how intensely to search, and what specific methods to use have not been addressed in the literature on the Russian labor market. These choices are extremely important in that they influence the probability of obtaining an offer, and thus, the probability of employment.

This paper responds to this gap in the empirical literature with respect to the in-depth study of labor supply in Russia by analyzing the job search behavior and the determinants of search methods use on a sample of successful unemployed searchers in Russia during 1994–2000.

3   Data

We use data from the Russian Longitudinal Monitoring Survey (RLMS) conducted by the Carolina Population Center at the University of North Carolina at Chapel Hill.[4] The RLMS is the result of an ongoing effort of American and Russian social scientists and officials to measure the impact of market reforms on the living and health conditions of the Russian population. It provides information about migration, work, medical services, use of time, and the health of men, women and children from the beginning of Russia's economic transformation in 1991.

According to the survey designers, the RLMS is the first nationally representative random sample for Russia. It supports both efficient cross-sectional and aggregate longitudinal analyses of change in the Russian household population. The survey is designed as a repeated sample of each household dwelling, much like the decile census in the US. Thus, instead of following individuals or households from one year to the next, the RLMS merely returns to the same dwelling sampled the previous year. Consequently, all households who move locally or migrate to another region are, by definition, eliminated from the follow-up.

The data have been collected in two phases. The first phase consisted of four rounds (1-4) between May 1992 and July 1994. The second phase covered six rounds (5-10) between October 1994 and April 2002. We use the information from Phase II (Rounds 5-9), which used a revised questionnaire and is more refined and consistent among the rounds. The sampling methods (multi-stage probability sampling) and the conduct of the survey in the second phase also proved far superior to those used in the first round.[5]

The analysis in this paper is performed on the pooled data for the following rounds of RLMS/calendar years: Round 5–1994, Round 6–1995, Round 7–1996, Round 8–1998, and Round 9–2000. As no survey was administered in 1997 and 1999, caution should be used in interpreting the results.

The RLMS administers three types of questionnaires: individual, household, and community. The research agenda for this project calls for the use of individual and household questionnaires.

The individual questionnaires of Rounds 5, 6, 7, 8, and 9 contain the question: "Are you working?" The choices of answers are: (1) yes (working); (2) on maternity leave or on leave to care for a child under three years old; (3) any other paid leave; (4) unpaid leave; and (5) no (not working). If a person answers that he or she is not working, they are asked if they would like to find work. An affirmative answer to the question "Did you go anywhere or see anyone looking for a job in the last 30 days?" will get the individual categorized as unemployed.

Thus, we are only concerned with the ILO definition of unemployed persons,[6] i.e. people who are not working and report looking for a job within 30 days prior to the survey. Out-of-work individuals who do not report job search and individuals experiencing unpaid leave are not included in our sample. In addition, we follow individuals from one round to the next and only look at those who are unemployed in the previous round and employed in the next round so that we are only dealing with the successful job searchers.

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[4] The project description at *www.cpc.unc.edu/rlms* provides complete information about the RLMS survey and its sampling procedure.
[5] Clarke (1999), p. 288.
[6] Grogan and Van den Berg (1999).

The individual questionnaires consider six choices of job search methods available to those who are not working at the time of the survey and have looked for a job withing the past 30 days: (1) applying to state employment agencies or labor registry offices; (2) applying to non-governmental employment services; (3) contacting friends and acquaintances; (4) contacting relatives; (5) applying directly to an enterprise; and (6) applying through advertising notices. These methods of job search are the focus of the study. Note that there are no open-ended or "other" choices in the list of search methods. Thus, unfortunately, the survey does not capture new methods of search (e.g. online searches) or methods that might be specific for Russia (e.g. informal conversations over dinner or protégé).

Due to the low frequency of responses for such methods as private employment agencies, relatives, and advertisements (see Appendix 2), we regrouped the methods into broader search strategies as follows:

1. Applying to state and private employment agencies (AGENCIES),
2. Working through friends, acquaintances and relatives (CONTACTS), and
3. Contacting firms directly and in response to advertisements (FIRMS).
   People who used more than one broad search strategy are assumed to have used a MULTIPLE search.

The socio-economic characteristics of the sample (gender, age, education structure, place of residence, and number of children), as well as the search methods used for pooled data are presented in Appendix 3.

The quality and availability of data restrict the possibilities of empirical analysis. As the RLMS was conceived as the survey of economic well-being, rather than labor force participation,[7] important labor-related information is missing and the periods between rounds (especially with omission of 1997 and 1999) may be too long to represent the "short period of time" assumed in static labor supply models. On the other hand, the sample is representative of the Russian Federation. It has been performed in roughly similar fashion ten times during the years of transition, which is in itself makes the data set valuable. Acknowledging these data shortcomings, we nevertheless rely Heckman's (2000) assessment that "important problems arise from refusing to learn from the data"[8] in constructing economic models. In the following sections, we construct a simple job search model for the Russian labor market, and, using RLMS data set, try to learn what we can from the estimation of its parameters.

4   Economic model

Our model follows the methodology of Weber and Mahringer (2002), Eriksson et al (2002), and Stillman (2001). It assumes that, at the beginning of each time period, individuals choose whether or not to search for a job to maximize their utility. Thus, the individual will search for a job this period if the utility of being employed in the next period is greater than the utility of being unemployed in the next period. More formally, we state this as

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[7] See "About the study" at the project description page at www.cpc.unc.edu/rlms.
[8] Heckman (2000): p. 88.

$$U_{i(t+1)} = V^E \quad \text{if} \qquad E_{i(t+1)} = 1, \text{ or} \qquad\qquad (1)$$

$$U_{i(t+1)} = V^U \quad \text{if} \qquad E_{i(t+1)} = 0,$$

where $E_{it} = 1(0)$ if an individual is (not) employed, i indexes individuals, t indexes time, then, individual i chooses to search for a job at time t if

$$V^E > V^U. \qquad\qquad (2)$$

In their utility maximization endeavor, individuals choose their reservation wage and search effort. We concentrate here on the determinants of the individual's choice of search effort and search methods. As the exact amount of search effort is unobservable, we observe its proxy, which is assumed to correlate strongly with actual search effort. Following Holzer (1988), search effort is approximated by search intensity, which is measured as the number of search methods used.[9] It is conventional wisdom that the choice of search intensity, as well as the choice of a particular search strategy, varies across individuals according to their skills, background, and place of residence. The measurement of the effects of socio-economic factors on the job search behavior of Russian unemployed is the motivation of this paper.

We follow the decision of Eriksson et al (2002) to decompose search activity into two parts. First, the job seeker decides whether or not to search. Second, if the job seeker prefers to search, he or she must decide on how intensively to search and what method(s) to use. We also assume that the decision on whether to search is different from the decision on search intensity and method choice. Thus, it is important to model search behavior as separate decisions.[10] Since these decisions are driven by different mechanisms, analyzing search activity and its determinants as a single decision may lead to misleading (policy) conclusions.[11]

Thus, the decision of an individual on whether to engage in a job search and the choice of search intensity and search strategy may be described with a three-equation structural model of the general form:

$$S_{it} = S\,(X_{it}, H_{it}, L_{it}), \qquad \text{(engagement equation)} \qquad (3)$$

$$SI_{it} = SI\,(X_{it}, H_{it}) \qquad \text{(search intensity equation)} \qquad (4)$$

$$SM_{ijt} = SM\,(X_{it}, H_{it}), \qquad \text{(search method choice equation)} \qquad (5)$$

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[9] The literature contains several methods for measuring search effort. Some studies [Barron and Mellow (1979), Eriksson et.al. (2002)] use the time spent for job search. Others [Kahn and Low (1990)] use number of employer contacts. A third group [Holzer (1988), Weber and Mahringer (2002)] uses the number of methods used during search. The decision to use the number of methods rested on the data availability and is deemed consistent with the analysis of transition countries [Hinnosaar (2003), Roshchin and Markova (2003)].

[10] Labor supply literature emphasizes the importance of distinguishing between e.g. decisions on whether to work and the number of hours of work to supply (Killingworth (1983).

[11] Eriksson, Lilja, and Torp (2002), p. 4.

where S_{it} is a measure of the *i*th individual's engagement in job search activity. X_{it} is a set of personal characteristics, H_{it} is a set of characteristics of individual's household, L_{it} is specific labor market characteristics, SI_{it} is search intensity or the number of methods used in searching, and SM_{ijt} is a measure of how much the search method is used by the *i*th individual.

Equations (3), (4) and (5) constitute the model of individual *i*'s job search behavior. Given this economic model, our next task is to consider an appropriate corresponding statistical model and estimation method.

5   Statistical model and estimation procedure

We follow the methodology of Stillman (2000, 2001), Weber and Mahringer (2002), and Eriksson *et al.* (2002) in construction of participation equations. These three equations – engagement, search intensity and search method choice – all include individual, household, and employment characteristics as linear independent variables.

Specifically, let X_{it} be a vector of individual characteristics that includes gender, age, education, and experience level; H_{it} be a vector of individual's household characteristics that includes the number of pre-school age children in the household and place of residence; and L_{it} be a vector of labor market characteristics such as wage arrears (unpaid wages or outstanding pay) that accounts for the specific conditions in Russia during the transition period.[12]

Defining S_{it}^* as the unobservable index function underlying individual *i*'s decision whether to search for work at time *t*, the engagement equation is specified as

$$S_{it}^* = \alpha_0 + X_{it}\,\alpha_1 + H_{it}\,\alpha_2 + L_{it}\,\alpha_3 + \varepsilon_{it}, \qquad\qquad (6)$$

$$S_{it} = 1 \qquad\qquad if \qquad\qquad S_{it}^* > 0,$$

$$S_{it} = 0 \qquad\qquad if \qquad\qquad S_{it}^* \leq 0,$$

where $S_{it} = 1(0)$ if individual *i* is searching (not searching) for a job at time t. X_{it}, H_{it}, and L_{it} are as described above. The error term, ε_{it}, is assumed to have a logistic distribution with mean zero and variance normalized to one.[13] It captures optimization errors along with individual-specific ability and other fixed factors and preferences that may affect an individual's expected income from employment, search cost, reservation utility, and relative preference for leisure.[14]

The dependent variable in equation (6) is a dichotomous indicator of whether the individual reports searching for a job. Thus, the binary logit model is used for estimation. Parameters α_1, α_2, α_3, and α_4 show the propensity to search for a job for different socio-economic groups of individuals.

Once an individual has decided to search for a job, he or she must decide how intensively to search and which search method(s) to use. Defining the SI_{it}^* as the

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[12] Earle and Sabirianova (2002) provide a discussion of wage arrears in Russia.

[13] The discrete choice models here are analyzed using maximum likelihood (ML) logit estimation. This requires that the error term follow logistic distribution and have its variance normalized.

[14] We follow Stillman (2001) in stipulating assumptions for the error term.

unobservable search intensity function for individual i at time t, and SM_{ijt}^{*} as the unobservable index function underlying individual i's decision whether to use search method j at time t, the reduced form search intensity and search method choice equations are specified as

$$SI_{it}^{*} = \gamma_0 + X_{it}\,\gamma_1 + H_{it}\,\gamma_2 + \xi_{it} \tag{7}$$

$$SM_{ijt}^{*} = \beta_0 + X_{it}\,\beta_1 + H_{it}\,\beta_2 + e_{ijt} \tag{8}$$
$$SM_{ijt} = 1 \quad \text{if } SM_{ijt}^{*} > 0,$$
$$SM_{ijt} = 0 \quad \text{if } SM_{ijt}^{*} \leq 0,$$

where SM_{ijt} is 1, if individual i is using a job search method j at time t, and 0 otherwise.

Equation (7) specifies the influence of personal (X_{it}) and household (H_{it}) characteristics on search intensity (SI_{it}^{*}). The effects are measured by parameter vectors γ_1 and γ_2, respectively. Following Holzer (1988) and Weber and Mahringer (2002), SI_{it}^{*} is approximated by the number of search methods used SI_{it}, which is ordinal qualitative variable. Higher values of SI_{it} are associated with higher search intensity. Accordingly, we estimate equation (7) in an ordinal (ordered) logit specification.

Equation (8) examines the heterogeneity of search method use in personal (X_{it}) and household (H_{it}) characteristics. SM_{ijt}^{*} is a 1 x 3 vector which can be interpreted as the individual i's propensity to use each of three broad search strategies identified in Section 4. β_1 is a 1 x 3 parameter vector, the jth row of which corresponds to the influence of explanatory variable X_{it} on the choice of a particular search strategy. Analogously, β_2 is a 1 x 3 parameter vector measuring effect of household characteristics (H_{it}). The error terms, ξ_{it} and e_{ijt}, are assumed to be independent and identically distributed across individuals and have mean zero and variance equal to one.

For the estimation of search method choice (SM_{ijt}) in equation (8), we employ the multinomial logit framework. The multinomial logit model gives marginal effects of individual and household factors on the linear predictor of search method choice (SM_{ijt}), as well the corresponding effects on the odds. One can also infer the relative propensities of different socio-economic groups to use each search method.

Following Killingsworth (1983), Holzer (1988) and Eriksson et al (2002), the search activity in our model is decomposed into separate parts of decision process. We first estimate the engagement equation (6), then, conditional on the involvement in the job search, we estimate equations (7) and (8).

The results of application of this model to the RLMS data are presented in the next section.

6   Results

6.1   Job search propensity

Table 1 contains the results of binomial logit estimation of the engagement equation (6).[15] The overall model fit is good as represented by the likelihood ratio statistic (1985.8260 for 9 degrees of freedom), and all coefficient estimates are significant at the 5% level, except for those whose age is below 25 years. One can see that parameter estimates for women and for people older than 50 years of age are negative, suggesting that the likelihood of the active search for new employment decreases for these socio-economic groups. Other parameter estimates are positive, which suggests that people in the 25−50 age group, people with secondary and college educations, and those residing in metropolitan areas of Moscow and St. Petersburg are more likely to search for a job. The existence of wage arrears *ceteris paribus* increases the likelihood of an active search.

The engagement equation (6) theorizes that individual and household characteristics and labor market conditions influence the decision of an unemployed worker to search for a job. It is conventionally assumed in the labor supply literature that women behave differently than men in their search for employment, and it is thus hardly surprising to find that in the Russian labor market the odds that a woman has searched for a job is *ceteris paribus* only 0.731 times as likely as for men. We might interpret this lower propensity of women to search in light of the new economic conditions in Russia. With the end of the Soviet pressure for equal employment, women realize they have more choices in their labor force participation. For example, they can engage in individual entrepreneurial activity such as charter shopping trips abroad, which does not involve any formal job search. Additionally, women, in particular, move between the "unobserved" and official economies,[16] which could prompt them to say that they are not actively searching for a job. Strikingly, given the different economic environments, the lower search propensity for women in Russia is consistent with estimates for Nordic countries.[17]

The factor closely related to gender differences in the labor market behavior is the household composition. The literature emphasizes that the existence of small children in the family would alter the preferences for work per se, for hours worked and reservation wage. Our model includes the categorical variable that measures the presence of children of pre-school age (0-7 years old) in the household. We find that the odds of searching for a job for individuals that have pre-school age children in the household are *ceteris paribus* 1.197 times higher than for individuals that do not have children of that age in the household. This higher propensity to search for a job could be the outcome of at least two factors. 1) The existence of a small child or small children would prompt both parents to look for additional income, especially during the high inflation period of 1994−2000. 2) The availability of high quality free day-care facilities, would allow parents, and especially mothers, to engage in job search more actively.

The labor supply theory suggests that a woman's decisions about her labor force participation and job search behavior might be disproportionatey affected by the presence of small children in the household. In one model specification, we interact the gender

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[15] Appendix 4 contains the summary statistics for variables used in the engagement equation estimation.

[16] The official estimate of unobserved (unrecorded or underground) economic activity in Russia is about 30%. It is also believed to be a substitute to the official economy, meaning that people move in and out of it fairly quickly and freely depending on the change in economic conditions. For unobserved economy estimations for Russia see Rosser *et al.* (2001), Alexeev and Pyle (2001), and Feige (2003).

[17] See Eriksson *et al.* (2002), Table 3, p. 14.

variable with the "children" variable, but find no statistical significance in any of the three equations (6, 7 and 8). Thus, we conclude for our sample that there are no significant differences in the job search behavior of men and women due to the presence of pre-school age children in the household and abandon efforts to include such an interaction variable.

We hypothesize that age has a significant effect on the propensity to search. The likelihood that people in the 25−50 age group were searching for a job is estimated *ceteris paribus* to be 2.156 times higher than for other age groups. The odds that persons in older age group were searching for a job is estimated to be lower than for other age groups (odds ratio=0.189). These results are intuitively appealing since one would expect unemployed people in their prime work age (25−50 years) to be most actively searching for jobs. In the context of our model, the benefits of search for this age group are likely to exceed the costs by a wide margin.

Over 50 years, the propensity to search declines with the approach of retirement age (55 for women and 60 for men). In particular, during the period of analysis (1994−2000), early retirement packages were often offered, especially to women. The decreased propensity to search for older workers is consistent with the labor supply literature and with Eriksson *et al.* (2002) estimates for Finland and Norway.

Theory hypothesizes that educational attainment influences the individual's utility function and expected lifetime earnings. Thus, education is considered an important factor in the job market. In our analysis, we separate people who received secondary education such as professional courses or professional technical school (approximately 1-3 years of studies beyond high school) and those who received college education such as institute or university (at least five years beyond high school). These education levels are not mutually exclusive in RLMS sample, so we use two separate categorical variables to capture the highest educational level achieved. The likelihood of engaging in a job search is estimated to increase for people with both levels of education (positive coefficients). In particular, the odds that unemployed workers who have completed secondary education have searched for a job are *ceteris paribus* 1.669 times higher than for people without such education. The odds for workers with college education are *ceteris paribus* 1.518 times higher than for people without such education. Thus, people with secondary education tend to search for work even more actively than people with college degrees.

Both search theory and our model suggest that search costs and productivities vary across the places of residence of the individuals. It is therefore reasonable to hypothesize that Russian Federation, which is a huge territory diverse in its urban and rural structures, would exhibit geographical differences in the functioning of the labor market. In fact, we did found no significant differences among the eight regions[18] identified in the RLMS.[19] One reason may be in the limited inter-region movements of labor,[20] and locality of the job search. Consequently, we choose to explore the importance of living in the metropolitan areas of Moscow and St. Petersburg (Region 1 in the RLMS) in contrast to the other regions of Russia (Regions 2 through 8 in the RLMS).[21] It turns out that the propensity to search is higher for residents of Region 1 than for residents of other regions of Russia. In fact, the odds that a denizen of Moscow and St. Petersburg was searching for a job is *ceteris paribus* 1.700 times higher than for populace of other regions. This result seems

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[18] Eight regions in RLMS correspond to the administrative division of Russian Federation.
[19] See Smirnova (2002).
[20] For example, Andrienko and Guriev (2003) concluded that region-to-region migration flows in Russia during 1992-1999 are low.
[21] Such decisions are consistent with other studies of job search behavior. For example, Weber and Mahringer (2002) consider "Living in a large city" as an explanatory variable in the analysis of Austrian labor market.

plausible, as one would expect the labor market to be more developed, flexible and richer in opportunities for searchers in urban areas such as Moscow and St. Petersburg. As these opportunities are worth exploring, searching actively is more likely to pay off in these cities.

Specific labor market conditions are critical characteristics of the transition countries. Wage arrears (unpaid wages or outstanding pay), in particular, are considered a distinctive feature of Russian labor market adjustment. Many have argued that they have hindered structural change in Russia as compared to CEECs.[22] We therefore suppose that the existence of wage arrears captures those specifics for Russian labor market in our analysis. Wage arrears in Russia are examined here only in relation to employment-unemployment transitions, i.e. when the arrears situation gets so bad that the worker quits. Earle and Sabirianova (2002) argue that conceptually the effect of delayed wages on an employee's mobility is ambiguous. They show empirically that the probability of the worker quitting in response to late wages is positive in the regions with low wage arrears, but negative in regions where they are high. The effect of unpaid wages on the behavior of individuals after they quit a job and sought a new one would thus be ambiguous as well.

The RLMS contains a question: "At present time, does your place of work owe you any money, which, for various reasons, was not paid on time?" The answers to this question comprise the categorical variable of wage arrears in our sample. The estimate shows that the propensity to search for a job for workers who have wage arrears is higher than for workers that do not experience such situation (odds ratio = 1.726). If we account for the fact that the incidence of wage arrears is quite low in our sample (around 5%, see Appendix 4), the higher propensity to search is consistent with the evidence presented by Earle and Sabirianova (2002).

6.2   Job search intensity

Table 2 contains the ordinal logit estimation results for job search intensity.[23] The sample consists of people who have searched for a job in the past 30 days and who used one or more search methods in their search. The overall fit of the model is good with the likelihood ratio Wald chi-square statistics 30.2824 for 6 degrees of freedom. All effects considered in the model are significant, except the presence of pre-school age children in the household. The score test for proportional odds assumption is passed.

Search intensity is measured by the number of search methods used (1−6), and ordered so that the larger numbers of methods used correspond to the higher level of search intensity. The average number of search methods used in Russia is 2.22 for successful searchers in the RLMS sample.[24] This figure is consistent with Roshchin and Markova's (2003) estimate of search intensity for unemployed workers for the period 1994−2000 in the RLMS sample.[25]

Labor supply theory, as well as equation (7), hypothesizes that gender, education, experience, household composition, and place of residence affect the search intensity of an unemployed individual. The estimates in Table 2 suggest that women in Russia search less

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[22] See Earle and Sabirianova (2002) for analysis of wage arrears in Russia, and Boeri and Terrell (2002) for comparison of labor market adjustment paths among transition countries.

[23] Appendix 5 contains summary statistics for variables used in the estimation of search intensity equation.

[24] See Appendix 3.

[25] Search intensity for unemployed is estimated to vary between 2.1 and 2.7 methods during 1994−2000.

intensely than men. In particular, the odds for women to have used two instead of one search method are *ceteris paribus* about 0.787 times as high as for men. Similarly, the odds for women to use three, instead of one or two, search methods are *ceteris paribus* about 0.787 times as high as for men. This result is consistent with lower search intensity for women then for men in Estonia,[26] Finland, and Norway.[27] In Austria, women search more intensely than men.[28]

Search intensity declines with work experience. *Ceteris paribus* each additional year of experience diminishes the odds of higher intensity by the factor of 0.987. This may be because experience in the labor market makes it possible for the worker to limit the search to one or two methods with a likelihood of success. Additionally, since age and experience level are highly correlated,[29] this estimate is consistent with the conclusions of other researchers that search effort diminishes with age.[30]

The job search literature emphasizes the importance of education on the effort devoted to the job search. Our estimate shows that *ceteris paribus* people with education search more intensely than people without. Table 2 shows that people with secondary educations are 1.285 times more likely to use more search methods than people without such education. The odds for people with college education will use two instead of one, or three instead of one or two, methods are 1.528 times higher than for people without such education. As in the case of search propensity, people with college educations search relatively more intensely for a job than people with only a secondary education. Higher returns on a year of education in transition economies,[31] greater innate motivation and ambition would be plausible explanations for this result.

Place of residence, as expected, has a significant positive effect of the job search effort. *Ceteris paribus* residents of Moscow and St. Petersburg search 1.519 times more intensely than people living in other regions. Search theory suggests that the costs of search are lower in urban labor markets due e.g. to the high density of employers and lower transportation costs, as well as higher real returns due to the real wage premia in urban labor markets. Our result is thus consistent with the hypothesis that increased job opportunities in metropolitan cities of Moscow and St. Petersburg, in addition to the flexibility of labor market, high density of employers, and increased access to the information, are expected to positively influence people's job search intensity.

Table 3 gives the predicted probabilities of the average number of methods used by unemployed in Russia. The use of only one job search method has the highest predicted probability ($\approx$42%). The predicted probabilities of using more than one method gradually decline in the sample (from 21% for two methods down to 2% for six methods). The predicted probabilities are consistent with the descriptive statistics for this sample (see Appendix 8).

6.3   Search method choice

The search method choice equation (8) is estimated using the multinomial logit procedure. A crucial restriction of this procedure is the mutual exclusiveness of the choice

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[26] Hinnosaar (2003).

[27] Erikkson *et al.* (2002).

[28] Weber and Mahringer (2002).

[29] The Pearson correlation coefficient is 0.84876.

[30] Weber and Mahringer (2002).

[31] See discussion in section 2 on stylized facts of the transitional labor markets.

alternatives, i.e. search methods used by unemployed in our case. Therefore, in this section we restrict our sample to those individuals who used a single search method. The frequencies of use of single search methods identified in the RLMS are presented in Appendix 2. Due to a disproportionately small number of observations for such methods as ads, relatives, and private employment services, we regrouped the search methods into three broad strategies (described in Section 3): AGENCIES, CONTACTS, and FIRMS. Accordingly, our sample now consists of 557 successful job searchers who used one of the three broad strategies.

Results of the multinomial logit estimation of the search method choice equation for three specifications based on the comparison category are presented in Table 4.[32] The overall fit of the search method choice equation is good with a likelihood ratio Wald chi-square statistic of 50.1342 for 12 degrees of freedom. The variables with statistically significant coefficients are gender, work experience, and residence in the metropolitan areas of Moscow and St. Petersburg. Since the odds ratios have an intuitive appeal for the interpretation, we concentrate on the odds ratios presented in Table 5.

Search theory hypothesizes that women use different job search strategies than men. These differences are expected to be particularly profound in Russia as in the post-Soviet era a highly inequitable distribution of social and domestic labor toward women has been observed.[33] It is interesting to see if gender inequality issues play any role in the job search behavior in transitional Russia. The model estimation predicts the odds for women to have used AGENCIES instead of FIRMS are 2.149 times higher than the same odds for men. The odds for women to have used the AGENCIES instead of CONTACTS are 2.275 times higher than the same odds for men. From these estimates, one can infer that compared to men women are using AGENCIES more often than any other strategy. In our opinion, the absence of "equal opportunity" legislation in Russia might influence the discrimination against women in the labor market. Thus, women may feel more secure applying through the employment agencies when looking for re-employment rather than going through direct contact with employers or personal contacts.

We hypothesize work experience influences the individual's reservation wage and, thus, search behavior. In particular, the search method choice is affected because individuals with greater experience in the labor market would use more personal or informal contacts or develop specific strategies in looking for a job. Our estimation shows that *ceteris paribus* each additional year worked increases the odds of applying through FIRMS instead of CONTACTS by the factor of 1.029, and the odds of applying through AGENCIES instead of CONTACTS by the factor of 1.022. These results highlight a counter-intuitive decline in the likelihood of reliance on CONTACTS relative to other methods with increasing experience. Perhaps some search strategies, for example informal contacts, which might be widely used by more experienced workers, are not captured by the RLMS as described in Section 2. Moreover, due to a decrease of returns to experience in all transition countries,[34] more experienced individuals might tend to apply through AGENCIES, which offer re-training and referrals, or directly through FIRMS, where they might have prior contacts with the administration.

Residence in metropolitan areas of Moscow and St. Petersburg (Region 1) has the largest effect on the choice of job search strategies. The odds that people living in Region 1 applied through CONTACTS instead of AGENCIES are 8.185 times higher than for people living in other regions. The odds for workers in Region 1 to have used FIRMS as

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[32] Appendix 8 contains summary statistics for variables used in the estimation of search method choice equation.

[33] Harrison (1986): pp. 78-79.

[34] See discussion of stylized facts of labor markets in transition economies in Section 2.

their job search strategy instead of AGENCIES are 8.483 times higher than for people living in other regions. Thus, AGENCIES are the least probable search strategy for unemployed individuals living in Region 1. The FIRMS strategy seems to be more probable than CONTACTS for Region 1, but the difference is insignificant. These results are consistent with the conventional wisdom and the reasonable economic prediction that living in large city increases the density of employers in one's region, and thus reduces costs of job search. In this case, Moscow and St. Petersburg definitely stand out in terms of developed labor market infrastructure (advertisements), and the extent to which personal contacts (friends and relatives) are utilized.

7   Conclusions

This paper investigated the job search behavior of Russian unemployed. It specifically addressed three issues in the development of Russian labor market: (1) the propensity to search for a job after becoming unemployed, (2) the search intensity of successful job seekers, and (3) the use of specific search methods when searching. We used the RLMS data of Rounds 5-9 to estimate the engagement in search equation, search intensity equation, and search method choice equation.

Several limitations of the data and estimation were encountered. Since the RLMS is a survey of "economic well-being"[35] rather than of "labor force, it lacks important labor related information. The annual data collection intervals may be too large to represent the "short period of time" assumed in static labor supply model. The sample size was decreased after accounting for the restriction of mutual exclusiveness of multinomial logistic regression. Recognizing these shortcomings, we exercise extra caution in interpreting the results.

On average, a successful job searcher in Russia used two methods. Approximately 17% of searchers used CONTACTS (relatives, friends, and acquaintances) as their job leads, 13% used AGENCIES (state and private employment services) as their search strategy, 12% applies to FIRMS (through advertisements and directly), and 57% combined several methods.

The results of the three-equation model estimation are summarized in Table 6. The econometric evidence suggests that three main findings.

1) The greatest propensity to search for a job was found in workers in the 25–50 age group who had completed secondary or college education, had children of the pre-school age in the household, or lived in the metropolitan areas of Moscow and St. Petersburg. People were less inclined to search for a job if they were female or in an older age group. Additionally, labor market characteristics, such as wage arrears, increase search propensity.

2) Women and people with more experience generally tended to search less intensely for work. Workers with secondary or college educations or those living in Moscow and St. Petersburg metropolitan areas searched more intensely for jobs.

3) Specific methods of job search varied depending on socio-economic group. Women are more likely to apply to AGENCIES than use other search strategies. People with more

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[35] See "About the Study" at the project description page at www.cpc.unc.edu/rlms.

experience are more likely to use FIRMS and AGENCIES instead of CONTACTS for their job leads. Residents of the metropolitan areas of Moscow and St. Petersburg are more likely to use CONTACTS and FIRMS instead of AGENCIES.

Overall, gender and residence in Moscow and St. Petersburg metropolitan areas were consistently statistically important for job search behavior. Women were significantly less active than men in all stages of job search. One explanation here may be the somewhat traditional family arrangement still promoted in Russia. Women are customarily expected to perform most household duties, even when they are employed full-time. Women are less likely to engage in job search, search less intensely for work, and use different search strategies than men.

Job search behavior of workers living in metropolitan areas of Moscow and St. Petersburg is estimated to differ significantly from the behavior of workers living in other regions of Russia. The concentration of employers, informational infrastructure development, density of personal contacts and other specifics of the labor market in Moscow and St. Petersburg in fact encourage the activity of labor market participants.

The fact that individuals prefer different overall search intensities and different job search methods suggests that the specifics of search behavior are important in the functioning of Russia's labor market (as our model suggests). Further research is needed, of course, to advance our understanding of the search behavior of unemployed workers in Russia. In particular, the productivity of each search method could be addressed and the demand side of the Russian labor market could be explored using a different data set.

Table 1   Propensity to search for a job

(Logit estimation, probability modeled is Search=1)

Explanatory Variable	Estimate	St.Error	Odds Ratio
Intercept	-1.6581	0.1310	
Female	-0.3135	0.0549	0.731
Age <25	0.0691 #	0.1229	1.072
Age 25-50	0.7681	0.1227	2.156
Age >50	-1.6643	0.1358	0.189
Secondary Education	0.5122	0.0558	1.669
College Education	0.4176	0.0902	1.518
Residence in Region 1	0.5307	0.0983	1.700
Presence of Children 0-7 years old	0.1799	0.0639	1.197
Wage Arrears	0.5460	0.0941	1.726
N	13286		
Likelihood Ratio Chi-Square	1985.8260		
DF	9		
Pr > Chi-Square	<0.0001		

Notes: 1) All estimates are significant at the 5% significance level, except the one labeled #.
2) All variables are categorical variables. They equal 1 when the characteristic is present, and 0 otherwise. The reference category for all explanatory variables is 0.

Table 2 Job search intensity equation

(Ordinal logit estimation, probabilities modeled are of higher search intensity)

Explanatory Variable	Estimate	Standard Error	Odds Ratio
Female	-0.1196	0.0552	0.787
Number of Years Worked	-0.0126	0.0046	0.987
Secondary Education	0.1253	0.0568	1.285
College Education	0.2119	0.0808	1.528
Presence of Children 0-7 years old	-0.0171 #	0.0623	0.966
Residence in Region 1	0.2091	0.0884	1.519
N	1097		
Likelihood Ratio	30.2824		
DF	6		
Pr > Chi-Sq	<0.0001		

Notes: 1) All estimates are significant at the 5% significance level, except the one labeled #. All explanatory variables, except number of years worked, are categorical variables. They equal 1 when the characteristic is present, and 0 otherwise. The reference category for these variables is 0.

Table 3   Predicted probabilities of average number of methods to be used

(Ordinal logit estimation)

Average Number of Search Methods to be Used	Predicted Probability
1	0.4193
2	0.2138
3	0.1645
4	0.1186
5	0.0591
6	0.0246
N	1097

Table 4   Search method choice equation *(Multinomial logit estimates)*

Parameter	Contrast with AGENCIES		Contrast with FIRMS		Contrast with CONTACTS	
	CONTACTS	FIRMS	CONTACTS	AGENCIES	FIRMS	AGENCIES
Female	-0.4111 *	-0.3824 *	-0.0287	0.3824 *	0.0287	0.4111 *
	(0.1178)	(0.1249)	(0.1172)	(0.1249)	(0.1172)	(0.1178)
Number of Years Worked	-0.0217 *	0.00729	-0.0290 *	-0.0073	0.0290 *	0.0217 *
	(0.00885)	(0.00890)	(0.0089)	(0.0089)	(0.0089)	(0.0089)
Secondary Education	-0.0147	0.0535	-0.0682	-0.0535	0.0682	0.0147
	(0.1156)	(0.1231)	(0.1186)	(0.1231)	(0.1186)	(0.1156)
College Education	-0.0163	-0.1988	0.1824	0.1988	-0.1824	0.0163
	(0.1798)	(0.1983)	(0.1880)	(0.1983)	(0.1880)	(0.1798)
Residence in Region 1	1.0511 *	1.0690 *	-0.0179	-1.0690 *	0.0179	-1.0511 *
	(0.3184)	(0.3249)	(0.1836)	(0.3249)	(0.1836)	(0.3184)
Presence of Children 0-7 years old	0.1704	0.1830	-0.0126	-0.1830	0.0126	-0.1704
	(0.1283)	(0.1373)	(0.1284)	(0.1373)	(0.1284)	(0.1283)
N	462					
Likelihood Ratio	50.1342					
DF	12					
Pr > Chi-Sq	<0.0001					

Notes: Standard Errors are in parentheses; * means statistical significance at 5% level.

Table 5   Odds ratios for the search method choice equation *(Multinomial logit estimation)*

Parameter	Contrast with AGENCIES		Contrast with FIRMS		Contrast with CONTACTS	
	CONTACTS	FIRMS	CONTACTS	AGENCIES	FIRMS	AGENCIES
Female	0.440 *	0.465 *	0.944	2.149 *	1.059	2.275 *
Number of Years Worked	0.979 *	1.007	0.971 *	0.993	1.029 *	1.022 *
Secondary Education	0.971	1.113	0.873	0.899	1.146	1.030
College Education	0.968	0.672	1.440	1.488	0.694	1.033
Residence in Region 1	8.185 *	8.483 *	0.965	0.118 *	1.036	0.122 *
Presence of Children 0-7 years old	1.406	1.442	0.975	0.693	1.026	0.711
N=462						

Note: * means that the parameter estimates for which the odds ratios are calculated are significant at 5% significance level.

Table 6 Summary of the effects of explanatory variables on the likelihood of the response variables

X	Likelihood of *Propensity to Search* with the Presence of X	Likelihood of *Higher Search Intensity* with the Presence of X	Likelihood of *Particular Search Method Use* with the Presence of X
Female	↓	↓	AGENCIES > FIRMS & CONTACTS
Age < 25 years old	—	—	—
Age 25-50 years old	↑	—	—
Age >50 years old	↓	—	—
Years of Experience	—	↓	FIRMS & AGENCIES > CONTACTS
Secondary Education	↑	↑	—
College Education	↑	↑	—
Presence of Children 0-7 years old	↑	—	—
Residence in Moscow and St.Petersburg	↑	↑	CONTACTS & FIRMS > AGENCIES
Wage Arrears	↑	—	—

Notes:

↑ means the increased likelihood of response with the presence of X
↓ means the decreased likelihood of response with the presence of X
— means the estimated coefficient was statistically insignificant

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Appendix 1

Table A1.1 Labor markets: Comparison among countries

Indicator	EU-15, 2002	ACC, 2002	USA, 2002	Russia, 2001
Population -- total, million	374.8	66.7	281.4 (#)	144.2
Total Employment, thousand	162,974	28,917	136,439	64,664
Employment Rate -- 15-64 years, %	64.2	56.1	62.4	58.6
Unemployment, thousand	13,453	5,012	8,378	6,303
Unemployment Rate -- 15+ years, %	7.6	14.8	6.0	8.9
Unemployment by Duration, %				
- less than 6 months	42.2	24.7	81.6	45.0
- 6 to 11 months	17.6	21.0	9.8	18.0
- 12 months and more	40.2	54.3	8.5	36.9

Notes:

EU-15 (European Union) countries are: France, Germany, Italy, Austria, Belgium, Finland, Greece, Ireland, Luxemburg, Netherlands, Portugal, Spain, UK, Denmark, and Sweden.

ACC (Acceding into European Union in 2004) countries are: Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and Slovak Republic.

(#) The population figure for the US is for 2000.

Sources:

For EU-15 and ACC countries: Labour Force Survey Principal Results 2002, Acceding Countries. Eurostat, European Communities, 2003.

For USA: Population: US Census Bureau, The Population Profile of the United States, 2000. Employment and unemployment: Bureau of Labor Statistics, Current Population Survey, 2002.

For Russia: Goskomstat Rossii, 2002, "Ekonomicheskaya Aktivnost' Naseleniya Rossii" (in Russian).

Appendix 1 (Continued)

Table A1.2 Russian federation: Distribution of unemployed by job search methods, %

Job Search Methods	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Application to the state employment service	28.3	34.4	36.3	39.0	39.9	37.3	29.4	25.9	30.3	33.3
Application to a commercial employment service	3.1	3.7	3.8	4.2	2.4	2.4	1.5	2.3	3.5	5.9
Placing ads in papers, responding to ads	13.6	15.6	16.9	17.6	16.3	18.6	18.0	24.0	24.7	23.7
Contacting friends, relatives, acquaintances	36.7	37.8	38.5	37.0	55.0	57.7	54.5	58.4	59.1	59.7
Directly contacting the management/employer	30.9	29.0	27.9	25.6	28.8	29.4	31.9	30.5	27.9	28.2
Other methods	14.8	13.4	16.7	15.2	16.0	16.7	11.5	14.3	11.8	13.8

Note: The sum exceeds 100% because more than one search method may have been used.
Sources: For 1993–2001: Goskomstat Rossii, Ekonomicheskaya Aktivnost' Naseleniya Rossii, 2002, Table 4.10.
For 2002: International Monetary Fund, 2003. Russian Federation: Statistical Appendix, Table 13.

Appendix 2

Table A2.1 Relation between single job search methods and broad search srategies

Single Job Search Methods	Frequency of Use	Broad Job Search Strategies	Frequency of Use
Advertisements	42		
Enterprises directly	121	FIRMS	163
Friends	197		
Relatives	22	CONTACTS	219
Private Employment Services	17		
State Employment Services	158	AGENCIES	175
Total	557	Total	557

Appendix 3

Table A3.1 Summary statistics for pooled data

Variable		Engagement Equation N=13286		Search Intensity and Search Method Choice Equations N=1310	
		Mean	St.Dev.	Mean	St.Dev.
Sex	Female	0.6344	0.4816	0.5267	0.4995
Age	Below 25	0.2452	0.4302		
	25 - 50	0.2076	0.4056		
	Above 50	0.5639	0.4960		
Education	Secondary	0.3589	0.4797	0.5641	0.4961
	College	0.0887	0.2844	0.1313	0.3379
Years of Experience				16.6126	12.4837
Residence	Region 1	0.0655	0.2474	0.1046	0.3061
Children	0-7 years old	0.1851	0.3884	0.2756	0.4470
Wage Arrears		0.0466	0.2108		
Search		0.1413	0.3483	1	0
Number of Single Methods Used (1-6)				2.2206	1.3600
Broad Search Strategies	AGENCIES			0.1336	0.3403
	CONTACTS			0.1672	0.3733
	FIRMS			0.1244	0.3302
	MULTIPLE			0.5748	0.4946

Notes:Region 1 consists of Moscow and St. Petersburg metropolitan areas.

Secondary education level includes people completed professional courses and professional technical institutions (PTU, FZU)

between one and three years of studies beyond basic 11-year education).

College education level includes people completed institutes and universities (at least five years of studies beyond basic 11-year education).

Broad Search Strategies are described in the text and Appendix 2.

Appendix 4

Table A4.1 Variables used in the engagement equation,
N=13286

Variable	Frequency	Percent
Sex		
Female	8429	63.44
Male	4857	36.56
Total	13286	100
Age		
Age < 25 years old	3258	24.52
Age 25-50 years old	2758	20.76
Age >50 years old	7270	54.72
Total	13286	100
Education		
Secondary Education	4768	35.89
College Education	1179	8.87
Residence		
Residence in Region 1	870	6.55
Labor Market Specific		
Wage Arrears	619	4.66
Household Characteristic		
Presence of Children 0-7 years old	2459	18.51

Appendix 5

Table A5.1 Variables used in search intensity and search method choice equations,

N = 1310

Variable	Frequency	Percent
Sex		
Female	690	52.67
Male	620	47.33
Total	1310	100
Experience		*Range*
Number of Years Worked	1097	0-54
Education		
Secondary Education	739	56.41
College Education	172	13.13
Residence		
Residence in Region 1	137	10.46
Household Characteristic		
Presence of Children 0-7 years old	361	27.56
Number of Methods Used		
1	558	42.60
2	288	21.98
3	211	16.11
4	150	11.45
5	76	5.80
6	27	2.06
Total	1310	100
Broad Job Search Strategies		
AGENCIES	175	13.36
FIRMS	163	12.44
CONTACTS	219	16.72
MULTIPLE	753	57.48
Total	1310	100

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