

**Getting Personal:
Networks and Stratification in the Russian Labor Market, 1985-2001***

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ABSTRACT. We use employment histories from the Survey of Stratification and Migration Dynamics in Russia (total N=7167) to examine how the role of personal networks in the Russian labor market evolved from 1985 through 2001 and how networks relate to patterns of social stratification in Russia. Because this period saw dramatic institutional changes associated with market transition, it offers a unique opportunity to assess whether broad institutional factors shape the prevalence or advantages of networks. We hypothesize and find specific institutional influences on the prevalence of networks based on employer-side considerations. We situate the mixed findings from our analyses of the “returns” to networks within recent debates regarding whether job contacts offer workers an advantage and how social capital shapes post-socialist inequalities involving gender, education, and former Communist Party members.

Since the publication in 1974 of Granovetter's seminal book, *Getting a Job*, economic sociologists and stratification researchers have sought to understand to the role played by personal networks in labor markets. As recent reviews of the literature indicate, the vast majority of research in this area has focused on the United States or other market societies (Granovetter [1974] 1995; Lin 1999; Marsden and Gorman 2001). Little has systematically examined variations across institutional contexts or over time in the use of networks or in their consequences for labor market outcomes. In fact, the relatively stable institutional contexts of labor markets in the United States and other developed market societies offer limited grounds for anticipating substantial variations or changes in the use or consequences of networks. Without comparative analyses of developing countries or non-market contexts, we cannot assess whether broad institutional factors shape the prevalence or advantages of networks. The collapse of state socialism and the attendant institutional changes in the direction of markets afford researchers an unusual opportunity to tackle these questions.

We examine how the role of personal networks has evolved in the Russian labor market and how networks relate to patterns of social stratification in Russia. We focus on variations in the relative frequency of network usage across time, geographic and institutional setting, and job seeker characteristics, from 1985 through 2001, a 17-year period marked by dramatic institutional changes, particularly following the collapse of the Soviet Union at the end of 1991 and the initiation of sweeping market reforms in January 1992. We also analyze whether using networks leads to better jobs, and whether the network advantage varies by job seeker characteristics. Our large, representative sample and extensive work histories permit us to build upon and expand the findings of other studies that have examined the economic sociology of labor markets in transition societies (Bian 1997; Zhou, Tuma, and Moen 1997; Clarke 1999;

Yakubovich and Kozina 2000; Gerber 2002; Yakubovich 2005) and postsocialist stratification (Nee 1989, 1996; Rona-Tas 1994; Bian and Logan 1996; Walder 1996; Xie and Hannum 1996; Gerber and Hout 1998; Cao and Nee 2000; Zhou 2000; Gerber 2000, 2006a).

Our empirical analyses address four questions: 1) How, if at all, do the institutional changes associated with market transition affect the importance of networks as a method to secure new jobs? 2) Does the use of networks vary systematically by economic location (sector and branch of the economy)? 3) How do individual characteristics and type of locality affect the probability of using networks to obtain new jobs in contemporary Russia? 4) Does the use of networks lead to better quality jobs in a society undergoing market transition?

Although networks played an important role in social and economic life in state socialist societies, we develop a theoretical rationale for expecting their role in the labor market to increase as a result of the institutional changes accompanying market transition. We also argue that networks should be more widely used to obtain jobs in the private sector and in newer branches of the economy. We situate our analyses of the correlates of network use and whether networks lead to better quality jobs within two debates: one over the labor market value of “network social capital” (Mouw 2003) and one pertaining to patterns of inequality in late-Soviet and post-Soviet Russia. In particular, we address a controversy regarding whether the earnings advantages of former members of the Communist Party of the Soviet Union (CPSU) stem from their superior social capital (in the form of Party-based networks), as well as hypotheses that relate earnings differences by gender and education in contemporary Russia to variations in network usage and returns. We also advance a novel hypothesis that may hold for countries other than Russia: locality type mediates variations of network use by education.

THEORIES AND HYPOTHESES

Changing Institutional Context: Increased Use of Networks in the Labor Market

Despite the growing interest in how institutional arrangements affect stratification processes (Kerckhoff 1995), there has been little or no attention to how institutions affect job search strategies.¹ The Soviet Union collapsed at the end of 1991 and the Russian government introduced a series of radical market reforms in January 1992 (see Blasi, Kroumova, and Kruse 1997; Gerber and Hout 1998; Clarke 1999). The dramatic change in institutional setting within Russia offers a unique opportunity to examine whether and how institutional context shapes the prevalence of different job search strategies, the labor market advantages to using personal networks, and the variations in these advantages by individual characteristics. Our job history data spanning the late-Soviet and post-Soviet periods are well suited for addressing these questions. But before turning to empirics, we develop theoretical expectations regarding how market transition might shape the role of networks.

In Soviet Russia networks provided a vital basis for relations of trust and reciprocal obligation that helped individuals cope with economic scarcities and an atmosphere of low generalized trust and high mutual suspicions encouraged by the authoritarian Soviet regime (McDaniel 1996; Ledeneva 1998). Networks operated most saliently in the realm of consumption, providing access to scarce goods and services. But in principle networks could also play a role in the Soviet labor market, too. In the absence of formal job advertising, information about especially good jobs could travel via networks, and managers might choose to

¹Granovetter ([1974] 1995) reviews findings on the labor market uses of networks in a variety of countries, but systematic comparisons of the use of or returns to networks in different institutional contexts are lacking. Mizruchi, Stearns, and Marquis (2006) find that the influence of inter-firm networks on debt-based financing in the United States declined from 1973 through 1994, which they attribute to specific institutional changes. They describe other recent studies of institutional or temporal variations in how networks shape firm practices, but the studies they mention do not deal specifically with labor markets.

reserve such jobs for their indirect and direct network ties so as to create or pay off other obligations (Yakubovich and Kozina 2000). Studies of networks in the People's Republic of China (Bian 1997), the German Democratic Republic (Volker and Flap 1999), and socialist-era Hungary (Borocz and Southworth 1998) have found that network-based hires played an important role in these state socialist settings. If informal relationships are especially important under state socialism, we might expect their role to diminish in these societies as they undergo market transition.

However, there are two compelling reasons to expect the role of networks in the labor market to increase in post-socialist societies. First, increasing scarcity should enhance the importance of personal networks because they provide information and access to scarce resources. Some observers thus argue that networks are more vital in post-Soviet Russia, because the economic crisis following market reforms created new scarcities – of employment and income rather than consumer goods and services (Burawoy, Krotov, and Lytkina 2000; Yakubovich and Kozina 2000; Ashwin and Yakubovich 2005). Second, networks establish trust and reciprocal obligations, thereby counteracting uncertainty in economic relationships. Reducing uncertainty becomes a more pressing imperative in a context of rapid institutional changes because the new institutions are incomplete and unfamiliar. As Guseva and Rona-Tas (2001) show in an analysis of the Russian credit card industry, Russian economic actors faced with uncertainty often have to rely on networks rather than institutions to reduce it. Applying this logic to the labor market, we would expect employers to rely more on networks when making hires in the post-Soviet context than they did in Soviet times.

Earlier studies of Russia based on very limited samples have found that the use of networks to find jobs persists or even increases as a result of market transition (Clarke 1999;

Yakubovich and Kozina 2000). These studies argue that state socialist labor market institutions (such as administrative job assignments by state organs) declined due to the collapse of the Soviet system, but market institutions (such as job advertisements and private employment agencies) were slow to emerge in their place. The resulting institutional vacuum left networks as the primary basis for finding jobs. This account overlooks the fact that individual application (blindly submitting an application to a firm) – not state assignment – was the primary method of successful job search in the Soviet era.² Obviously state assignments should diminish following the collapse of the Soviet system, but it is not clear why the disappearance of administrative assignments should lead networks to supplant individual application.

A more compelling theoretical rationale for predicting this pattern can be derived if we focus on the employer side of the hiring process. Soft budget constraints, taut plans, poor technology, an extensive pattern of growth, and endemic supply interruptions all created a general labor shortage in the Soviet Union and other state socialist economies (Kornai 1981). Russia's market transition produced, if incompletely, a shift from a supply-constrained to a demand-constrained labor market: the reforms led to a sharp contraction of output, layoffs, and unemployment (Clarke 1999; Gerber 2002). When labor is in short supply and budget constraints are soft, unsolicited individual applications for jobs are more likely to lead to hires, because firms generally wish to hire more workers and the costs of making “bad” hires are low. When there is a labor surplus and budget constraints are hardening, employers have both the opportunity and incentive to be more selective in evaluating applicants. As the “stakes” involved in the search process are raised, employers should become more hesitant to take on applicants with whom they are not linked by a contact, particularly if the application is unsolicited:

² Mandatory state job assignments were largely limited to graduates of universities and specialized secondary schools, who typically received a 3-year assignment upon graduation (see Solnick 1998; Gerber 2003).

Hypothesis 1: In the course of market transition, the proportion of hires accomplished via individual application declines.

Correspondingly, they should also rely more on networks as a basis for information about and trust in potential employees:

Hypothesis 2: In the course of market transition, the proportion of hires accomplished via personal networks increases.

In short, networks insure employers against uncertainty under both state socialism and capitalism, but uncertainty in hiring decisions is a greater threat in the former than in the latter.

More Reliance on Networks in the Private Sectors and Newer Branches

Single-firm studies in the United States demonstrate that employers are more likely to hire applicants who are referred by current employees (Fernandez and Weinberg 1997; Fernandez, Castilla, and Moore 2000; Peterson, Saporta, and Seidel 2000). While these studies are indispensable for establishing employers' preferences for hiring referrals, by their nature they cannot address the question of whether some types of firms are more likely to do so than others. The reasoning behind hypothesis 2 suggests that employers' incentives and opportunities to rely on networks are positively associated with the degree of uncertainty, the stakes associated with a bad hiring decision, and the supply of labor. This logic, in turn, implies that employer preference for referrals varies by sector and economic branch.

Private employers are more likely to face competitive conditions and harder budget constraints than state sector employers. Private firms tend to pay higher wages (Gerber and Hout 1998; Gerber 2000, 2006a). Thus, relative to state-owned firms they have both incentives and opportunities to be more selective about whom to hire and, correspondingly, are more likely to rely on referrals:

Hypothesis 3: Private firms are more likely to rely on networks for making hires than state sector firms.

Because the Soviet economy evolved in response to the priorities of planners rather than to the demand of consumers and investors, certain economic branches were quite underdeveloped relative to the size they would have obtained in a market context. The introduction of market institutions thus produced fairly dramatic structural change, as investment and labor flowed to new branches such as retail and wholesale trade, consumer services, finance, and insurance (Gerber 2002). The very newness of these branches in the post-Soviet economy implies that employers did not have readily available formal criteria for making hiring decisions. In contrast, employers in traditional branches such as manufacturing, education, or health could refer to long-established criteria for assessing the suitability of applicants based on their formal qualifications. This means that employers in newer branches on average have more uncertainty about how to evaluate the formal qualifications of job applicants, and they therefore are more likely to rely on referrals when making hiring decisions:

Hypothesis 4: Firms in newer branches of the economy will be more likely to rely on networks than firms in more traditional branches.

To test hypotheses 3 and 4, it would be preferable to have firm-level hiring data on a variety of firms from different sectors and branches. However, we can test these hypotheses indirectly by determining whether jobs obtained through networks are more likely than jobs obtained in other ways to be in the private sector and in the newer branches. Under certain assumptions, which we discuss below in the “Methods” section, we can deduce variations in employer preferences from associations between search technique and the sector or branch of new jobs.

The Employee Side: Are There Advantages to Network Social Capital?

Granovetter ([1974] 1995) argued that personal networks provide superior information about job opportunities, as well as possible influence over the decisions of employers. Therefore, jobs obtained through networks – especially the weak ties within them, since they are more likely to deliver non-redundant information – would tend to be of better quality than those obtained through formal or individual means.³ Despite the intuitive appeal of these arguments, studies assessing whether the use of networks exerts a causal effect on wages have yielded contradictory empirical findings (see Marsden and Gorman 2001). Some studies indicate that using networks rather than formal methods has no effect on wages for most groups of workers, or even has a negative effect (Corcoran, Datcher, and Duncan 1980; Volker and Flap 1999; Mouw 2002, 2003). Other studies have found, though usually with some qualifications, that jobs obtained via contacts do generally carry higher earnings than jobs obtained through other methods (Campbell and Rosenfeld 1985; Simon and Warner 1992, Green, Tigges, and Brown 1995; Korenman and Turner 1996).

A related but distinct perspective treats network connections as a variable “social resource” or form of “social capital,” whose usefulness depends on the composition of the network: not contacts as such, but specifically contacts with powerful, high-status, especially well-placed, or otherwise disconnected people can be deployed by individuals to advance their own position on the labor market (Lin, Ensel, and Vaughn 1981; Marsden and Hurlbert 1988; Burt 1992; Bian 1997; Lin 1999). The social capital perspective does not require an observed

³ The theoretical logic underlying the “strength of weak ties” argument – which our data do not permit us to assess – is compelling, but empirical support for the claim has generally been weak (Bridges and Villemez 1986; Marsden and Hurlbert 1988; Wegener 1991). However, Yakubovich (2005) used person-level fixed effects to show that weaker ties within a job-seeker’s network are more likely to yield a job offer than the strong ties. Although Yakubovich uses survey data from a Russian city for his analysis, his focus is on the “strength of weak ties” argument, not the particular institutional context of Russia or the implications for post-socialist stratification.

positive “return” to the use of networks to obtain jobs. In fact, as Montgomery (1992) demonstrates (with reference to strong versus weak ties), individuals with advantageous network structures may have a higher “reservation wage” and therefore be less inclined to take job offers obtained through formal search means, producing an observed non-effect of networks on wages even though social capital does result in higher wages. Instead, the social capital approach looks for associations between measures of network quality and job outcomes. As Mouw (2003) observes (see also Lin 1999), empirical research on the relationship between network composition (“network social capital”) and labor market outcomes consistently finds the expected positive associations.

However, this association may be the spurious result of social homophily: people choose friends who are similar to themselves (McPherson, Smith-Lovin, and Cook 2001). Individuals with unobservable characteristics that make them high earners tend to befriend other individuals with the same characteristics, and vice versa. This makes it hard to rule out a scenario where network composition is not a cause of earnings, but an effect of the same unobservable variables that affect earnings. In that case, the apparent “effect” of social capital on labor market outcomes is produced by the joint causation of network characteristics and wages by unobservable variables.

Building on Montgomery’s (1992) applications of search theory to the analysis of network effects on labor market outcomes, Mouw (2003) develops a compelling indirect test of the proposition that network social capital enhances job quality: if good contacts lead to better jobs then it must be the case that variables measuring the quality of network social capital have positive effects on both wages *and* on the probability of using contacts rather than other methods to obtain jobs. Using formal mathematical proofs, he shows that these conditions apply whether

workers employ a sequential or an extensive search strategy.⁴ This insight provides a way to falsify the claim that network social capital has a causal effect on job quality: “if a proposed social capital variable has no effect, or a negative effect, on the probability of using contacts, then it is not exerting a causal effect on wages via the information and influence of contact networks.”(Mouw 2003, p.875) Mouw adds that one can reject this indirect test only by assuming that the use of networks to obtain jobs is exogenous to the level or quality of network social capital – which it would be if, say, for a job seeker who simply accepted the first job offer he received. In that case, however, one would have to find an observed labor market return to the use of network ties – either in general or specific types of ties – in order to conclude that network social capital leads to better jobs. Proponents of the argument that social capital in the form of network ties enhances labor market opportunities must therefore show that one of the following holds: 1) measures of social capital increase both wages *and* the probability of using networks to find jobs; *or* 2) using networks leads to better wages.

We can express these tests of the social capital effect as empirical hypotheses corresponding to, respectively, assumptions that the use of ties is exogenous and endogenous:

Hypothesis 5: The use of personal networks rather than other methods to obtain a new job positively affects the quality of the job.

Hypothesis 6: Measures of network social capital increase both wages and the probability of finding a job through network ties rather than through other methods.

We can test hypothesis 5 directly using several different measures of job quality. As for hypothesis 6, we have several indirect measures of network social capital, for which we develop corollary hypotheses in the next section. Mouw (2003) finds no empirical support for a network

⁴ In a sequential search the job seeker considers job offers one at a time as they come in and takes the first job that exceeds her reservation wage. In extensive search the job seeker waits until he receives all job offers and then chooses the one with the highest wages.

effect in the United States. But that does not preclude a network effect in another society with different economic institutions. By evaluating the validity of these hypotheses in late-Soviet and post-Soviet Russia, we test whether social networks in fact yield a better job and higher earnings in a transition society.

Why we might expect to find evidence of network effects in Russia? For one, studies of state socialist societies have found evidence of network effects on labor market outcomes (Bian 1997; Borocz and Southworth 1998; Volker and Flap 1999). According to these studies, institutional features of state socialism put paramount importance on the influence (based on trust and reciprocity) that can flow through ties, despite the formal commitment to ideals of meritocracy.

Second, although much of the literature on post-socialist inequality has focused on the relative importance of human capital and political capital (e.g. Bian and Logan 1996; Nee 1996; Gerber and Hout 1998), some studies assert that social capital has especially strong influence on material opportunities in the context of market transition (Rona-Tas 1994; Hanley, Yershova, and Anderson 1995; Rona-Tas and Guseva 2001). As economic crisis and uncertainty spread, those with information about increasingly scarce opportunities are much more likely to find themselves among the “winners” in the course of market transition. As a source of information about opportunities, network connections with well-placed individuals should play a key role in providing access to high-quality jobs, and either hypothesis 5 or hypothesis 6 should find empirical support. However, these studies do not directly measure the effects of networks or of social resources on job quality directly. Instead, they base the claim that social capital grows in importance on the positive income returns to membership in the former (socialist-era) Communist Party. They interpret the advantages of former Party members as evidence that Party

membership brought with it a superior store of social capital in the form of Party-based contacts that continued to be useful even after the demise of the Party and its formal structures.

Variation in the Usage and the Advantages of Networks

The literature on network social capital also emphasizes variations in the quality of network resources by characteristics such as gender (McPherson and Smith-Lovin 1982; Campbell 1988; Munch, McPherson, and Smith-Lovin 1997), education and occupational status (Marsden and Hurlbert 1988; Wegener 1991), and race (Mouw 2002; Fernandez and Fernandez-Mateo 2006). Here we take the “quality” of an individual’s network to be the probability that it will yield an acceptable job offer. We do not have direct measures of network quality. However, the logic of the social capital argument described above implies that variations in network quality should show up as variations in usage and/or advantages networks. If, for example, Russian women have poorer-quality network resources than Russian men, it would follow based on Mouw’s (2003) test that women are less likely to use networks than men (assuming network use is endogenous to network quality) or that doing so brings less of an advantage to women than to men (assuming network use is exogenous to network quality). We consider possible variations in the returns to networks by gender, education, CPSU membership, and marital status, because prior studies offer good reasons to expect particular associations between network quality and each of these variables. We also propose two new variables that might be associated with network quality: size of locality and duration of an individual’s residence in locality.

We expect that the quality of women’s networks with respect to labor market opportunities will be lower in Russia than the quality of men’s networks, for the same reasons that explain the gender gap in network quality in the United States (e.g. McPherson and Smith-

Lovin 1982; Campbell and Rosenfeld 1985; Campbell 1988; Munch et al. 1997): women are less likely to have high status males among their acquaintances and childrearing and other traditional domestic responsibilities divert women from activities where they are likely to develop job-relevant network ties. Poorer quality networks could be one reason why women have lower job-to-job mobility in post-Soviet Russia than men (Gerber 2002; Gerber and Mayorova 2006). Ashwin and Yakubovich (2005) argue that Russian women are more likely to use their network ties to advance the job prospects of their male acquaintances than to advance their own. All this suggests:

Hypothesis 6a: Russian women are less likely to use networks to obtain jobs and/or have lower labor market returns to networks than do Russian men.

On the other hand, if Russian employers discriminate against women by devaluing their formal qualifications, Russian women seeking new jobs may have to rely on their network connections more than Russian men do.

The higher the status of one's contacts, the greater should be the returns to using them for information and influence in the job market (Lin, Ensel, and Vaughn 1981; Wegener 1991). Status is positively associated with network size, complexity, and diversity (Campbell, Marsden, and Hurlbert 1986). Education is a good proxy for status, and the social homophily principle implies that the highly educated will have more ties with other highly educated people than do less educated people:

Hypothesis 6b: Highly educated Russians are more likely to use networks to obtain jobs and/or have higher labor market returns to networks than less educated Russians.

Of course, education also serves as a formal qualification for many desirable jobs, which might offset the association between education and network and thereby reduce the association between

education and network use. Some studies have found a negative association between education and network use (Corcoran et al. 1980; Marsden and Gorman 2001). However, education could still be associated with greater “returns” to networks among those who do use networks to obtain jobs.

The claims that former Communist Party members do better in post-Socialist societies due to their superior social capital (Rona-Tas 1994; Hanley et al. 1995; Rona-Tas and Guseva 2001) imply that their networks are of better quality for the purpose of securing labor market opportunities:

Hypothesis 6c: CPSU members are more likely to use networks to obtain jobs and/or have higher labor market returns to networks than do non-Party members.

The “social capital” explanation of Communist Party members’ advantages has been challenged. Gerber (2000b, 2001b, 2002) argues that the returns to Party membership reflect not social capital but higher average stocks of unobserved human capital on the part of Party members that resulted from the processes governing selection into the Party. The “social capital” and “selection” explanations have not been adjudicated using explicit measures of network usage of Party members vs. non-Party members. Empirical confirmation of hypothesis 6c would provide decisive evidence in favor of the former, while its rejection would amount to strong evidence against it.

Ashwin and Yakubovich (2005) argue that women play a vital role as “supporting actors” in the Russian labor market: even though women are less likely to use networks to find jobs for themselves, female-dominated networks are more likely to lead to new jobs for men than male-dominated networks. Through their wives, married men are more likely to have access to female-dominated networks than single men:

Hypothesis 6d: Married men are more likely to use networks to obtain jobs than unmarried men.

Ashwin and Yakubovich (2005) support their argument with an analysis of a small sample of job searches in four Russian industrial cities. We cannot test their argument directly, but if their finding holds nationally hypothesis 6d should be confirmed.

The vast literature on networks and labor markets does not devote much attention to geographically-based variations in social network quality and usefulness. We believe it likely, however, that several spatial characteristics can shape both the quality and importance of networks. First, we would expect that networks tend to be larger in size, more extensive, and more diverse in larger urban environments than in smaller localities. The reason for this is simple: urban areas are more densely populated and urban life brings one into contact with a larger number and wider array of individuals than rural life, thus affording more opportunities to establish ties with an expansive and diverse range of people. Moreover, bridging ties might be more predominant in urban-based networks than in smaller localities where “everyone knows everyone.” Our intuition implies:

Hypothesis 6e: Residents in larger cities are more likely to use networks to obtain jobs and/or have higher labor market returns to networks than residents in smaller localities.

If this hypothesis holds, it is essential to control for locality size in order to estimate the effect of education on network usage and returns, because education and urbanization are positively associated in many national contexts.

Finally, we reason that the longer individuals live in a particular locality, the more time they have to establish local ties.⁵ Although migrants often move to localities where they already

⁵ Marsden and Hurlbert (1988) tested for such an effect on network use using data from the Detroit Area Study, but they found no effect.

know somebody, on average newcomers to an area will have fewer ties than longer-term residents:

Hypothesis 6f: Duration of residence in present locality increases the probability of using networks to obtain jobs and/or the labor market returns to networks.

We expect the effect of duration of residence to be strongest for newcomers and to decelerate in intensity with time, calling for a logarithmic specification.

DATA, MEASURES, AND METHODS

Data

Our data are from the *Survey on Stratification and Migration Dynamics in Russia* (SSMDR), which combines three nationally representative samples of adult Russians surveyed by the Moscow-based survey research firm, VTsIOM, in September 2001-January 2002 (total N=7,167). The surveys represent three waves of a bi-monthly omnibus survey, “Monitoring of the Socio-economic Situation in Russia,” which VTsIOM has administered since March 1993.⁶ The samples were drawn using VTsIOM’s standard multi-stage procedure for the Monitoring surveys. All urban population points and rural administrative areas were divided into 65 strata according to region, a proxy for ethnic composition, size, and administrative status. A total of 110 primary sampling units (PSUs) were systematically selected within strata with probabilities proportionate to size (Moscow and St.Petersburg were self-representing). Secondary sampling units (SSUs) consisting of either electoral districts (in urban PSUs) or villages (in rural PSUs) were selected within each PSU such that 8-12 interviews were conducted in each SSU.

Addresses within SSUs were selected using a random walk algorithm. At each address, the

⁶ In 2004 Russian authorities took over VTsIOM and dismissed its founding director, Yuri Levada. Virtually all of VTsIOM’s erstwhile staff left the organization and joined Levada in forming the Levada Analytic Center, which continues to administer the “Monitoring” surveys. The current VTsIOM should not be confused with the prior organization, as the quality of its staff and procedures are uncertain.

respondent with the nearest birthday was selected for interview. Among target respondents who could be contacted in three or fewer attempts (the minimum required by the field protocol), the response rate was 61.2%. Originally 7,267 interviews were conducted. However, subsequent checks revealed misconduct on the part of an interviewer. As a result, all 100 interviews (across the three waves) conducted at that interviewer's regional office were deleted. Further investigation revealed no other evidence of systematic misconduct by the interviewers.

A special bloc of questions obtained detailed employment/job histories spanning December 1984 to the time of the survey, including the following information on up to five new jobs obtained by respondents since December 1984: the primary means by which they found the job (our measure of job search strategy), the occupation, type of employment (self-employed vs. hired), and economic branch, size and property form of firm. The survey also obtained the standard set of background variables and current earnings, as well as migration and family structure histories spanning the same period.

Overall, respondents reported 8,424 new jobs begun since December 1984. But since we are concerned with labor market processes in Russia and the labor market behavior of younger and older workers may differ from that of working age Russians due to pronounced selection effects, we limit analyses to new jobs obtained by respondents when they were residing in the Russian federation and were at least 18 years old but younger than retirement age (55 for women, 60 for men). These restrictions reduce the number of new jobs in our sample to 7552.

Measures

Our key measure is the primary method(s) used by the respondent to obtain each new job begun after December 1984.⁷ Respondents were asked: "In what manner did you find/obtain

⁷ The survey did not determine how the job held in December 1984, the outset of the observation window, was obtained. But since our focus is on the late-Soviet and post-Soviet periods, this loss of information is not crucial.

this job?” The response categories were as follows:

1. I used the state employment agency.
2. I used a private employment agency.
3. My relatives, friends, or acquaintances helped me.
4. Through an advertisement in the newspaper, radio, television, etc.
5. I personally applied to the organization’s personnel department.
6. I sent my resume to the organization’s personnel department.
7. I changed jobs within the same organization.
8. I entered a competition announced by the enterprise.
9. I looked for opportunities for self-employment.
10. I was assigned to the job after completing my education.
11. I returned to the job from maternity leave.
12. I returned to the job after the army or another temporary job.
13. Other.

All thirteen categories are clearly too unwieldy to be analyzed separately. Yet, for descriptive purposes we cannot simply distinguish between personal networks and other search methods. Therefore, we adopt the following 7-category classification of search methods (with constituent response categories in brackets):

- 1) personal networks [3];
- 2) public or private employment agencies [1 and 2];
- 3) job advertisements of announcements [4 and 8];
- 4) direct application [5 and 6];
- 5) self-employment [9];
- 6) state assignment [10];
- 7) other [13].

We treat returns to prior jobs from maternity leave [11] or the army [12] as non-searches; we therefore exclude the corresponding jobs from our analyses. The same goes for intra-firm job changes [7], which involve internal rather than external labor markets. These exclusions reduce our sample of job changes further to 7,130. Of these, we must exclude an additional 332 for which we are missing data on the search method, yielding a final sample size of 6,798 job changes (including first jobs and jobs entered from non-employment) reported on by 3651 respondents. For our multivariate analyses we omit jobs involving self-employment, because

self-employment involves exit from the labor market. For these analyses, our sample consists of 6,573 new jobs reported on by 3,569 respondents.

Our measures of other variables are straightforward, with one exception. We require an occupation-based measure of job desirability in order to model the effects of networks on job quality for jobs obtained prior to the current job. For this purpose, we use a scale created with the data from 14 cross-sectional surveys conducted in Russia from 1991 through 2000. The scale is based on the mean logged earnings in constant (December 1997) rubles for each 4-digit 1988 ISCO occupation.⁸ This “occupational logged earnings index” (OLEI) is an empirically derived method for scaling occupations in transition-era Russia. It suffers from one major drawback: by pooling surveys conducted at different times (in order to maximize the number of observations in each 4-digit category) the index assumes stability over time in the average earnings accruing to different occupations. On the other hand, the index performs fairly well as a predictor of earnings: its zero-order effect on the current (logged) earnings of SSMDR respondents with valid earnings and occupations is 1.11 – which is near unity – and it alone explains 23.5% of the variance, which is impressive for a one-degree-of-freedom measure and a sample the size of the SSMDR. Thus, the OLEI is a reasonably valid measure of the earnings that normally accrue to a particular occupation.

Methods

Analyzing Trends and Correlates of Network Use

We begin by examining descriptively trends over time in the proportion of new jobs that are obtained using each of the seven search methods and variations in the trends in network usage by gender, education, CPSU membership, and size of locality. We then estimate two sets

⁸ For occupations with fewer than 20 valid observations in our surveys, the assigned scale values are weighted averages of the 4-digit and 3-digit means. Details will be provided upon request.

of logistic regression models on the *sample of new jobs* that we define as having resulted from searches. This sample excludes within-firm job changes, because most of these probably are promotions or re-assignments, as well as returns to a job from maternity leave or military service. It includes new jobs resulting from job-to-job shifts and those resulting from employment entry from some other status (unemployed, in school, etc.)⁹ Using this sample, we first estimate logistic regressions predicting the use of networks rather than other means to secure new jobs to test the hypotheses pertaining to trends in network use and to how gender, education, CPSU membership, marital status, and locality are related to the probability of using networks to obtain new jobs.

This basic analytical design has long been the convention in studies of social networks in the labor market. It is not without its shortcomings. The process of taking a new job usually involves a series of stages: applications to one or more potential employers, the successful passage through one or more screening processes, the proffering of one or more offers, negotiation of terms, and the decision to accept an offer. Single-firm studies of hires have exploited rich data to show that the effects of referrals (network contacts) can differ at these various stages (Fernandez and Weinberg 1997; Fernandez et al. 2000; Petersen et al. 2000). Our data lack information on job searches that did not produce new jobs, so we cannot analyze the respective roles of networks in each of these stages of the process.¹⁰ We can only analyze the

⁹ We keep jobs resulting from “state assignment” even though they might be viewed as involving an administrative mechanism rather than search. Despite the theoretically obligatory character of these assignments, in practice there was some flexibility: assignees could lobby for more desirable assignments and evade undesirable ones (Solnick 1998; Gerber 2003). Thus, there was a component of search involved.

¹⁰ Survey data including information about the entire range of search strategies used in both successful and non-successful searches are hard to find. Also, as Yakubovich (2005) notes, the act of initiating a search is likely to be endogenous to the probability of success; thus, even with such data it would be hard to generalize about the effects of a particular strategy on the likelihood of success or of covariates on the success probabilities associated with various strategies. Data from single-firm studies also have limitations. Most importantly, they only permit one type of network contact – direct referral from an existing employee – to be identified. The particular nature of this

“effects” of covariates on the probability that networks were used, conditional on a job change having taken place. This inevitably produces some ambiguity in the interpretation of these “effects.”

For example, say we find that women are less likely to have used networks to obtain those new jobs that they report. Based on this finding we wish to infer that women have poorer-quality networks for the purpose of finding jobs. However, the same result would obtain if women’s networks are of the same average quality as men’s networks but women are less likely to rely on networks than men for reasons other than their quality. In short, without data on the methods used in unsuccessful searches we cannot tell whether our results reflect differences in the quality of networks or differences in the propensity to use networks. On the other hand, while we acknowledge this ambiguity, it should not be overstated: the most plausible reason why, in our example, women (or the less educated, or non-CPSU members) would be less likely to rely on networks is that their networks are of poorer quality.

Another drawback of our data is that they do not permit us to distinguish jobs resulting from non-search from successful searches. “Non-search” jobs seem more likely to involve a referral by a network connection (Campbell and Rosenfeld 1985), because a worker who is not looking for new job is unlikely to apply via formal means. If this is the case, then our data will over-state the proportion of successful searches that yielded a job via network ties. If the processes shaping the transition to non-search jobs differ from the processes shaping successful searches, each of our parameter estimates will reflect a weighted average of that parameter’s values within the two processes, where the weights are the (unobserved) proportions of successful searches and non-search jobs in our data. For example, if highly educated workers are

measure of network contacts may explain why these studies consistently find a network advantage among applicants, while the findings from employee-based surveys have been more mixed.

more likely to be recruited for non-search jobs for reasons unrelated to the quality of their network social capital, our estimates of the effect of education on the probability networks were used for jobs obtained will tend to be biased upward, so long as non-search jobs are more likely to involve networks than successful searches.¹¹

Here, too, though, we believe the problem is not as grave as it may seem, for two reasons. First, we believe the process of accepting a non-search job is equivalent to the process of sequential job search: an individual receives a job offer, decides whether it exceeds his reservation wage, and either accepts or rejects it. Non-seekers of jobs may have higher reservation wages, but the process is not fundamentally different from that of sequential search. Thus, the logic underlying Mouw's (2003) test applies.

Analyzing Variation in Network Preference by Sector and Branch

Our next set of analyses addresses hypotheses 3 and 4 using logistic regressions for the log-odds that a new job is in, respectively, the private sector and the following branches of the economy: finance/insurance, trade/catering/services, education/science, and defense industry. The first two branches are relatively newer branches, in the sense that they were largely undeveloped during the Soviet system, they have grown substantially during the course of market transition, and thus most of the firms in these branches are new firms. By our reasoning, employers in these branches should be more likely to rely on networks because their relative newness means they are less likely to have ready formal criteria at hand. The latter two branches, in contrast, are long-standing branches where employers should have readily available formal criteria for making hires and thus formal criteria should be more pronounced than networks.

¹¹ This could transpire if employers are more likely to actively recruit employees for highly skilled jobs with specialized requirements than for less skilled jobs. In that case, they may rely on referrals to identify suitable candidates, and those highly educated individuals who end up being recruited will tend to be recruited via networks.

Of course, the way our models are set up – with employer characteristics as the dependent variables – does not provide a direct test of the extent of employer reliance on networks. A direct measure would be the degree of network advantage among applicants, where network advantage means simply, as in single-firm studies, that applicants who learn of the job via networks are more likely to be hired than those who do not.

To see how our analyses are related to our hypotheses, consider a formal expression of the relationship between sector and preference for network hires over formal hires:

$$\frac{\left(\frac{H_N^P}{A_N^P}\right)}{\left(\frac{H_F^P}{A_F^P}\right)} = \exp(\beta) * \frac{\left(\frac{H_N^S}{A_N^S}\right)}{\left(\frac{H_F^S}{A_F^S}\right)}, \quad (1)$$

where H denotes the number of hires, A denotes the number of applicants, the subscripts N and F denote, respectively, the use of networks and the use of (exclusively) formal (non-network) qualifications, and the superscripts P and S denote, respectively, the private and the state sector. The left hand side of Equation (1) is the ratio of the hiring rate for those who use networks to the hiring rate for those who do not in the private sector than in the state sector, while the right hand side is the same ratio for state sector multiplied by a constant, $\exp(\beta)$.

If there are no sector differences in preference for network hires, then $\beta = 0$. If, as hypothesis 3 claims, the preference for network hires is greater in the private sector, then $\beta > 0$. Thus, a test of the statistical hypothesis that $\beta > 0$ is equivalent to a test of hypothesis 3. However, while observe each of the H terms from equation (1) in our data, we do not observe any of the A terms. To see how (1) is related to an equation whose parameters we can estimate, consider that by multiplying through and re-arranging terms, we obtain:

$$\frac{H_N^p H_F^S}{H_F^p H_N^S} = \exp(\beta) * \frac{A_N^p A_F^S}{A_F^p A_N^S}. \quad (2)$$

With our data, we can estimate a logistic regression of the form:

$$\ln\left(\frac{P(\text{private})}{P(\text{state})}\right) = a + b * \text{networks}, \quad (3)$$

where “networks” is a dummy variable for a network-based hire, as opposed to a formal hire.¹²

If we exponentiate both sides, re-express the equation as a ratio of conditional odds, and compare the resulting terms to those in (2), we obtain:

$$\frac{\frac{P(\text{private} | \text{networks})}{P(\text{state} | \text{networks})}}{\frac{P(\text{private} | \text{formal})}{P(\text{state} | \text{formal})}} \equiv \frac{\frac{H_N^p}{H_N^S}}{\frac{H_F^p}{H_F^S}} \equiv \frac{H_N^p H_F^S}{H_F^p H_N^S} = \frac{\exp(a + b)}{\exp(a)} = \exp(b) \equiv \exp(\beta) * \frac{A_N^p A_F^S}{A_F^p A_N^S}. \quad (4)$$

In other words our parameter estimate b in equation (3) is in fact equivalent to an estimate of β that is biased by a factor of the ratio of the odds that a private sector application uses networks to the odds that a state sector application uses networks, $(A_N^p / A_F^p) / (A_N^S / A_F^S)$, which for simplicity we can denote A' .

This means that $\exp(b) > 1$ implies that $\exp(\beta) > 1/A'$. If $A' \leq 1$ – that is, if private sector applications are as likely or less likely as state sector applications to involve networks – then a positive estimate of b based on our survey is evidence in favor of hypothesis 3, since $\exp(\beta)$ must be greater than 1.0. However, if $A' > 1$ – that is, if applications in the private sector are more likely to use networks than applications in the state sector – then the sign of β is indeterminate, because $\exp(\beta)$ can in principle be greater or less than 1.0 and still satisfy the inequality, $\exp(\beta) >$

¹² We can incorporate additional covariates in the model without changing the essential logic described here. When additional covariates are added, the same relationships among sector and network usage among hires and applicants apply within subsets of job seekers who have the same values on the other covariates. We explicate the logic in bi-variate form for simplicity of presentation.

$1/A'$. Therefore, we cannot definitively conclude that $\exp(\beta) > 1$ on the basis of a positive estimate of b , unless we are willing to assume that $A' \leq 1$.

But why would applications in the private sector would be more likely to use networks than applications in the state sector? The most likely explanation is that job-seekers perceive that networks are more important for getting jobs in the private sector than in the state sector, so they tend to forego applying to private sector jobs they did not find about through networks. It seems implausible that job-seekers would be more likely to use networks when applying to private sector jobs if doing so would put them at a *disadvantage*. Thus, the most obvious explanation for $A' > 1$ is precisely that $\exp(\beta) > 1$. In sum, the only scenario in which our estimate of b is positive yet the network advantage is *not* higher in the private sector is one where applications to private sector firms are more likely to involve networks than applications to state sector firms even though doing so brings as much or more of an advantage in state firms. Therefore, we can reasonably treat a positive b as evidence that private sector employers favor network applicants more than state sector employers do. We can apply the equivalent interpretation to positive b estimates where the dependent variable is the log-odds that a new job is in a particular newer branch. Also, we can interpret a negative b estimate when the dependent variable is the log-odds that a new job is in a specific traditional branch as evidence that employers in these older branches are *less* likely to favor networks than employers in other branches.

Analyzing the “Returns” to Networks

Finally, to test the hypotheses pertaining to the “returns” to the use of networks, (5 and the second parts of 6a-c, 6e, 6f), we estimate three sets of models, corresponding to three different definitions of job quality. First, we estimate an OLS regressions on the sample of new

jobs where the dependent variable is the “occupational logged earnings index” (OLEI) score for the new job. The OLEI score is only an occupation-based proxy for earnings, but it is the only measure of job quality that we have for all new jobs obtained during the observation window. Second, we estimate OLS regressions for logged current earnings. In these two sets of models, we start by assessing the zero-order effect of having obtained the job via networks, then we add control variables, then we examine interactions between the use of networks and the variables specified in our hypotheses.

Analyses of earnings in contemporary Russia need to address wage arrears, as they remain relatively common and the processes shaping wage arrears differ from the processes influencing earnings (Gerber 2006a). In a context of widespread arrears, workers who change jobs may seek to maximize the chances of getting paid on time rather than maximizing contracted wages. One possible advantage of networks is that they can pass on information to job seekers about which employers tend to pay their employees on time. Our last set of models are multinomial logistic regressions examining whether using networks influences this distinctive aspect of job quality, exposure to wage arrears, using a trichotomous measure: paid in full, paid in part, not paid at all.

Endogeneity bias poses a potential problem in all these regression models: those who actually use networks to find new jobs may be precisely those who stand to benefit from them the most, and vice versa. Thus, the coefficients in the models may be biased estimates of the average “return” to using networks. Unfortunately, our data do not contain suitable instruments that might allow us to address this source of potential bias using the standard Heckman-type approach. Therefore, we emphasize that our regression results should be interpreted as descriptive rather than as definitive evidence of average causal relationships.

Of course, as Montgomery (1992) demonstrated, the direction and magnitude of the bias are hard to anticipate because those with high-quality network resources may have higher reservation wages and therefore only accept job offers obtained through formal means when they pay at least as well as the anticipated wage from a network-based offer. On the other hand, Mouw (2003) observes that the use of networks may be exogenous to job quality in a scenario where applicants accept the first offer they receive and social capital does not affect the likelihood of receiving an offer. In the high-unemployment context of contemporary Russia, that scenario might well apply more often than not. Most likely, no single search scenario applies universally: some workers use sequential search, others extensive search, take-the-first-offer, or non-search, still others use strategies not discussed in the literature. Given the probable complexity of the processes that may make the use of networks endogenous to the resulting job quality and the limitations of our data, the best we can do is estimate conventional regression models and take the coefficients at face value, while acknowledging their provisional character. In light of the relative lack of representative sample data on social networks and labor market outcomes in a market transition context, we believe are nonetheless worthy of attention. Future data collection and research on this topic should explicitly seek to measure the prevalence of different search strategies and explore how they affect the interpretation of regression-based estimates of the “returns” to networks.

RESULTS

Trends in Successful Search Strategies

To depict trends in the relative frequency of different search strategies we plot the annual percentage of new jobs reported by our respondents during the period under study that resulted primarily from each strategy in our 7-category classification (Figure 1). The trends are

consistent with hypotheses 1 and 2. The most striking development since the late Soviet era has been a sharp increase in the proportion of hires resulting from the use of personal networks. Networks already played a substantial role in the late Soviet era: in 1985, they were primary basis for 33.4% of the hires reported by our respondents. By 2001, the figure had increased to 57.0%. Our data thus confirm the findings reported by Clarke (1999) and Yakubovich and Kozina (2000) based on more limited samples: the importance of personal networks on the Russian labor market has grown following the introduction of market reforms. Leaving aside the apparently anomalous surge in 1989, the most pitched growth occurred in 1992, immediately following the Soviet collapse and the “shock therapy” reforms.

[Figure 1 about here]

The growth in the importance of personal networks came mainly at the expense of direct application, which accounted for over 51.6% of new jobs in 1985 but only 21.2% by 2001. Another noteworthy trend is the growth of hires that result from responses to formal advertisements. In proportional terms, this type of search strategy grew most of all: from about 3.2% of new hires in 1985 to 14.1% in 2001, making ads the third most common search strategy by then. This finding suggests that formal market institutions *have* taken on significantly greater importance in the Russian labor market: this method of formally communicating information about jobs is a distinctively “market” institution, virtually absent in Soviet times. Other studies (Clarke 1999; Yakubovich and Kozina 2000) have combined the use of ads with the use of agencies and direct applications. On the basis of stagnant or downward trends in the combined category, they have concluded that formal market institutions have not played an increased role in the Russian labor market. It is not clear why direct applications should be viewed as using formal market institutions, since they in fact involve the use of neither formal intermediaries

(agencies) nor formalized information channels (advertisements). Their relative decline should not be interpreted as evidence against the growth of formal institutions in the labor market. As for public or private employment agencies, their use remains limited. But by disentangling the use of ads from the other formal techniques (which our large sample permits us to do), we arrive at a different conclusion regarding formal market institutions more generally: their role in the Russian labor market has clearly increased.

Our data also capture the practical elimination of state assignment as a mechanism for obtaining a new job in Russia. The most common type of state assignments was the “distribution” (*raspredelenie*) of students to mandatory 3-year jobs following completion of higher or specialized secondary education (see Solnick 1998; Gerber 2003). This institution began to break down in the late 1980s and was abandoned altogether following the Soviet collapse. Finally, we note that our data are also consistent with the slow growth of self-employment in Russia during the 1990s, which other studies have observed (Gerber 2001a).

Correlates of the Use of Personal Networks

The Russian labor market has clearly gotten “more personal,” in the sense that personal networks have come to play a substantially greater role in the process of obtaining new jobs. Now we turn to the topic of what this development means for processes of social stratification in Russia. First, we take a descriptive look at whether the probability of network use in successful searches varied by gender, education, CPSU membership, and locality size and whether the groups defined by these variables experienced different trends during the period of observation (Figures 2A-2D). To eliminate the effects of chance year-to-year fluctuations and simplify presentation, we henceforward use five periods rather than 17 years to represent change over

time: two corresponding to the last years of the Soviet period (1985-1988, 1987-1991) and three corresponding to the post-Soviet era (1992-1994, 1995-1997, 1998-2001).

[Figures 2A-2D about here]

The bivariate plots offer no evidence of divergent trends for different groups. Moreover, they show that men and women used personal networks at roughly equal rates both before and after the Soviet collapse. So did CPSU members and non-members. The differences by education are rather muted, and appear to apply only to those with least education: workers with less than a secondary degree are *less* likely to use networks than those with high school or university education, but there is generally little or no difference among the latter two groups. The differences by locality size are fairly consistent over time and they confirm hypothesis 6e: network use is most common in Moscow, Russia's largest city, second most in other large cities, and less common in smaller towns.

Our logistic regression results confirm some of the impressions from the bivariate plots, but also add important qualifications (Table 1). All our models include controls for age (centered at the minimum, 18 years) and for different origin states ("main activity" prior to getting the new job), which may be correlated with our variables of primary theoretical interest and may also influence the use of networks. We start with a model containing individual traits – gender, education, and CPSU membership – as well as the dummy variables for period.

[Table 1 about here]

Net of the control variables, women are less likely to use networks than men. The gender gap reaches two-tailed significance when the locality measures are included. This result is consistent with hypothesis 6a: the most likely explanation is simply that Russian women have social networks that are less useful for finding jobs, as in other national contexts. Hypothesis 6b

receives only partial support: network use is lower among Russians with less than secondary education, presumably also because they have less useful networks for the purpose of attaining jobs. Absent the locality variables, Russians with college degrees are more likely to use networks than secondary school graduates. However, that effect disappears once the locality characteristics are entered, implying that the apparent effect of higher education in Model 1 is spurious: those with college degrees are more likely to live in urban areas. This finding illustrates the importance of controlling for type of locality in other studies of variation in the use of networks by education. The effects of all three locality measures are statistically significant and consistent with hypotheses 6e and 6f: residence in larger cities – Moscow in particular – and duration of residence in current locality are both associated with greater network use.

The results of Model 3 in Table 1 provide no support for hypothesis 6d: if anything, married women rather than married men are more likely to use networks than their unmarried counterparts. But neither the main nor the interaction effect is statistically significant, and this holds even if we exclude one or the other variable from the model. The null effects of these variables casts some doubt on the argument that women's networks play a vital role facilitating the job prospects of their male relatives but not themselves (Ashwin and Yakubovich 2005). Model 3 does not directly test this argument. But the argument implies that married men are more likely than single men or married women to obtain jobs via networks, which is not the case.

Finally, the findings regarding CPSU membership and change over time are consistent across all three model specifications in Table 1. Hypothesis 6c has no empirical support: CPSU membership does not increase the use of networks. This means, according to the test developed by Mouw (2003), either that CPSU membership does not correlate with network social capital or that network social capital has no value in the contemporary Russian labor market. In either case

the evidence indicates that CPSU members do not owe their earnings advantages to superior social capital.

The period effects are statistically significant and consistent with hypothesis 2 in every case. The small standard errors of the dummy variable effects relative to the omitted baseline indicate that the use of networks increased monotonically across each of the five periods. Clearly, the surge in network use cannot be attributed to changes in the composition of the workforce.¹³ We note that the control variables have fairly predictable effects: younger workers are more likely to use networks, while new labor market entrants (from education or military service) are less likely to do so than the currently employed.

Variation in Network Use by Sector and Branch

To assess hypotheses 3 and 4, we estimated logistic regression models to see if, net of controls, new jobs resulting from networks are more likely to be in the private sector, finance/insurance, and trade/catering/services, and less likely to be education/science and defense industry (Table 2). Our control variables include gender, education, CPSU membership, locality, age, and period. We also entered dummy variables indicating that the origin state was employment and that the respondent's previous job was in the sector or branch category of the dependent variable, plus an interaction between these two dummy variables.

[Table 2 about here]

These results consistently support hypotheses 3 and 4. Jobs obtained via networks are about 50% more likely to be in the private sector (expected odds ratio – the exponential the coefficient on “networks” – of 1.52), and in the newer branches of finance/insurance (1.67) and trade/catering/services (1.48). They are about one-third less likely to be in the older branches of

¹³ We checked for change over time in the effects of the individual variables using different specifications of their interactions with period. None were statistically significant. Results available upon request.

education/science (.65) and defense industry (.64). All of these effects are statistically significant. Wages are relatively high in finance/insurance and defense industry and relatively low in trade/catering/services and education/science, so we can rule out mean wages as the source of the variation across branches.

As noted above, these findings cannot definitively prove our hypotheses, because they result from variations in the proportions of applicants who use networks by sector and branch rather than variations in the level of employer preference. However, if variations in proportions of applicants are behind the results, these variations most likely reflect perceptions about employer preferences that are consistent with hypotheses 3 and 4. Thus, under very plausible assumptions our findings suggest that employer preferences for referrals are related to the enhancement of uncertainty by competitive pressures and incentives associated with private ownership and also the relative lack of established formal criteria associated with firms working in newer areas of the economy.

Effects of Networks on Job Quality

We begin by examining the effect of using networks on occupational earnings, the sole measure of earnings for which we have information pertaining to all new jobs obtained since 1984 (Table 3). Our zero-order model (controlling only for period) suggest that using networks does, on average, lead to a higher OLEI score in the new job. However, the advantage is small in magnitude (amounting to only 4.8% higher occupational earnings). When we add controls for gender, education, CPSU membership, prior occupation, age, locality, origin state (in employment), prior occupational earnings, and the interaction between the latter two, the network “return” is smaller still (1.8%). Yet it remains statistically significant, so hypothesis 5 is supported, albeit weakly.

[Table 3 about here]

In our final model, we tested for variations in the network return by gender, education, CPSU membership, locality size, and duration of residence in locality (hypotheses 6a-c, 6e, and 6f). We found no significant interactions involving education or locality: hypotheses 6b, 6e, and 6f are not supported with respect to greater returns. We trimmed these variables from our final model in the interest of parsimony. The interaction between gender and network use is statistically significant, but it is opposite in sign to the effect predicted by hypothesis 6a. Based on OLEI scores, Russian women have benefited from using networks to obtain new jobs, while men have not (because the main effect is not significant in model 3). Hypothesis 6c is also flatly contradicted: CPSU members who use networks to find new jobs end up with *lower* average OLEI scores than CPSU members who find new jobs via other means. In fact, only CPSU members who obtain new jobs without relying on networks have any advantage. Of course, since OLEI score is an imperfect measure of earnings these results cannot be taken as definitive.

Turning to our models for earnings in current job (Table 4), the zero-order model suggests a larger return to networks than in our models of OLEI score: based on the Russians who obtained their current jobs through networks earn on average 9.6% ($e^{0.091} - 1$) more than those who obtained their jobs via other means.¹⁴ But this effect declines sharply and is not significant once we control for the effects of other variables in Model 2. The apparent “return” to networks seems to be spurious: variables associated with network use also affect earnings.

[Table 4 about here]

However, the significant interaction terms retained in Model 3 indicate that the overall non-effect of networks masks offsetting positive and negative effects for different groups of

¹⁴ Note that our sample excludes currently employed respondents who have not changed jobs since 1984, because we do not know how they got their job.

workers. Consistent with hypothesis 6a, female Russians who used networks to obtain their job earn significantly less than those who used other means. Consistent with hypothesis 6b, university-educated Russians who obtained their jobs via networks earn significantly more. Their wage premium for network use is substantial: 18.1%, which exceeds the overall return to higher education relative to secondary (15.9%). Once again contradicting hypothesis 6c, CPSU members who used networks earn significantly less than those who used other means. In fact, the negative interaction between CPSU membership and network usage again cancels out the main effect of CPSU membership: contrary to the social capital explanation for why former Communist Party members do better, the advantage applies exclusively to those who do *not* obtain jobs using their network contacts.

Finally, we consider whether social networks provide job seekers information about whether employers pay wages on time and thus help them avoid wage arrears (Table 5). Because firm-level arrears fluctuate over time, we expected networks to matter most for recently obtained jobs. Thus, we initially included a dummy variable for networks, a dummy variable denoting a job obtained during the last three years, and an interaction between these two dummy variables, in addition to controls (Model 1). Upon inspecting these results, we surmised that the effect of networks applied only for jobs obtained in the last three years, and that the standard errors on the interaction coefficients were being inflated by the correlated main effect variables. When we removed the main effects, we observed no deterioration in model fit. The resulting model confirmed our expectation: among individuals who obtained their current jobs during the last three years, those who used networks to find their jobs are significantly less likely to

experience partial or complete delays in the payment of their wages.¹⁵ This is an intriguing finding, as it suggests that networks can yield an advantage that is rather unique to Russia and other former socialist countries characterized by endemic wage arrears.

[Table 5 about here]

DISCUSSION

Our evidence consistently supports all four of our hypotheses pertaining to how institutions shape the role of social networks in the labor market. During the course of Russia's market transition, the labor market has gotten more personal: the prominence of personal networks as a method of successful job search has grown dramatically and the role of direct, unsolicited applications has declined. These developments cannot be attributed to changing composition of the labor force. Instead, they most likely reflect the shift from a supply-constrained to a demand-constrained labor market. Market reforms brought tighter budget constraints, competition in product markets, and a general labor surplus (unemployment). These developments gave employers both the incentive and the opportunity to be more selective in their hires, while raising the stakes associated with the uncertainty surrounding hiring decisions. In effect, the main axis of uncertainty faced by employers shifted from supply (of labor and other inputs) to demand. Networks are a tried and true mechanism for reducing uncertainty, and thus it should be expected that employers came to place greater emphasis on referrals when making hiring decisions as Russia's market transition progressed.

The same reasoning led us to predict that employer preference for network-based hires would be greater in the private sector, where competitive pressures are more pronounced, than in the state sector. Moreover, since many private firms in Russia are new firms, we reasoned that

¹⁵ We tested the same set of interactions involving network use as in the previous models and found none were significant. Once we found that the effect of networks on wage arrears was limited to jobs obtained during the last three years, we went back to check for a similar pattern in our earnings model, and we found none.

managers in such firms were less likely to have formal criteria for assessing applicants readily at hand than managers in traditional firms. This led us to foresee higher levels of employer preference for network-based hires in newer economic branches whose growth was part of the structural changes accompanying Russia's market transition. Correspondingly, we anticipated lower levels of employer preference for referrals in more traditional branches. Our data analysis unambiguously confirmed these expectations. Thus, by analyzing a society undergoing market transition we have identified and demonstrated several different ways that the role of networks in the labor market can be shaped by broader economic institutions.

Given the nature of our data, which do not include information on unsuccessful applications or on the search strategies used that did not lead to new jobs, our empirical results are not definitive. But we are reassured when we consider the most likely alternative explanation for the findings that we take as support for our institutional arguments; namely, that changes in the behavior of job applicants account for these findings. That is, the patterns we observe could reflect the behavior of job seekers more than employers: job seekers could have relied increasingly on networks in their searches over time and in applications to private sector firms and to firms in newer branches. Even if employer preferences remain constant over time and do not vary across sector or branch, these behaviors by applicants could produce the findings in our empirical analyses. However, the most likely reason why such choices on the part of job seekers would evolve is simply that they perceived an increasing premium on networks on the part of employers and, in particular, those in the private sector and in newer branches. Thus, even if job seeker behaviors contributed to the empirical patterns we identified, the most plausible explanation of those behaviors is that they reflect precisely the employer preferences (and, hence, the institutional factors underlying them) that we take to be the root cause.

We acknowledge that our argument here rests on the assumption that job seekers' behavior basically responds accurately and rationally to information about employer preferences, and that some scholars may not accept this premise. But the burden would seem to be on those skeptics who might wish to argue, for example, that employer preferences remained constant but job seekers nonetheless began to rely more on networks to come up with alternative plausible explanations for why job seekers would behave in this fashion. Until our argument is confronted with a compelling alternative, we believe that within the limitations of our data we have demonstrated that institutional context shapes the role of networks in the labor market.

We have clearly shown that job contacts have come to play a more pronounced role in Russia and that their role varies by institutional setting in theoretical coherent ways. But do job contacts matter in Russia in the sense of providing some advantage to those who have them over those who do not? If they do matter in Russia, then how are networks related to broader patterns of social stratification? The rest of our hypotheses and results pertain to these issues. While Mouw's (2003) careful and thorough study of the United States arrives at an unqualified answer of "no," our results are decidedly mixed.

Here our most consistent and important set of findings involve former CPSU members. Our study is the first to directly test the "social capital" explanation for the continuing advantages of former CPSU members despite the demise of state socialist institutions (Rona-Tas 1994; Hanley et al. 1995; Rona-Tas and Guseva 2001), which attributes those advantages to superior network social capital within Party-based networks. All the results suggest that the quality of CPSU members' networks is in fact lower than the quality of non-members' networks, at least with respect to labor market outcomes. The CPSU members are no more likely to use networks to find new jobs than non-CPSU members. Moreover, when CPSU members who do

get new jobs via networks those jobs tend to pay *less* than the jobs obtained by otherwise similar CPSU members using means other than networks, whether OLEI score or current earnings is used to measure earnings. In fact, our regression results show that the only CPSU members who enjoy earnings advantages over non-members with similar characteristics are precisely those who *do not* use their networks to get new jobs. Whether the use of networks is endogenous or exogenous to their quality, these findings clearly suggests that the earnings advantage of CPSU in post-Soviet Russia *cannot* stem from superior social capital. Since other evidence has been adduced in favor the “selection theory” attributing the CPSU advantage to unmeasured human capital (Gerber 2000, 2001b, 2002), it should be viewed as the more likely explanation for why Communist Party members do better in contemporary Russia.

Our findings regarding variations by gender and education are more ambiguous. Net of control variables, women in Russia are less likely to obtain jobs via networks than men. Consistent with this, our preferred model for current earnings suggests that when women do use networks they suffer an earnings disadvantage as a result. Together, these two findings clearly imply that in Russia women’s networks are of poorer quality than men’s networks, as they are elsewhere (McPherson and Smith-Lovin 1982; Campbell 1988; Munch et al.1997). This may help explain why women in Russia have had lower rates of job-to-job mobility during the transition period (Gerber and Mayorova 2006). It is also consistent with research showing that Russian women are not likely to use their networks to advance their own employment opportunities (Ashwin and Yakubovich 2005).

One result contradicts this story: the positive and significant interaction between network use and female gender in the model for OLEI score: Russian women who use networks to obtain new jobs have thereby gained an *advantage* with respect to occupational earnings. We suspect

that the OLEI score does a poorer job measuring the actual earnings of women than of men, and this may explain the anomalous result. But further investigation of gender differences in the use of and returns to networks in the Russian labor market is probably necessary before definitive conclusions can be reached.

Two results suggest some variation in the quality of networks by education. First, Russian workers with less than secondary education are less likely to find new jobs via networks. While there is no evidence that the least educated Russians suffer any kind of penalty when they use networks to get jobs, the negative effect in the model for network use implies that they tend to have poorer-quality contacts, based on the assumption that the use of contacts is endogenous to the quality of the offers they generate (Mouw 2003). It appears that poorer quality networks exacerbate the labor market disadvantages of those with the lowest levels of human capital. Once we control for locality size, there is no difference between university and high school graduates in the probability of using networks to obtain new jobs. On the other hand, the earnings of university-educated Russians who used networks to obtain their current jobs substantially exceed those of university graduates who did so using other means (and, by extension, they exceed by an even larger margin the earnings of non-university grads, whether or not they obtained their jobs via networks). In fact, the return to networks in terms of current earnings is limited to workers with university degrees.

How can we interpret the apparently puzzling results that university educated workers are no more likely than high school graduates to obtain jobs via networks, but when they do so they enjoy a substantial earnings advantage? Mouw (2003, p.890) describes just such a scenario, one where “well-connected workers would not be more likely to use contacts than would poorly connected workers, but when they did use contacts they would benefit more than other workers.”

As he notes, this scenario is consistent with the argument that high quality contacts provide an advantage in the labor market when they are used, but the quality of contacts does not affect the probability that they are used (i.e., use of contacts is exogenous). Perhaps this is the situation with respect to university educated Russians: their social networks are superior in the sense that they are more likely than the networks of high school graduates to provide information about high quality jobs, yet they do not search for jobs using the sequential or extensive strategies that would, in this circumstance, imply a higher rate of obtaining new jobs via networks. One reason that the use of contacts may be exogenous for university-educated Russians is that the labor market is especially lacking in suitable positions for them, which is evident in their particularly low rates of job-to-job shifts (Gerber 2002). If they sense that few suitable positions are available, university graduates who want a new job might simply take the first offer they get rather than engage in sequential or extensive search. Of course, this is speculative and it would require more thorough empirical investigation to be verified. But it is a plausible explanation for why university educated Russians might have superior social network resources but are not more likely to use networks to find jobs.

We found no support for an interesting hypothesis proposed by Ashwin and Yakubovich (2005) that Russian women are more likely to use their network resources to help their male relatives find jobs than to help themselves. If this is true, it implies that Russian men who are married are more likely to find their jobs through networks than those who are unmarried, because marriage by definition links men to a female-based network. Of course, some unmarried Russian men might well be linked to female networks and not all wives will use their network resources to help their husbands find jobs. But on average, it is reasonable to assume that married men have more access to female networks than unmarried men. Yet we find no

significant effect of being married on the use of networks to find new jobs, for either men or women. This finding thus casts some doubt on the claim that women's networks play a facilitating role for men in Russia.

We found confirmation for two novel hypotheses pertaining to locality: the use of networks to obtain jobs is more common in larger localities (especially Moscow) and the longer one lives in a given locality the more likely one is to use networks to find new jobs. We expected these effects on the grounds that the greater population density of urban areas increased the likelihood that one would have more extensive and diverse networks and that one accumulates network ties in a locality over time. Moreover, when the effects of locality are included in our regressions, we no longer observe a significant effect of university education on network usage. Apparently, university degree holders are only more likely to use networks to obtain new jobs in Russia because they are more likely to live in larger urban areas. We suspect the same pattern may hold in other national settings, so the failure to include controls for locality size may lead to misleading results with respect to the relationship between education and network use. The vast literature on social networks in the labor market devotes scant attention to systematic variations by these aspects of locality. Our findings suggest that future studies in Russia and elsewhere should focus more on this source of variation.

Finally, we found that Russian employees who got their jobs via networks during the last three years are less likely to experience wage arrears. This is the most straightforward evidence we have that job contacts provide an advantage. Although endemic wage arrears are not typically found in the developed capitalist societies most often studied by stratification researchers and economic sociologists, this finding from Russia provides a useful reminder that

there are aspects of job quality other than earnings and occupational prestige that the use of networks may well influence.

Overall, our analysis produced evidence that network social capital does matter in the contemporary Russian labor market, though it matters in different ways for different outcomes (getting a job vs. occupational earnings vs. current earnings vs. wage arrears), for different groups of workers (defined by gender, education, CPSU membership, size of locality, duration of residence there, and recentness of hire), and depending on different assumptions about the endogeneity of network use to network quality (search strategies vs. take-the-first offer). The findings are less consistent than strong advocates of the view that network social capital provides clear advantages might like to see. However, we believe that the complexity of individual-level network effects that we observe in Russia is more the rule than the exception in studies based on other contexts. In light of the limitations of our data, which lack direct measures of network quality and information about unsuccessful searches, the most reasonable general conclusion based on our analysis is that networks appear to matter in the Russian labor market – and, thus, they affect patterns of stratification – but in complex and uneven ways. They do not explain the advantages of former CPSU members, but they may contribute to the lower earnings and job mobility of women and the higher earnings of those with more education. More research based on detail with more information is needed to verify these conclusions and develop a more thorough understanding of the stratifying role of network social capital in Russia.

REFERENCES

- Ashwin, Sarah and Valery Yakubovich. 2005. "Chercher la Femme: Women as Supporting Actors in the Russian Labor Market." *European Sociological Review*. 21: 149-64.
- Bian, Yanji and John R. Logan. 1996. "Market Transition and the Persistence of Power." *American Sociological Review*. 61: 739-57.
- Bian, Yanjie. 1997. "Bringing Strong Ties Back In: Indirect Ties, Network Bridges, and Job Search in China." *American Sociological Review*. 62: 366-85.
- Blasi, Joseph R., Maya Kroumova, and Douglas Kruse. 1997. *Kremlin Capitalism: Privatizing the Russian Economy*. Ithaca and London: Cornell University Press.
- Borocz, Jozsef and Caleb Southworth. 1998. "'Who You Know': Earnings Effects of Formal and Informal Social Network Resources under Late State Socialism in Hungary, 1986-87." *Journal of Socio-Economics*. 27: 401-25.
- Bridges William P. and Wayne J. Villemez. 1986. "Informal Hiring and Income in the Labor Market." *American Sociological Review*. 51:574-82.
- Burawoy, Michael, Pavel Krotov, and Tatyana Lytkina. 2000. "Domestic Involution: How Women Organize Survival in a North Russian City." Pp. 231-61 in *Russia in the New Century*, edited by Victoria Bonnell and George Breslauer. Boulder: Westview Press.
- Burt, Ronald. 1992. *Structural Holes: The Social Structure of Competition*. Cambridge: Harvard University Press.
- Campbell, Karen E. 1988. "Gender Differences in Job-Related Networks." *Work and Occupations*. 15:179-200.
- Campbell, Karen E., Peter V. Marsden, and Jeanne S. Hurlbert. 1986. "Social Resources and Socioeconomic Status." *Social Networks*. 8: 97-117.
- Campbell, Karen E. and Rachel A. Rosenfeld. 1985. "Job Search and Job Mobility: Sex and Race Differences." *Research in the Sociology of Work*. 3: 147-74.
- Cao, Yang, and Victor G. Nee. 2000. "Comment: Controversies and Evidence in the Market Transition Debate." *American Journal of Sociology*. 105: 1175-88.
- Clarke, Simon. 1999. *The Formation of a Labour Market in Russia*. Cheltenham: Edward Elgar.
- Corcoran, Mary, Linda Datcher, and Greg J. Duncan. 1980. "Information and Influence Networks in Labor Markets." Pp. 1-37 in volume 8 of *Five Thousand American Families:*

- Patterns of Economic Progress*, edited by Greg J. Duncan and James N. Morgan, Ann Arbor: Institute for Social Research.
- Fernandez, Roberto M., Emilio J. Castilla, and Paul Moore. 2000. "Social Capital at Work: Networks and Employment at a Phone Center." 105: 1288-1356.
- Fernandez, Roberto M. and Isabel Fernandez-Mateo. 2006. "Networks, Race, and Hiring." *American Sociological Review*. 71:42-71.
- Fernandez, Roberto M. and Nancy Weinberg. 1997. "Sifting and Sorting: Personal Contacts and Hiring in a Retail Bank." *American Sociological Review*. 62: 883-902.
- Gerber, Theodore P. 2000. "Membership Benefits or Selection Effects? Why Former Communist Party Members Do Better in Post-Soviet Russia." *Social Science Research*. 29: 25-50.
- Gerber, Theodore P. 2001a. "Paths to Success: Individual and Regional Determinants of Self-employment in Post-Communist Russia." *International Journal of Sociology*. 31: 3-37.
- Gerber, Theodore P. 2001b. "The Selection Theory of Persisting Party Advantages in Russia: More Evidence and Implications." *Social Science Research*. 30: 653-71.
- Gerber, Theodore P. 2002. "Structural Change and Post-Socialist Stratification: Labor Market Transitions in Contemporary Russia." *American Sociological Review*. 67: 629-59.
- Gerber, Theodore P. 2003. "Loosening Links? School-to-Work Transitions and Institutional Change in Russia Since 1970." *Social Forces*. 82: 241-76.
- Gerber, Theodore P. 2006a. "Getting Paid: Wage Arrears and Stratification in Russia." *American Journal of Sociology*. 111: 1816-70.
- Gerber, Theodore P. 2006b. "Survey of Stratification and Migration Dynamics in Russia, 1985-2001." [Computer file]. ICPSR04206-v1. Moscow, Russia: Vserossiiskii Tsent Izucheniia Obshchestvennogo Mneniia (VTsIOM) [producer], 2002. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2006-07-18.
- Gerber, Theodore P. and Michael Hout. 1998. "More Shock Than Therapy: Employment and Income in Russia, 1991-1995." *American Journal of Sociology*. 104: 1-50.
- Gerber, Theodore P. and Olga Mayorova. 2006. "Dynamic Gender Differences in a Post-Socialist Labor Market: Russia, 1991-1997." *Social Forces*. 84: 2047-75.
- Granovetter, Mark. [1974] 1995. *Getting a Job: A Study of Contacts and Careers*. 2nd ed. Chicago, London: University of Chicago Press.

- Green, Gary P., Leann M. Tigges, and Irene Browne. 1995. "Social Resources, Job Search, and Poverty in Atlanta." *Research in Community Sociology*. 5: 161-82.
- Guseva, Alya and Akos Rona-Tas. 2001. "Uncertainty, Risk, and Trust: Russian and American Credit Card Markets Compared." *American Sociological Review*. 66: 623-46.
- Hanley, Eric, Natasha Yershova, and Richard Anderson. "Old Wine in New Bottles? The Circulation and Reproduction of Russian Elites, 1983-1993." *Theory and Society*. 24: 639-68.
- Kerckhoff, Alan. 1995. "Institutional Arrangements and Stratification Processes in Industrial Societies." *Annual Review of Sociology*. 15: 323-47.
- Korenman, Sanders and Susan C. Turner. 1996. "Employment Contacts and Minority-White Wage Differences." *Industrial Relations*. 35: 106-22.
- Ledeneva, Alena. 1998. *Russia's Economy of Favours: Blat, Networking, and Informal Exchange*. Cambridge: Cambridge University Press.
- Lin, Nan. 1999. "Social Networks and Status Attainment." *Annual Review of Sociology*. 25: 467-87.
- Lin, Nan, Walter M. Ensel, and John C. Vaughn. 1981. "Social Resources and Strength of Ties: Structural Factors in Occupational Status Attainment." *American Sociological Review*. 46: 393-405.
- McDaniel, Tim. 1996. *The Agony of the Russian Idea*. Princeton: Princeton University Press.
- McPherson, J. Miller and Lynn Smith-Lovin. 1982. "Women and Weak Ties: Differences by Sex in the Size of Voluntary Organizations." *American Journal of Sociology*. 87: 883-904.
- McPherson, J. Miller, Lynn Smith-Lovin, and James Cook. 2001. "Birds of a Feather: Homophily in Social Networks." *Annual Review of Sociology*. 27: 415-44.
- Marsden, Peter V. and Elizabeth H. Gorman. 2001. "Social Networks, Job Changes, and Recruitment." Pp. 467-502 in Ivar Berg and Arne L. Kallenerg (eds.) *Sourcebook of Labor Markets: Evolving Structures and Processes*. New York: Kluwer Academic/Plenum Publishers.
- Marsden, Peter and Jeanne S. Hurlbert. 1988. "Social Resources and Mobility Outcomes: A Replication and Extension." *Social Forces*. 66: 1038-59.
- Mizruchi, Mark S., Linda Brewster Stearns, and Christopher Marquis. 2006. "The Conditional Nature of Embeddedness: A Study of Borrowing by Large U.S. Firms, 1973-1994." *American Sociological Review*. 71: 310-33.

- Montgomery, James D. 1992. "Job Search and Network Composition: The Strength of Weak Ties." *American Sociological Review*. 57: 586-96.
- Mouw, Ted. 2002. "Racial Differences in the Effects of Job Contacts: Conflicting Evidence from Cross-Sectional and Longitudinal Data." *Social Science Research*. 31: 511-38.
- Mouw, Ted. 2003. "Social Capital and Finding a Job: Do Contacts Matter?" *American Sociological Review*. 68: 868-98.
- Munch, Allison, J. Miller McPherson, and Lynn Smith-Lovin. 1997. "Gender, Children, and Social Contact: The Effects of Childrearing for Men and Women." *American Sociological Review*. 62: 509-20.
- Nee, Victor. 1989. "A Theory of Market Transition: From Redistribution to Markets in State Socialism." *American Sociological Review*. 54: 663-81.
- Nee, Victor. 1996. "The Emergence of a Market Society: Changing Mechanisms of Stratification in China." *American Journal of Sociology*. 101: 908-49.
- Petersen, Trond, Ishak Saporta, and Marc-David L. Seidel. 2000. "Offering a Job: Meritocracy and Social Networks." *American Journal of Sociology*. 106: 763-816.
- Rona-Tas, Akos. 1994. "The First Shall Be Last? Entrepreneurship and Communist Cadres in the Transition from Socialism." *American Journal of Sociology*. 100: 40-69.
- Rona-Tas, Akos, and Alya Guseva. 2001. "The Privileges of Past Communist Party Membership in Russia and Endogenous Switching Regressions." *Social Science Research*. 30: 641-52.
- Simon, Curtis J. and John T. Warner. 1992. "Matchmaker, Matchmaker: The Effect of Old boy Networks on Job Match Quality, Earnings, and Tenure." *Journal of Labor Economics*. 10:306-29.
- Solnick, Steven. 1998. *Stealing the State: Control and Collapse in Soviet Institutions*. Cambridge: Harvard University Press.
- Volker, Beate and Hendrik D. Flap. 1999. "Getting Ahead in the GDR: Social Capital and Status Attainment under Communism." *Acta Sociologica*. 42: 17-34.
- Walder, Andrew G. 1996. "Markets and Inequality in Transitional Economies: Toward Testable Theories." *American Journal of Sociology*. 101: 1060-73.
- Wegener, Berndt. 1991. "Job Mobility and Social Ties: Social Resources, Prior Job, and Status Attainment." *American Sociological Review*. 56: 60-71.

- Xie, Yu and Emily Hannum. 1996. "Regional Variation in Earnings Inequality in Reform-Era Urban China." *American Journal of Sociology*. 101: 950-92.
- Yakubovich, Valery B. 2005. "Weak Ties, Information, and Influence: How Workers Find Jobs in a Local Russian Labor Market." *American Sociological Review*. 70: 408-21.
- Yakubovich, Valery B. and Irina Kozina. 2000. "The Changing Significance of Ties: An Exploration of the Hiring Channels in the Russian Transitional Labor Market." *International Sociology*. 15: 479-500.
- Zhou, Xueguang. 2000. "Economic Transformation and Income Inequality in Urban China: Evidence From Panel Data." *American Journal of Sociology*. 105: 1135-74.
- Zhou, Xueguang, Nancy Brandon Tuma, and Phyllis Moen. 1997. "Institutional Change and Job-Shift Patterns in Urban China, 1949 to 1994." *American Sociological Review*. 62: 339-65.

FIGURE 1: Trends in Successful Search Strategies, Russia 1985-2001, SMDR Data
 (Annual % of New Hires By Each Search Strategy, Excluding Intra-firm Shifts)

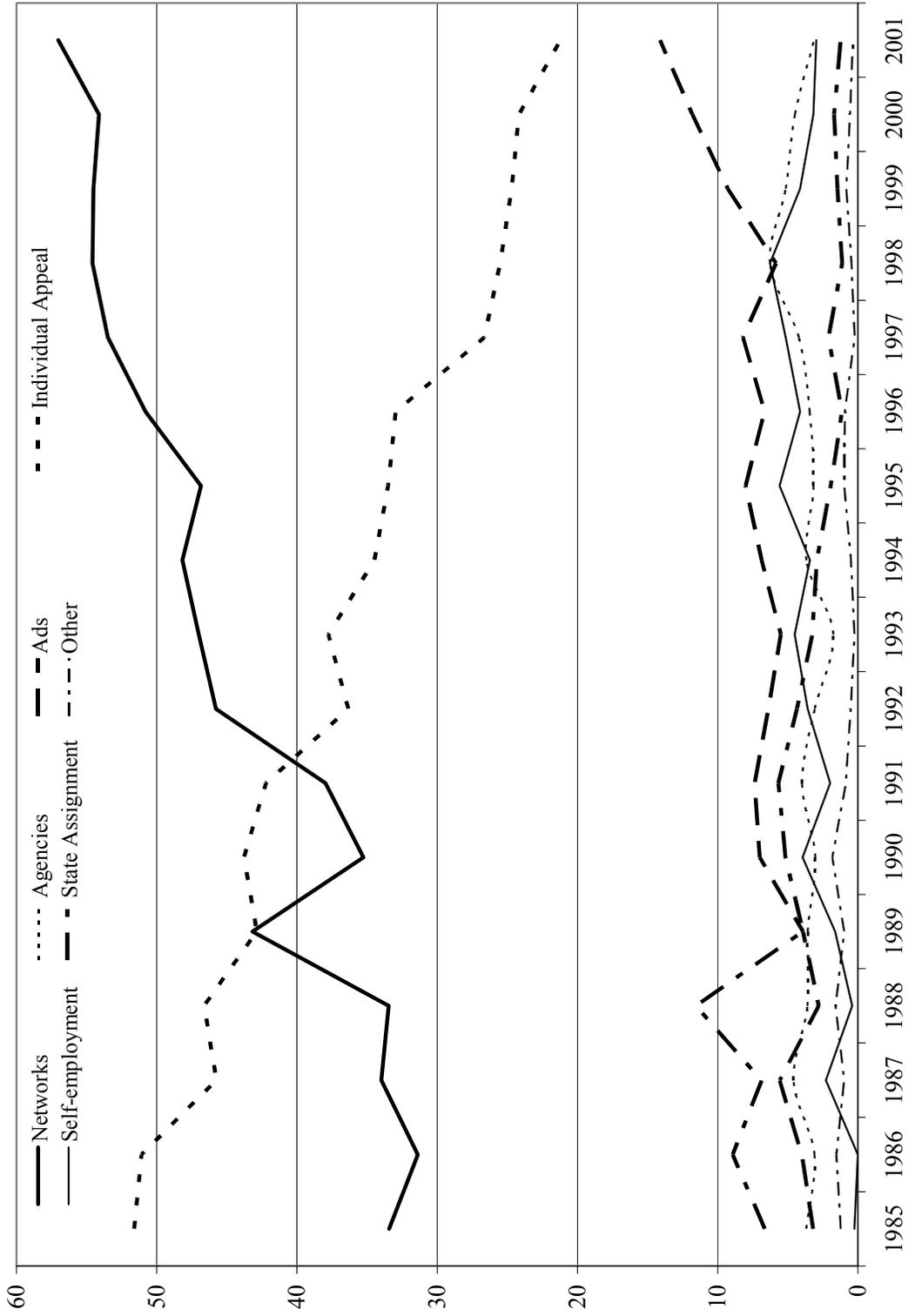


FIGURE 2A: % Jobs Found Via Networks, By Gender

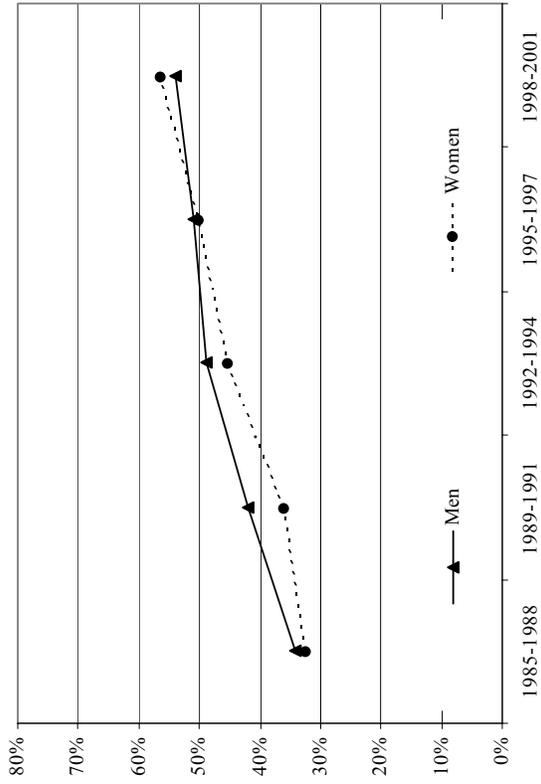


FIGURE 2B: By Education

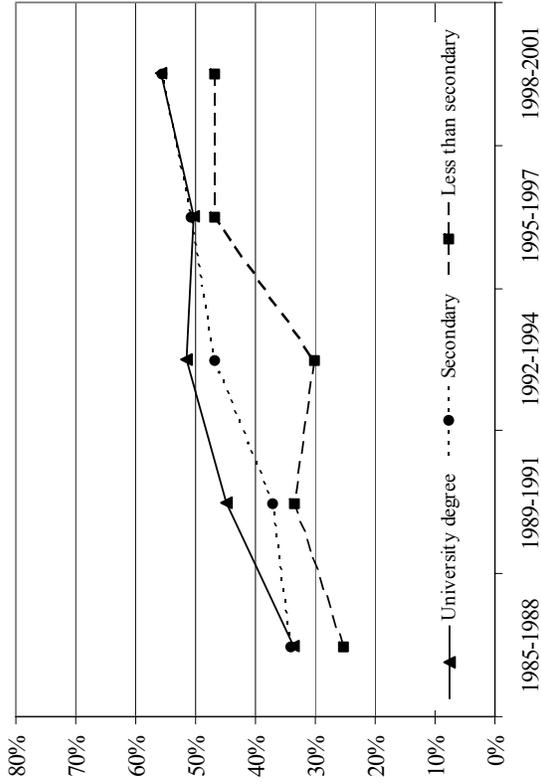


FIGURE 2C: By CPSU Membership

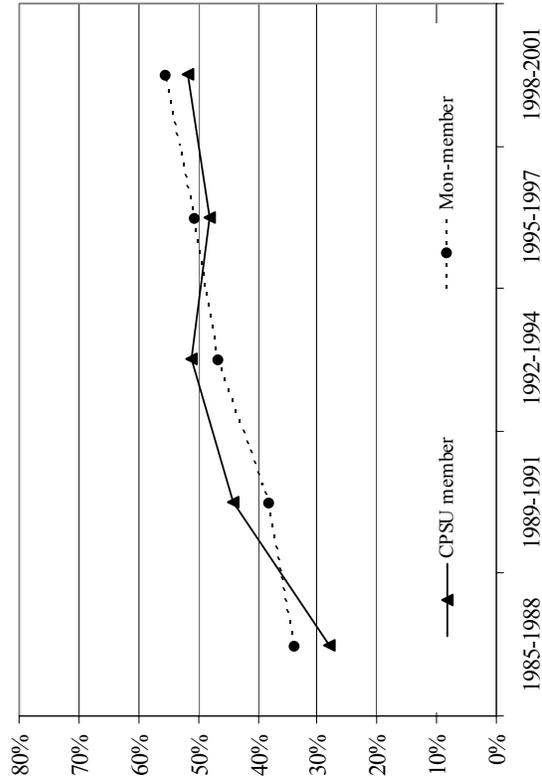


FIGURE 2D: By Locality Size

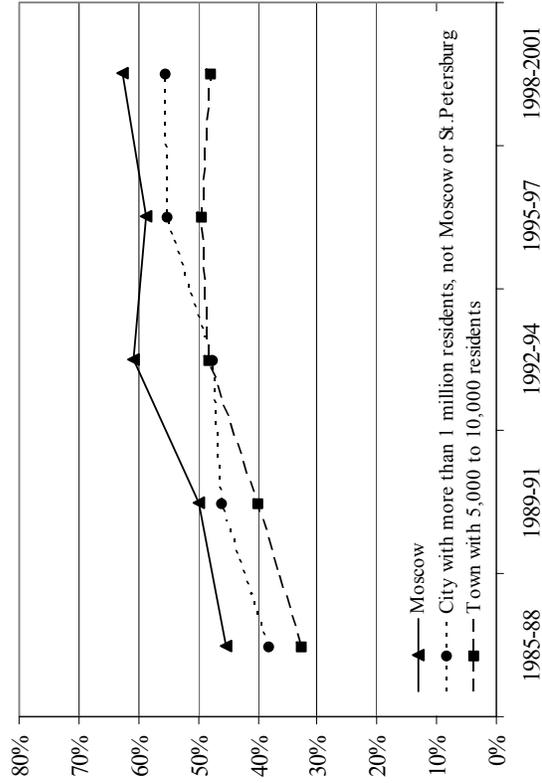


TABLE 1

Logistic Regression Models for the Probability that a New Job was Found Using Networks, Russia 1985-2001^A

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>	
	B	SE	B	SE	B	SE
Woman	-.110 *	.065	-.129 **	.065	-.221 **	.092
Education (Secondary)						
College (VUZ)	.187 **	.073	.090	.074	.089	.074
Less than Secondary	-.378 **	.138	-.297 **	.143	-.286 **	.143
CPSU Member	-.026	.115	.002	.117	.010	.117
Moscow resident			.290 **	.108	.290 **	.108
Ln(city size)			.060 **	.017	.062 **	.017
Ln(years in current oblast)			.059 *	.035	.062 *	.035
Married					-.006	.094
Married*woman					.174	.120
Age(18)	-.012 **	.003	-.014 **	.004	-.015 **	.004
Origin State (From employment)						
From school	-.471 **	.087	-.477 **	.088	-.455 **	.089
From unemployment	.007	.079	.005	.080	.007	.080
From pension	.648 **	.248	.669 **	.250	.673 **	.252
From outside labor force	-.031	.080	-.022	.081	-.024	.081
From Army	-.434 **	.168	-.436 **	.167	-.443 **	.171
From maternity leave	-.064	.140	-.084	.141	-.129	.143
From self-employment	.087	.309	-.018	.310	-.012	.308
From "other"	-.171	.395	-.081	.396	-.069	.398
Period (1985-1988)						
1989-1991	.270 **	.088	.254 **	.089	.255 **	.089
1992-1994	.631 **	.086	.601 **	.087	.607 **	.087
1995-1998	.805 **	.086	.774 **	.087	.782 **	.087
1999-2001	.986 **	.082	.939 **	.083	.956 **	.083
Constant	-.409 **	.094	-1.324 **	.230	-1.343 **	.236
Log-likelihood	-4400.3		-4352.1		-4349.5	
DF	18		22		24	

^ASample consists of new jobs obtained by SSMDR respondents when they were aged 18 to retirement age with non-missing data on search strategy: 6573 observations from 3569 respondents. Standard errors are adjusted for clustering of observations within respondents. Dummy variables for missing data on CPSU membership and on logged city size are included in appropriate models but not shown.

*p < .05, one-tailed

**p < .05, two tailed

TABLE 2
Logistic Regression Models for the Probability that a New Job is in Private Sector or Selected Branches, Russia 1985-2001^A

<i>Sector/branch:</i>	<i>Private sector</i>		<i>Finance and insurance</i>		<i>Trade, catering, services</i>		<i>Education and science</i>		<i>Defense industry</i>	
	B	SE	B	SE	B	SE	B	SE	B	SE
Networks	.419 **	.060	.515 **	.211	.389 **	.073	-.428 **	.100	-.452 **	.183
Woman	-.425 **	.059	.859 **	.219	.632 **	.072	1.303 **	.121	-.248	.176
Education (Secondary)										
University	-.142 **	.071	.705 **	.212	-.450 **	.088	.764 **	.098	.326	.204
Less than Secondary	.108	.133	-.620	.717	.361 **	.138	-.660 **	.265	-.271	.482
CPSU Member	-.079	.108	.554 *	.316	.031	.130	-.081	.188	.165	.314
Moscow resident	-.078	.101	.412	.330	.066	.118	.296 *	.155	-.697 **	.290
Ln(city size)	.121 **	.017	.019	.061	.081 **	.020	-.019	.026	.149 **	.050
Ln(years in current oblast)	.025	.035	.034	.126	.002	.044	-.029	.049	.232 **	.118
Age(18)	-.005	.003	-.003	.012	-.015 **	.004	-.002	.006	-.006	.010
From Employment	-.129 *	.070	-.211	.250	-.472 **	.093	-.455 **	.135	-.670 **	.220
Previous job in same sector/branch	1.129 **	.111	2.106 **	.555	1.504 **	.113	1.745 **	.165	2.251 *	1.181
From employment*same sector/branch	.502 **	.169	2.011 **	.676	.948 **	.177	1.152 **	.232	1.727	1.221
Period (1985-1988)										
1989-1991	.548 **	.112	.083	.380	.362 **	.131	-.015	.147	-.846 **	.295
1992-1994	.985 **	.105	.437	.329	.379 **	.120	-.124	.141	-.759 **	.241
1995-1998	1.113 **	.104	.151	.352	.717 **	.116	-.325 **	.145	-1.034 **	.282
1999-2001	1.577 **	.100	.338	.326	.876 **	.107	-.507 **	.131	-1.158 **	.254
Constant	-3.014 **	.236	-5.948 **	.838	-3.412 **	.276	-2.984 **	.337	-5.175 **	.715
Log-likelihood (DF)	-3648.0	(19)	-511.2	(19)	-2848.6	(19)	-1732.9	(19)	-639.4	(19)
Number of observations (respondents)	6439	(3527)	6555	(3561)	6555	(3561)	6555	(3561)	6555	(3561)

^ASample consists of new jobs obtained by SSMDR respondents when aged 18 to retirement age with non-missing data on search strategy and dependent variable. Standard errors are adjusted for clustering of observations within respondents. Dummy variables for missing data on CPSU membership, place of residence, and prior job sector or branch are included in models, but not shown.

**p < .05, one-tailed

**p < .05, two tailed

TABLE 3

OLS Models for Occupational Earnings of New Jobs, Russia 1985-2001^A

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>	
	B	SE	B	SE	B	SE
Networks	.043 **	.010	.018 **	.007	.002	.011
Networks*Woman					.042 **	.015
Networks*University					.003	.016
Networks*CPSU					-.082 **	.028
Woman			-.172 **	.008	-.193 **	.011
Education (Secondary)						
University			.146 **	.009	.145 **	.011
Less than Secondary			-.079 **	.018	-.080 **	.018
CPSU Member			.026 *	.014	.064 **	.019
Moscow resident			-.016	.013	-.015	.013
Ln(city size)			.011 **	.002	.011 **	.002
Ln(years in current oblast)			.006	.004	.006	.004
Age(18)			-.002 **	.000	-.002 **	.000
From Employment			-.890 **	.195	-.881 **	.195
Previous Occupational Earnings			.320 **	.024	.319 **	.024
Previous Occupational Earnings*From Employment Period (1985-1988)						
1989-1991	.006	.014	-.014	.012	-.013	.012
1992-1994	.043 **	.014	.010	.011	.011	.011
1995-1998	.027 *	.014	.002	.012	.002	.012
1999-2001	.029 **	.013	.020 *	.011	.019 *	.011
Constant	6.411 **	.011	4.298 **	.156	4.311 **	.156
R-squared	.007		.309		.311	

^ASample consists of new jobs obtained by SSMDR respondents when they were at least at 18 and younger than retirement age with non-missing data on search strategy and OLEI score: 6484 observations from 3536 respondents. Standard errors are adjusted for clustering of observations within respondents. Dummy variable for missing data on CPSU membership, place of residence, and prior occupational earnings score are included in models 2 and 3, but not shown.

TABLE 4

OLS Models for Last Month's Earnings (Logged), in Rubles^A

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>	
	B	SE	B	SE	B	SE
Networks	.091 **	.032	.014	.028	.045	.046
Networks*Woman					-.109 *	.056
Networks*University					.166 **	.064
Networks*CPSU					-.179 *	.106
Woman			-.492 **	.028	-.438 **	.040
Education (Secondary)						
University			.228 **	.032	.148 **	.043
Less than Secondary			-.296 **	.070	-.295 **	.070
CPSU Member			.107 **	.054	.187 **	.068
Moscow resident			.331 **	.050	.332 **	.050
Ln(city size)			.070 **	.008	.070 **	.008
Age(18)			-.004 **	.002	-.004 **	.002
Ln(years current job)			.021	.015	.019	.015
Month of survey (9/01)						
November 2001	.005	.040	.032	.034	.032	.034
January 2002	.163 **	.040	.136 **	.035	.138 **	.035
Constant	7.619 **	.032	7.004 **	.102	6.992 **	.104
R-squared	.012		.272		.276	

^ASample consists of currently employed SSMDR respondents at least 18 and under retirement age with non-missing, positive earnings who entered their current job after December 1984: 2327 respondents. Standard errors are corrected for heteroskedasticity. Dummy variables for missing data on CPSU membership and locality are included in models 2 and 3, but not shown.

*p < .05, one-tailed

**p < .05, two tailed

TABLE 5
Multinomial Logit Models for Wage Arrears in Previous Month^A

Outcome (relative to full pay):	Model 1				Model 2			
	<i>No Pay</i>		<i>Partial Pay</i>		<i>No Pay</i>		<i>Partial Pay</i>	
	B	SE	B	SE	B	SE	B	SE
Networks	.030	.135	.129	.202				
Less than 3 yrs. in job	.051	.130	-.018	.205				
Networks*less than 3 yrs.	-.244	.182	-.467 *	.281	-.190 *	.100	-.387 **	.157
Woman	-.219 **	.091	-.091	.140	-.221 **	.091	-.090	.140
Education (Secondary)								
University	-.458 **	.109	-.329 **	.163	-.459 **	.109	-.329 **	.162
Less than Secondary	.434 **	.215	.293	.343	.435 **	.215	.292	.344
CPSU Member	.333 **	.169	.341	.263	.333 **	.169	.342	.263
Moscow resident	-.389 **	.169	-.321	.254	-.066 **	.023	.000	.037
Ln(city size)	-.067 **	.023	-.001	.037	-.388 **	.169	-.321	.254
Age(-18)	.013 **	.005	-.002	.007	.013 **	.005	-.002	.007
Month of survey (September 2001)								
November 2001	-.142	.112	-.493 **	.172	-.142	.112	-.487 **	.172
January 2002	.094	.111	-.190	.167	.094	.111	-.190	.166
Constant	.241	.298	-1.295 **	.493	.266	.290	-1.287 **	.487
Log-likelihood			-2223.3				-2223.6	
DF			28				24	

^ASample consists of currently employed SSMDR respondents at least 18 and under retirement age with non-missing data on whether they were paid in full the previous month: 2539 respondents. Standard errors are corrected for heteroskedasticity. Dummy variables for missing data on CPSU membership and locality are included in the appropriate models but not shown.

*p < .05, one-tailed

**p < .05, two tailed

APPENDIX TABLE A1

Descriptive Statistics, Valid SSMDR Sample (18 years and older), Selected Years^A

	<i>1985</i>	<i>1989</i>	<i>1992</i>	<i>1995</i>	<i>1998</i>	<i>2001</i>
<i>Entire Analysis Sample:</i>	4331	4409	4505	4568	4640	4903
Woman	60.7%	59.8%	59.3%	58.1%	57.1%	58.3%
College (VUZ) Degree	21.2%	22.6%	22.8%	23.5%	23.8%	23.0%
Less than Secondary	19.0%	14.7%	11.9%	9.7%	7.6%	6.1%
CPSU Member	15.7%	14.0%	12.8%	11.2%	9.5%	7.9%
Ln(city size)	12.2	12.2	12.3	12.3	12.3	12.4
Moscow Resident	16.5%	16.5%	16.4%	16.5%	16.5%	17.2%
Ln(years in current oblast)	3.1	3.2	3.3	3.3	3.3	3.3
Married	68.8%	69.4%	67.9%	64.9%	60.8%	55.0%
Current Age	36.0	36.8	37.1	37.0	36.8	36.9
Main activity						
Hired employee	83.1%	82.3%	77.9%	73.5%	70.0%	66.0%
In school	5.3%	4.3%	5.1%	5.7%	6.3%	6.1%
Retired/disabled	4.1%	4.3%	5.1%	5.6%	5.4%	6.4%
Unemployed	0.6%	1.0%	1.9%	3.5%	5.1%	7.3%
Not in Labor Force	1.4%	2.2%	3.2%	5.0%	6.6%	7.4%
Military service	1.6%	1.1%	1.4%	1.1%	0.9%	0.2%
On maternity leave	3.6%	3.8%	4.0%	3.2%	2.6%	2.8%
Self-employed	0.0%	0.3%	0.8%	1.9%	2.8%	3.2%
"Other" activity	0.3%	0.6%	0.6%	0.5%	0.4%	0.4%
Missing/unobserved	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%
<i>Hired Workers, 18+ (N):</i>	3597	3630	3509	3356	3249	3237
Occupational Earnings, mean	6.47	6.47	6.47	6.47	6.46	6.47
Occupational Earnings, sd	0.33	0.32	0.32	0.32	0.32	0.33
Private Sector Employer	0%	6%	12%	20%	28%	40%
Industry of Employer:						
Finance and Insurance	0.7%	0.8%	1.0%	1.4%	1.6%	1.7%
Trade, Catering, and Services	9.5%	9.4%	10.8%	11.7%	14.5%	17.5%
Education and Science	9.7%	10.5%	10.9%	11.7%	12.0%	11.5%
Defense Industry	6.0%	6.2%	5.5%	3.9%	3.1%	2.5%
Prior month logged earnings, mean						7.72
Prior month logged earnings, sd						0.79
Paid in part, prior month						10.0%
Not paid at all, prior month						31.8%

^AThe data are snapshots of person-months from respondents aged 18 to retirement age and residing in Russia taken January 1st for 1985-1998 and the survey month for 2001.