Structural Change and Post-Socialist Stratification: Labor Market Transitions in Contemporary Russia

Theodore P. Gerber

University of Arizona

In Russia, market transition has led to sweeping structural changes: a long recession, growth of the private sector, expansion of certain branches of the economy and contraction of others, a decrease in average firm size, and regional differentiation in economic performance. These structural changes had important consequences for stratification through their effects on individual labor market outcomes. Analyses of nine types of individual labor market transitions in Russia using 1991–1997 work-history data show that structural location has strong effects. Human capital and membership in the Communist Party of the Soviet Union also influence labor market prospects, but not in ways consistent with general theories about how market transition affects stratification processes. Structural change plays a key role in determining the impact of market reforms on stratification. But market transition produces variable patterns of structural change in different countries and in different regions within a single country. The structural perspective demonstrates why market transition has variable consequences for stratification: Different prior conditions and reform policies produce different patterns of structural change.

The transition from a state-administered to a market-based economy in Russia brought about rapid and far-reaching structural changes in the labor market. Institutional changes associated with the market reforms—the withdrawal of direct state control over the economy and the growth of pri-

vate property and market exchange—rippled at different rates and with different consequences through different sectors, branches, and regions, redistributing the number and quality of jobs across these dimensions. Overall, the Russian economy contracted radically. These structural changes in the labor market have strongly influenced stratification processes: How a Russian citizen fares on the labor market depends on his or

her labor market location—in a particular firm, branch of the economy, sector, and region—and varies over time.

The importance of these "structural" effects becomes clear in analyses of individual-level labor market transitions in Russia from 1991 through 1997, a period spanning the last year of the Soviet era and the first six years of the market transition era. Using new work-history data from a nationally representative sample, I estimate continuous-time hazard models showing the effects of individual-level characteristics and structural variables on the rates of three types of labor market transition: interfirm job shifts, intrafirm shifts, and involuntary job losses (layoffs). I also estimate logistic regressions to determine how the same variables influence the "quality" of job shifts—understood in terms of the sector, branch, and occupation of the destination job—conditional on a shift taking place.

The impact of structural change on stratification has received surprisingly little attention in the literature on post-socialist stratification. Instead, this literature has focused on returns to education and effects of membership in the Communist Party. Two dominant theories have proposed general accounts of how market transition influences these effects. According to "market transition theory" the spread of market institutions increases returns to human capital and decreases returns to political position, because markets reward productivity while state socialist institutions reward redistributive power (Cao and Nee 2000; Nee 1989, 1991, 1996). "Power conversion theory" claims that Communist Party cadres use their superior positions within powerful networks to preserve, and even enhance, their material advantages after market transition (Bian and Logan 1996; Rona-Tas 1994; Szelenyi and Szelenyi 1995).

I also test for the effects of human capital and Communist Party membership on labor market transitions. Because neither market transition theory nor power conversion theory consistently predicts the empirical pattern of effects, neither offers a general account of how market transition shapes stratification. The reason they fail to do so becomes clear once we appreciate the important role of structural change in the labor market as a key mediating force that translates the institutional reforms of market transition into consequences for individual life chances. The particular pattern of recession and structural change accompanying market transition in Russia resulted not from any universal features of market (as opposed to state-administered) economies, but from the combination of market institutions with structural legacies inherited from the Soviet era and the particular policies implemented by Russia's reformers. These legacies and policies, in turn, reflect past government policies and more recent political struggles accompanying the reforms, which introduce contingency into the structural consequences of market transition in a particular country. Political struggles surrounding reform processes in Russia also directly affected stratification processes: Pressure on the Communist Party of the Soviet Union hurt the labor market prospects of its members during the final year of the Soviet Union's existence.

The contingent nature of the structural changes that accompany market transition in a given national context helps explain why the impact of market reforms on stratification cannot be deduced from ideal-typical conceptions of how markets operate (Gerber and Hout 1998; Walder 1996, 2002; Xie and Hannum 1996; Zhou 2000). Even if markets—or, for that matter, elite networks—have certain generic features, their introduction will not have uniform effects on stratification processes in different countries. Cross-national variations in initial structural conditions, political circumstances, and policies lead to differences in the pace and pattern of structural changes following market reforms. Once we recognize that structural change directly influences life chances and interacts with individual-level traits, it becomes clear that the impact of market transition on stratification will vary. Even within a single national context, structural conditions can produce varying consequences in different sectors, branches, and regions. The relationship between market transition and stratification is thus a variable—varying both within and across national contexts— to be explained based on institutional factors, political factors, and inherited structural legacies.

MARKET TRANSITION AND STRUCTURAL CHANGE IN RUSSIA

"Structural change" refers to macro-level changes in the size of a country's work force and its distribution across sectors (private versus public), economic branches (manufacturing versus services), types of firms (large versus small), occupations (professional versus manual), and geographic locations (variation across regions and locality sizes). In stable capitalist societies, technological change, global competition, and shifting welfare state policies have brought about significant structural changes. These changes affect individual job mobility and employment exit patterns (and thus life chances) in ways that are predictable but not inevitable, and these effects vary by institutional regime (DiPrete 1993; DiPrete et al. 1997; DiPrete and McManus 1996; DiPrete and Nonnemaker 1997).

In Russia, a different set of factors led to far more dramatic and sweeping structural changes than those analyzed in the literature on Western capitalist societies. A series of radical institutional reforms effectively dismantled the system of far-reaching state control over the economy and led to the rapid rise of private ownership and market-based allocation of resources and consumer goods. These institutional changes produced structural changes that, in turn, diversely affect the life chances of Russians differently located in the economic structure inherited from the Soviet era. To understand the impact of these structural changes on stratification in contemporary Russia and to draw the appropriate theoretical lessons, we must first consider their precise nature and why they took place. This requires a focus on the role that *preexisting structural conditions* and *particular reform policies*—rather than market institutions as such—have played in shaping the specific structural changes that market transition produced in Russia.

STRUCTURAL DISTORTIONS OF THE SOVIET ECONOMY

Five characteristics of the Soviet economy are especially relevant for understanding the structural changes that followed market reforms (e.g., see Blasi, Kroumova, and Kruse 1997; Hewett 1988). (1) Private firms were virtually nonexistent, outside of a small cooperative sector born in the late 1980s. (2) Manufacturing branches (especially defense and heavy industry) and construction were greatly overdeveloped, while trade, catering, services, and finance were underdeveloped because of the priorities of Soviet planners. (3) A glut of large enterprises had resulted from planners' faith in economies of scale and vertical integration. (4) Regional industrial structures were unbalanced and often did not reflect comparative regional advantages, again because of the preferences of planners. (5) Full employment and labor shortages reigned because of soft budget constraints, low technological innovation, frequent supply interruption, and a paternalistic managerial culture, all of which encouraged managers to hoard labor.

Market transition involves both property reform and liberalization (the withdrawal of state control over the economy). Introduced in the structural conditions of Russia, these processes redistributed jobs from the state sector to the private sector, from manufacturing industries (especially defense and heavy industry) to services and finance, and from large to small and medium-size enterprises. They also led to a greater differentiation of economic performance and labor market conditions across Russia's regions. Finally, they produced sharp growth in unemployment.

RUSSIAN REFORM POLICIES: RADICAL LIBERALIZATION AND PRIVATIZATION

Market transition can be implemented at different speeds and through a wide variety of policies. In China, the process was gradual for the first two decades of reform and has not involved substantial political reforms. Large-scale privatization began only in the mid-1990s and has mainly affected new public firms in rural areas. In most countries of East Central Europe, reforms have been much more rapid and have included both privatization and dramatic change in political institutions. Each case of market transition unfolds according to a different blueprint, and the actual policies adopted result

from often contentious political processes (Stark and Bruszt 1998).

In August 1991, the tense political atmosphere following the defeat of an attempted coup by hard-liners prompted reformers in Yeltsin's regime to adopt a radical approach. They were influenced by neoliberal arguments and feared that gradual measures would be easily reversed should conservative forces gain the upper political hand. The government's package of "shock therapy" measures in January 1992 abruptly eliminated controls on wages, prices, trade, currency exchange, and ownership of productive assets, along with state planning agencies, and mandatory state orders (Aslund 1995; Blasi et al. 1997). Large-scale privatization of medium and large state firms began in earnest in December 1992 (small firms were privatized in early 1991).

These reforms explicitly sought to transform the labor market. One goal was to make the labor market more flexible.[1] To this end, mandatory job assignments for graduates with higher or specialized education were eliminated, unemployment benefits and employment services were established. But more important, liberalization and privatization were to spur a massive reallocation of labor from inefficient to productive firms, branches, and sectors. Freed from centrally established wages, promotion schedules, and suppliers, but facing foreign competitors, dwindling state orders, and shrinking subsidies, managers now had the flexibility and the incentives to restructure their product lines and workforces in response to market signals. Initially, unemployment would rise steeply, as inefficient enterprises shut down and successful enterprises shed excess labor. But after the initial shock of liberalization, gains from foreign investment, market incentives, and increased productivity would fuel growth.

The reforms did not remove all obstacles to labor market flexibility because of continuing political conflicts. Some enterprises continued to receive state subsidies. Privatization turned ownership of many firms over to work collectives, which usually re-elected existing managers committed to the goal of keeping the work collective intact. Worker-protection legislation required three months of severance pay upon involuntary termination. Housing shortages and residency restrictions in some cities impeded the geographic mobility of labor. Nonetheless, Russia's market transition introduced institutional changes with great potential to transform the labor market: the rise of a private sector; the removal of state controls over wages, prices, and other firm-level decisions; the growth of foreign competition and loss of protected access to markets in other (former) Communist countries; the curtailing of subsidies; and the legalization of self-employment and unemployment.

STRUCTURAL CHANGE

Introduced in the structural conditions described above, the reforms generated a recession of longer duration and greater severity than those in Poland, Czechoslovakia, and Hungary. According to official data (Goskomstat Rossii 1999), unemployment jumped from virtually zero during the Soviet period to 11.2 percent of the workforce in 1997. GDP fell by 40 percent between 1990 and 1997. Real wages plummeted nearly 60 percent in 1992 alone, and despite a gradual recovery had reached only 73 percent of their of their 1991 levels by 1997.

Structural, political, and policy factors all contributed to the unusual length and depth of Russia's recession (see Burawoy 1996; Ickes, Murrell, and Ryterman 1997; Popov 1998; Sapir 1999). The prior structural distortions in Russia were more extreme than in other countries, which would have necessitated a more thorough macroeconomic adjustment even in the best of circumstances. Political conflicts led to inconsistent policies and weakened Russia's emergent state and legal institutions. In turn, ineffective, unstable state institutions encouraged corruption, asset-stripping, rent-seeking, and speculation, while discouraging the restructuring and investment needed for growth. Certain exchange rate, trade, and taxation policies also slowed Russia's recovery.

---

[1] The Soviet labor market was formally flexible in that workers were free to change jobs if they wished. But informal policies and institutions promoted lifelong employment within a single organization (see Clarke and Donova 1999: Dmitriev and Maleva 1997).

Russia's recession contrasts starkly with the strong growth experienced in China after the introduction of market reforms. Obviously, neither growth nor recession follows inevitably from market transition; where recession ensues, its length can vary considerably. The outcome depends on the preexisting structural conditions and the set of policies followed in a particular country.

Official data also testify that privatization and the ascendancy of market forces over planners' priorities led to the expected changes in the sector and branch structure of the economy (Goskomstat Rossii 1999). From 1991 to 1997, private-sector employment in Russia grew from 13 percent to 40 percent of total employment. Employment grew steeply in the areas of trade/catering (55 percent), finance/insurance (77 percent), and public administration (68 percent) and modestly in housing/communal services (6 percent) and health (2 percent). Employment declined in all other branches, most precipitously in the previously bloated manufacturing (–35 percent) and construction (–33 percent) branches, and in education and science (–17 percent). Growing variation in branch performance also increased the interbranch standard deviation in mean wages by 40 percent from 1992 to 1997. Employment in large- and medium-size enterprises declined more rapidly than overall employment (Clarke 1999), implying a drop in average firm size.

Finally, during Russia's market transition, regional disparities in economic performance also increased. This reflects regional differences in comparative advantages inherited from the Soviet era (when regional growth patterns, investment, and industry mixes were determined by the strategic priorities of the Soviet state rather than market forces), the retreat from redistributive policies by the central government, and the decline of centralized authority over the regions (Mau and Stupin 1997; Sutherland and Hanson 1996; Van Selm 1998).

CONSEQUENCES OF STRUCTURAL CHANGE FOR INDIVIDUAL LABOR MARKET PROSPECTS

The impact of structural change on individual job mobility and job exit patterns can vary (DiPrete 1993; DiPrete and Nonnemaker 1997). For example, the contraction of a branch or sector implies a preponderance of firm exits, but these can involve different mixes of layoffs, voluntary quits, retirements, and interbranch or intersector job shifts, with different implications for the life chances of the employees involved. The implications of structural change for stratification patterns in Russia and other countries undergoing market transition must therefore be determined empirically. But the literature on post-socialist stratification has generally neglected labor market transitions.

There are some recent exceptions. Studies of job mobility patterns in reform-era and pre-reform China report that the impact of market transition on mobility has been, at most, incremental (Walder, Li, and Treiman 2000; Zhou, Tuma, and Moen 1996, 1997). This could reflect the slow pace of market transition in China's urban areas, where samples for these studies were drawn. Studies of Estonia (Titma, Tuma, and Silver 1998) and the former German Democratic Republic (Mayer, Diewald, and Solga 1999) suggest that where market transition proceeds rapidly, higher rates of job mobility or job loss result.

In Russia, field studies and analyses of limited samples suggest continuity in job search strategies (Yakubovich and Kozina 2000), internal mobility levels (Clarke and Donova 1999), and employer considerations (Clarke 1999) between the Soviet and post-Soviet periods. These studies capitalize on the richness of their survey data to shed light on job search processes from the perspective of both employees and employers. But their results cannot be generalized to other sectors, economic branches, and regions. Only multivariate analyses of broadly representative work-history data can answer the key question for stratification: How do the structural changes influence the labor market prospects of different groups of Russians? Such analyses must be guided by hypotheses regarding the effects of both structural and individual-level variables derived from previous research on structural change and labor market transitions and theories of market transition.

THEORY AND HYPOTHESES

STRUCTURAL EFFECTS: EMPLOYER CHARACTERISTICS

As the consequences of reform course through different parts of the economy and regions of the country at different speeds, they produce variation in economic and institutional conditions across employing organizations (firms), localities, and time. This variation, in turn, potentially affects individuals' labor market risks and opportunities, as manifested in labor market transition rates. I begin with employer characteristics, emphasizing sector (property form) and branch.

I deduce "push" effects of employer characteristics from positive effects on interfirm mobility, job loss, and shifts to low-quality jobs.[2] Workers are more likely to take on a low-quality job to the extent they are driven out of their current job by unfavorable firm characteristics. Favorable firm characteristics should exert "retention" effects, evident in higher rates of shifts to high-quality jobs. Intrafirm mobility can result from push effects (necessitating workforce reorganization) or retention effects (fostering promotions), but in the recessionary context of Russia the former are more likely.

Property form represents one firm-level characteristic whose variation has clear theoretically based implications for labor market transitions. Kornai's (1981) influential analysis links state property with soft budget constraints, which encourage managers to hoard and squander labor resources. In contrast, competition and hard budget constraints compel managers of private firms to economize on labor costs and improve productivity. Russian market reformers concurred: Privatization of state-owned firms would restore economic efficiency and growth because profit-seeking owners of private firms would restructure output and labor in more productive, efficient directions (Boycko, Shleifer, and Vishny 1995; Sachs

---

[2] I hereafter abbreviate "conditional odds of shifts to high- (low-) quality jobs" as "shifts to high- (low-) quality jobs." Readers should bear in mind that this refers to the odds that a shift is to a high- (low-) quality job, *conditional on a shift occurring*.

1992). This effect is not only transitory, but durable: Unlike state enterprises, whose survival is guaranteed by the state budget, private firms must continually compete for survival, which often involves restructuring their labor forces. Thus, the traditional perspective on private property sees it, relative to state property, as a "push" factor:

Hypothesis 1: Employees in new private and privatized firms in Russia have *higher* interfirm mobility, job loss, and low-quality shift rates; *lower* rates of high-quality shifts.

Less obvious, the effects of property reform may operate at the level of organizational field, which could blur differences across property forms within the field. State-owned firms may adapt to the changing environment by adopting practices or strategies normally associated with private ownership, as have Chinese firms under some forms of state ownership (Guthrie 1997; Walder 1995). Uncertainty within state-owned firms regarding future state financing could serve as an incentive to restructure. Also, processes of mimetic or normative isomorphism (DiMaggio and Powell 1983) may motivate state-firm managers to introduce practices associated with private firms. They may dismiss excess workers simply because other firms in the organizational field do so or other managers politically justify the practice.

Differences in the *extent of privatization* across fields would lead to observed differences in labor market transitions corresponding to those theoretically associated with private and state property forms. Treating branch as a proxy for organizational field, I expect branch-level privatization to exert push effects:

Hypothesis 2: Workers in branches with more extensive private property exhibit *higher* rates of interfirm shifts, job loss, and low-quality shifts; *lower* rates of high-quality shifts.

It may take time for the firm- and branch-level effects of private property to develop. Persistent insider control following privatization, continuing subsidies due to ongoing political struggles over reforms, and a

throwback managerial culture among privatized firms could undermine market incentives (Blasi et al. 1997; Clarke 1998; Dmitriev and Maleva 1997; Kapeliushnikov 1997; Kharkhordin and Gerber 1994). Even "new" private enterprises (formed after the Soviet era) may adopt hiring practices that resemble those of state-owned firms (Gimpelson and Lippoldt 1999; Russell and Hanneman 2000). Particularly in such conditions, it is not realistic to expect the effects of property reform to be instantaneous. But if private property does bear the hypothesized effects, they should gradually surmount the political and cultural obstacles:

Hypothesis 3: The firm- and branch-level push effects of private property, especially in privatized enterprises, *increase* over time.

Apart from property form, a variety of other branch characteristics should also affect individual labor market transitions—for example, product market characteristics, concentration, average firm size, and labor intensity (Hachen 1992). Russian data lack information on these characteristics, however, so I focus on *branch performance*—measured by wage levels and employment change—as the other key branch-level variable. Recall that the combination of economic liberalization with Soviet-era investment priorities produced divergent fortunes in various branches. Wages and employment both tend to decline in poorly performing branches and increase in successful branches (although the relationship is not exact, as wages remain low in trade/catering despite its rapid growth). High wages retain workers; employment contraction implies many firm exits in the form of interfirm shifts, quits, and layoffs (DiPrete 1993; DiPrete et al. 1997; DiPrete and Nonnemaker 1997; Hachen 1992):

Hypothesis 4: Employees of firms in poorly performing branches have *higher* rates of interfirm and intrafirm shifts, job loss, and low-quality shifts; *lower* rates of high-quality shifts.

Sector and branch are the most important, but not the only, readily measurable employer traits, in terms of effects on labor market transitions. Firm size is another relevant characteristic. Large firms tend to retain workers because they are likely to have internal labor markets and are better able to ride out cyclical downturns in the external environment (Carroll and Mayer 1986). Moreover, average firm size has fallen steadily in post-Soviet Russia. But considerations of space dictate treating firm size as a control variable here.

STRUCTURAL EFFECTS: LOCATION AND TIME

While firm-level variables influence labor market transitions through "push" effects, regional characteristics exert "pull" effects—they determine the availability of jobs of varying quality outside the firm. *Regional property composition* and *regional economic performance* are the aspects of regional variation that should matter most for labor market transitions. Just as penetration by market institutions (private property) varies across firms and branches, so it does across regions. Market reforms, at least in the plans of reformers, are associated with more active labor markets and the growth of opportunities:

Hypothesis 5: Greater penetration of private property in a region *increases* interfirm shift, layoff, and high-quality shift rates; *decreases* rates of low-quality shifts.

Independent of institutional change, the regional variations in economic performance due to Soviet legacies described earlier should also influence individual labor market transition rates. Poorly performing regions—those with low mean real wages and high unemployment—should offer fewer opportunities outside one's firm, and vice versa:

Hypothesis 6: Better regional economic performance (high wages, low unemployment) *increases* interfirm and high-quality shift rates; *decreases* job loss and low-quality shift rates.

Finally, certain aspects of liberalization, privatization, and recession produce *changes over time* that uniformly affect branches and regions. From 1991 to 1997, the level of market penetration increased (at varying rates) in all regions and branches. Employ-

ment decreased steadily in all regions and in the branches employing the vast majority of Russians. Wages plummeted in all branches and regions in 1992, then slowly gained ground. In short, market transition and recession progressed throughout Russia and in all branches during the period under study. Their advance should be reflected in changing baseline labor market transition hazards over time:

Hypothesis 7: Over time, the baseline hazards of interfirm shifts, job loss, shifts to private and privatized firms, and low-quality shifts *increase*; high-quality shifts (apart from shifts to the private sector) *decrease*.

INDIVIDUAL CHARACTERISTICS: HUMAN CAPITAL AND COMMUNIST PARTY MEMBERSHIP

Market transition theory holds that markets reward human capital more than the institutions of state socialism do (Cao and Nee 2000; Nee 1989, 1991, 1996). Its propositions are dynamic: It does not imply that *human capital* provides no labor market advantages under state socialism, only that its advantages *increase* as market institutions gain strength:

Hypothesis 8: Over time, high levels of education have *increasingly positive* effects on the rates of job mobility and shifts to high-quality jobs, and *increasingly negative* effects on job loss and shifts to low-quality jobs.[3]

Market transition theory also leads to clear expectations regarding how variation in market penetration across firm, branch, and region translates into variation in the labor market advantages of human capital:

Hypothesis 9: The favorable effects of education on labor market transitions are *stronger* in firms, branches, and regions where market penetration has proceeded more rapidly.

---

[3] Interfirm mobility is best viewed as a positive outcome when assessing individual-level effects because at a given level of firm-level push characteristics, interfirm mobility is always preferable to job loss.

Human capital might also interact with structural location in a manner not predicted by market transition theory. In the United States, workforce experience, white-collar occupation, education, and employer tenure can buffer workers from the impact of structural change on labor market transitions, as employers seek to keep their most valuable employees in anticipation of eventual recovery (DiPrete 1993; DiPrete and Nonnemaker 1997). Clarke's (1999) interviews with Russian managers suggest that they have similar considerations, implying:

Hypothesis 10: The labor market advantages of more education are *stronger* in contracting branches, poorly performing regions, and small firms.

Hypothesis 10 underscores the need to empirically distinguish the effects of property reform from the effects of other aspects of structural change on "returns" to human capital, in order to properly assess market transition theory.

Power conversion theory claims that *Communist Party members* have persistent advantages because they acquired superior "social capital"—personal connections and relations of reciprocity—through the Communist Party during Soviet times (Bian and Logan 1996; Rona-Tas 1994; Rona-Tas and Guseva 2001). In this view, Party connections are weak ties that should be useful for gaining information on and access to opportunities *outside the firm*:

Hypothesis 11a: Former Communist Party members have *higher* rates of interfirm mobility and high-quality shifts, *lower* rates of job loss and low-quality shifts.

Precisely because the social capital provided by Communist Party membership is in the form of contacts with other (former) members outside the firm, power conversion theory offers no grounds to predict substantially greater mobility for Communist Party members *within the firm*. External network connections should strongly influence firm-internal mobility only indirectly, if at all.

Another approach attributes the persistent advantages of Communist Party members to the mechanisms of selection into the Communist Party, which led to former Communist Party members having above-average

stores of unobservable qualities like ambition that facilitate material success in any given institutional arrangement (Gerber 2000a, 2001b). This "selection theory" implies Hypothesis 11a but specifies a different causal mechanism than power conversion theory: Communist Party members are more productive, net of observed characteristics, and employers view Communist Party membership as a "signal" of higher productivity.[4] Unlike power conversion theory, selection theory also implies higher *intrafirm* mobility for former Communist Party members:

Hypothesis 11b: Former Communist Party members have *higher* rates of intrafirm job mobility.

Political developments during Russia's market transition may have undermined any lingering advantages of Communist Party members on the labor market. Throughout 1991, the Communist Party experienced growing internal turmoil and sharpening challenges to its authority by Russian state officials. In July, Yeltsin issued a decree evicting Communist Party organs from Russian enterprises. About one-third of Russian enterprises apparently complied (Radio Free Europe/Radio Liberty 1991). Yeltsin banned the Communist Party for a time following the failed August 1991 coup against Soviet President Gorbachev. The embattled political situation of the Communist Party would have radically discounted the political capital associated with Party membership, paving the way for enterprise managers to dismiss Party members who served no productive function. If, as market transition theory initially claimed, Communist Party members owed their advantages exclusively to political position, the reversal of the Communist Party's political fortune would surely have made Communist Party membership a net *disadvantage* on the labor market. But the political assault on the

Communist Party could actually have strengthened the selection effect by removing the least productive Communist Party members from the labor market. This scenario implies:

Hypothesis 12: The effects of Communist Party membership on labor market fortunes are negative in 1991, but positive thereafter.

DATA AND METHODS

DATA

The data come from the Survey of Employment, Income, and Attitudes in Russia (SEIAR). As part of a regular bimonthly survey by the All-Russian Center for Public Opinion and Market Research, stratified multistage samples (N = 4,818) representing the Russian population aged 16 and older were drawn in January and March of 1998.[5] I excluded 601 respondents who did not pass through the eligible age window (ages 18 to 60) in 1991–1997, 656 of those remaining who never worked as a hired employee during this period, 2 of those remaining who had not completed their education at the time of the survey, and 6 of those remaining whose job histories had unresolvable inconsistencies. This reduced the unweighted sample size to 3,553.[6]

The SEIAR included a battery of questions that allowed me to construct a complete work/employment history for each respondent since December 1990, including all

---

[4] Prior analyses (Gerber 2000a, 2001b) of the income returns to Communist Party membership in post-Soviet Russia provide evidence that Party membership has a positive signaling effect—not a negative effect reflecting the perception of Communist Party members as political "hacks," which some Eastern European dissidents have proposed.

[5] Details regarding sampling frame; selection of primary sampling units, secondary sampling units, and households; refusal rates; quality control; and specific wording of questions are available in the documentation accompanying the data file (Gerber 1999). This can be downloaded from http://www.icpsr.umich.edu.

[6] I calculated post-sampling weights to reproduce in the sample the relative cell frequencies in the four-way cross-classification of birth cohort, education, gender, and type of residence (urban versus rural) reported in the 1994 Russian micro-census. All analyses reported below are based on the weighted sample (N = 3,238). Weighting reduces the sample size because Russians over age 60, who are excluded from my analyses, were undersampled and thus generally received weights above unity.

spells of employment, unemployment, and separation from the labor force. Some histories are missing information on certain jobs. For the 14 respondents who changed jobs more than four times in the period analyzed, the missing data resulted from the fact that details were collected on a maximum of four new jobs held since 1990. Other respondents simply neglected to provide some information. Rather than exclude respondents or spells with missing job characteristics, I assigned valid zeros (for nominal variables) or sample means (for continuous variables) on the missing variables for the relevant spells and included dummy variables indicating missing data in the models to avoid influencing the parameter estimates with these substitutions.

OUTCOMES

I estimate continuous-time competing-hazard models of three labor market transitions: interfirm job shifts, intrafirm job shifts, and job loss.[7] The risk set for these events during month t consists of all 18-to-60-year-olds with completed education, working for hire, and not on maternity leave. Respondents are added to the risk set as they turn 18, complete their education, return from maternity leave, or enter hired employment.[8] They leave when they exit hired employment or turn 61. Respondents who change jobs remain at risk for all three outcomes.

I also estimate models of the quality of job shifts. To ensure that the effects of covariates on the quality of job shifts do not merely reflect their effects on overall job mobility rates, which could be the case if unconditional hazard models are used, I estimate binary logistic regression models, each *conditional on a job shift having taken place*. Four destinations imply "high-quality" shifts: (1) new private and (2) privatized firms (where earnings are higher by net factors of 1.86 and 1.73, respectively, in the

---

[7] Entry to self-employment is analyzed with the SEIAR data in Gerber (2001a).

[8] The survey did not determine when women returned from maternity leave, so I treat all maternity leave spells as lasting for nine months. This introduces measurement error of unknown magnitude and consequence.

SEIAR data), (3) a high-wage branch, and (4) a higher-earning occupation. Two destinations imply "low-quality" shifts: (1) a low-wage branch and (2) a lower-earning occupation.

High-wage branches are defined as having mean wages at least one-quarter of a standard deviation above the mean for all branches (based on data from Goskomstat Rossii 1999): extraction, construction, transport/communications, and finance/insurance. Because the distribution is negatively skewed, low-wage branches are defined more restrictively as having mean wages one-half a standard deviation below the mean for all branches: agriculture, trade/catering, health/social services, education/science, and culture/entertainment. To measure occupational earnings mobility, I scaled four-digit occupation codes from the 1988 version of the International Standard Classification of Occupations according to the standardized mean earnings of respondents in the corresponding occupations in nine Russian surveys spanning February 1992 to March 2000 (valid N = 12,023). A higher- (lower-) earning destination occupation is defined as having at least one fifth of a standard deviation higher (lower) on this scale than the origin occupation.

The conditional logit models for transition to a new private, privatized, high-wage branch, and low-wage branch firms are estimated on the sample of interfirm shifts. The models for upward and downward earnings mobility are estimated on the sample of all job shifts, excluding those for whom the relevant type of mobility is impossible because of ceiling or floor effects.

MODELS

To test the hypothesized interactions and assess alternative patterns of change over time (in effects and in the baseline hazard), I estimate a series of models for each outcome in four distinct steps. In step 1, I estimate a baseline model including only the main effects of individual and contextual traits and, to flexibly represent change in the baseline hazard without imposing a priori a particular functional form, dummy variables for each year of the observation window (following 1991, the omitted year). I include ex-

perience-squared in the baseline only if it significantly improves overall model fit.[9]

In step 2, I use likelihood-ratio tests to assess, *one at a time*, the hypothesized interactions between human capital and locational traits (Hypotheses 9 and 10). Prior to step 3, I estimate a new baseline model adding those interactions that are significant to the original baseline model.

In step 3, I test for hypothesized changes during the course of market transition in the effects of individual variables (human capital and Communist Party membership) and institutional variables (firm- and branch-level property form). Existing theories specify a direction, but not a precise *pattern*, of temporal change in effects. Therefore, for each hypothesized interaction, I try four alternative patterns of change over time, each plausible and each parameterized by a function, $f(y)$, of integer years elapsed since December 1990: (1) $f(y) = (y > 0)$, a dummy variable for post-1991, represents a "one-time shock," whereby an effect changed following the introduction of market reforms in 1992, but thereafter remained stable. (2) $f(y) = log(y + 1)$ denotes a "diminishing impact" scenario: Reforms have a strong initial impact that continues at a decelerating rate as the transition proceeds. (3) $f(y) = y^2$ reflects an "accelerating impact": The influence of market reforms is weak initially, but increases exponentially over time. (4) $f(y) = log(y) + y^2$—the log-quadratic specification—captures an "impact reversal" process of nonmonotonic change.[10]

The theoretical centrality of change over time and theoretical uncertainty regarding its precise pattern warrant testing such a variety of specifications of $f(y)$. But I risk capitalizing on chance, so any interactions detected should be viewed as provisional until replicated with other data. On the other hand, if none of the $f(y)$ significantly improves model fit, I can be confident that the effect is temporally stable.

Step 4 produces a preferred model. First, I add to the step 2 baseline model all the significant interactions involving time from step 3 (using, for each, the $f(y)$ that most improves model fit). Then, I remove all nonsignificant main and interaction effects, to simplify interpretation of the significant effects. Finally, I complete the model by replacing the dummy variables indicating year with the best-fitting of five parsimonious specifications of change over time in the baseline model: a null model and the patterns of change corresponding to each of the $f(y)$ described above. The resulting model takes the form:

$$\log h_{it} = \sum_{j \in J} \beta_j x_{ijt} + \sum_{k \in K} \omega_k c_{ikt}$$
$$+ \sum_{j \in J'} \sum_{k \in K'} \theta_{jk} x_{ijt} c_{ikt}$$
$$+ \sum_{j \in J''} d_j x_{ijt} f_{xjt}(y)$$
$$+ \sum_{k \in K''} \phi_k c_{ikt} f_{ckt}(y) + \eta f_{bt}(y), \qquad (1)$$

where x_j are individual traits; c_k are locational variables; J' and K' denote subsets of individual and locational variables hypothesized to interact; J'' and K'' denote, respectively, subsets of individual and locational variables hypothesized to interact with time; $f_{xjt}(y)$ is the value at time t of the best-fitting functional specification of change over time in x_j; f_{ckt} is the equivalent for change over time in c_k; and $f_{bt}(y)$ is the value at time t of the best-fitting functional specification for change over time in the baseline hazard.[11] Parameter estimates are fixed at zero if they are not statistically significant. All models are estimated using maximum-likelihood with robust standard errors.[12]

INDEPENDENT VARIABLES

SEIAR's property-form categories permit separate dummy variables for "new private"

---

[9] I also tested a *woman × experience* interaction for each outcome, but it was never statistically significant.

[10] In fact, the log-quadratic function is extremely flexible and can also readily capture accelerating positive or negative effects depending on the parameter values. Note that $log(y + 1)$ equals 0 for 1991, as do y^2 and $y > 0$.

[11] In cases where the log-quadratic specification fits best, there are two corresponding δ_j, ϕ_k, or η—one for $log(y + 1)$ and one for y^2.

[12] Modeling steps are illustrated in Appendix Table A-1, which shows fit statistics for some of the models estimated for interfirm shifts. Complete fit statistics are available from the author upon request.

firms (wholly owned by individuals or for-eign firms) and "privatized" firms (joint-stock companies with majority ownership in the hands of the work collective or nonstate entities). A dummy variable for collective farms is also entered. The omitted category, state-owned firms, includes partially priva-tized firms (where the state owns the major-ity of shares), as well as firms owned by fed-eral, regional, or local authorities.

High-wage and low-wage branches (speci-fied with dummy variables), branch employ-ment change, and the percentage of private sector employees in each branch category are all determined from official sources (Goskomstat Rossii 1999). Annual regional characteristics are from official data (Goskomstat Rossii 1998) on Russia's *oblasts,* territorial units equivalent to Ameri-can states. Regional economic performance is measured by the annual mean wage (in thousands of regionally adjusted 1991 rubles) and the end-of-year unemployment rate (imputed for 1991).[13] Published regional data on the extent of regional penetration by private property prior to 1995 are lacking. So I computed a "services" index—the ratio of value of services delivered to the total value of services, industrial production, and agricultural production—as a proxy for the advance of private property over the full pe-riod under study.[14]

Education is measured using dummy variables for the key levels of educational attainment in the Soviet/Russian system (see Gerber 2000b): college degree, special-ized secondary school, lower vocational school, and less than secondary. The base-line is general secondary school. Mutually

exclusive dummy variables indicate Com-munist Party "cadre" status (administrative position in the Party) and "rank-and-file" membership.

Control variables include workforce ex-perience, a dummy variable for women, logged firm size, logged size of locality of residence, a dummy variable indicating residence in Moscow, a dummy variable for job tenure less than one year, and, in mod-els for occupational earnings mobility, oc-cupational earnings. I also include dummy variables for defense-industry, agriculture, and trade/catering to deal with potential id-iosyncracies involving these branch catego-ries. All continuous variables are centered at their annual means (for variables from official data) or their sample means (for variables from the survey) to permit mean-ingful interpretations of changes in baseline hazards or log-odds.

RESULTS

First I present the descriptive statistics. Then, my exposition proceeds through the series of hypotheses developed above. For each set of hypotheses, I discuss the relevant coefficients from the preferred models for each outcome. For each set of coefficients, only significant effects are presented in the tables. To facilitate interpretation of signifi-cant interaction effects involving time, I pro-vide computations of all effects for five of the seven years in the period under study. All parameter estimates, standard errors, and other information from the preferred models are to be found in Appendix Table A-2.

DESCRIPTIVE STATISTICS

Descriptive statistics for key variables im-puted at annual or semiannual intervals from January 1991 through January 1997 reveal that the SEIAR data capture key changes of the transition era (see Table 1). Employment share declined sharply in manufacturing and the primary sector, and grew vigorously in trade/catering, financial services, and public administration. These patterns and the annual distributions of em-ployees across branches are all consistent with official data, suggesting the survey data are sound. The spread of private prop-

---

[13] The survey sampled 41 of Russia's 89 *oblasts.* Because the data contain only the re-spondent's place of residence at the time of the survey, I must assume that no respondents changed city or *oblast* since 1990. This intro-duces measurement error of unknown magnitude into estimates of the regional parameters, even though regional mobility is relatively rare in Russia.

[14] For 1995 and later years, the services index is highly correlated with the percentage em-ployed in privately-owned firms, percentage em-ployed in small businesses, and number of priva-tized firms, suggesting it is a good proxy for re-gional penetration of private property.

Table 1. Descriptive Statistics for the Employed Sample (Weighted), Ages 18 to 60, with Completed Education: SEIAR, 1991 to 1997

Variable	1991	1992	1994	1996	1997
Number of cases (beginning of year)	2,675	2,884	2,796	2,698	2,637
Age (mean)	38.7	38.4	38.9	39.0	39.1
Percent female	51.3	51.0	49.3	50.5	50.6
Percent Communist Party cadre	.6	.5	.5	.5	.6
Percent Communist Party rank-and-file	12.1	11.2	10.5	10.4	10.2
Education (Percentages)					
College degree	18.5	18.6	19.1	19.8	20.2
Specialized secondary	27.9	28.6	28.8	29.7	29.7
General secondary	20.2	20.2	20.3	20.8	21.2
Lower vocational	17.7	18.3	18.9	18.7	19.0
Less than secondary	15.8	14.4	13.0	11.1	9.8
Branch of Current Employer (Valid Percentages for Nonmissing Categories)					
Manufacturing	33.9	32.9	29.1	25.6	24.0
Extractive industry	1.8	1.7	1.2	.9	1.0
Agriculture	12.0	11.5	11.1	9.6	9.4
Construction	10.0	9.4	10.2	9.1	8.7
Transport/communications	8.7	8.6	9.0	9.3	9.8
Trade/catering	8.7	9.9	11.3	13.9	14.5
Housing/public services	3.7	3.6	4.0	4.5	4.5
Health/social services	5.2	5.3	5.4	6.3	6.8
Education/science	8.6	8.8	9.5	10.1	9.9
Culture/entertainment/sport	2.0	2.2	2.0	2.0	2.3
Credit/finance/insurance	.8	.8	1.1	1.5	1.6
Public administration	3.5	3.9	4.9	5.7	6.2
Other	1.2	1.4	1.3	1.5	1.4
Missing (total percentage,)	2.7	4.3	3.2	3.2	2.7
Property Type, Current Employer (Valid Percentages for Nonmissing Categories)					
State-owned firm (including partly privatized)	87.4	85.0	80.9	76.9	75.2
Privatized, worker-owned firm	1.9	2.3	5.0	5.3	5.3
New private firm	3.0	4.9	6.7	10.8	12.9
Collective farm	7.2	6.6	6.7	6.0	5.6
Other	.6	1.1	.8	1.1	1.1
Missing (total percentage,)	2.7	4.3	3.1	3.4	2.9
Mean firm size (ln)	5.3	5.2	5.0	4.8	4.7
Standard deviation of logged firm size	1.7	1.8	1.9	1.9	2.0
Annual Transition Rates					
Job losses/layoffs	.010	.020	.029	.032	.035
Intrafirm shifts	.007	.011	.011	.014	.011
Extrafirm shifts	.039	.043	.056	.051	.055

(Table 1 continued)

Variable	1991	1992	1994	1996	1997
Annual Transition Rates (Continued)					
Extrafirm Shifts to (Valid Percentages for Nonmissing Shift Types):					
New private firm	17.4	18.2	19.2	30.8	27.5
Privatized firm	5.8	9.7	10.1	9.0	10.3
Property missing (total percentage)	9.0	3.2	4.8	1.5	4.0
High-wage branch	21.4	24.9	27.7	23.2	20.8
Low-wage branch	35.6	41.6	37.9	43.4	48.6
Industry missing (total percentage)	9.0	4.0	2.7	1.5	3.3
Job Shifts					
Total job shift rate	.046	.054	.067	.065	.067
Job Shifts to (Valid Percentages for Nonmissing Shift Types):					
Higher-earning occupation	16.4	27.8	24.5	26.7	23.1
Lower-earning occupation	26.7	27.1	30.2	28.7	30.6
Occupational mobility missing (total percentage)	12.8	14.7	11.7	10.7	16.2
Official Data across Branches [a]					
Percent private (mean)	14.4	18.2	26.5	29.0	31.4
Standard deviation of percent private	17.2	20.6	26.3	26.7	29.1
Standard deviation of branch employment change	4.5	6.8	9.3	12.0	10.7
Region Characteristics across 41 Sample Oblasts [b]					
Mean wage (in 1991 rubles)	534	232	286	360	385
Standard deviation of mean wage	80	72	91	112	123
Mean services index	4.2	2.8	7.7	11.0	12.7
Standard deviation of services index	1.6	1.5	4.1	5.8	6.5
Mean unemployment rate	.8 [c]	5.0	8.2	10.3	12.2
Standard deviation of unemployment rate	.2 [c]	1.0	2.0	2.8	3.4

[a] Computed from Goskomstat Rossii (1999) and unpublished Goskomstat Rossii data.

[b] Computed from Goskomstat Rossii (1998).

[c] These figures are imputed, based on the assumptions that the overall 1991 rate was 1.0 percent and the 1991 rate in each oblast was .167 of the 1992 rate, which is the ratio of the assumed 1991 overall rate to the reported 1992 overall rate.

erty can be seen in the growing percentage of respondents who were employed in new private and privatized firms over time. Also, the average firm size of employed respondents declined by nearly half from 1991 to 1997.

Among SEIAR respondents, overall labor market transition rates have been fairly low, but have tended to increase since 1990. The frequency of job loss grew at an especially pitched rate, which was expected in light of known macroeconomic trends. The data also reflect an increase following the demise of state socialism in the proportion of employer shifts to new private and privatized firms, as well as shifts to low-wage branches. Trends in shifts to high-wage branch or occupational earnings mobility are hard to discern. The official figures on the average wage, services index, and unemployment rates are consistent with those for the entire set of regions, bearing out the widely observed in-

crease in regional differentiation of economic conditions.

STRUCTURAL EFFECTS: EMPLOYER CHARACTERISTICS

Overall, Russians' labor market fortunes are strongly affected by the characteristics of their employers (Table 2). However, Hypothesis 1 receives little support: At the firm level, the effects of *private property* are modest at best. There are no effects on job shift rates. Apart from an evident segmentation of the labor market along sectoral lines, there is only one effect of private property on the quality of shifts (dramatically higher odds of a shift to a low-wage branch), and it applies only to those with less than a secondary education. *Sectoral segmentation* takes the form of higher odds that new private firm employees will find work in other new private firms and the equivalent for employees of privatized firms from 1993 onward. This has important consequences for stratification: Because wages are higher in the private sector, workers who are shut out face fewer opportunities to improve their earnings.

There is only one firm-level property effect consistent with Hypothesis 3: Employment in a privatized firm initially lowers the exposure to job loss, but the effect reverses direction by 1997. As anticipated, privatization eventually creates an impetus for restructuring at the firm level, but only after a delay, during which governance issues are clarified and cultural and political impediments to market incentives are surmounted. In sum, the results show tendencies of segmentation and preliminary evidence that privatization eventually encourages micro-level restructuring. But otherwise, property reform at the firm level has few of the push effects expected by the reformers.

At the *branch level*, however, private property has important effects consistent with Hypothesis 2. The degree of branch-level privatization increases the rates of interfirm shifts and job loss, suggesting push factors are at work. It also increases the (conditional) rates of shifts to new private firms (over time), privatized firms (to a diminishing extent of time), and, for workers

with less than a secondary education, to higher-earning occupations. Other effects—increased intrafirm shifts and decreased shifts to low-wage branches—are not consistent with the push effects specified by Hypothesis 2. But the overall pattern does suggest that managers of firms in organizational fields that have been more thoroughly penetrated by private property are more likely to adopt the restructuring practices associated with private ownership—net of the (weak or nonexistent) effects of firm-level property type.

The signature institutional change associated with market transition—the spread of private ownership—has stronger effects at the contextual (branch) level than at the micro (firm) level. The branch-level effects tend to be stable over time, contrary to Hypothesis 3. But increasing interbranch variance in the extent of privatization (see Table 1) implies growing divergence of labor market outcomes due to this source of institutional change.

Branch performance clearly affects labor market transitions in contemporary Russia. Consistent with Hypothesis 4, branch contraction pushes workers out of firms: It increases the risk of job loss and increases internal mobility rates, reflecting, most likely, the reconfiguration of workforces within firms undergoing down-sizing (DiPrete 1993). Branch contraction has no net effect on the interfirm shift rate: Russian firms facing difficult product market conditions rely on layoffs more than attrition to economize on labor costs. Also consistent with Hypothesis 4, branch expansion increases shifts to privatized firms and high-wage branches (for those with less than college and less than high school education, respectively). Only the negative effect of expansion on shifts to new private firms runs counter to Hypothesis 4.

Also consistent with Hypothesis 4, high-wage branches retain employees: Those in high-wage branches have lower rates of interfirm mobility, shifts to lower-earning occupations, and shifts to low-wage branches, as well as much higher odds of shifts to high-wage branches. Employees of firms in low-wage branches are pushed out: They have higher rates of interfirm mobility and shifts to low-wage branches, lower rates of

Table 2. Effects from Preferred Models of Employer Characteristics on Labor Market Transitions in Russia: SEIAR, 1991 to 1997

Independent Variable	1991	1992	1994	1996	1997
New Private Firm vs. State Firm					
New private firm odds	6.87	2.15	1.26	2.55	5.18
High-wage branch odds	.60	.60	.60	.60	.60
Low-wage branch odds [a]	30.38	30.38	30.38	30.38	30.38
Privatized Firm vs. State Firm					
Job loss hazard	.01	.05	.35	1.08	1.66
Privatized firm odds	.00	.05	3.09	5.41	3.01
Branch Percent Private [b]					
Interfirm shift hazard	1.02	1.02	1.02	1.02	1.02
Intrafirm shift hazard	.99	.99	.99	.99	.99
Job loss hazard [c]	1.03	1.03	1.03	1.03	1.03
New private firm odds	1.00	1.00	1.01	1.02	1.03
Privatized firm odds	1.04	1.03	1.02	1.01	.98
Low-wage branch odds	.99	.99	.99	.99	.99
Lower-earning occupation odds [a]	1.02	1.02	1.02	1.02	1.02
Branch Percent Employment Change [d]					
Intrafirm shift hazard	.98	.98	.98	.98	.98
Job loss hazard	.98	.98	.98	.98	.98
New private firm odds	.97	.97	.97	.97	.97
Privatized firm odds:					
For secondary school or less	1.05	1.05	1.05	1.05	1.05
For college	.98	.98	.98	.98	.98
High-wage branch odds [a]	1.08	1.08	1.08	1.08	1.08
High-Wage Branch vs. Average-Wage Branch					
Interfirm shift hazard	.80	.80	.80	.80	.80
Intrafirm shift hazard	.66	.66	.66	.66	.66
High-wage branch odds	3.34	18.05	18.05	18.05	18.05
Low-wage branch odds	.52	.52	.52	.52	.52
Lower-earning occupation odds	.49	.49	.49	.49	.49
Low-Wage Branch vs. Average-Wage Branch					
Interfirm shift hazard	1.50	1.50	1.50	1.50	1.50
Intrafirm shift hazard	.43	.43	.43	.43	.43
High-wage branch odds	.49	.49	.49	.49	.49
Low-wage branch odds	4.17	4.17	4.17	4.17	4.17

Note: All coefficients shown are significant at the $p < .05$ level or better.

[a] Effect applies only to those with less than a secondary school education; no effect for those with at least secondary school.

[b] Shows the effect of one percentage-point difference.

[c] The effect applies only to those with a college degree; no effect for those with less than college.

[d] Shows the effect of a one-percent increase.

Table 3. Effects from Preferred Models of Regional Characteristics and Time on Labor Market
Transitions in Russia: SEIAR, 1991 to 1997

Independent Variable	1991	1992	1994	1996	1997
Regional Services Index					
Interfirm shift hazard [a]	.95	.95	.95	.95	.95
Job loss hazard [b]	1.03	1.03	1.03	1.03	1.03
Privatized firm odds:					
For less than secondary school	.36	.36	.36	.36	.36
For secondary school or more	1.03	1.03	1.03	1.03	1.03
High-wage branch odds	1.05	1.05	1.05	1.05	1.05
Lower-earning occupation odds	0.97	0.97	0.97	0.97	0.97
Regional Mean (Real) Wage [c]					
Job loss hazard	1.02	1.02	1.02	1.02	1.02
Low-wage branch odds	.97	.97	.97	.97	.97
Regional Unemployment Rate [d]					
Intrafirm shift hazard [a]	.77	.77	.77	.77	.77
Job loss shift hazard	1.05	1.05	1.05	1.05	1.05
Privatized firm odds	1.13	1.13	1.13	1.13	1.13
Low-wage branch odds:					
For less than secondary school	1.32	1.32	1.32	1.32	1.32
For secondary school or more	.88	.88	.88	.88	.88
Higher-earning occupation odds [a]	.66	.66	.66	.66	.66
Change in Baseline Hazard (1991 = 1)					
Interfirm shift hazard	1.00	1.15	1.33	1.44	1.49
Job loss hazard	1.00	1.74	3.04	4.21	4.76
New private firm odds	1.00	1.39	1.93	2.33	2.51
Privatized firm odds	1.00	3.82	3.82	3.82	3.82
High-wage branch odds	1.00	1.91	2.56	1.71	1.14
Higher-earning occupation odds	1.00	2.13	2.13	2.13	2.13
Lower-earning occupation odds	1.00	1.01	1.14	1.43	1.68

Note: All coefficients shown are significant at the $p < .05$ level or better.

[a] Effect applies only to those with less than a secondary school education; no effect for those with at least secondary secondary school.

[b] Effect applies only to those with a college education; no effect for those with less than college.

[c] Shows the effect of an increase of ten 1991 rubles.

[d] Shows the effect of a one percentage-point increase.

intrafirm mobility and shifts to high-wage branches. Net of the other branch measures, branch wage level does not affect job loss rates. The higher rates of mobility within both branch-wage types is another form of segmentation with consequences for stratification: Part of the workforce is confined to moribund branches and has difficulty escaping to flourishing branches, where another part of the workforce is well-ensconced.

STRUCTURAL EFFECTS:
REGION OF RESIDENCE AND TIME

Despite the error built into the regional measures (some respondents may have changed regions during the observation period), we

find a number of statistically significant re-
gional effects. Refer to Table 3. The effects
of the spread of private property at the re-
gional level are ambiguous with respect to
Hypothesis 5, which associates the regional
penetration of market forces with greater la-
bor market opportunities outside the firm.
Consistent with this expectation, residents in
regions with high values on the services in-
dex experience more frequent shifts to priva-
tized firms (for those with at least a high
school education) and to high-wage
branches, and less frequent downward occu-
pational mobility. Contrary to Hypothesis 5,
they also experience lower interfirm shift
rates (if they have less than a high school
education) and higher job loss rates (if they
have a college degree).

Consistent with Hypothesis 6, high wage
levels in a region are associated with in-
creased interfirm mobility and, not surpris-
ingly, fewer shifts to lower-earning occupa-
tions. Higher regional unemployment in-
creases exposure to job loss (reflecting the
lower availability of jobs in other firms to
soak up laid-off workers) and, for the least
educated, lowers opportunities for move-
ment to a higher-earning occupation and in-
creases shifts to low-wage branches. Re-
gional unemployment also has two effects
that contradict Hypothesis 6: It raises the
odds of a shift to a privatized firm and, for
those with secondary schooling or college,
reduces the odds of a shift to a low-wage
branch. These initially counterintuitive re-
sults can be explained. Unemployment is
higher in more heavily industrialized re-
gions, and industrial firms are most subject
to privatization. Thus the unemployment
rate probably captures the availability of
jobs in privatized enterprises that is not
captured by the services index. Also, more
jobs have been created in the low-wage
trade/catering/services branch than in any
other, so lower unemployment in a region
suggests greater development of this branch
there. Otherwise, all the significant effects
of regional economic performance on labor
market transitions are consistent with Hy-
pothesis 6.

Given the poor quality of the regional
measures, it is striking that the models re-
vealed any significant regional effects at
all. Despite some ambiguity in the pattern

of effects, the results confirm that there is
an important regional component to the
structural changes that have shaped labor
market outcomes in Russia. Further re-
search with improved measures is needed to
shed more light on the contours of this di-
mension.

Turning to change over time, the results
strongly support Hypothesis 7. All the base-
line hazards/odds increased over time, ex-
cept for the hazard of internal mobility and
the conditional odds of a shift to low-wage
branch firm. Because the regional and
branch-level measures are all centered at
their annual means, these shifts in the base-
lines capture the global effects of structural
changes accompanying market transition.
The various effects—the rise of private
property, institutional instability, macroeco-
nomic recession, and so on—cannot be dis-
entangled because they strongly covary over
the period in question. These macro-level
changes clearly made the Russian labor mar-
ket more active (increased interfirm mobil-
ity) and more perilous (sharply increased job
loss, modestly increased downward mobil-
ity). At the same time, they increased access
to the private sector and, perhaps surpris-
ingly, to high-wage branches (at least during
the mid-1990s) and higher-earning occupa-
tions. The overall picture is mixed: Market
transition has brought great risks, but also
has brought some opportunities. How do hu-
man capital and Communist Party member-
ship affect the balance of risk and opportu-
nity?

HUMAN CAPITAL EFFECTS

For individuals, a college education provides
several stable labor market advantages dur-
ing the course of Russia's transition: more
intrafirm shifts (presumably, promotions),
more shifts to privatized firms, more upward
mobility and less downward mobility in
terms of occupational earnings, and, gener-
ally, fewer shifts to low-wage branches (see
Table 4). Those with the least education have
consistently fewer shifts to better-paying oc-
cupations and to new private firms. On the
other hand, the college-educated change
firms at a lower rate and also have far fewer
shifts to new private firms, where earnings
are highest. Thus, a college education is not

Table 4. Effects from Preferred Models of Education on Labor Market Transitions in Russia: SEIAR, 1991 to 1997

Independent Variable	1991	1992	1994	1996	1997
College Education vs. General Secondary School					
Interfirm shift hazard	.78	.78	.78	.78	.78
Intrafirm shift hazard	1.38	1.38	1.38	1.38	1.38
Job loss hazard:					
Mean services and branch percent private	1.00	.79	.63	.55	.52
Standard deviation above mean branch percent private	1.40	1.11	.88	.76	.73
Standard deviation above mean regional services	1.14	.90	.71	.62	.59
New private odds	.57	.57	.57	.57	.57
Privatized odds:					
Mean branch employment change	2.28	2.28	2.28	2.28	2.28
Standard deviation above mean branch employment change	1.23	1.23	1.23	1.23	1.23
Low-wage branch odds:					
Mean logged firm size	.53	.53	.53	.53	.53
Standard deviation above mean logged firm size	1.11	1.11	1.11	1.11	1.11
Higher-earning occupation odds	1.77	1.77	1.77	1.77	1.77
Lower-earning occupation odds	.46	.46	.46	.46	.46
Less Than Secondary School vs. General Secondary School					
Interfirm shift hazard:					
Mean regional service index	1.00	1.37	1.88	2.26	2.43
Standard deviation above mean regional service index	.83	1.13	1.55	1.87	2.01
Intrafirm shift hazard:					
Mean regional unemployment rate	1.00	1.67	1.64	.68	.34
Standard deviation above mean regional unemployment	.59	.99	.97	.41	.20
Job loss odds:					
Standard deviation above mean logged firm size	.71	.71	.71	.71	.71
New private firm odds	.17	.17	.17	.17	.17
Privatized firm odds:					
Mean regional service index	1.00	.80	.13	.03	.00
Standard deviation above mean regional service index	.19	.16	.00	.00	.00
High-Wage branch odds:					
Standard deviation above mean branch employment change	2.13	2.13	2.13	2.13	2.13
Low-wage branch odds:					
Standard deviation above mean regional unemployment	2.25	2.25	2.25	2.25	2.25

(Continued on next page)

(Table 4 continued)

Independent Variable	1991	1992	1994	1996	1997
Less Than Secondary School vs. General Secondary School (Continued)					
New private firm employees	30.38	30.38	30.38	30.38	30.38
Higher-earning occupation odds:					
Mean branch percent private and regional unemployment	.45	.45	.45	.45	.45
Standard deviation above branch percent private	.81	.81	.81	.81	.81
Standard deviation above regional unemployment	.19	.19	.19	.19	.19
Lower-earning occupation odds	.07	.56	2.30	1.67	.90

Note: All coefficients shown are significant at the $p < .05$ level or better.

an unambiguous source of labor market opportunity.[15]

But more important for assessing market transition theory are changes over time (Hypothesis 8) and variation across sector and branch (Hypothesis 9) in the effects of education. Here I find a number of significant interaction effects, which further testify to the importance of structural variables in shaping labor market outcomes in the course of market transition. But I find no consistent pattern regarding the predictions of market transition theory. Consistent with Hypothesis 8, as market transition progresses, college education comes to provide considerable insulation from layoff. But in any given year a college education is less of an advantage in this respect the greater the degree of branch-level and regional-level privatization, which contradicts Hypothesis 9.

At the other end of the spectrum, over time those with less than secondary school have less internal mobility and fewer shifts to privatized firms—both consistent with

[15] To illustrate the magnitude of the interactions between structural variables and education, Table 4 presents the relevant effects calculated at the annual means for the relevant structural variable (which, because they are all annually mean-centered, is always equal to the main effect) and at one 1994 standard deviation above the mean on the structural variable (for 1994 standard deviations, see Table 1). The effect at one 1994 standard deviation *below* the mean on the structural variable can be obtained by taking the reciprocal of the "one 1994 standard deviation above" effect.

Hypothesis 8. But their interfirm shift rate grows steadily, and their relative exposure to downward occupational earnings mobility decreases starting in 1995, after an initial upswing. Regional-level privatization decreases their interfirm shift rate and their (relative) access to privatized firms, while employment in a new private firm magnifies their exposure to movement down the occupational earnings scale—all consistent with Hypothesis 9. But branch-level privatization diminishes their relative disadvantage regarding the odds of shifting to a better-paying occupation. Altogether, then, it is quite clear that structural variation in the degree of market penetration affects the magnitude of the advantages associated with education, but not in a manner consistent with the predictions of market transition theory.

Although many interactions between other structural aspects of location (branch and regional performance and firm size) and human capital are not significant, those that are tend to support Hypothesis 10. Russians with less than a secondary school education are more hurt by regional unemployment (lower relative odds of internal mobility and upward occupational mobility, higher mobility to low-wage branches) and by branch-level contraction (lower mobility to high-wage branches) than are those with a high school education or more. Branch contraction enhances the relative advantage of college education for shifts to privatized firms (as implied by the smaller college coefficient for *expanding* branches). On the other hand, firm size affords protection from layoff only

Table 5. Effects from Preferred Models of Communist Party Membership on Labor Market Transitions in Russia: SEIAR, 1991 to 1997

Independent Variable	1991	1992	1994	1996	1997
Communist Party Cadres vs. Nonmembers					
Intrafirm shift hazard	.00	2.42	2.42	2.42	2.42
Job loss hazard	3.69	.84	.38	.71	1.46
Lower-earning occupation odds	2.42	2.42	2.42	2.42	2.42
Communist Party Rank-and-File vs. Nonmembers					
Interfirm shift hazard	.29	1.19	1.19	1.19	1.19
Intrafirm shift hazard	.00	1.78	1.78	1.78	1.78
Job loss hazard	2.93	1.42	.69	.45	.38
Privatized firm odds	43.57	.33	.33	.33	.33
Low-wage industry odds	17.99	1.54	.31	.50	1.10
Lower-earning occupation odds	15.61	1.36	1.36	1.36	1.36

Note: All coefficients shown are significant at the $p < .05$ level or better.

to those with less than secondary school, and also decreases the odds of shifts to low-wage branches for those with less than a college education.

MEMBERSHIP IN THE COMMUNIST PARTY

Nearly *all* of the effects of Communist Party membership vary over time, in some cases sharply (see Table 5). Confirming Hypothesis 12, the clearest expression of the direct impact of political struggles on stratification processes, the results show that 1991 was a bad year for Communist Party members, but membership became an advantage thereafter. In 1991, Party members had substantially higher job loss rates and lower rates of job mobility. Rank-and-file members had much higher conditional rates of shifts to low-wage branches and lower-earning occupations. The parameter estimates are similar for cadres, but the effects are not significant, probably because of the small number of cadres in the sample. After 1991, Communist Party membership became associated with better labor market prospects, as predicted by Hypothesis 11a: lower rates of job loss (for most of the period 1992–1997) and, for rank-and-file members, lower rates of shifts to low-wage branches (from 1993 to 1996). Confirming Hypothesis 11b, both cadres and rank-and-file members had higher intrafirm mobility from 1992 onward, providing evidence that selection contributes to the advantages of Party members.

Not all effects are consistent with a Communist Party advantage: Both cadres and rank-and-file members have higher conditional rates of downward occupational earnings mobility throughout the period, and rank-and-file members have less access to jobs in privatized firms from 1992 onward. But the downward occupational mobility must not be overemphasized, as in the SEIAR data, the occupational earnings scale—the basis for defining upward and downward occupational mobility—explains only 24 percent of the variance in earnings. This is a substantial proportion, given that occupation is often portrayed as a weak predictor of earnings in Russia (Clarke 1999). But it leaves a fair amount to be explained by other variables. Moreover, former cadres earn 29.3 percent more, and rank-and-file members 15.9 percent more, than nonmembers, net of occupational earnings.

CONTROL VARIABLES: GENDER, WORK-FORCE EXPERIENCE, AND FIRM SIZE

The control variables generally have predictable effects (see Appendix Table A-2), but three variables deserve brief comment. The preferred models show that Russian women face significantly worse labor market prospects in the period of market transition than do men with the same traits and structural position. Women have lower interfirm mobility than men, higher exposure to low-quality shifts, and lower rates of high-qual-

ity shifts. Preliminary analyses revealed some interesting patterns of variation in the gender effects over time and by education. Gender differences in the impact of market transition on labor market transitions in Russia are sufficiently important and complex to merit a separate analysis.

Workforce experience, an aspect of human capital generally overlooked in the market transition literature, has ambiguous effects on labor market prospects. The parameter estimates show that experience ties workers to their current firms and reduces upward occupational mobility—both standard effects reflecting the eventual maximizing of career prospects during the work life-cycle. But experience increases internal mobility (until 18 years, when the curvilinear effect reverses) and shifts to new private firms (until 14 years). It decreases shifts to firms in low-wage branches (until 24 years). Experience initially protects from job loss, but contrary to market transition theory, as market transition progresses it eventually increases exposure to layoff.

Firm size has several effects similar to those found in the West (Carroll and Mayer 1986). Employment in a large firm shelters Russians from job loss, especially those with less than high school education. It lowers the odds that an interfirm shift will lead to a new private firm, possibly because most new private firms are small (and may require different skills). Larger firm size increases the odds that a shift will be to a higher-earning occupation and, for those without college, decreases the odds that a shift will be to a low-wage branch. Perhaps surprisingly, firm size has no significant effect on internal mobility. But otherwise, Russians employed in smaller firms, as increasing numbers are, face greater exposure to unfavorable labor market outcomes.

DISCUSSION

I have sought to show how and why structural change must be foregrounded in analyses of stratification under conditions of market transition. The framework posits two links in the process whereby the institutional changes of market transition affect stratification. First, prior structural conditions interact with the specific policies by which mar-

ket transition is implemented to produce particular patterns of structural change in post-socialist countries. Second, these patterns of structural change affect individual-level labor market prospects—and, thus, life chances—in theoretically coherent ways.

I have developed both links based on a study of labor market transitions in post-Socialist Russia, which shows that structural factors—characteristics of employer, region of residence, and overall output levels—have strong direct effects on individual labor market transitions and also interact with human capital. Russia's market transition led to a particular pattern of dramatic changes in the marginal distributions of these structural factors: the uneven spread of private property (across firms, branches, and regions), divergent patterns of performance and employment change (across the same units), and, globally, an extended recession. These specific structural changes are no more intrinsic to market transition than is the growth experienced in China. Instead, they resulted from Russia's particular market transition policies, structural conditions, and political developments. Policies and prior conditions thus exerted a more theoretically coherent—if contextually contingent—set of effects on stratification than any generic features of market institutions as such. Just as an adequate sense of stratification processes in stable capitalist societies requires theories and research on how structural location influences life chances (Carroll and Mayer 1986; DiPrete and Nonnemaker 1997; Stolzenberg 1978), greater attention must be devoted to the role of structural change in shaping patterns of post-socialist stratification.

Seven of the 12 hypotheses (Hypotheses 1 through 7) derived from research on Western societies and theories of market transition pertained to the anticipated effects of structural location on particular labor market transitions. Two others (Hypotheses 9 and 10) pertained to interactions between structural location and education. With one exception, all these hypotheses received moderate to strong empirical confirmation. A "structural" control variable, firm size, also has anticipated effects. Structural location clearly affects the labor market fortunes of contemporary Russians in theoretically predictable and coherent ways.

The one exception, Hypothesis 1, is important: In Russia, private property appears not to have the firm-level effects anticipated by market reformers. There is some evidence that such effects were emerging by 1997, a possibility that must be tested with future data. But if the lack of effect stands, it will not surprise the many Russia specialists who have questioned the impact of privatization because of the particular conditions in which it has taken place (Blasi et al. 1997). More surprising, in light of such doubts, are the pronounced effects of privatization at branch level. Taken together, the results reinforce the message of the studies based on China, which found that the effects of property form on firm practices (such as hiring and firing) are more complex than implied by the Kornai model (Guthrie 1997; Walder 1995).

One advantage of the structural approach is that it explicitly disentangles the effects of institutional change from the effects of structural change. The two aspects of market transition are clearly related: Institutional changes such as the introduction of private property clearly induce structural changes, and structural preconditions shape the actual consequences of those institutional changes. But institutional change and structural change are conceptually distinct, and their relationship is variable. Therefore, an adequate theoretical understanding of post-socialist stratification processes requires that they be distinguished empirically (Walder 2002). My analysis has accomplished this at two of the three levels of structural analysis (employer and region) by including measures of the extent of privatization (institutional change) and economic performance (structural change). At the third level of structural analysis—time—it is not possible to separate these two aspects of change because they covary so strongly.

By disentangling, both conceptually and empirically, institutional and structural effects on individuals' life chances, the structural perspective on post-socialist stratification lends insight into why there *cannot be* universal consequences of market transition for processes generating inequality. Institutional variations and politics generate different stratification outcomes in the context of market transition because they combine with another source of variation, inherited struc-

tural legacies, to produce varying patterns of structural change in the labor market. Others have made a similar argument, based on institutional variations across post-socialist societies (Stark and Bruszt 1998; Walder 1996) and the influence of politics on transitions (Parish and Michelson 1996; Zhou 2000).

The impact of structural change on individual labor market prospects and the dependence of structural change on preexisting structural and political conditions thus help explain why market transition theory offers little insight into stratification processes in contemporary Russia (Gerber and Hout 1998). Without question, human capital affects the labor market prospects of Russians during the period of market transition, and these effects vary substantially over time and across locations. But both the main effects and their patterns of variation are far more complex and inconsistent than implied by market transition theory. Even if the theory applies in China, there is no reason it should apply to Russia, given the different nature of the structural changes resulting from market transition there.

Political factors can also influence stratification processes directly, as shown in the pattern of Communist Party effects on labor market transitions. Communist Party members fared poorly on the labor market in 1991, when the Party was under considerable political pressure. Thereafter, when the Party no longer existed and no particular measures or decrees were directed at former members, their labor market fortunes improved. This pattern is hard to explain on the basis of power conversion theory, but is consistent with selection theory, insofar as the least productive Communist Party members were those who were removed from the labor market because of political pressures in 1991. But whether selection theory applies to other post-socialist societies depends, according to the logic developed here, on the precise set of institutions and structural conditions shaping Communist Party recruitment there and the specific policies directed toward former Party members in the market transition era.

In addition to critiquing the possibility of a general theory of post-socialist stratification, the structural perspective suggests pos-

sible underlying similarities in the stratification processes of advanced capitalist and post-socialist societies, in that many aspects of structural location have similar effects in both environments. The framework may help develop testable middle-range theories about systematic cross-national variation in how market transition affects stratification. Comparative research might fruitfully proceed in two complementary directions: the elucidation of relationships among particular sets of preexisting conditions, policies, and patterns of structural change and the analysis, along the lines of DiPrete et al. (1997), of institutional bases of cross-national variation in the effects of structural change on individual labor market transitions. Variations in structural change undermine the possibility that market transition will have a uniform effect on stratification in different post-socialist countries. Nonetheless, it may be possible to generalize—at a lower level of abstraction—about how certain types of prior conditions lead, when combined with certain types of institutional changes, to particular forms of structural change and resulting consequences for life chances.

Theodore P. Gerber *is Associate Professor of Sociology at the University of Arizona. His research examines social stratification, public opinion, and migration in Russia. Current projects include the NSF-funded "Survey on Stratification and Migration Dynamics in Russia (2001–2)," and research on how Russians view human rights (with Sarah Mendelson); the orientations of Russian weapons scientists (with Deborah Ball), changes in Russian higher education (with David Schaefer), and social mobility in Russia (with Michael Hout.)*

Appendix Table A-1. Model Selection Example: Hazard Models for Job Shift to a New Employer [a]

Step [Model]	Variables Added	–2 LL	Contrast	$\Delta\chi^2$	d.f.	*p*-Value
Step 1: Estimate Baseline Model and Specify Experience Effect						
[1]	Baseline model	4,853.36				
[1a]	**Experience squared**	**4,839.51**	**vs. [1]**	**13.85**	**1**	**.000**
[1b]	Woman × experience	4,853.32	vs. [1a]	.04	1	.848
Step 2: Test Interactions between Individual and Structural Variables						
Less Than Secondary School × Structure						
[2a1]	Less than secondary × New private firm	4,838.51	vs. [1a]	.16	1	.685
[2a2]	Less than secondary × firm size (ln)	4,838.65	vs. [1a]	.03	1	.864
[2a3]	Less than secondary × Branch percent employment change	4,836.27	vs. [1a]	2.40	1	.121
[2a4]	Less than secondary × Branch percent private	4,838.60	vs. [1a]	.07	1	.784
[2a5]	**Less than secondary × Services index**	**4,832.31**	**vs. [1a]**	**6.37**	**1**	**.012**
[2a6]	Less than secondary × Unemployment rate	4,835.55	vs. [1a]	3.13	1	.077

[2b]: Repeat equivalent substeps 1 through 6 for interactions with college—none are significant.

Step 3: Test Temporal Interactions Involving Education, Communist Party Cadres and Rank-and-File Party Members, Gender, and Property

[3a1]	**Less than secondary × ln(*y* + 1)**	**4,825.12**	**vs. [2a5]**	**7.19**	**1**	**.007**
[3a2]	Less than secondary × y^2	4,825.58	vs. [2a5]	6.73	1	.009
[3a3]	(Less than secondary × y^2) + (Less than secondary × ln[*y* + 1])	4,824.80	vs. [2a5]	7.51	2	.023
[3a4]	Less than secondary × (*y* > 0)	4,829.50	vs. [2a5]	2.81	1	.094

[3b] to [3i]: Repeat equivalent substeps 1 through 4 for interactions involving:
(b) lower vocational, (c) college, (d) experience, (e) Communist Party cadre, (f) Communist Party rank-and-file, (g) new private firm, (h) privatized worker-owned firm, and (i) branch percent private.

(Appendix A-1 continued)

Step [Model]	Variables Added	−2 LL	Contrast	Δχ²	d.f.	*p*-Value
Step 4: Add All Interactions, Trim Nonsignificant Effects, Smooth Trend in Baseline						
[4a]	From [3a1] and [3f4]	4,817.29	vs. [2a5]	15.02	2	.001
[4b]	Remove nonsignificant main effects	4,825.34	vs. [4a]	8.05	14	.887
[4c]	Remove all year dummy variables (null model)	4,841.71	vs. [4b]	16.37	6	.012
	Replace year dummy variables with smoothed functions of year:					
[4d]	$f(y) = y^2$	4,834.39	vs. [4b]	9.05	5	.107
			vs. [4c]	7.31	1	.007
[4e]	**$f(y) = \ln(y + 1)$**	**4,828.41**	**vs. [4b]**	**3.06**	**5**	**.690**
			vs. [4c]	**13.30**	**1**	**.000**
[4f]	$f(y) = \ln(y + 1) + y2$	4,827.81	vs. [4b]	2.47	4	.650
			vs. [4c]	13.90	2	.001
[4g]	$f(y) = (y > 0)$	4,835.38	vs. [4b]	10.03	5	.074
			vs. [4c]	6.33	1	.012

Note: Preferred models are shaded; "*y*" denotes integer years elapsed since December 1991.

[a] Complete fit statistics for this model and models for other outcomes are available from the author.

Appendix Table A-2. Preferred Models for Selected Labor Market Transitions and Quality of Job Shifts [a]

Model Type:	Continuous-Time Hazard Models			Logistic Regressions					
Risk Set:	Currently employed respondents, aged 18–60, with completed education (217,335 person-months)			Interfirm shifts with valid property type for destination firm		Interfirm shifts with valid branch for destination firm		All job shifts with valid occupations on both origin and destination jobs, exluding those ineligible due to ceiling or floor effects	
Type of Shift:	Interfirm Shift	Intrafirm Shift	Job Loss	To New Private Firm	To Privatized Firm	To High-Wage Branch	To Low-Wage Branch	To Higher-Earning Occup.	To Lower-Earning Occup.
Additional Variables	β	β	β	β	β	β	β	β	β
Property Type of Current Firm (State-Owned, Non-profit, Other)									
New private	—	—	—	1.93* (.73)	—	−.52+ (.28)	—	—	—
Privatized	—	—	−4.90* (1.54)	—	−8.22* (3.86)	—	—	—	—
Collective farm	—	−1.07* (.42)	—	—	1.83* (.86)	—	—	—	−1.06* (.51)
Branch percent employment change	—	−.02+ (.01)	−.03* (.01)	−.03* (.01)	.05* (.02)	—	—	—	—
Branch percent private	.02* (.00)	−.01* (.01)	.02* (.00)	—	.04* (.01)	—	−.01+ (.00)	—	—
High-wage branch	−.23* (.12)	−.41+ (.23)	—	—	—	2.89* (.64)	−.65* (.25)	−.70* (.21)	
Low-wage branch	.41* (.15)	−.84* (.25)	—	—	—	−.71* (.24)	1.43* (.22)	—	—
Firm size (ln)	—	—	−.07+ (.04)	−.16* (.07)	—	—	−.22* (.06)	.14* (.06)	—

(Appendix Table A-2 continued)

Model Type:	Continuous-Time Hazard Models			Logistic Regressions					
Risk Set:	Currently employed respondents, aged 18–60, with completed education (217,335 person-months)			Interfirm shifts with valid property type for destination firm		Interfirm shifts with valid branch for destination firm		All job shifts with valid occupations on both origin and destination jobs, exluding those ineligible due to ceiling or floor effects	
Type of Shift:	Interfirm Shift	Intrafirm Shift	Job Loss	To New Private Firm	To Privatized Firm	To High-Wage Branch	To Low-Wage Branch	To Higher-Earning Occup.	To Lower-Earning Occup.
Additional Variables	β	β	β	β	β	β	β	β	β
Regional mean wage	1.57* (.56)	—	—	—	—	—	-2.61* (1.09)	—	—
Regional services index	—	—	—	—	.03+ (.02)	.05* (.02)	—	—	-.03* (.01)
Regional unemployment rate	—	—	.05* (.02)	—	.13* (.06)	—	-.13* (.03)	—	—
Education (General Secondary)									
College degree	-.25* (.09)	.32+ (.17)	—	-.56* (.27)	.83* (.27)	—	-.64* (.25)	.57* (.20)	-.81* (.21)
Specialized secondary	—	—	-.24* (.11)	-.36 (.24)	—	—	-.40+ (.22)	—	-.51* (.20)
Vocational	—	—	—	-.79* (.30)	—	—	-.53* (.25)	-.63* (.25)	—
Less than secondary	—	—	—	-1.75* (.59)	—	—	—	-.81* (.41)	-2.76 (1.69)
Experience	—	.08* (.03)	—	.07+ (.04)	—	—	-.09* (.03+)	-.02 (.01)	
Experience²/10	-.01* (.00)	-.02* (.01)	.01* (.00)	-.02* (.01)	—	—	.02* (.01)	—	—
Communist Party Membership (Nonmember)									
Cadre	—	-12.85* (.16)	1.31* (.56)	—	—	—	—	—	.93* (.43)
Rank-and-file member	-1.24* (.60)	-12.74* (.12)	1.07* (.33)	—	3.81* (1.51)	—	2.89* (1.16)	—	2.75* (1.29)
Female	-.51* (.09)	—	—	—	-.67* (.27)	-.90* (.19)	.95* (.17)	-.77* (.19)	.89* (.18)
Defense industry	.31* (.14)	—	—	.81* (.34)	—	—	—	—	—
Agriculture	-1.70* (.33)	2.21* (.61)	-.67* (.19)	-1.10* (.54)	-2.66* (.87)	—	—	—	—
Trade/catering	-1.38* (.28)	1.30* (.52)	—	—	—	—	—	—	-.78* (.31)
Locality size (ln)	.06* (.02)	—	—	.16* (.05)	.27* (.09)	—	—	—	—
Moscow	.49* (.11)	—	—	—	—	-.72+ (.37)	—	—	—
Tenure > year	—	—	.32+ (.19)	—	—	—	—	—	—
Occupational earnings	—	—	—	—	—	—	—	-1.35* (.14)	.92* (.12)

(Appendix Table A-2 continued)

Model Type:	Continuous-Time Hazard Models			Logistic Regressions					
Risk Set:	Currently employed respondents, aged 18–60, with completed education (217,335 person-months)			Interfirm shifts with valid property type for destination firm		Interfirm shifts with valid branch for destination firm		All job shifts with valid occupations on both origin and destination jobs, exluding those ineligible due to ceiling or floor effects	
Type of Shift:	Interfirm Shift	Intrafirm Shift	Job Loss	To New Private Firm	To Privatized Firm	To High-Wage Branch	To Low-Wage Branch	To Higher-Earning Occup.	To Lower-Earning Occup.
Additional Variables	β	β	β	β	β	β	β	β	β
Interactions of Education and Location									
College × branch percent private	—	—	.01* (.00)	—	—	—	—	—	—
College × regional services index	—	—	.03* (.01)	—	—	—	—	—	—
College × branch percent employment change	—	—	—	—	-.07* (.03	—	—	—	—
College × firm size (ln)	—	—	—	—	—	.27* (.11)	—	—	
Less than secondary × new private	—	—	—	—	—	—	3.41* (1.16)	—	—
Less than secondary × branch percent private	—	—	—	—	—			.02+ (.01)	—
Less than secondary × regional services index	-.05* (.02)	—	—	—	-1.06* (.34)	—	—	—	—
Less than secondary × firm size (ln)	—	—	-.18+ (.10)	—	—	—	—	—	—
Less than secondary × branch percent employment change	—	—	—	—	—	.08* (.04)	.—	—	—
Less than secondary × regional unemployment rate	—	-.26* (.13)	—	—	—	—	.40* (.17)	-.42* (.19)	—
Interactions Involving Change Over Time [a]									
Experience × ln(y + 1)	—	—	.02* (.01)	—	—	—	—	—	—
College × ln(y + 1)	—	—	-.34* (.11)	—	—	—	—	—	—
Less than secondary × ln(y + 1)	.46* (.10)	.85* (.36)	—	—	—	—	—	—	3.29* (1.65)
Less than secondary × y^2	—	-.08* (.03)	—	-.22* (.07)	—	—	—	-.10+ (.05)	
Cadre × ln(y + 1)	—	—	-2.27* (.98)	—	—	—	—	—	—
Cadre × y^2	—	—	.10+ (.05)	—	—	—	—	—	—
Cadre × (y > 0)	—	13.74* (.39)	—	—	—	—	—	—	—

(Appendix Table A-2 continued)

Model Type:	Continuous-Time Hazard Models			Logistic Regressions					
Risk Set:	Currently employed respondents, aged 18–60, with completed education (217,335 person-months)			Interfirm shifts with valid property type for destination firm		Interfirm shifts with valid branch for destination firm		All job shifts with valid occupations on both origin and destination jobs, exluding those ineligible due to ceiling or floor effects	
Type of Shift:	Interfirm Shift	Intrafirm Shift	Job Loss	To New Private Firm	To Privatized Firm	To High-Wage Branch	To Low-Wage Branch	To Higher-Earning Occup.	To Lower-Earning Occup.
Additional Variables	β	β	β	β	β	β	β	β	β
Interactions Involving Change Over Time (Continued)									
Rank $\times \ln(y + 1)$	—	—	-1.04* (.25)	—	—	—	-3.72* 1.32)	—	—
Rank-and-file $\times y^2$	—	—	—	—	—	—	.12* (.05)	—	—
Rank-and-file $\times (y > 0)$	1.42* (.60)	13.32* (.21)	—	—	-4.94* (1.59)	—	—	—	-2.44+ (1.31)
New private $\times \ln(y + 1)$	—	—	—	-1.80* (.79)	—	—	—	—	—
New private $\times y^2$	—	—	—	.09* (.04)	—	—	—	—	—
Privatized $\times \ln(y + 1)$	—	—	2.78* (.85)	—	7.80* (3.25)	—	—	—	—
Privatized $\times y^2$	—	—	—	—	-.16+ (.09)	—	—	—	—
Branch percent private $\times y^2/10$	—	—	—	.01* (.00)	-.02* (.01)	—	—	—	—
High-wage $\times (y > 0)$	—	—	—	—	—	-1.69* (.65)	—	—	—
Change in Baseline Hazard									
$\ln(y + 1)$	.20* (.06)	—	.80* (.10)	.47* (.17)	—	1.01* (.36)	—	—	—
y^2	—	—	-6.94* (.25)	—	—	-.05* (.02)	—	—	.01* (.01)
$y > 0$	—	—	—	—	1.34* (.59)	—	—	.76* (.29)	—
Constant	-5.24* (.16)	-7.61* (.36)	—	-2.76* (.49)	-4.97* (.82)	-1.55* (.37)	-.04 (.33)	-1.32* (.33)	-1.21* (.19)
Number of observations	3,238	3,238	3,238	856	856	861	861	955	951
Number of events	903	211	436	196	83	217	356	240	260
Log-likelihood	-2,413.87	-874.92	-1,413.57	-420.34	-238.46	-442.38	-483.47	-485.00	-535.46

Note: Standard errors are robust and appear in parentheses. Dummy variables for missing industry, property, firm size, and Communist Party membership are included in all models, but are not shown. Nonsignificant effects are removed.

The occupational earnings variable is included only in models of occupational earnings mobility. Continuous regional and industry variables are centered at annual means.

[a] "*Y*" denotes integer years elapsed since December 1991, thus $(y > 0)$ equals 0 for 1991 and equals 1 for all subsequent years.

*$p < .05$ (two-tailed tests)   +$p < .05$ (one-tailed tests)

REFERENCES

Aslund, Anders. 1995. *How Russia Became a Market Economy.* Washington, DC: Brookings Institution.

Bian, Yanji and John R. Logan. 1996. "Market Transition and the Persistence of Power." *American Sociological Review* 61:739–57.

Blasi, Joseph R., Maya Kroumova, and Douglas Kruse. 1997." *Kremlin Capitalism: Privatizing the Russian Economy."* Ithaca, NY and London, England: Cornell University Press.

Boycko, Maxim, Andrei Shleifer, and Robert Vishny. 1995. *Privatizing Russia.* Cambridge, MA: MIT Press.

Brainerd, Elizabeth. 1998a. "Winners and Losers in Russia's Economic Transition." *American Economic Review* 88:1094–1116.

Burawoy, Michael. 1996. "The State and Economic Involution: Russia through a Chinese Lens." *World Development* 24:1105–17.

Cao, Yang and Victor G. Nee. 2000. "Comment: Controversies and Evidence in the Market Transition Debate." *American Journal of Sociology* 105:1175–88.

Carroll, Glenn R. and Karl Ulrich Mayer. 1986. "Job-Shift Patterns in the Federal Republic of Germany: The Effects of Social Class, Industrial Sector, and Organization Size." *American Sociological Review* 51:323–41.

Clarke, Simon. 1998. "Structural Adjustment without Mass Unemployment? Lessons from Russia." Pp. 9–86 in" *Structural Adjustment without Mass Unemployment? Lessons from Russia,* edited by S. Clarke. Cheltenham, England: Edward Elgar.

———. 1999. *The Formation of a Labour Market in Russia.* Cheltenham, England: Edward Elgar.

Clarke, Simon and Inna Donova. 1999. "Internal Mobility and Labour Market Flexibility in Russia." *Europe-Asia Studies* 51:213–43.

DiMaggio, Paul and Walter W. Powell. 1983. "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields." *American Sociological Review* 48:147–60.

DiPrete, Thomas A. 1993. "Industrial Restructuring and the Mobility Response of American Workers in the 1980s." *American Sociological Review* 58:74–96.

DiPrete, Thomas A., Paul M. de Graaf, Ruud Luijkx, Michael Tahlin, and Hans-Peter Blossfeld. 1997. "Collectivist vs. Individualist Mobility Regimes? Structural Change and Job Mobility in Four Countries." *American Journal of Sociology* 103:318–58.

DiPrete, Thomas A. and Patricia A. McManus. 1996. "Institutions, Technical Change, and Diverging Life Chances: Earnings Mobility in the United States and Germany." *American Journal of Sociology* 102:34–79.

DiPrete, Thomas A. and K. Lynn Nonnemaker. 1997. "Structural Change, Labor Market Turbulence, and Labor Market Outcomes." *American Sociological Review* 62:386–404.

Dmitriev, Mikhail and Tatyana Maleva. 1997. "Russian Labor Market in Transition: Trends, Specific Features, and State Policy." *Social Research* 64:1499–1529.

Gerber, Theodore P. 1999. *Survey of Employment, Income, and Attitudes in Russia (SEIAR)* [MRDF]. Codebook and Technical Report. Ann Arbor, MI: Inter-university Consortium for Political and Social Research, University of Michigan [distributor]. Moscow, Russia: All Russian Center for Public Opinion and Market Research [producer].

———. 2000a. "Membership Benefits or Selection Effects? Why Former Communist Party Members Do Better in Post-Soviet Russia." *Social Science Research* 29:25–50.

———. 2000b. "Educational Stratification in Contemporary Russia: Stability and Change in the Face of Economic and Institutional Crisis." *Sociology of Education* 73:219–46.

———. 2001a. "Paths to Success: Individual and Regional Determinants of Self-employment in Post-Communist Russia." *International Journal of Sociology* 31, 2:3–37.

———. 2001b. "The Selection Theory of Persisting Party Advantages in Russia: More Evidence and Implications." *Social Science Research* 30:653–71.

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.

Gimpelson, Vladimir and Douglas Lippoldt. 1999. "Private Sector Employment in Russia: Scale, Composition, and Performance." *Economics of Transition* 7:505–33.

Goskomstat Rossii (Gosudarstvennyi Komitet Rossiiskoi Federatsii Po Statistike; The State Statistical Committee of the Russian Federation). 1998. *Regiony Rossii, 1998.* (The regions of Russia, 1998). Moscow, Russia: Goskomstat.

———. 1999. *Rossiiskii Statisticheskii Ezhegodnik 1998* (Russian statistical annual, 1998). CD-ROM version. Moscow, Russia: Informatsionnyi Tsentr Goskomstata Rossii.

Guthrie, Douglas. 1997. "Between Markets and Politics: Organizational Responses to Reform in China." *American Journal of Sociology* 102:1258–1304.

Hachen, David S. 1992. "Industrial Characteristics and Job Mobility Rates." *American Sociological Review* 57:39–55.

Hewett, Ed A. 1988. *Reforming the Soviet*

Economy: Equality versus Efficiency. Washington, DC: Brookings Institution.

Ickes, Barry W., Peter Murrell, and Randi Ryterman. 1997. "End of the Tunnel? The Effects of Financial Stabilization in Russia." *Post-Soviet Affairs* 13:105–33.

Kapeliushnikov, Rostislav. 1997. "Job Turnover in a Transitional Economy: The Behaviour and Expectations of Russian Industrial Enterprises." Pp. 57–86 in *Labour Market Dynamics in the Russian Federation*, OECD proceedings. Paris, France: Organization for Economic Co-operation and Development.

Kharkhordin, Oleg and Theodore P. Gerber. 1994. "Russian Directors' Business Ethic: A Study of Industrial Enterprises in St. Petersburg, 1993." *Europe-Asia Studies* 47:1075–108.

Kornai, Janos. 1981. *The Economics of Shortage.* 2 vols. Amsterdam, The Netherlands: North Holland.

Mayer, Karl Ulrich, Martin Diewald, and Heike Solga. 1999. "Transitions to Post-Communism in East Germant: Worklife Mobility of Women and Men between 1989 and 1993." *Acta Sociologica* 42:41–53.

Mau, Vladimir and Vadim Stupin. 1997. "The Political Economy of Russian Regionalism." *Communist Economies and Economic Transformation* 9:5–25.

Nee, Victor. 1989. "A Theory of Market Transition: From Redistribution to Markets in State Socialism." *American Sociological Review* 54:663–81.

———. 1991. "Social Inequalities in Reforming State Socialism: Between Redistribution and Markets in China." *American Sociological Review* 55:267–82.

———. 1996. "The Emergence of a Market Society: Changing Mechanisms of Stratification in China." *American Journal of Sociology* 101:908–49.

Parish, William L. and Ethan Michelson. 1996. "Politics and Markets: Dual Transformations." *American Journal of Sociology* 101:1042–59.

Popov, Vladimir. 1998. "Will Russia Achieve Fast Economic Growth?" *Communist Economies and Economic Transformation* 10:421–49.

Radio Free Europe/Radio Liberty. 1991. *Radio Free Europe/Radio Liberty Daily Report.* August 6, 1991. Prague, Czech Republic.

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.

Russell, Raymond and Robert Hanneman. 2000. "The Use of Part-Time Employees and Independent Contractors among Small Enterprises in Russia." *Research in the Sociology of Work* 9:187–208.

Sachs, Jeffrey D. 1992. "Privatization in Russia: Some Lessons from Eastern Europe." *American Economic Review* 80:43–48.

Sapir, Jacques. 1999. "Russia's Crash of August 1998: Diagnosis and Prescription." *Post-Soviet Affairs* 15:1–36.

Stark, David and Laszlo Bruszt. 1998. *Postsocialist Pathways: Transforming Politics and Property in East Central Europe.* Cambridge, England: Cambridge University Press.

Stolzenberg, Ross. 1978. "Bringing the Boss Back In." *American Sociological Review* 43:813–28.

Sutherland, Douglas and Philip Hanson. 1996. "Structural Change in the Economies of Russia's Regions." *Europe-Asia Studies* 48:367–92.

Szelenyi, Ivan and Szonja Szelenyi. 1995. "Circulation or Reproduction of Elites During the Postcommunist Transformation of Eastern Europe." *Theory and Society* 24:615–38.

Titma, Mikk, Nancy Brandon Tuma, and Brian D. Silver. 1998. "Winners and Losers in the Postcommunist Transition: New Evidence from Estonia." *Post-Soviet Affairs* 14:114–36.

Van Selm, Bert. 1998. "Economic Performance in Russia's Regions." *Europe-Asia Studies* 50:603–18.

Walder, Andrew G. 1995. "Local Governments as Industrial Firms: An Organizational Analysis of China's Transitional Economy." *American Journal of Sociology* 101:263–301.

———. 1996. "Markets and Inequality in Transitional Economies: Toward Testable Theories." *American Journal of Sociology.* 101: 1060–73.

———. 2002. "Markets and Income Inequality in Rural China: Political Advantage in an Expanding Economy." *American Sociological Review* 67:231–53.

Walder, Andrew G., Bobai Li, and Donald J. Treiman. 2000. "Politics and Life Chances in a State Socialist Regime: Dual Career Paths into the Chinese Elite, 1949 to 1996." *American Sociological Review* 65:191–209.

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. and Irina Kozina. 2000. "The Changing Signficance of Ties: An Exploration of the Hiring Channels in the Russian Transitional Labor Market." *International Sociology* 15:479–500.

Zhou, Xueguang. 2000. "Economic Transforma-

tion 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. 1996. "Stratification Dynamics under State Socialism: The Case of Urban China, 1949–1993." *Social Forces* 74:759–96.

———. 1997. "Institutional Change and Job-Shift Patterns in Urban China." *American Sociological Review* 62:339–65.