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The structural perspective on postsocialist inequality: Job loss in Russia☆

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Abstract

The paper seeks to develop a structural approach to understanding post-socialist patterns of inequality, in distinction to the individual and institutional frameworks that have dominated the literature on the topic. Variation in exposure to job loss (layoff) of Russian hired workers from 1985 to 2001 is examined using employment histories from the Survey of Stratification and Migration Dynamics. The analysis focuses on the role of structural position (firm characteristics such as sector, industry, and size) in shaping job loss risk, both independently of individual characteristics such as experience, gender, and human capital and in interaction with these personal traits.

Keywords: Structural change; Labor markets; Market transition; Postsocialist inequality

The study of patterns of inequality in societies undergoing market transition has become an important subfield of social stratification research. It is easy to understand why: a key issue for comparative stratification research is how national institutions affect patterns and magnitudes of socio-economic inequality (Kerckhoff, 1995; Mueller & Shavit, 1998). The dramatic transformations associated with the demise of state socialist institutions and the corresponding rise of markets offer a unique opportunity to observe how stratification mechanisms respond to new institutional environments. Much of the sociological literature on how market transition has affected inequality has centered on Victor Nee's institutional theory of the transition, which predicts increasing returns to human capital and declining rewards for membership in the political elite as market institutions spread (Cao & Nee, 2000; Nee, 1989, 1996).

But institutional transformation is not the only aspect of market transition that can have consequences for stratification processes (Walder, 1996). Other scholars have drawn attention to the roles of the political changes (Zhou, 2000), economic growth (Xie & Hannum, 1996), and structural changes (Gerber, 2002, 2006b; Gerber & Hout, 1998) that are part and parcel of the market transition process itself as it unfolds in any specific national context. This paper attempts to develop conceptually and empirically the structural account of how the transition from a socialist to a market economy affects patterns of inequality. I first discuss what a "structural" perspective

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on market transition involves, and I derive some empirical predictions that it implies. I then test these predictions by examining the effects of individual characteristics, locality, and structural variables (specifically, the branch, property type, and size of a hired Russian's employer) on exposure to job loss in Russia from 1985 to 2001.

1. Conceptual framework: labor market structure and postsocialist inequality

Does market transition have a predictable impact on patterns of stratification reflecting inherent features of state socialist and capitalist economies? Just as neoliberal reformers saw universal incentive structures and behavioral correlates in markets and private property, Nee's "market transition" theory proposes that private ownership and the profit motive inherently increase the earnings returns to human capital, while the withdraw of Communist Party control over the economy reduces the advantages associated with political position (Nee, 1989, 1996). Other theorists see a different source of regularity in the legacy of the past: socialist-era elites convert their political power or social capital into advantages in the new institutional context (Rona-Tas, 1994). These perspectives both hold that market transition has a generic, predictable effect on stratification processes in different countries, and that its impact unfolds in the realm of individual characteristics (human capital, party affiliation) or social capital (network ties). An alternative view sees the impact of market reforms on stratification as variable, depending on structural, political, legal, and other factors that differ across and within countries (Gerber, 2002, 2006b; Gerber & Hout, 1998; Parish & Michelson, 1996; Walder, 1996, 2002, 2003). Although market transition may involve a fairly standard set of institutional changes (the rise of markets, the decline of state control), they will affect stratification differently, depending on the conditions in which they are implemented.

Of course, it is theoretically unsatisfying to simply point to cross-national variability in conditions as a source of differing effects of market transition on inequality: doing so suggests even reach middle-range generalizations are elusive. The "structural" perspective on postsocialist stratification, introduced in earlier work (Gerber, 2002, 2006b), suggests an alternative between grand generalization and narrow context-specific case analysis. There are two components to the structural argument:

> First, prior structural conditions interact with the specific policies by which market transition is implemented to produce particular patterns of structural changes in post-socialist countries. Second, these structural changes affect individual-level labor market prospects – and, thus, the life chances – in theoretically coherent ways (Gerber, 2002, p.650).

In other words, the structural approach holds that market transition produces structural changes in the labor market due that result from the combination of market-oriented institutional changes and the inherited structure of the socialist economy. In turn, these structural changes, dramatic shifts in the allocation of labor and other resources across different types of firms and organizations and different regions, have consequences for individuals both independently of and (potentially) in interaction with their personal traits and social capital.

Although much of the literature on postsocialist stratification emphasizes individual traits or social capital (Bian & Logan, 1996; Cao & Nee, 2000; Gerber, 2000, 2001b; Gerber & Mayorova, 2010; Nee, 1989, 1996; Rona-Tas, 1994; Wu & Xie, 2003; Zhou, 2000), studies of labor market transitions (Gerber, 2002), earnings (Clarke, 2002), and wage arrears (Gerber, 2006b) in Russia suggest structural factors exert stronger influences on life chances than individual characteristics. This paper replicates and extends earlier studies of how the structural changes produced by the introduction of market reforms in Russia affected individual opportunities and risks. I focus on exposure to job loss, an outcome with clear and indisputable negative implications for well-being.

The structural perspective on postsocialist stratification borrows insights from two strands of stratification literature devoted to the United States and developed capitalist societies. The "new structuralism" of the 1970s and 1980s sprung from the insight that the challenges of monitoring skilled labor in technologically advanced production settings lead some firms to adopt practices such as internal labor markets, multi-dimensional organizational structure, job ladders, vacancy-based promotion, collective bargaining principles, grievance procedures, and standardized wage schedules, all of which, in turn, influence the wages and benefits of employees (e.g. Kalleberg, Wallace, & Althauser, 1981; Sorenson & Kalleberg, 1981; Spilerman & Petersen, 1999). Firms vary in the composition and extent of these non-market practices, and the task for the new structuralism was to specify common patterns in different types of firms. The search for patterns led to dualistic images of the labor market into a primary sphere characterized by institutional supports for high wages and job security and secondary sphere with market wages and unstable employment (Beck, Horan, & Tolbert, 1978;

Sakamoto & Chen, 1991). More nuanced efforts identified systematic variations by firm size, economic branch (industry), and sector (private vs. government-owned). While critics have pointed to wide variations in the practices of firms that resemble one another across these dimensions (Baron & Bielby, 1980), many empirical analyses demonstrate sufficient similarities to produce structural variations in wages net of individual characteristics like human capital and gender (Beck et al., 1978; Bibb & Form, 1977; Kalleberg et al., 1981; Stolzenberg, 1978).

Exposure to wage arrears, a serious problem in Russia during the 1990s, is linked more to these firm characteristics than to individual traits (Gerber, 2006b). If firms of different sizes, branches, and sectors have different levels of wage arrears (and, by extension, other sources of divergent life chances and well-being), then a reallocation of Russia's workforce across these dimensions due to the exogenous "shock" of market transition will have clear consequences for stratification: those who find themselves in less favorable types of firms will suffer as a result, while those in more desirable types of firms will benefit.

The second strand of stratification literature offering the basis for a structural perspective consists of recent studies of labor market dynamics in the United States and other developed capitalist societies. DiPrete and his colleagues have documented how macro-level changes in the size of a country's workforce and its distribution across sectors (private vs. public), economic branches (manufacturing vs. services), types of firms (large vs. small), occupations (professional vs. manual), and geographic locations result from technological development, increased global competition, and shifting welfare state policies (DiPrete, 1993, 2002; DiPrete, de Graaf, Luijkx, Tahlin, & Blossfeld (1997); DiPrete & McManus, 1996; DiPrete & Nonnemaker, 1997). These structural changes, in turn, affect individual job mobility and employment exit patterns, and thus life chances and well-being, in systematic ways that vary by institutional regime.

The structural changes analyzed in these studies pale in magnitude compared to those experienced in contemporary Russia and other countries that underwent the transition from state socialist to market economies (see, e.g., Blasi, Kroumova, & Kruse, 1997; Dmitriev & Maleva, 1997). Radical institutional reforms effectively dismantled the system of far-reaching state control over the economy, producing a rapid rise of private ownership and market-based allocation of resources and consumer goods. The economic structure inherited from the Soviet era was distinguished by the absence of a private sector, the proliferation of large enterprises, over-development of manufacturing, military industry, extraction, and construction relative to services, retail trade, and catering, massive subsidies for agriculture, and the virtual nonexistence of financial and insurance firms. It should be emphasized that these characteristics reflected both the institutions that put state planners in charge of allocating the country's resources and the particular priorities that those planners embraced. We can imagine a planning-based system where planners prioritize consumer goods and service over heavy industry and military production. Thus, planning alone did not produce the particular structural configuration of the Soviet economy; it was the specific combination of planning with the particular priorities of Soviet planners (which, in turn, resulted from concrete political and historical conditions).

Introduced in the Soviet structural context, the institutional shift from planning to market-based allocation produced dramatic changes. A large private sector, consisting of both privatized state firms and newly created (mainly small) privately held companies grew sharply, while the state sector receded. Economic dynamism shifted from branches Soviet planners favored for political reasons to those where pent-up demand based on Soviet-era neglect created market opportunities; thus, labor flowed out of manufacturing, agriculture, and construction into trade, catering, and personal services (hereafter "TCPS") and finance. Perhaps less predictably, the expansion of newly formed federal, regional, and local governmental bodies, another by-product of reforms, spurred the growth of employment in public administration. Large Soviet-era establishments have given way to smaller firms, better able to flexibly adapt to changing market conditions. As regions gained more autonomy to pursue their comparative advantages, local and regional variations in labor market conditions increased (Gerber, 2006a; Van Selm, 1998). In essence, market reforms were an exogenous shock that had variable impact on different types of firms, thereby adding an especially dynamic force to the effects that firm characteristics such as size and sector have on job and employment transitions in more stable times (e.g. Carroll & Mayer, 1986).

The present paper replicates and extends my earlier work, which showed that structural developments affected stratification patterns by shaping Russians' employment and job mobility outcomes from 1991 to 1998 (Gerber, 2002). The data analyzed herein cover a longer period of time (1985–2001) and offer a larger sample size, more detailed information about firm characteristics (in particular, more detailed branch categories), and also time-varying information about the

characteristics of locality. The longer time span permits me to test more definitively whether the collapse of the socialist economy really represented a decisive break in terms of provoking structural changes. Time-varying locality and regional characteristics allow better controls for the features of local context that might be related to firm-level characteristics. Moreover, here I try several new specifications of the effects of structural variables, which prove to be fruitful. Finally, in contrast to Gerber (2002), I devote particular attention to the issue of whether structural characteristics mediate and/or interact with individual characteristics in shaping rates of job loss.

2. Data and methods

The data are from the Survey on Stratification and Migration Dynamics in Russia (SSMDR), given to a national probability sample of 7167 Russians ages 16 and older in three waves from September 2001–January 2002 by the Moscow-based survey research firm, VTsIOM. For complete details on sampling, field work, and quality control see Gerber (2006c). The survey obtained detailed employment/job histories spanning December 1984 to the time of the interview, including the month and year of all job and employment status changes. For their December 1984 job and up to five subsequent jobs, respondents provided information on the occupation, type of employment (self-employed vs. hired), and economic branch, size and property form of firm. The survey also included standard background variables, and migration and family structure histories.

Using the employment histories, I constructed a spell file consisting of all person-months from January 1985 through the month of the interview when respondents were of official working age (18–55 for women, 18–60 for men), residing in Russia, and employed for hire in a job on which there was valid information. I limit the analysis to hired employees because the processes shaping exit from self-employment differs from those shaping job loss among hired employees, who form the overwhelming majority of the work force in Russia. In any case, self-employment (including informal work) was slow to develop in Russia and thus rarely provided recourse for the unemployed (Gerber, 2001a): only 3.5% of the SSMDR respondents report having been self-employed (including informal work) at any time during the observation window. Regardless of their employment status at the time of the survey, respondents are included in the risk set in all months when they meet the eligibility criteria and excluded in all months when they do not. For example, they leave the risk set whenever they leave employment (due to job loss, voluntary quit, resumption of full time education, retirement, etc.) and they re-enter the risk set whenever they return to hired employment, so long as they are of working age. The residential histories provided time-varying measures of both locality type and region of residence. I merged in annual official data (Goskomstat, 1998, 2002) on regional unemployment rates (from 1992 to 2002) and mean wages in order to control for regional variations in economic conditions.

In the first stage of the analysis, I document the structural changes that took place by showing trends over time in the distribution of the workforce across branch, property type, and firm size categories. Next, I estimate discrete time event history models for the logged hazard of job loss. I start with models including only individual and locality characteristics, which provide baseline estimates of the effects of these variables. I then incorporate the three sets of structural variables (branch, property type, and size), refine the specification of structural effects, and test interactions between individual characteristics and structural variables. The final model trims the non-significant interactions. In the last step, I repeat these procedures separately for the post-transition and pre-transition periods in order to test whether structural variables matter more after the Soviet collapse, as theoretical considerations imply they should.

3. Variables and predictions

The key dependent variable is a dummy variable indicating whether the respondent lost his/her job involuntarily in a particular month during the observation window. The employment histories clearly distinguished voluntary quits from involuntary job loss, and I code only the latter category as instances of job loss. The distinction between involuntary job loss and voluntary quits may have been blurred in Russia during the 1990s by widespread wage arrears and furloughs (Earle & Sabirianova, 2002). Still, it is worth distinguishing job exits where the employee makes their own conscious decision to leave from those where the employee is compelled to leave.

Individual-level covariates include age (centered at 18), gender, education (specified as dummy variables for university, specialized secondary, lower vocational, and less than secondary, with generalized secondary the omitted baseline category), Communist party membership, and the log of years of employer tenure plus one. Market transition theory proposes that human capital is an increasingly valued asset in the postsocialist labor market. This would imply a negative association between education and exposure to job loss, with these effects

magnified in the more marketized areas of the economy (newer branches, the private sector, smaller firms) and dampened in the least marketized areas (the traditional branches, state sector, larger firms). Studies of the early years of Russia's market transition cast doubt on the validity of this claim (Gerber, 2002; Gerber & Hout, 1998). However, a consensus has emerged that returns to education did increase in China in the course of its market transition (Cao & Nee, 2000; Hauser & Xie, 2005; Zhao & Zhou, 2002; Zhou, 2000) and also in the formerly socialist countries of Eastern Europe (Domanski, 2005). It could be that over a longer time span education became a more reliable labor market resource in Russia. Gerber (2002) did find that higher education is associated with lower rates of job loss in Russia's early post-transition economy.

Membership in the Communist Party of the Soviet Union (CPSU) has often been interpreted as a proxy for social network connections rooted in the Soviet era that prove useful in the post-Soviet context (Eric, Yershova, & Anderson, 1995; Rona-Tas & Guseva, 2001; Rona-Tas, 1994). However, CPSU membership is better understood as a proxy for human capital not captured by education (Gerber, 2000, 2001b; Gerber & Mayorova, 2010). Thus, the same predictions apply to CPSU membership as apply to education. In the Soviet era, though, CPSU membership also served as a proxy for political privilege. Thus, market transition theory could also predict that pre-transition job-protecting effects of CPSU membership decrease in the post-transition era.

Gender differences in job loss are hard to predict a priori. Many observers feared that the collapse of the Soviet Union would be especially detrimental to Russian women by giving freer rein to male employers to discriminate on the basis of gender (LaFont, 2001; Linz, 1996; Ogloblin, 1999). However, Gerber and Mayorova (2006) argue that as market principles advance Russian women gained better access to employment than Russian men because they have lower reservation wages. Structural change could yield lower overall job loss rates for women. For example, they typically predominate in the trade, catering, and personal services (TCPS), which expanded in the post-Soviet era, while men tend to be over-represented in the shrinking manufacturing and construction branches. At the same time, women tend to be under-represented in the private sector (Clarke & Donova, 1999; Gerber, 2002; Gerber & Hout, 1998).

Employer tenure should be associated with lower rates of job loss, due both to the acquisition of firm-specific skills and to positive selection (employees who fit better in a particular firm are likely to be there longer). I include it as a control variable, as it may be related to key covariates of interest (average tenure should be lower in newer branches and private firms because these firms tend to be younger). The same goes for five variables pertaining to place of residence: dummy variables for residence in Moscow and rural villages (respectively), the log of locality size (measured as the midpoints of eight size categories), the annually adjusted regional employment rate (set to zero for all regions prior to 1992, the first year this information was collected, reflecting the rarity of unemployment prior to the Soviet collapse), and the log of the average regional wage expressed in regionally adjusted 1991 rubles. Both regional measures are updated annually (as well as whenever a respondent changed regions) and are centered at their yearly means for all regions (to avoid conflating temporal change with cross-regional variation). All models also include dummy variables for each year in the observation window, which allows the baseline hazard to change over calendar time to reflect the well-known economic contraction following the market reforms.

My main theoretical interest is in the effects of structural variables. In general, employment in contracting branches should be more tenuous, as contraction implies shrinking workforces in those branches. Contraction can be effected by means other than layoffs and firm closures (hiring freezes and attrition), but these are likely to produce slower change. Conversely, employment in branches that expand (or contract the least) should be associated with lower rates of job loss.

Gerber (2002) operationalized the effect of branch of employer using the annual change in employment within each branch (based on official data) and found the expected negative effects on job loss. But annual data on changing employment by branch are not available for the pre-transition years, and insight may result from examining variation across specific branches. Therefore, I specify branch of employer with dummy variables corresponding to thirteen categories (detailed below) used in official Russian statistics. The initial omitted baseline is "manufacturing and extraction," the largest branch, which shrank most precipitously following the Soviet collapse so I significantly lower rates of job loss in the other branches. The fastest growing branch, TCPS, holds particular interest. Its expansion suggests lower rates of job loss, but it may also be an especially volatile sector, with high rates of both firm entry and exit.

I derive expectations regarding the effects of property from classic distinctions between the incentives facing private and state-socialist enterprises (e.g. Kornai, 1981). The managers of private firms seek to maximize profits and face harder budget constraints; therefore, they are more likely to contract their workforces

when facing difficult product market conditions. In the crisis-like conditions of post-Soviet Russia, private sector employees should exhibit higher rates of job loss. This effect may vary depending on whether the firm is a privatized (former state) firm or a new private firm. New entrants are likely to have already been more selective in deciding whom to hire, while one of the main rationales behind privatization was to encourage the managers of privatized firms to shed Soviet-era "ballast" from their workforces (Blasi et al., 1997).

The data provide somewhat sketchy information about whether privately owned firms are new private or privatized firms: respondents often could not say precisely which type of private firm they worked for. They may have forgotten (the job history data are retrospective) or they may not have known in the first place. I operationalize this distinction by interacting private property with firm size and with branch: new private firms and private firms in TCPS are much more likely to be small or medium in size, while large private firms and those in the traditional branches (manufacturing and construction) are most likely privatized. I treat state farms ("kolkhozy"), cooperatives, and social organizations (combined with "other" property types) as distinct forms of property; the inclusion of dummy variables corresponding to these types ensures that the dummy variable for private property represents a distinct contrast with state-owned firms and organizations. Gerber (2002) found little evidence of the expected differences in job loss (or job change) rates by property type, aside from some indication of higher exit rates in the mid-1990s in privatized firms.

I specify firm size by taking the natural log of the midpoint of each of six firm size intervals used in the survey (detailed below). The Soviet Union's largest firms were notorious for being particularly inefficient, so they have been more adversely affected by the new competitive conditions. Accordingly, I expect firm size to be positively associated with the hazard of job loss. This runs against a standard argument of new structuralism that larger firms are better able to shelter their workforces from macro-economic perturbations, which would predict less job loss in larger firms. Moreover, in the Russian context the largest firms may be "too big fail" – that is, they may be able to use their size as political leverage to obtain government subsidies necessary to preserve their workforces. In sum, a theoretical case can be made for either positive or negative effects of firm size, and distinctive effects associated with the very largest firms should be tested. Gerber (2002) found that the effect of firm size on job loss was negative through the mid-1990s.

In addition to assessing whether structural location, as measured by branch, property type, and size of employer, influences rates of job loss in post-Soviet Russia, I also consider whether structural effects increased due to the institutional changes associated with market transition. An intuitive way to do this is to estimate the models separately for the pre-transition and post-transition eras. Prior to the Soviet collapse, structural effects should be weaker: while firm characteristics that affected job loss and firm exit could be associated with branch and size under stable, equilibrium conditions (as studies in Western contexts have shown), the distinctive "structural" effects of market transition should manifest as reform-induced changes in the distribution of the workforce across branch, property type, and size categories (i.e. contraction and expansion of categories). Thus, the structural perspective predicts significantly more pronounced variations across these dimensions in job loss in the post-Soviet period.

Finally, I consider not only whether individual characteristics interact with structural variables, but also whether the latter mediate the effects of the former. Theories emphasizing human and social capital as the bases for advantage in postsocialist settings resort to reasoning about the intrinsic profit-maximizing behavior of private owners and the benefits of personal ties. But these advantages could instead reflect the different structural employment situations associated with education and social capital.

4. Results

The first question is whether structural change did indeed occur as a result of market transition. Official data on the distribution of Russia's workforce across branch categories at five-year intervals from 1970 to 2000 provide some initial insight (Fig. 1). From 1970 through 1990, these distributions exhibited striking stability, with manufacturing, agriculture, and construction representing the three largest branches, together employing 55–60% of the workforce throughout these 20 years. As noted, the TCPS branch remained uncharacteristically small in Soviet Russia during this era, when the "service economy" arose in developed capitalist countries. In stark contrast, the period following the introduction of market reforms (in January 1992) saw much more dramatic changes: rapid shrinking of manufacturing and construction, sharp annual increases in the share of TCPS. Less evident due to their small initial size, public administration and finance/insurance also grew robustly in proportional terms beginning in the 1990–1995 interval. Other branches retained a fairly stable share

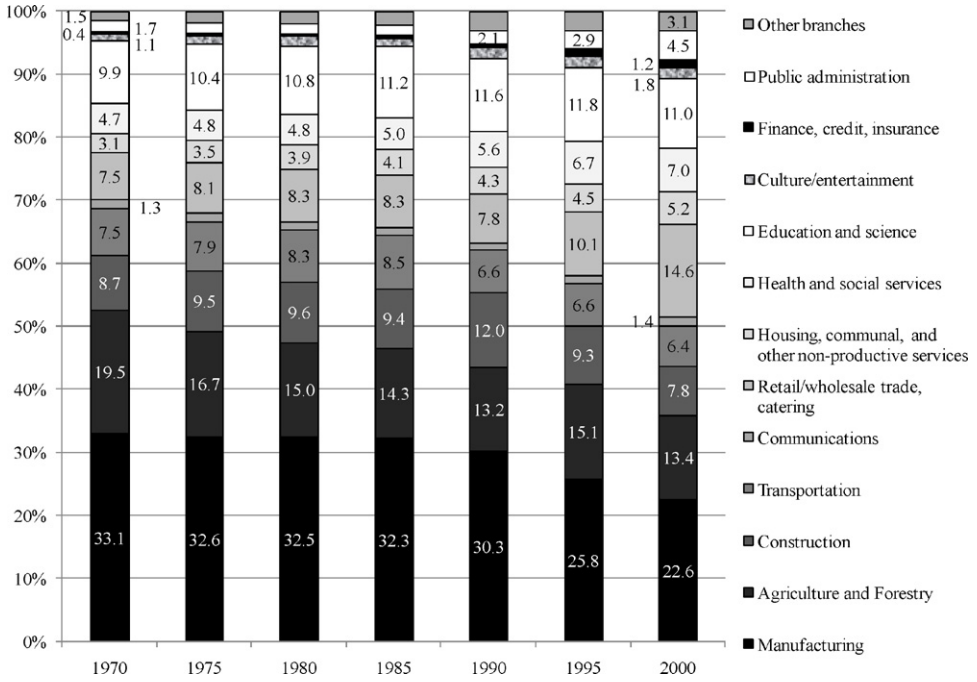

Fig. 1. Distribution of the employed work force by branch (Official Russian data).

of employment. Overall, though, the decline of manufacturing and construction and the corresponding rise of TCPS, finance/insurance, and public administration that are specific to the post-transition period strongly suggest that the combination of institutional changes (market reforms) and the inherited Soviet-era structures produced definitive structural changes in the post-Soviet Russian economy.

The changing annual distributions of the SSMDR analysis sample across branches January from 1985 to 2001 (not shown to save space, available upon request) tell a similar story: considerable stability from 1985 to 1991, followed by rapid shrinking of employment share in manufacturing and construction and growth in TCPS, finance/insurance, and public administration. Also, the distributions in the SSMDR data in any given year resemble those in the official data, apart from some under-representation of agricultural employees: the SSMDR data capture known trends.

Official data on the Soviet-era distribution of the workforce by property type and firm size are either uninformative or unavailable. Accordingly, I use the SSMDR data to demonstrate structural change across these dimensions. As expected, private property was extremely limited in the Soviet era, though there was small cooperative sector in the late 1980s as a result of Gorbachev's reforms. Small state-owned firms (such as stores and restaurants) were privatized starting in 1990. The Soviet collapse led immediately to the privatization of remaining small enterprises and some medium ones, and eventually to the privatization of larger firms (starting in 1993). Restrictions on private ownership of productive assets other than land were lifted in January 1992, paving the way for new private firms to emerge. These radical institutional changes spurred the growth of the private sector and corresponding shrinking of the state sector (Fig. 2).

On the eve of Russia's market transition (1991), 36% of the workforce worked in organizations of at least 500 employees (Fig. 3). While this was down from 42% in 1985, the pace of change accelerated substantially from 1991 to 2001. In parallel fashion, the proportion employed in small organizations rose especially fast in the post-transition years. If firm size is related to the rates of job loss, this marked change toward smaller firms should have broad consequences for the life chances of Russian workers independently of (and perhaps in interaction with) their human or social capital.

Unlike official tabulations, the SSMDR data also show how the three structural variables are related (Table 1). TCPS, finance/insurance, and construction firms are highly likely to be privately owned, while organizations in health/social services, education/science, and public administration are predominantly state-owned. Small firms are most common in TCPS and least common in manufacturing, while large firms clearly

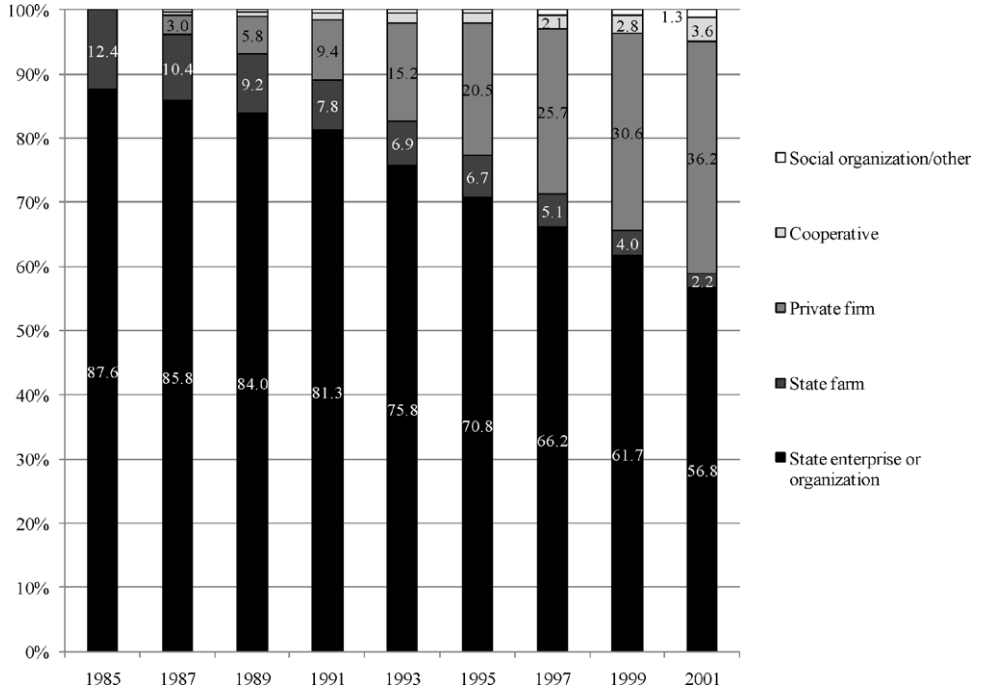

Fig. 2. Distribution of the employed work force by property type (SSMDR data).

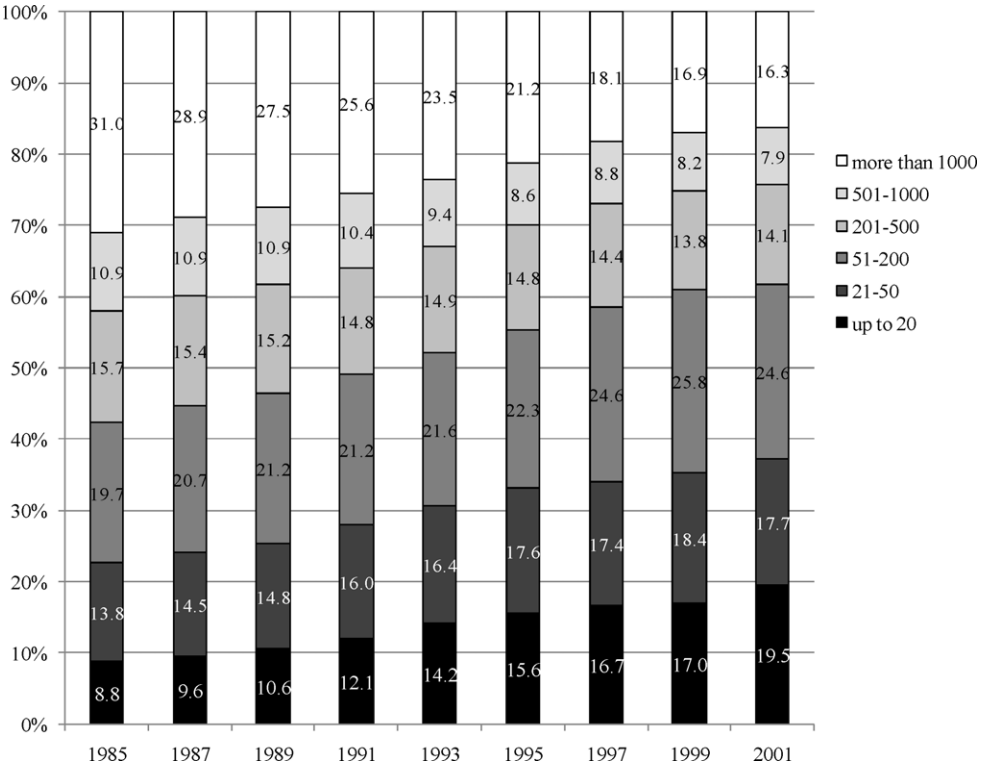

Fig. 3. Distribution of the employed work force by size of employer (SSMDR data).

Table 1
Property and size by branch, working age hired employees in Russia, SSMDR data.

	Private sector			20 or fewer employees			1000 or more employees		
	1990	1995	2000	1990	1995	2000	1990	1995	2000
Manufacturing/extraction	9%	23%	45%	3%	4%	4%	57%	52%	46%
Agriculture/forestry	12%	24%	46%	10%	16%	17%	9%	8%	6%
Construction	12%	36%	55%	8%	12%	21%	11%	7%	7%
Transportation	4%	22%	34%	3%	9%	14%	25%	18%	17%
Communications	10%	19%	33%	16%	18%	32%	30%	30%	30%
Trade/catering/personal services	22%	56%	78%	37%	50%	56%	6%	4%	3%
Housing/communal services	4%	15%	18%	20%	21%	19%	8%	9%	6%
Health and social services	2%	4%	7%	16%	13%	13%	8%	10%	9%
Education and science	2%	3%	3%	16%	17%	15%	5%	4%	4%
Culture and entertainment	7%	19%	24%	35%	44%	37%	11%	11%	8%
Finance and insurance	14%	43%	64%	7%	22%	27%	0%	3%	4%
Public administration	0%	3%	6%	9%	14%	14%	10%	7%	6%
Other	0%	16%	30%	21%	24%	40%	18%	21%	12%
Total	9%	23%	38%	8%	23%	38%	26%	20%	16%

characterize manufacturing and communications. These associations vary over time. They underscore the need to control for all three structural variables simultaneously.

Estimated monthly hazards of job loss from an event history model containing only dummy variables for each year and an intercept show the impact of Russia's economic crisis on overall job loss rates (Fig. 4). Job loss rates crept higher as the Soviet economy experience difficulties in the Gorbachev years, but they grew faster after the 1991 Soviet collapse and 1992 reforms. Despite occasional years of stability, they trended upward for the rest of the 1990s, at times sharply. This trend demonstrates the need for fixed year effects in the event history models to avoid biased estimates of the effects of structural variables correlated with time (such as private sector employment).

The descriptive results establish that structural change occurred in the Russian labor market due to the institutional changes associated with market transition. The event history models for job loss show whether these changes matter for stratification. Model 1 includes only individual characteristics and regional controls,

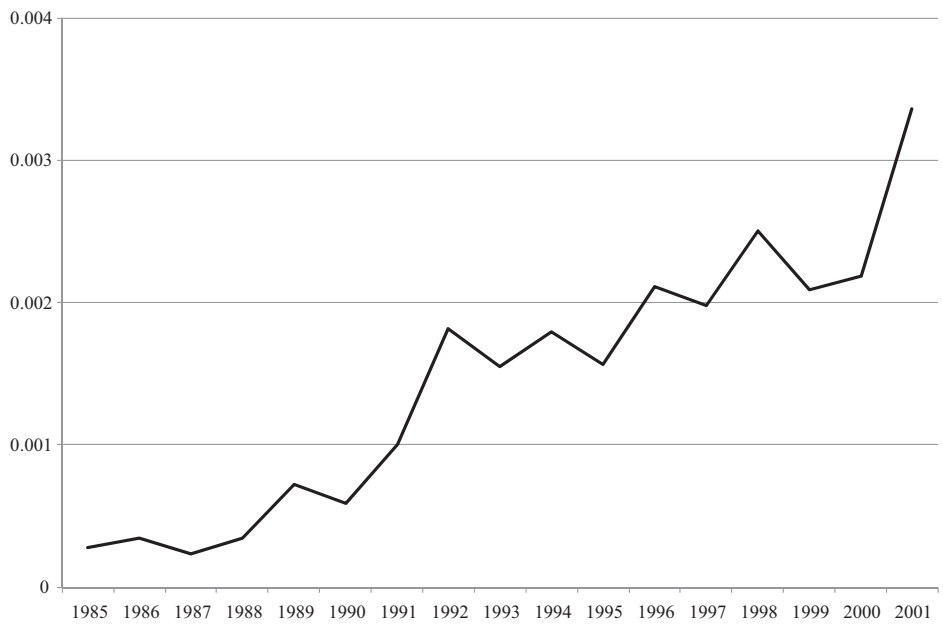

Fig. 4. Annual estimated hazard of job loss in a given month, working age SSMDR respondents working for hire.

Table 2
Additive discrete time models: job loss among hired employees, 1985–2001.

	Model 1		Model 2		Model 3	
	B	rse	*B*	rse	*B*	rse
Age (−18)	−.008*	.004	−.009**	.005	−.010**	.005
Woman	−.110	.076	−.033	.082	−.041	.079
CP member	−.221	.142	−.235*	.143	−.251*	.143
Education (general secondary)						
University (VUZ)	−.337**	.104	−.192*	.107	−.181*	.106
Specialized secondary	−.164	.105	−.099	.105	−.092	.104
Lower vocational (PTU)	−.062	.117	−.080	.118	−.072	.117
Less than secondary	−.216	.156	−.286*	.157	−.261*	.157
Ln(years employer tenure)	−.208**	.042	−.185**	.043	−.185**	.042
Moscow resident	.339**	.161	.384**	.160	.356**	.159
Rural village	.153	.169	.170	.172	.161	.171
Ln(city size)	.045	.029	.036	.030	.036	.029
Regional unemployment	.040**	.014	.040**	.014	.039**	.014
Ln(regional mean wage)	−.162	.134	−.159	.134	−.161	.135
Branch (manufacturing/extraction)						
Agriculture/forestry			−.479**	.210	−.577**	.210
Communications			−.924**	.375	−.926**	.377
Trade/catering/personal services			.185	.119	.350**	.129
Health/social services			−1.075**	.210	−.985**	.204
Education/science			−.903**	.168	−.785**	.158
Public administration			−.557**	.181	−.457**	.172
Construction			.043	.142		
Transportation			−.127	.143		
Housing/communal services			−.261	.200		
Culture/entertainment			−.350	.248		
Finance/insurance			.069	.244		
Other branch			−.087	.342		
Property form (state firm/organization)						
Private firm			−.207**	.091	.265*	.140
State farm (kolkhoz)			.470*	.251	.677**	.255
Cooperative			−.106	.208	−.108	.214
Other			−.239	.422	−.263	.404
Ln(firm size − 125)			−.037	.026	−.057*	.032
Size over 1000					.367**	.134
Private × manufacturing or construction					−.416**	.170
Private × over 1000					−.570**	.249
Private × trade/catering/personal services					−.560**	.205
Constant	−7.690**	.317	−7.611**	.324	−7.766**	.325
Log-likelihood	−6879.67		−6815.29		−6807.53	
Model chi square (DF)	409.29 (30)		567.74 (50)		599.88 (48)	

689,492 person months from 5737 SSMDR respondents. Models include dummy variables for all years and denoting missing value substitutions on branch, firm size, property, and city. Regional variables centered at annual means for all regions, unemployment set to 0 prior to 1992.
* $p < .10$.
** $p < .05$.

providing a reduced form estimate of the effects of human capital and gender (Table 2). University education is associated with substantially lower rates of job loss ($B = -.337$). Model 2 incorporates the structural variables. Model 3 refines the specifications of their effects by trimming the non-significant branch dummy variables, adding interactions of private sector with manufacturing/construction, TCPS, and large firms, and incorporating a dummy variable for firms with over 1000 employees.

Structural characteristics of employer influence the risks of job loss. Employees in agriculture/forestry,

communications, health/social services, education/science, and public administration are more protected from job loss than employees in manufacturing, construction, and other branches. Despite the expansion of TCPS over the observation period, employment in state-owned TCPS firms is associated with the highest rate of job loss of any branch, implying that TCPS is an especially volatile branch in the state sector. However, the private*TCPS interaction outweighs the TCPS effect, so for private sector employees TCPS is a less volatile branch than manufacturing/construction. While TCPS may be inherently more volatile than other branches, in this period Russia's structural changes are more decisive in shaping its effects on job loss.

Contrary to expectations, net of the other variables private firm employees have lower rates of job loss overall (model 2). However, controlling for the interactions of private property with branch and size (model 3), private firms that are small in size and outside manufacturing/construction and TCPS have elevated job loss rates. Large private firms in manufacturing and construction are most likely privatized firms; in contrast, new private firms apparently behave more consistently with ideal-typical models of private employers. The negative interaction of private sector with TCPS is anomalous in this regard, but the overall negative effect for private sector TCPS firms (obtained by adding the interaction and the main TCPS effect) is more consistent with expectations that job loss should be lower in this most rapidly expanding sector (recall that the lion's share of TCPS firms are privately owned, as illustrated in Table 1 above.)

As for firm size, generally larger firms insulate their workers from job loss, consistent with Gerber's (2002) findings. However, this effect does not apply to the largest firms, unless they have been privatized: the dummy variable for "over 1000" offsets the linear effect of logged size. Apparently, the largest state owned firms are not able to protect their employees from layoffs as the general size effect would lead us to expect: they indeed suffer from inefficiencies and lack of competitiveness.

The inclusion of structural variables reduces the point estimate of the effect of university education from −.337 to −.181. Nearly half the reduced form job-protection effect of higher education results from its association with structural characteristics of employers: university graduates are disproportionately employed in relatively protected branches. This mechanism of advantage for university graduates is not apparent based on strict human capital or social capital reasoning. Also, net of the structural controls, the least educated Russians exhibit (marginally significant) lower job loss rates than those with secondary, and the negative (protective) effect of CPSU membership also obtains one-tailed significance. The effect of education net of structural position is non-linear, which is hard to explain in terms of a link between human capital and market incentives.

The next models (Table 3) incorporate interactions of education, CPSU membership, and gender with structural variables (model 4) and then trim those that are not significant to arrive at a preferred model (model 5). The final two sets of models are the preferred models estimated separately for the Soviet era (1985–1991) and the post-Soviet era (1992–2001). Note that the models in Table 3 include all the covariates in model 3 of Table 2, but to preserve space some are not shown. There are three significant and noteworthy interactions between individual and structural variables. There is a strong, positive interaction between the dummy variable for women and manufacturing/construction. Combined with the main effect of "woman," this interaction means that women are laid off at higher rates than men with similar characteristics in these branches. However, the negative and significant main effect indicates that outside manufacturing/construction women are actually more protected than men. This finding may help explain why earlier quantitative studies find little evidence for claims that women were laid off in disproportionate numbers following Russia's transition to the market. These claims are largely based on anecdotes and qualitative studies of manufacturing firms. Women may suffer more than men in these types of firms, but do better than men in other, more typically female branches. The interactions involving CPSU membership suggest that party members fared no better or worse than non-members in the traditional branches and in TCPS: the party "advantage" applied only outside these branches.

The estimated effects in models 1–5 pertain to the entire period in question, while the structural changes were concentrated in the post-reform years. The separate estimates for post-transition and pre-transition periods confirm that the main explanation for the structural effects is trends within branch, sector, and size categories related to Russia's reforms, not generic characteristics of these categories. The estimates pertaining to the post-transition era are similar in pattern and generally stronger in magnitude. In contrast, the parallel estimates based on the pre-transition period are weaker and often non-significant. If the effects presented in models 1–5 reflected intrinsic tendencies of branches, property types, and sizes alone, there would be less discrepancy between the pre and post-transition periods. Of course, there may be such generic tendencies, but the

Table 3
Testing interactions between individual and structural variable.

	Model 4		Model 5		1985–1991		1992–2001	
	B	rse	*B*	rse	*B*	rse	*B*	rse
Woman	−.258**	.121	−.204**	.096	.016	.169	−.239**	.105
CP member	−.524**	.246	−.595**	.234	.376	.272	−1.024**	.269
Education (general secondary)								
University (VUZ)	−.222	.151	−.182*	.106	−.028	.276	−.206*	.114
Specialized secondary	−.099	.105	−.096	.105	.113	.242	−.135	.114
Lower vocational (PTU)	−.073	.118	−.072	.117	.062	.291	−.090	.124
Less than secondary	−.429*	.255	−.265*	.158	.139	.345	−.312*	.174
Ln(years emp. tenure)	−.200**	.043	−.198**	.043	−.288**	.086	−.186**	.047
Branch (manufacturing/extraction)								
Agriculture/forestry	−.482**	.212	−.494**	.211	−.973	.708	−.442*	.226
Communications	−.739*	.381	−.763**	.381	−.331	.708	−.903**	.452
TCPS	.411**	.193	.473**	.140	−.052	.284	.591**	.157
Health/social services	−.773**	.217	−.805**	.211	−2.407**	.992	−.640**	.213
Education/science	−.555**	.178	−.598**	.167	−.921**	.401	−.529**	.185
Public administration	−.304*	.177	−.315*	.174	−.106	.395	−.328*	.192
Property form (state enterprise/organization)								
Private firm	.317**	.162	.333**	.143	−.377	.798	.432**	.149
State farm (kolkhoz)	.749**	.256	.726**	.254	1.039	.712	.701**	.274
Cooperative	−.138	.215	−.134	.214	−.210	.752	−.108	.227
Other	−.235	.401	−.236	.404	.646	.724	−.391	.472
Ln(firm size − 125)	−.060	.047	−.067**	.032	−.157*	.086	−.049	.035
Size over 1000	.321**	.135	.327**	.134	.060	.329	.423**	.147
Private × manuf./construc.	−.584**	.181	−.564**	.177	−1.038	.996	−.584**	.181
Private × over 1000	−.529**	.252	−.516**	.249	.367	1.088	−.669**	.251
Private × TCPS	−.704**	.216	−.657**	.209	−.454	1.094	−.742**	.221
VUZ × private	−.008	.195						
<sec. × private	−.055	.387						
CPSU × private	−.442	.358						
Woman × private	.139	.163						
VUZ × manuf./construct.	.016	.191						
<sec. × manuf./construct.	.296	.304						
CPSU × manuf./construct.	.510*	.291	.531*	.280			.878**	.330
Woman × manuf./const.	.427**	.149	.409**	.132			.504**	.145
VUZ*TCPS	.176	.250						
Less than sec. × TCPS	.260	.423						
CPSU × TCPS	.712*	.376	.661*	.364			.908**	.433
Woman × TCPS	.069	.205						
VUZ × ln(firm size)	−.010	.058						
<sec. × ln(firm size)	−.066	.094						
CPSU × ln(firm size)	.003	.079						
Woman × ln(firm size)	−.002	.048						
Log-likelihood (pers. months)	−6795.97 (689,492)		−6798.60 (689,492)		−1224.23 (299,175)		−5541.74 (385,517)	
Model chi square (DF)	604.03 (64)		596.61 (51)		246.17 (37)		310.53 (44)	

Models also include all variables in Model 3, Table 2.
* Two-tailed $p < .10$.
** Two-tailed $p < .05$.

clear strengthening of structural effects in the post-Soviet era provides compelling evidence that the very process of structural change itself had substantial consequences for individual-level exposure to job loss.

5. Conclusion

The strong effects of the economic branch, property type, and size of one's employer on exposure to job loss in Russia demonstrate the importance of the structural perspective for understanding of how the institutional transformations associated with market transition affect the patterns and magnitude of socio-economic inequalities in the societies that experience these breathtaking shifts. The market reforms produced specific and theoretically coherent structural changes that were considerably more sweeping than the changes typically observed in analyses of the labor markets of stable developed capitalist societies. Moreover, these changes affected the life chances of Russian workers by influencing their exposure to job loss, both independently of and in combination with the effects of individual characteristics. Structural variables play a significant mediating role that accounts, in some cases, for large parts of the reduced-form effects of individual level variables. The structural effects were much more pronounced in the post-socialist era, which suggests that they reflect structural change as much as or more than intrinsic characteristics of branch, property, and firm size.

These findings, along with those from earlier studies of the impact of structural variables on labor market outcomes in Russia (Clarke, 2002; Gerber, 2002, 2006b; Gerber & Hout, 1998), show how accounts of postsocialist stratification that focus exclusively on human capital, social capital, or other individual traits miss an important part of the story: if structural change plays an integral and multidimensional role in shaping the emergent patterns of inequality in Russia after 1992, it probably plays a similar role in reform-era China and in postsocialist Eastern Europe. In the rush to examine how institutional changes shape the effects of human and capital, however, researchers on these other contexts have overlooked the potentially vital role of structural change (but see Zhou, Tuma, & Moen, 1997). Hopefully, the findings from Russia will convince scholars of market transition to systematically explore the relevance of the structural perspective for understanding the new patterns of inequality in other transition countries.

The present analysis has focused on developing the theoretical rationale for a structural perspective on postsocialist stratification and testing the perspective by analyzing job loss. The structural perspective can be further refined within the context of Russia with future analyses of the SSMDR data, as well as other data sets containing retrospective job histories that may become available. Another structural variable—occupation—can be incorporated in the analysis (see e.g., Gerber, 2006b; Gerber & Mayorova, 2006). Additional outcomes such as the quality of job changes (representing upward and downward mobility according to various criteria) can be modeled. The effects of local context, which here serve only as controls, can be studied more extensively. Additional interactions involving individual characteristics might be tested. Moving beyond the retrospective employment history data, cross sectional surveys gathered at different points in time during the transition era can be used to analyze associations between structural characteristics and earnings. Finally, using both the employment history and cross-sectional approaches, further investigation of the temporality of structural dynamics might yield additional insight: at some point, Russia and other postsocialist countries presumably complete their "transition" to new institutional and structural modalities. The structural perspective implies that at that point structural effects should diminish in magnitude as a new structural equilibrium emerges. The results reported above indicate that Russia did not cross that threshold in the 1990s, but it may well have in the subsequent decade.

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