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A Note on Industrial Adjustment and Regional Labor Markets in Russia

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1. Introduction

The transition from a centrally planned to a market economy in Russia will include not only changes in ownership, allocation mechanisms, and decision-making structures, but also significant enterprise restructuring and industrial adjustment as enterprises adjust to new economic conditions. Labor mobility between jobs, occupations, and enterprises will be key to restructuring and adjustment. Obstacles to recent labor mobility stem from the industrial structure in Russia and raise questions regarding the relationship between labor market characteristics and adjustment mechanisms.

My examination of the industrial structure leads to three general conclusions. First, after privatization, many enterprises will operate as monopsonists in the labor market. Second, in order to effect restructuring and adjustment, labor will often need to move between industries rather than simply between enterprises within industries. Finally, adjustment will cause the share of industrial employment in small firms to increase. The features of the transition that will shape the dynamics of labor markets are discussed in section 2. Empirical findings and their implications for three kinds of labor markets are presented in section 3. Concluding remarks are offered in section 4.

This paper stems in part from an earlier project based upon the 1989 *Soviet Census of Industry* which examines the industrial structure of Russia in terms

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enterprise size and industry concentration (Brown, Ickes and Ryterman 1994). We demonstrate that, relative to the United States, Russia has more medium and large manufacturing enterprises, few extra-large manufacturing enterprises and almost no small manufacturing enterprises. While few Russian enterprises are monopolists at the national level, many enterprises operate in highly segmented markets and are thus able to exercise market power. This paper extends the analysis to labor markets. While enterprises will lose their monopoly power as distribution improves, low labor mobility and small labor markets will allow many firms to remain monopsonists in their labor markets, thus creating barriers to adjustment.

2. Russian Labor Market in Transition

Labor is highly immobile in Russia relative to western market economies. The Soviet legacy of internal passports and legal restrictions that prohibited people from moving has had a significant impact on people's habits and expectations concerning mobility. The Soviet legacy of utilizing reciprocity or social networks, for meeting many of their household needs remains. Russians are reluctant to change jobs if the move jeopardizes their social networks. Rose (1993) utilizes recent survey evidence from three transitional economies, including Russia, to document nine types of economies that exist for the production or exchange of goods and services. Four are social or non-monetized economies that depend upon reciprocal relationships between people in the same locality or enterprise. In Russia, for example, 96% of the respondents reported involvement in at least one of the social economies (more than one quarter regularly rely on help from friends and relatives; more than one-third reported that they use connections to provide or receive goods without cash payment).[1]

The Soviet legacy of housing and transportation shortages also impedes labor mobility. Privatizing residential units may alleviate this problem, but construction of new housing is also required. The poor system of transportation is an impediment to households wishing to move their belongings; transport difficulties makes visiting family and friends in other cities and, even commuting to work in nearby localities, an obstacle. The information constraint to labor mobility is declining as advertising and yellow pages-type publications emerge.

Changes in ownership and decision-making structures of workplaces will influence the Russian labor market. First, there will be *intra-industry* adjustment as firms identify and exploit their comparative advantage (Ickes and Ryterman 1993). Firms investing in new technologies and equipment and thus altering their labor requirements will cause movements of labor

between firms within industries. *Inter-industry* adjustment, for example, growth in the service sector of the economy relative to manufacturing will impact on the labor market as will the shift in relative output shares between heavy industries and consumer goods. Finally, as a market economy emerges in Russia, we would expect an adjustment in the *size distribution of firms,* resulting in a greater proportion of the workforce employed by smaller firms.

Table 1 illustrates the difference in the size distribution of civilian manufacturing enterprises in Russia and the United States. Almost 88% of U.S. firms employ fewer than 50 people while only 10% of Russian enterprises fall in this category. U.S. firms with fewer than 250 workers employ 27% of the industrial workforce, while those in Russia employ less than 6%. Small firms are often the source of innovation. Yet, a significant percentage of small firms fail. As Russia becomes a market economy, entry of new, small firms increase responsiveness to consumer commands and increase the likelihood of innovation.

3. Findings and Implications

How does the impact of the transition on industrial structure in Russia influence local labor markets, regional labor markets, and employment in small and large firms?

Local Labor Markets

Table 2 documents the number of enterprises or industries by city. Almost half of Russian cities are one-company towns; 76% of the cities have four or fewer companies; 92% have 10 or fewer. The Soviet legacy of monopsony continues to dominate industrial employment alternatives. This situation is compounded by restricted labor mobility. If enterprises in the Military Industrial Complex (MIC) were included, the number would be even more dramatic.

In practice, the results of monopsony power in the labor market will depend on the degree of control—*de facto* through share ownership or *de jure* through political power—the local government has over the decision making of the enterprise. Enterprise overstaffing in Russia implies that level of employment at the time of privatization is even higher than the competitive level. Thus, privatization could lead to high unemployment in one-company towns.

If workers form unions to bargain over wages and employment, they may improve their position. The outcome will depend upon whether the workers form a union before or after labor shedding occurs and whether the union

TABLE 1

Comparison of the Size Distribution of Russian and U.S. Manufacturing Firms (size class by employment)

Country	Statistic	1–49	50–99	100–249	Small 1–249	Medium 250–999	Large 1000–9999	Ex-Large 10000 or more	Total
Russia	Number of firms	2,130	2,476	4,459	9,065	5,662	2,386	83	17,196
	As a percent of total number of firms in manufacturing	12.4	14.4	25.9	52.7	32.9	13.9	0.5	100.0
U.S.	Number of firms	269,516	18,661	11,489	299,666	5,530	1,657	267	307,120
	As a percent of total number of firms in manufacturing	87.8	6.1	3.7	97.6	1.8	0.5	0.1	100.0
Russia	Number of workers	57,669	180,815	736,237	974,721	2,874,640	5,911,370	1,758,320	11,519,051
	As a percent of total number of workers in manufacturing firms	0.5	1.6	6.4	8.5	25.0	51.3	15.3	100.0
U.S.	Number of workers	2,738,564	1,289,853	1,749,175	5,777,592	2,519,572	4,518,667	8,632,159	21,447,990
	As a percent of total number of workers in manufacturing firms	12.8	6.0	8.2	26.9	11.7	21.1	40.2	100.0

Source: U.S. data from U.S. Census, 1987 Enterprise Statistics (company data); Russian data from PlanEcon, 1989 Soviet Census of Industry (enterprise data). The Russian data do not include enerprises in the Military Industrial Complex. As the vast majority of these enterprises are medium and large, their absence does not change the analysis. This table relates statistics only on the manufacturing industries from the Russian industry data.

TABLE 2

Characteristics of Firms in Russian Cities by Firm and Industry Concentration

Attribute	Statistic	Value of Statistic for Cities with the Following Number of Firms: 1	2	3	4	5–10	11–20	21–50	51–100	101–200	>200	Total
Number of Total Cities	Number	2097	576	356	282	693	228	92	33	15	2	4374
Percent of Total Cities	Frequency	47.9	13.2	8.1	6.4	15.8	5.2	2.1	0.8	0.3	0	
	Cumulative	47.9	61.1	69.3	75.7	91.5	96.8	98.9	99.6	100	100	
Number of Total Firms	Number	2097	1152	1068	1128	4660	3246	2760	2334	1832	1114	21391
Percent of Total Firms	Frequency	9.8	5.4	5	5.3	21.8	15.2	12.9	10.9	8.6	5.2	
	Cumulative	9.8	15.2	20.2	25.5	47.2	62.4	75.3	86.2	94.8	100	
Employment by Firms (number)	Mean	335.8	319.2	286.7	274.3	361.2	659.3	1030.8	940	1108.8	1051.2	
	Median	179	90	64	62	76	122	146	128	213	645	
Percent of Total Employment	Frequency	5.1	2.7	2.2	2.2	12.2	15.6	20.7	16.0	14.8	8.5	
	Cumulative	5.1	7.8	10.0	12.2	24.4	40.0	60.7	76.7	91.5	100.0	

Attribute	Statistic	Value of Statistic for Cities with the Following Number of Industries: 1	2	3	4	5–10	11–20	21–50	51–100	101–200	>200	Total
Number of Total Cities	Number	2125	573	358	281	690	228	81	36	1	1	4374
Percent of Total Cities	Frequency	48.6	13	8.2	6.4	15.8	5.2	1.9	0.8	0	0	
	Cumulative	48.6	61.7	69.9	76.3	92.1	97.3	99.1	100	100	100	
Number of Total Firms	Number	2155	1169	1105	1151	4791	3489	2947	3470	346	768	21391
Percent of Total Firms	Frequency	10.1	5.5	5	5.2	22.4	16.3	13.8	16.2	1.6	3.6	
	Cumulative	10.1	15.5	20.7	26.1	48.5	64.8	78.6	94.8	96.4	100	
Employment by Firms (number)	Mean	336.7	338.4	263.7	276	370	693.6	1017.9	1055.6	1115.9	1022.1	
	Median	182	85	62	61	78	123	123	178	1047	242	
Percent of Total Employment	Frequency	5.3	2.9	2.1	2.3	12.9	17.6	21.8	26.6	2.8	5.7	
	Cumulative	5.3	8.2	10.3	12.6	25.5	43.1	64.9	91.5	94.3	100.0	

Source: *PlanEcon*, 1989 Soviet Census of Industry (civilian)

represents all workers in the community or is limited to the workers in an enterprise. Even without a union or collective, workers may be able to respond to the monopsony power by exercising control afforded them through share ownership as a result of privatization.

The union and worker-ownership option raise two related concerns. First, unions or worker-ownership may slow the restructuring process if short-term concessions are granted at the expense of necessary investments for profitability in the long run. Second, a high priority to job security could deter improvements of labor mobility. Encouraging labor immobility could adversely affect long-term profitability.

Regional Labor Markets

Table 3 illustrates the Russian employment situation by industrial branches and by region. Likely trouble spots are indicated in the table by boxes in which both numbers are high, meaning that not only is the branch very important to the region, but also that the region is very important to the branch. See for example the lumber branch in the North Region: lumber accounts for 26.1% of industrial employment in the North, and this region accounts for 19.2% of total employment in lumber industries. Table 3, which excludes MIC industries, suggests that branches are evenly distributed across regions, thus a branch-specific negative shock is less likely to fall disproportionately on one region. This is good news for regional labor markets, especially if intra-industry adjustment causes labor to move inter-industry. Such labor mobility depends on the skill complementarities of jobs and occupations between industries: if industry-specific skills dominate, inter-industry mobility will require retraining.

Table 4 identifies the variation across regions of industrial concentration. In the North Region, for example, regional monopolies—one enterprise in that industry in that region—characterize 38.2% of all industries, and account for 4.7% of civilian industrial enterprises, employing 19.6% of civilian industrial workforce. Industries with four or fewer enterprises account for 68.4% of all industries, 14.2% of civilian industrial enterprises, and 36.9% of civilian industrial employment. In the Central Region, on the other hand, regional monopolies account for only 1.7% of civilian industrial employment.

Regional concentration translates into market power. As the only supplier in the region, monopolists survive during transition, insulating their workers against job loss. If regional concentration diminishes and firms fail, workers must move out of their region, move to another industry, or face permanent unemployment.

TABLE 3

Concentration of Employment in Branches Across Regions for Enterprises in Russia (row%/column%)

	Region												
Branch	Central	Chernozem	Eastern Siberia	Far East	Kaliningrad	North Caucasus	North	Northwest	Urals	Volga	Volgo-Vyatka	Western Siberia	Share of Total E
Agriculture*	10.9/0.8	3.3/1.1	6.9/1.9	18.8/7.1	8.7/23.7	4.5/0.9	17.0/5.6	2.6/0.8	10.2/1.1	5.7/0.8	5.8/1.5	5.3/0.9	1.6
Apparel	29.5/4.7	4.2/3.2	3.9/2.5	3.6/3.1	0.5/2.9	13.7/5.9	2.4/1.8	6.8/4.9	10.7/2.7	10.3/3.5	7.6/4.4	6.8/2.7	3.8
Chemicals	21.6/4.5	5.9/5.8	5.5/4.5	0.9/1.0	0.0/0.2	7.7/4.3	1.4/1.4	4.6/4.3	13.0/4.3	19.5/8.5	9.4/7.1	10.5/5.5	4.9
Construction*	16.8/0.1	4.2/0.1	3.8/0.1	4.1/0.1	0.6/0.1	3.0/0.0	14.3/0.4	6.0/0.1	8.2/0.1	4.1/0.0	3.5/0.1	31.3/0.4	0.1
Electronics	24.1/3.3	9.5/6.1	4.1/2.2	1.2/0.9	1.0/5.4	6.5/2.4	0.1/0.0	8.6/5.3	13.3/2.9	9.3/2.7	11.6/5.8	10.6/3.7	3.2
Fabricated Metal	21.6/2.6	7.2/4.0	3.9/1.9	3.2/2.0	0.0/0.0	10.1/3.2	0.9/0.5	12.4/6.6	15.4/2.9	9.2/2.3	9.4/4.0	6.8/2.0	2.8
Food	17.3/7.1	8.8/16.9	4.7/7.6	8.7/19.3	0.8/12.8	14.5/15.9	3.8/7.4	4.6/8.4	10.5/6.7	11.3/9.7	5.3/7.9	9.6/9.8	9.6
Furniture	25.1/1.8	3.6/1.2	5.1/1.4	3.7/1.4	0.8/2.1	17.6/3.4	3.3/1.1	8.1/2.6	8.4/0.9	9.0/1.4	6.6/1.7	8.8/1.6	1.7
Ind M&E	27.3/15.8	6.7/18.2	2.8/6.4	1.6/4.9	0.4/8.2	10.5/16.3	2.1/5.8	5.9/15.3	15.5/14.1	13.4/16.3	5.4/11.3	8.4/12.2	13.6
Instruments	43.0/3.7	1.8/0.7	1.7/0.6	0.5/0.2	0.6/1.9	8.8/2.0	0.1/0.0	8.5/3.3	8.9/1.2	14.3/2.6	6.2/1.9	5.7/1.2	2.0
Leather	25.6/1.8	5.6/1.9	2.6/0.8	2.3/0.9	0.4/1.2	13.3/2.6	1.0/0.3	9.3/3.0	13.8/1.6	11.6/1.8	8.4/2.2	6.0/1.1	1.7
Lumber	11.7/3.4	0.9/1.3	16.7/19.1	8.1/12.6	0.3/3.7	2.6/2.0	19.2/26.1	4.5/5.9	14.6/6.6	4.4/2.7	7.7/8.0	9.2/6.6	6.8
Mining*	6.8/2.3	3.4/5.4	9.5/12.8	7.6/14.1	0.2/3.0	11.4/10.5	10.6/17.1	2.2/3.4	18.3/9.9	3.7/2.6	0.8/1.0	25.6/22.1	8.0
Miscellaneous	37.1/2.1	2.2/0.6	2.1/0.5	1.0/0.3	0.0/0.0	10.3/1.5	4.1/1.1	10.0/2.5	11.4/1.0	4.5/0.5	14.2/2.8	3.1/0.4	1.3

continued

TABLE 3 (*continued*)

Branch	Region												
	Central	Chernozem	Eastern Siberia	Far East	Kaliningrad	North Caucasus	North	Northwest	Urals	Volga	Volgo-Vyatka	Western Siberia	Share of Total E
Paper	14.1/0.9	0.7/0.2	11.4/2.7	6.9/2.3	4.6/10.9	1.8/0.3	25.0/7.2	12.5/3.4	11.8/1.1	4.4/0.6	6.2/1.4	0.6/0.1	1.4
Petroleum	14.2/0.6	0.1/0.0	14.5/2.4	1.8/0.4	0.0/0.0	8.3/0.9	0.8/0.1	3.2/0.6	28.4/1.9	14.8/1.3	5.1/0.8	8.8/0.9	1.0
Primary Metal	15.0/3.9	6.8/8.3	4.3/4.5	1.5/2.1	0.0/0.4	3.1/2.2	5.8/7.1	1.5/1.7	43.3/17.7	5.1/2.8	4.3/4.1	9.4/6.2	6.1
Printing	41.3/1.8	3.3/0.7	3.1/0.5	3.2/0.8	0.5/0.9	6.7/0.8	2.7/0.6	9.8/1.9	10.9/0.8	8.6/0.8	3.6/0.6	6.3/0.7	1.0
Rubber	29.0/2.5	8.1/3.2	2.6/0.9	0.5/0.2	0.0/0.0	5.9/1.3	0.2/0.1	8.8/3.4	8.2/1.1	20.0/3.6	5.9/1.8	10.9/2.3	2.0
Services*	25.6/3.1	4.3/2.4	6.8/3.3	5.0/3.3	0.4/1.8	10.5/3.4	2.1/1.2	5.3/2.9	15.9/3.0	10.1/2.6	4.6/2.0	9.4/2.8	2.8
Stone C&G	25.5/8.1	5.7/8.5	6.0/7.6	4.8/8.3	0.3/4.0	9.1/7.8	3.3/4.9	5.7/8.1	14.5/7.3	11.6/7.8	4.6/5.3	8.9/7.2	7.5
Textile	55.2/14.6	3.2/3.9	4.0/4.2	0.7/0.1	0.3/3.2	7.3/5.2	1.3/1.6	5.3/6.3	6.5/2.7	7.8/4.3	4.1/4.0	4.2/2.8	6.2
Tobacco	23.7/0.1	18.5/0.4	2.2/0.0	0.0/0.0	0.0/0.0	18.2/0.2	0.0/0.0	13.5/0.3	8.1/0.1	7.8/0.1	0.2/0.0	7.7/0.1	0.1
Transport Equip.	25.5/7.9	1.9/2.7	3.6/4.4	3.7/6.1	0.9/11.3	4.8/4.0	2.2/3.2	1.7/2.4	10.4/5.0	27.1/17.6	15.7/17.5	2.6/2.0	7.2
Transportation*	15.2/2.3	4.3/3.1	11.9/7.2	9.1/7.5	0.4/2.2	6.7/2.8	7.4/5.4	3.5/2.4	14.6/3.5	10.2/3.3	5.1/2.8	11.7/4.5	3.6
Others*	38.1/0.0	0.0/0.0	0.6/0.0	0.0/0.0	0.0/0.0	30.2/0.0	0.0/0.0	0.0/0.0	8.8/0.0	13.8/0.0	0.0/0.0	8.5/0.0	0.0
Share of Total E	23.4	5.0	5.9	4.3	0.6	8.7	5.0	5.2	14.9	11.2	6.5	9.3	100.0

Source: *PlanEcon*, 1989 Soviet Census of Industry (civilian)
*Non-manufacturing branches

TABLE 4

Measures of Industrial Concentration Across Regions in Russia

Region	Statistic	Firm-Industries* 1	Firm-Industries* <=4	Region	Statistic	Firm-Industries* 1	Firm-Industries* <=4
Central	% of Industries	19.0	48.4	North	% of Industries	38.2	68.4
	% of Firms	1.4	7.5		% of Firms	4.7	14.2
	% of Employment	1.7	16.9		% of Employment	19.6	36.9
Chernozem	% of Industries	38.8	71.3	Northwest	% of Industries	37.9	77.2
	% of Firms	5.9	19.1		% of Firms	8.5	30.9
	% of Employment	15.5	49.0		% of Employment	17.4	52.0
E. Siberia	% of Industries	40.1	73.1	Urals	% of Industries	27.1	61.0
	% of Firms	4.6	15.1		% of Firms	3.0	13.2
	% of Employment	10.7	36.7		% of Employment	8.2	29.5
Far East	% of Industries	42.1	70.1	Volga	% of Industries	27.6	63.6
	% of Firms	5.5	15.0		% of Firms	3.0	14.1
	% of Employment	12.4	24.3		% of Employment	7.3	41.1
Kaliningrad	% of Industries	62.1	84.8	V-Vyatka	% of Industries	38.6	71.1
	% of Firms	27.0	52.6		% of Firms	5.3	16.6
	% of Employment	26.3	70.5		% of Employment	15.1	52.5
N. Caucasus	% of Industries	33.1	65.7	W. Siberia	% of Industries	32.2	65.2
	% of Firms	3.9	14.1		% of Firms	3.7	13.9
	% of Employment	8.9	25.3		% of Employment	6.5	29.5

Source: *PlanEcon,* 1989 Soviet Census of Industry (civilian)

*Column lists the value of the statistic for industries with the given number of firms in that industry in that region. Industries are measured at the 4-digit SIC level.

Employment in Small and Large Firms

Conventional wisdom suggests that transition will increase the share of industrial employment in small firms. Small firms are likely privately owned new entrants, while large firms are likely to be recently privatized (employee-owned) or state-owned.

In market economies, large firms are typically associated with greater job security than small firms (Brown, Hamilton and Medoff 1990). Small firms have higher mortality rates and account for more layoffs. In the Russian transition economy, as the structure of industry adjusts, there will be a net job gain in small firms despite high turnover rates of new private firms. Also, as the large privatized enterprises restructure, they will account for a large share of layoffs.

Large U.S. firms compensate their employees better than small firms: these firms pay a 10–15% wage premium and provide workers much more generous benefits packages. In Russia, firm size does not explain differentials in wages or benefits (Commander 1993, Standing 1992, Commander and Jackman 1993). Firm ownership may be a significant explanatory variable. Privatized firms are shedding housing and other services which they provided as a state-owned enterprise. Currently, there is no clear signal regarding the relative provision of benefits between small and large firms in Russia, nor is there any clear signal regarding the quality of working conditions across firm size or firm ownership.

From the workers' perspective, small private firms might be viewed as risky because of their potentially higher exit rate. If workers perceive differences in wages and the quality of working conditions as insignificant, they will be reluctant to make the moves necessary for industry adjustment. The question is whether workers perceive these differences.[2]

4. Conclusion

This paper suggests that several features of the Soviet economy continue to contribute to the immobility of workers in the Russian labor market. Privatization will not immediately alter enterprises' monopsonist position in the relevant labor market. Movement of labor between industries rather than just between firms within industries will be required for the transition to a market economy to succeed. Once the transition is complete, a larger share of industrial workers will be employed in small firms. More research is needed on the nature of skill and job complementarities within and between industries and how this will impact restructuring and adjustment.

Notes

1. Rose concludes, ". . . about four-fifths of East Europeans are unwilling to move to another city or country in search of a job. To move cities or change countries means abandoning the social network that makes it possible to sustain a portfolio of economies critical in getting by."

2. Jan Svejnar pointed out that joint ventures with Western companies, which are likely to be small firms, are probably perceived as the best paying and most secure employment. This is true, but I would argue that workers are very aware of joint venture status and probably consider these firms in a separate category.

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