ECONOMIC GROWTH CENTER

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LABOR MARKET DYNAMICS IN RUSSIA

Mark C. Foley
Yale University

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Abstract

Following the dissolution of the Soviet Union in December 1991, Russia experienced a series of economic shocks, resulting in large decreases in output but limited change in employment. Using information contained in a nationally representative longitudinal survey of Russian citizens, this research analyzes the labor market behavior of individuals from 1992 to 1996 during the transition to a market economy. Under Markovian assumptions, the pattern of transitions between labor market states is identified. Results indicate that the state sector has declined, but that the emerging private sector has played a limited role in alleviating growing unemployment. The probability of losing a job increased 75 percent from 1992 to 1996 while the re-employment probability declined by 24 percent, leading to an increase in long-term unemployment. Multinomial logit estimates demonstrate that workers with a personal ownership stake in their firm, the prevalence of which has more than tripled since 1992, are significantly less likely to lose their job or change to a new one. Men are more likely to make a transition to non-state employment, while women are more apt not only to move into the state sector, but also to remain in a state sector job. The relative instability of the private sector and self-employment, which are predominated by men and younger persons, is evident from higher flows into unemployment from these sectors. In contrast to the state sector, hiring in the private sector is primarily from the pool of *employed* individuals. The growing wage arrears crisis has not influenced labor market transitions, but the incidence of forced leaves is strongly and positively associated with dropping out of the labor force and changing jobs. Education has become a factor in exiting unemployment to a job. While there was no distinction by level of education in 1992-93, by 1995-96 individuals with higher, special secondary, or ordinary secondary education are more likely to find employment than those with primary education or less. University or graduate degrees carry the greatest weight, increasing the re-employment probability by 27.5 percentage points. Higher and secondary education provided protection against job loss initially, but by 1996 only higher education provides a distinct advantage in maintaining employment. This result is suggestive of a divergence between education and skills acquired in the Soviet era and those demanded by the jobs of an emerging market economy.

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I. Introduction

Prior to the dissolution of the Union of Soviet Socialist Republics (USSR) in December 1991, the population of Russia enjoyed virtual job security and the official rate of unemployment was zero.[1] The subsequent economic transformations have led to an increase in the number of unemployed as well as under-employed individuals. Moreover, with the emergence of a formal private sector, there exist new opportunities for non-state employment. This paper focuses on transitions among the various labor market states in Russia over the period 1992 to 1996.

Unemployment is a complicated phenomenon and numerous statistics have been employed to analyze its determinants and dynamics. The unemployment rate measures the proportion of the workforce which, although not currently employed, is actively seeking employment. While such a ratio is a key indicator of the average severity of the problem for an entire population, it masks the highly dynamic nature of the labor market by failing to capture individuals who drop out of the labor force, those who become unemployed via new entry or job loss, and even those who make a transition from one job to another, with perhaps an intervening spell of unemployment. In order to properly design policies to alleviate the growing problem of unemployment in transition economies, it is important to know the unemployment rate but it is more useful to understand how the risk of becoming unemployed and the patterns of job mobility vary with demographic characteristics, educational

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[1] The government of the Soviet Union claimed to have eradicated unemployment in the 1930's. Evidence from the Soviet Interview Project (see Millar (1987) for details) estimates the actual average unemployment rate in the USSR from 1974-1979 at 1.2 percent for spells of one month or longer, with an average duration of approximately 4.8 months (Gregory and Collier, 1988). Granick (1987) presented a range for the Soviet unemployment rate in the late 1970s covering all unemployment spells of 1.5 to 3.0 percent.

attainment, and economic conditions.

In the Russian Federation, as in other centrally planned economies of central and eastern Europe, employment, at least until the late 1980s, was largely centralized. Labor force participation was high for both sexes and the structure of employment was skewed toward unskilled and skilled manual labor, as a result of primarily extensive economic growth and the priorities of Soviet central planners which emphasized certain branches of the economy. In most transition economies, since 1990 unemployment has emerged rapidly, and remained high with long spells of unemployment. Two notable exceptions to this pattern are the Czech Republic and Russia. A striking characteristic of the path of employment in the Russian labor market is the relatively small net change to employment despite large negative shocks to output and low levels of capacity utilization. A common response by enterprises has been to hoard labor. Where shocks to output have been large, enterprises have tended to place workers on involuntary leave or short-time work. Tremendous subsidies of enterprise wage bills and the lack of a legal bankruptcy process have contributed to this behavior. Thus, although official unemployment is not high since many workers are still nominally associated with a firm, the size of labor market flows is likely to increase with time as outright, involuntary separations increase, individuals switch to better jobs within the state or private sector, and many opt to drop out of the labor force. Using aggregate official data and survey information on 300 "unemployed" individuals, Commander and Yemtsov (1994) have concluded that the overall picture of labor market activity in the Russian transition so far has been one of relatively small flows to unemployment, with large job-to-job flows, and high outflow rates after low unemployment durations.

The Russian Longitudinal Monitoring Survey provides a unique opportunity first to confirm these post-Soviet trends using a nationally representative household dataset but, more importantly, to identify the general characteristics of the individuals making these labor market transitions. In this way, this research will inform the design and implementation of labor market policies and programs in Russia. Specific policy-related questions deserve close focus. Namely, what types of education are well-suited to the new labor market? Is a particular age, gender, or occupational group disproportionately affected by the changing structure of employment and therefore needs specific attention via labor market policies which, for example, promote full separation from state enterprises or provide entrepreneurial training. Answers to these questions can create a basis for formulating effective labor market policies and programs in conjunction with an efficient social safety net.

The continuing economic reforms in Russia are expected to significantly alter the wage and employment structures. There will undoubtedly be changes in the level of unemployment and overall job mobility. An economy in transition will be characterized by the displacement of workers in the socialized, state sector and the absorption of some of these individuals into the expanding private sector. If the new employment structure affects workers' productivity, there will be an adjustment of wages as it changes. However, inflexibility of the labor force stemming from an inability to change jobs, industries, or regions, coupled with an increasing mismatch between labor demand and supply in Russia, may cause structural unemployment to emerge forcefully. In that event, specific labor market policies would be necessary to mitigate rises in unemployment and to facilitate labor market flexibility. It is likely in Russia that the frequency of open unemployment will increase as firms begin absolute separations in the face of reduced incentives, in the form of more stringent credits, to maintain a nominal attachment

with workers.

II. Data

The data employed to analyze labor market transitions are taken from the Russian Longitudinal Monitoring Survey (RLMS), the first nationally representative sample of the Russian Federation. The RLMS is a household-based survey designed to systematically measure the effects of economic reforms on the welfare of households and individuals in Russia. The project is divided into two phases, with four rounds of data collected in phase one, and three rounds in phase two. Each phase is a separate panel dataset. This research uses data from both phases in order to assess changes over time. Data from phase one are Round 1 (June-August 1992) and Round 3 (July-September 1993), and from phase two Round 6 (November-December 1995) and Round 7 (November-December 1996).[2] The sample in phase two is smaller, but the number of primary sampling units was doubled to enhance representativeness. Two balanced panel datasets are constructed, each identifying labor market transitions over a year long period, 1992-93 and 1995-96. Results should be interpreted considering that the resulting database is not completely random due to attrition between the interview dates and migration. Of the 12,779 individuals aged 18 or older who answered the adult individual-level questionnaire in round 1 and the 11,785 in round 3, 9,684 had valid responses at both dates and constitute the first panel. Rounds 6 and 7 contained 7,904 and 7,813 persons aged 18 or older respectively; of these, 6,422 individuals had valid responses at both dates and form the second panel.[3] A comparison of the demographics of individuals lost due to non-response revealed that the average age, the distribution of

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[2] Each dataset is denoted by the corresponding year in the tables and text.

[3] The RLMS is a "survey of addresses" in that families are not followed to a new city should they move. Rather the family entering their apartment/home is included in the survey.

educational levels, and the gender breakdown were similar to those of persons remaining in the panels.

An individual's labor market state is defined by answers to a question asking the respondent to categorize his or her "main occupation" at the time of the interview. Tables 1 and 2 contain the total number of individuals in each classification. Employment in the state sector declined from 1992 to 1993 while it rose in the private sector and among work collectives, which can be generally thought of as privatized enterprises. This is expected for an economy in transition and particularly one with such a good record of mass privatization. Self-employment consists of individuals whose <u>main</u> occupation was individual economic activity or entrepreneurial activity. Examples of individual economic activity are a private cab driver, private tailor, or marketing the produce grown on a home plot. Entrepreneurs are defined as owners or co-owners of a business, company, cooperative, store, or farm which they are continuously involved in managing. As expected, the prevalence of such activity has increased with time, by over 50% during this period. Since the number of entrepreneurs remained about the same, individual economic activity accounts for the bulk of this increase. Unemployment has gone up as well, excluding the hidden unemployed on forced leave or short-time work. Another interesting trend is the 17 percent fall in persons who spend the bulk of their time raising children. The transition to a market economy could enable women, particularly mothers, to exit the labor force and specialize in home production as a result of less social pressure to work, the absence of antiparasitism laws, and the divestiture of child care from state employment. However, two factors could be at work explaining this net outflow. Social pressures and individual attitudes toward work do not change quickly, but more importantly, the austere economic conditions for most of the population are likely

driving homemakers to seek additional income for the family. Lastly, the category

"unemployed but not searching" consists of persons who are temporarily unemployed but do

not want to work. Interpreting this as a proxy for discouraged workers, it is noteworthy that

the number more than doubled from 1992 to 1993.

Table 1	**Distribution of Labor Market Status**		
	1992 to 1993		
Labor Market State	N in 1992	N in 1993	Percent Change
Employed in enterprise owned by:[1]	5,816	5,713	-1.8
State[2]	4,870	4,085	-16.1
Private individuals	162	255	+57.4
Work Collective	624	1,243	+99.2
Other[3]	160	130	-18.8
Self-employed[4]	97	142	+46.4
Unemployed	331	341	+3.0
Out of the Labor Force:	3,440	3,488	+1.4
Retired	2,531	2,642	+4.4
Student	198	155	-21.7
Disabled	227	234	+3.1
Raising children	442	366	-17.2
Unemployed but not searching	42	91	+116.7
Total	9,684	9,684	

[1] Less than one percent of respondents reported more than one type of establishment ownership, although multiple answers were allowed. The majority of these included state ownership and were thus classified as state-owned to achieve mutually exclusive categories.
[2] Employment in a state-owned enterprise includes ownership by a public association.
[3] The nature of other-owned organizations is unknown.
[4] Self-employment consists of individuals whose main occupation was individual economic activity or entrepreneur

Table 2 summarizes the panel constructed for the period 1995 to 1996. The enterprise

ownership variables are not mutually exclusive signifying the increase in joint ownership in

the Russian economy. Foreign ownership is still limited in 1996, suffering from political

uncertainty, insufficient legal guarantees, and institutional constraints.[4] The percentage of

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[4] Foreign investment, both direct and portfolio, constituted less than 4 percent of overall investment in 1995. In 1997, the government and the Russian Central Bank are scheduled to lift all remaining limitations on foreigners' activity in the treasury bond market. Currently, foreigners are restricted to 16 percent yields and account for only 10 percent of treasury bill sales. Foreign direct investment (FDI) is low compared to other transition economies,

workers who personally owned a portion of their company rose dramatically from 5.7 percent in 1992 to 21.1 percent in 1995. Unemployment continued to grow and the number of persons concentrating on raising children further declined. The prevalence of discouraged workers decreased.

Table 2	**Distribution of Labor Market Status** **1995 to 1996**		
Labor Market State	N in 1995	N in 1996	Percent Change
Employed in enterprise owned by:[1]	3,486	3,416	-2.0
State	2,503	2,448	-2.2
Foreign individuals or firms	117	113	-3.4
Russian individuals or firms (private)	885	919	+3.8
Personal owner/co-owner	758	658	-13.2
Self-employed[2]	100	100	0.0
Unemployed	440	484	+10.0
Out of the Labor Force	2,396	2,422	+1.1
Retired	1,751	1,851	+5.7
Student	145	119	-17.9
Disabled	107	111	+3.7
Raising children	332	299	-9.9
Unemployed but not searching	61	43	-27.8
Total	6,422	6,422	
[1] Establishment ownership categories are not mutually exclusive in 1995-6 since respondents were allowed to identify more than one type. The top line indicates the number of respondents. [2] Self-employment consists of individuals whose main occupation was individual economic activity or entrepreneur. This is distinguished from "personal owner/co-owner" which reflects employees who have some partial ownership of the firm at which they work.			

III. Conceptual Framework and Aggregate Transitions

In calculating transition probabilities, the analytical approach follows, among others, Clark and Summers (1979, 1982), and Bellman, Estrin, Lehmann, and Wadsworth (1992), by assuming that movements between states are governed by a Markov process. Therefore the probability of transition depends only on the state currently occupied. This seems appropriate for an economy subject to a strong, sudden structural shock which mitigates the importance of

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particularly in light of Russia's size and resources. Russia receives about the same FDI per capita as Azerbaijan

individual work histories.[5]

For initial purposes of exposition, the labor market is divided into only three states: employment (E), unemployment (U), and out of the labor force (O). This implies 9 potential transitions which can be represented by the following transition probability matrix:

$$P_i = \begin{bmatrix} EE_i & EU_i & EO_i \\ UE_i & UU_i & UO_i \\ OE_i & OU_i & OO_i \end{bmatrix}$$

where EU_i, for example, represents the probability that an individual is unemployed at time t, conditional on being employed at time t-1. The gross probability of transition from state i to state j is given by

$$P_{ij} = \text{Flow}_{ij} \ / \ \text{Stock}_i \quad i, j = \{e, u, o\}$$

where Flow_{ij} is the number of individuals in state i in 1992 who are in state j in 1993, and Stock_i is the original stock of individuals in state i in 1992.

Defining three labor market states yields the following transition probability matrix:

Table 3	**Labor Market Transition Probabilities** 1992 to 1993			
		Destination State		
i	**Origin State**	Employed	Unemployed	OLF
1	Employed	.910	.032	.058
2	Unemployed	.520	.323	.157
3	OLF	.087	.014	.899
N_{it} = number in labor market state i at time t (1=Round 1)				
N_{11} = 5,913 ; N_{21} = 331 ; N_{31} = 3,440 ; OLF = Out of the Labor Force				

and less than half that of Albania (Russian Economic Trends, 1995).
[5] It has been argued (Radaev, 1993) that the past work history of an individual, particularly a former party member who at the time of privatization was in a position to exert considerable influence over the capital under his command, is relevant to current labor market state and income. However, the RLMS does not allow identification of former party membership or previous job under the socialist regime.

The gross transition probabilities in Table 3 suggest that most individuals, about 90 percent of those either employed or not in the labor force, remained in their original state. This is slightly above 1991 annual values for East Germany of 84 and 80 percent, respectively (Bellman, Estrin, Lehmann, Wadsworth, 1992) and comparable with a 93 percent probability of remaining employed in Britain during its decline in the early eighties (Wadsworth, 1989). In contrast, unemployment does not present itself as a stagnant pool since over two-thirds of individuals leave unemployment during the year. The complementary statement is that one-third of the unemployed are long-term. This is consistent with survey evidence[6] for mid-1993 which estimated that nearly a third of respondents were in a current spell greater than eight months (Commander, McHale, and Yemtsov, 1995). Compared to the pattern observed in selected OECD countries, as Table 4 shows, the probability of re-employment within one year is relatively high in Russia, and the probability of remaining unemployed is nearly as low as that in the US.[7]

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[6] This survey was conducted by the All-Russian Center for Public Opinion Research (or VTsIOM, its Russian acronym).

[7] Poterba and Summers (1993) investigate the problem of response error using US data. Utilizing a re-interview survey, they find that over 99.1 percent of employed individuals and 99.2 percent of individuals not in the labor force were correctly classified. However, only 86 percent of unemployed persons were truly unemployed, with 3.6 percent and 10.4 percent misclassified as employed or out of the labor force, respectively. Table 3A in the appendix shows that applying the US misclassification probabilities to the transition rates of Tables 3 and 10 does not substantially alter the observed probabilities for transitions out of unemployment. However, they do find that incorporating misclassification probabilities into the likelihood function of their multinomial logit model does affect estimated coefficients, in particular strengthening the negative effect of unemployment insurance. The reported estimates in this paper do not account for misclassification probabilities since an individual's labor market status is not known with certainty at either interview, unlike Poterba and Summers (1993) in which the respondent's true status at the initial interview was known for sure from a re-interview one week later.

Table 4	**Labor Force Status of those Unemployed 12 Months Earlier**		
	Selected OECD Countries		
	(Percent)		
	Employment	Unemployment	Not in the Labor Force
Belgium	22	69	9
Denmark	49	37	14
France	29	54	17
Ireland	18	69	13
Italy (1983)	32	61	7
Netherlands	24	62	14
UK	29	51	20
US	49	26	25
Russia (1993)	52	32	16
Source: Figures refer to 1985 unless otherwise indicated. All except US are from OECD (1987), Table 1.12, based on recall information in the Labor Force Surveys. The US figure is from OECD (1987), Table 6.9, based on Current Population Survey re-interviews.			

The aggregation embodied in Table 3, however, overshadows some of the more interesting activity in the Russian labor market, namely churning within the state sector, movements between different employed states, as well as the destinations of flows out of unemployment. Therefore, the matrix of labor market transition probabilities in Table 3 is augmented to account for the distinction among employment in a state-owned enterprise, a privately-owned firm, a work collective, an otherwise-owned firm, and self-employment. Those not in the labor force include retired persons, students, disabled individuals, housewives,[8] and inactive individuals who categorized themselves as unemployed but not wanting to work.

While the term "transition probability" is applicable to off-diagonal individuals for whom a true transition was made, it can be misleading for those employed individuals on the diagonal. That is, the majority of these individuals simply remained at their present job and made no transition at all. Thus, Table 5 summarizes the probability of being in the destination

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[8] There was 1 man in round 1 whose main occupation was raising children, and 7 in round 3.

state conditional on the original state, without regard to the actual job performed within the particular sector be it state, private, or work collective. The appendix contains the gross flows which underlie the transition probabilities in Table 5.

i	Origin State	Table 5 — Labor Market Transition Probabilities: 1992 to 1993 — Disaggregating Employment — Destination State						
		Employed					Unemployed	OLF
		State Enterprise	Private Enterprise	Work Collective	Otherwise Owned	Self-employed		
1	State Enterprise	.729	.018	.147	.015	.007	.028	.055
2	Private Enterprise	.179	.451	.111	.019	.092	.092	.056
3	Work Collective	.184	.043	.635	.018	.019	.030	.071
4	Otherwise Owned	.438	.081	.256	.138	...	.038	.050
5	Self-employed	.093	.175	.093	.010	.392	.113	.124
6	Unemployed	.347	.051	.060	.012	.048	.323	.157
7	OLF	.057	.006	.013	.004	.007	.014	.899

N_{it} = number in labor market state i at time t (t=1 indicates Round 1 data) ; ... = no transition observed
N_{11} = 4,870 ; N_{21} = 162 ; N_{31} = 624 ; N_{41} = 160 ; N_{51} =97 ; N_{61} = 331 ; N_{71} = 3,440 ; N_{Total} = 9,684

There was a significant degree of mobility among labor market states in the early stages of transition. Gross flows are indeed large, for 33 percent of the labor force changes status during the period, rising to 39 percent when intra-sector transitions are accounted for (Table 8).[9] Moreover, a persistence of hiring is apparent across all sectors, including the state sector in which fully one-third of the unemployed and a significant proportion of private sector and work collective employees found jobs. However, in contrast to the state sector, hiring in the private sector and work collectives is primarily from the pool of *employed* individuals. For the private sector at least, this may represent a desire to obtain specific skills

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[9] These figures should be considered an upper bound on transitions because of the possibility of "nameplate" changes where a firm's ownership changes but the individual makes no transition and the firm's operations remain largely unchanged. Table 8A in the appendix places the lower bound on transitions at 23 percent for labor force participants. The main flow patterns are similar after accounting for possible "nameplate" changes.

and experience or discrimination against the unemployed. On the supply side, limited experience with job searching, incomplete information on employment opportunities with private firms, and perhaps passive attitudes that the state should provide one with a job may have contributed to smaller flows from unemployment to the private sector. Retraining programs for the unemployed could provide credentials as well as new skills which private sector employers desire. During the final quarter of 1995, an average of 109,000 workers were in government-sponsored retraining programs, an increase of 40 percent over a year earlier (*Russian Economic Trends*, 1995).

The experience in Russia is consistent with the limited role private employers have played in absorbing unemployment in other transition countries. Evidence from Hungary, the Czech Republic, and Slovakia suggests that most workers have made the shift from state to private employment directly, without a period of unemployment (Vecernik, 1992; Köllö, 1993). Lastly, the relatively large flow from unemployment to OLF may foreshadow growing discouragement among workers.

By not differentiating among movers and stayers *within* a sector, table 5 masks another aspect of the Russian labor market, namely churning within a given sector. If an individual remained self-employed, it is not known whether a transition was made to a new self-employed endeavor or the person simply continued with the original venture. However, for the state sector, private sector, and work collectives there is some information available to quantify the extent of churning. In order to ascertain the extent of churning in the state sector, the subsample of individuals present in that sector at both time periods is constructed. This amounts to 3,552 individuals, or 73 percent of the original stock. As Table 6 indicates, of these individuals, 10 percent changed their place of employment or occupation from the

previous interview.[10] Individuals who remained within the same sector but changed jobs are referred to as "churners". Due to the changing format of the questionnaires, broad industry codes are not available for 1992. However, Table 6 also breaks down the destination of churners as well as those *entering* the state sector.

Table 6	Labor Market Activity in the State Sector 1992 to 1993		
Original Stock	Flows		Final Stock
4,870	Exits 1,318 Remained 3,552 Churners 355 Entrants 533		4,085
Destination Industry	Distribution of Entrants (column percent)		Distribution of Churners (column percent)
Manufacturing	20.3		27.0
Agriculture	7.9		5.6
Construction	9.2		9.3
Transportation	6.6		9.9
Trade	9.0		4.2
Communications	1.9		2.0
Housing-utilities	5.3		7.0
Public Health	7.9		8.2
Public Education	12.4		5.9
Science	0.9		0.6
State Government	4.1		3.4
Culture	3.4		2.3
Forestry	0.9		1.4
Other	9.9		12.4
Note: Destination industry was missing for 2 entrants and 3 churners			

Manufacturing was the most common destination for both types of movers, with public education second for entrants, transportation second for churners.   Employment in the sciences is not a popular destination, likely due to diminished funding. Table 7 shows that the extent of churning within the private sector exceeds that for the state sector, albeit with a

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[10] Note that previous interview here refers to round 2. A similar question about having changed jobs was not asked in round 2.

smaller sample size, while churning among work collectives is less pronounced.

Table 7		Churning in the Private Sector and Work Collectives 1992 to 1993			
Original Stock		Flows		Final Stock	% Churning
Private Sector	162	Exits	89	255	
		Remained	73		
		Churners	10		13.7 %
		Entrants	182		
Work Collectives	624	Exits	228	1,243	
		Remained	396		
		Churners	29		7.3 %
		Entrants	847		

Table 8 largely repeats table 5 but is different in one important aspect. It allows for the possibility that employed individuals made an intra-sector transition. This alters three cells of the matrix. Over one-third of state sector employees made a transition during the period, primarily to other state sector employment or a work collective. Private sector employment appears to be the most unstable, with less than 40 percent[11] remaining at their job for more than a year and 9.2 percent becoming unemployed. Work collectives experience considerable exits as well, with many moving to the buoyant state sector.

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[11] This is a lower bound with Table 8A estimating the upper bound at 63.6 percent after accounting for potential "nameplate" changes.

i	Origin State	Employed State Enterprise Same New	Employed Private Enterprise Same New	Employed Work Collective Same New	Employed Other	Employed Self-employed	Unemployed	OLF
Table 8	**Labor Market Transition Probabilities: 1992 to 1993** **Augmented for Churning**							
		Destination State						
		Employed					Unemployed	OLF
1	State Enterprise	.729 **.656 .073**	.018	.147	.015	.007	.028	.055
2	Private Enterprise	.179	.451 **.389 .062**	.111	.019	.092	.092	.056
3	Work Collective	.184	.043	.635 **.588 .046**	.018	.019	.030	.071
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What are the reasons for these job separations? For individuals who were employed at their first interview date but had experienced a job separation[12], the reason for that separation is known. It is also known for persons not currently working.   As Table 9 shows, quits have dominated separations, consistent with aggregate data.

Table 9	**Job Separations by Type** (Column Percentage)		
		1992	1993
Reason for Separation	Employed*	Not Employed[†]	Not Employed[‡]
Health reasons	----	36.5	33.7
Due to staff reductions	28.3	10.9	10.1
Due to shutdown or reorganization	8.3	2.7	3.3
Quit for personal reasons	52.0	17.1	19.5
Other	11.4	32.8	33.4

Note: Retirements excluded.
* N = 300 individuals who were employed at their first interview date but had a spell of unemployment of unknown length since 1/1/92. This is approximately 5 percent of employed individuals. [†] N = 1,192 non-employed individuals. [‡] N = 1,199 non-employed individuals.

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[12] The breakdown of these separations between those individuals experiencing an unemployment spell and those making a direct job-to-job transition is not known. In other words, the duration of the spell is unknown.

For the first two years of economic transition in Russia, the picture that emerges is a labor market with significant churning between employed states and non-negligible intra-sector movement, with the majority of job transitions being voluntary. Aggregate data yield a similar conclusion (Commander, McHale, and Yemtsov, 1995), but do not allow for breakdown of these patterns by individual characteristics. Table 10 uses the most recent data available to document the transition probabilities among the three basic labor market states for the period 1995 to 1996. Two features deserve note. The probability of losing a job increased 75 percent over 1992, while the probability of an unemployed person finding a job declined by 24 percent. Since the rate of exiting the labor force remained unchanged, long-term unemployment rose sharply at the same time the unemployment rate was also increasing.

Table 10	**Labor Market Transition Probabilities 1995 to 1996**		
		Destination State		
i	**Origin State**	Employed	Unemployed	OLF
1	Employed	.881	.056	.062
2	Unemployed	.395	.459	.145
3	OLF	.076	.034	.891
N_{it} = number in labor market state i at time t (6=Round 6) N_{16} = 3,586 ; N_{26} = 440 ; N_{36} = 2,396 ; OLF = Out of the Labor Force				

IV. Individual Characteristics and Labor Market Dynamics

This section first looks at data for the labor force as whole and then focuses on transitions disaggregated by gender, by age, and by education (Tables 11 through 16). The overall values for each cell are included in italics for ease of reference. Aggregate employment fell by 6.9 percent to 67.1 million between 1992 and 1995 during which time the sectoral distribution has changed markedly.[13] Employment in the largest single sector,

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[13] These figures are from Goskomstat and the Center for Economic Analysis and Forecasting.

industry, declined almost 20 percent, from 21.3 to 17.2 million persons. Transport and communications (4.4 million in 1995) and the sciences (1.7 million) also realized declines over 20 percent. Employment in trades and catering rose 16.1 percent, second to credit, finance, and insurance where employment rose 40 percent, but remained at a very low level of 0.7 million. These aggregate figures refer primarily to the state and former state sectors, thereby missing much of the new private sector which the RLMS shows has been increasing.

With respect to gender, although the levels are generally close, a few patterns do emerge. Beginning with Table 11, which identifies movements from 1992 to 1993, women are more likely to move out of the labor force from every state except private employment. This may be due in part to these women not being the primary earner for their families. Men are almost twice as likely to experience job loss from a private enterprise or self-employment. In terms of finding employment, the overall rates are comparable for women and men, but with underlying systematic variation by sector. That is, women are slightly more likely to find employment in the state sector while men have a much greater probability of finding work in a private enterprise or through self-employment. Table 12 shows that the two major changes from 1992 to 1995, the 75 percent increase in the probability of losing employment and the 24 percent decline in the probability of exiting unemployment to a job, affect both genders and the relative magnitudes remain constant. Men are still more likely to become unemployed with a slightly greater re-employment probability, while women remain nearly twice as likely to drop out of the labor force. Consequently, the unemployment pool has become more evenly balanced by gender over time. The likelihood of finding employment is 5 times greater for unemployed persons than for those not in the labor force, initial evidence

that these are indeed distinct labor market states.[14] Private sector employment appears to be male-oriented since men are more likely to obtain a private sector job, but they are also more likely to leave such employment. Similarly, among working individuals, it is more common for men to make the transition into self-employment. In general, men are more likely to make a transition to non-state employment while women are more apt not only to move into the state sector but also to remain in a state sector job. Thus, it appears that men are more willing to move away from traditional employment and take on the more novel, market-oriented jobs.

The distinctions among ownership become more complicated as transition progresses due to joint ventures and the government selling part of its interest in state enterprises, for example. In phase two, the RLMS contained separated questions on enterprise ownership, thereby allowing multiple answers. Investigation of the effects of ownership on labor market activity from 1995 to 1996 is deferred to the multivariate analysis.

With respect to age (Tables 13 and 14), clearly the highest outflow rates to OLF are for older, retiring workers. More specifically, the relatively large flow from unemployment to OLF reveals that older workers are more likely to become discouraged. For unemployed individuals, those finding jobs in the state sector are older on average, and those who become self-employed are younger. This may signify greater risk aversion among older individuals who are more likely to have dependents or for other reasons opt for the less volatile state sector. Among job-to-job transitioners, younger workers appear more likely to shift to the private sector and self-employment. This may be indicative of a wider acceptance of reforms among the younger population, but more likely reveals a preference by private firms for

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[14] Flinn and Heckman (1983) concluded that unemployment and out of the labor force were distinct states among youths in the United States.

younger workers.   Among employees of state enterprises and private firms as well as the

self-employed, there is a monotonic relationship between age and risk of job loss. Younger

workers are *more* likely to lose their job. Since most separations are voluntary, this does not

necessarily imply that they are less desired by employers. It could indicate a greater

willingness of younger workers to make a transition.

In order to disaggregate the broad transition probabilities according to level of

education, it was necessary to combine various levels of educational attainment. Briefly, the

four educational categories correspond to having a university or graduate degree, specialized

secondary education (technical, medical, pedagogical, musical, etc.), ordinary secondary

education (vocational or factory school), and primary education or less. There is an inverse

association between the risk of losing employment and educational attainment. Among state

sector workers, higher educated individuals are less likely to become unemployed, although

the probabilities are low compared to the job loss rates from private firms or self-employment.

Private enterprises also value education since higher educated individuals are less likely to

become unemployed and more likely to remain in the private sector. A similar pattern holds

for the state sector where hiring is stronger among those with more years of education. Self-

employment seems better suited to those with a higher education as they are much less likely

to become unemployed and more likely to remain self-employed. This is consistent with the

inverse relationship between education and unemployment found in the United States,

however, it represents a distinct shift from the Soviet period.   There was a *positive*

relationship between education and unemployment in the Soviet Union, as higher educated

workers had a greater incidence of unemployment and longer duration spells (Gregory and

Collier, 1988).[15] Lastly, across all sectors, the less educated are more likely to leave the labor

force, whether from employment or unemployment. This may be due to a lower opportunity

cost in making such a transition. In general, these patterns have continued into 1996.

V. Multivariate Analysis of Transitions

The preceding tabulations could possibly be misleading in the following sense.

Workers in different age groups, for example, might differ in characteristics other than their

age, and these other differences could account for a univariate association between labor

market transition rates and age. Therefore, multivariate models of the determinants of job

exits as well as exits from unemployment are estimated.

Let an individual i face $j = \{1, 2, ..., J\}$ choices. For the ith individual facing J

choices, let the utility of the choice j be : $U_{ij} = \boldsymbol{\beta'} \mathbf{x}_{ij} + \varepsilon_{ij}$. Given that choice j is made, the

level of utility associated with the jth choice is the greatest, $U_{ij} = \max (U_{i1}, U_{i2}, ... , U_{iJ})$. A

model of multiple choice is driven by the probability that choice j is indeed made. Namely,

that $\Pr[U_{ij} > U_{ik}]$, $k \neq j$. Assumptions on the distribution of the error term complete the model

and are typically either normal or logistic. The multivariate probit case of normally

distributed errors is computationally difficult and so has not been widely used. The

alternative assumption, and the one which will be made here, is a logistic distribution of errors

which is more tractable as it involves only the computation of an exponential as opposed to an

integral.[16] This amounts to assuming that the J disturbances are independent and identically

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[15] Potential explanations offered emphasize, first, the administrative placement of higher education graduates to their first job resulting in less successful matches and consequent frictional unemployment, and secondly, over-investment in human capital creating a disequilibrium between supply and demand of university graduates (Granick, 1987).

[16] The logistically distributed errors are obtained by differencing two random variables with log Weibull distributions. The cumulative density of the difference between any two random variables with log Weibull distributions is given by the logistic function. For the binary case, suppose that the utility of option A to a person with characteristics x is $x\beta_a + \varepsilon_a$ and for option B, $x\beta_b + \varepsilon_b$, where the errors are drawn independently from a log

distributed with a Weibull distribution: $F(\varepsilon_{ij}) = \exp(-\exp(-\varepsilon_{ij}))$ (McFadden, 1973). Then, with

$Y_i \in \{1, 2, \ldots, J\}$ being a random variable indicating the choice made,

$$\text{Prob } [Y_i = j] \quad = \quad \exp(\beta_j'\mathbf{x}_i) / \Sigma_k \exp(\beta_k'\mathbf{x}_i) \qquad k, j = \{1,2,\ldots, J\}$$

The vector $\mathbf{x}_i$ includes characteristics of the individual as well as attributes of the original job.

The likelihood function is:

$$\ln L = \Sigma_i d_{ij} \ln \text{Prob}[d_{ij} = 1]$$

where $d_{ij} = 1$ if the individual is observed to be in state j and 0 otherwise. Regression

coefficients are difficult to interpret, so the marginal impacts of the explanatory variables

(evaluated at the sample mean transition probabilities) on the transition probability to state j

are reported. The marginal impact of a given explanatory variable, x_i, on the transition

probability to state j, P_j, is given by:

$$dP_j / dx_i = P_j [b_j - \Sigma_k P_k b_k]$$

where b is the appropriate element of the parameter vector $\boldsymbol{\beta}$ and $P_j \equiv \text{Prob } [Y_i = j]$. Thus the

magnitude as well as the direction of a variable's influence depends on the choice j.

Two main models are estimated below, one for employment transitions and one for

unemployment transitions. For the model of employment transitions, the vector $\mathbf{x}_i$ includes

characteristics of the individual: age, gender, marital status, number of children, level of

education, skill level, income, and indicator variables of economic conditions such as

secondary private economic activity, personal ownership in the respondent's company, wage

arrears, and involuntary unpaid leave. It also includes attributes of the original job such as

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Weibull distribution. Choice A is made if $U_A > U_B$, or equivalently, $x\beta_a + \varepsilon_a > x\beta_b + \varepsilon_b$, which implies that $(\varepsilon_b - \varepsilon_a) < x(\beta_a - \beta_b)$. The probability of this occurrence is the cumulative distribution function (cdf) of $(\varepsilon_b - \varepsilon_a)$ up to the point $x(\beta_a - \beta_b)$ and the cdf is logistically distributed. See Maddala (1983) for generalization to the multinomial case.

sector of employment, size of the enterprise, and region. In addition to demographic and human capital variables, the model of unemployment transitions incorporates the receipt of unemployment benefits, the duration of unemployment, and region which serves as a proxy for local labor market conditions. Results are presented in Tables 17 through 22.[17]

The results for the model of employment transitions are presented in tables 17 through 20. Tables 17 and 18 present estimates of the dynamics in the early stages of economic transition, from 1992 to 1993. Tables 19 and 20 characterize the labor market three years later, looking at employment transitions from 1995 to 1996. The models include the same covariates in order to facilitate comparison over time, and are referred to by origin state (E for employed, U for unemployed), number, and year; for example, model E1/93 is model 1 of transitions from employment in 1992 to new employment, unemployment, or nonparticipation in 1993. It is comparable to model E1/96. The baseline category is always the origin state, so that, for example, significant parameter estimates for job-to-job transitioners indicate significant differences between churners and stayers. Initially, a basic set of explanatory variables − age, gender, marital status, education, income, and type of ownership − is included in order to obtain estimates of these effects on the transition process unconditional on fertility, particularly for women, skill level, and region. Additional regressors are included incrementally.

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[17] The categories unemployed and out-of-the-labor-force are potentially close in nature, particularly for young persons, and so may violate the assumption of independence of irrelevant alternatives for a multinomial logit model. The likelihood ratio test statistic for the restriction that the unemployment coefficients equal the out-of-the labor-force coefficients is 220.43 for Model E1/93 (Table 15) and 168.22 for Model E1/96 (Table 17). These are distributed $\chi^2(16)$ and the critical value for a 5 percent significance level is 26.3.   The null hypothesis of equality between the parameters of the two nonemployment states is rejected, suggesting that unemployment and out-of-the-labor force are not spurious distinctions for this sample.

Model E1/93 (Table 17) shows that in 1993 the workers most at risk for loss of employment are men, single persons, and those without special secondary or higher education. Employment in the private sector and self-employment appears relatively unstable compared to the state sector, still supported by heavy subsidies. Model E2/93 incorporates skill level and regional effects. An individual's skill level is categorized according his or her occupation.[18] The introduction of skill variables mitigates the strength of the education effects, however, higher and special secondary education remain significant to maintaining employment. Those in elementary occupations, the lowest skill level, are significantly more likely to lose their job. Inflows to unemployment from jobs do not vary across region in 1992-93, although individuals in urban areas are at a slightly greater risk of job loss.

Older individuals and women are more likely to exit the labor force. However, there is no significant effect for married women in 1992-93, a fact which will change by 1995-96. Children appear to generate an attachment to the labor force as each extra child increases the likelihood of staying employed by 1.1 percentage points. The effects of education and skill level on the probability of dropping out of the labor force are the same as for job loss; lower educational qualifications and skills are associated with leaving the labor force. The greater instability of private sector and self-employment is confirmed when focusing on transitions from jobs to nonparticipation. Finally, the major determinants of job-to-job movements are private sector employment, ordinary secondary education, and low skill level, each increasing the probability of switching jobs by 2.3 percentage points or more.

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[18] The International Standard Classification of Occupations (1988) categorization of skill levels from reported occupations was used. This entails four skill levels, from highest to lowest: Professionals, Technicians and Associate Professionals, Clerks/ Service workers/ Machine operators, and Elementary Occupations. Armed forces and Legislators are unclassified.

Table 19 presents the equivalent three models for employment transitions during the period 1995 to 1996. Men remain more likely to lose a job, while the differences for married persons, particularly married women's disadvantages in job loss, are no longer present. Human capital effects have become more concentrated. That is, only higher education provides a distinct advantage in maintaining employment. The magnitude of the point estimate has doubled,[19] with the marginal effect increasing to 5.0 percentage points from 1.3 in 1992. This shift is perhaps indicative of a divergence between the education and skills acquired in the Soviet era and those demanded by the jobs of an emerging market economy. The disappearance by 1996 of any association between skill level and job loss suggests that employers have made adjustments to their workforce.

The renaming of the employment sector variables in the 1992-93 results to establishment ownership in 1995-96 is intentional. It emphasizes that the employment sector variables are a *set* of dummies[20] necessitating exclusion of one (state sector), while the 1995-96 establishment ownership category is not mutually exclusive. This is due in part to different wording of the questions in the survey instruments, but also, notably, to evolving economic circumstances in Russia, namely the increase in private and personal ownership from successful privatization programs and emerging equity markets. The negative sign on government ownership in Model E3/96 indicates that state-owned enterprises are less likely to be shedding labor. This is consistent with the positive private sector EU coefficient in 1992.[21] Self-employment remains unsteady in 1995; self-employed persons are more likely than other

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[19] University/Graduate education in model E3/93 = -0.586 and -1.293 in model E3/96.

[20] Less than one percent of respondents identified more than one type of enterprise ownership in 1992, despite the ability to give more than one answer, as in 1995. The majority of these multiple answers included state ownership and so were assigned to that category exclusively. Assignment to the alternative category did not alter the results.

[21] The acronyms EU, EO, EE$_{new}$, UE, and UO represent original state and destination state respectively.

employees to become unemployed within a year. An interesting comparison, and one indicative of Russia's progress in privatization, is between the "owner/co-owner" variables in 1992 and 1995. The incidence of individuals owning part of the enterprise at which they work rose 370 percent. In 1992, when only 5.7 percent of workers owned a portion of their company, there was no significant effect on *any* outflows from employment. However, by 1996, 21.1 percent of workers were part-owners and they were significantly less likely to lose their job, leave their job for another, or drop out of the labor force.

In 1992-93 there was no significant regional variation in employment outflows to unemployment, out-of-the-labor-force, or new jobs. However, by 1995-96, the Central Black Earth and North Caucasus regions have higher probabilities of unemployment than the metropolitan areas of Moscow and St. Petersburg, consistent with the instability of these regions and the adjustment to the independence of neighboring states. Furthermore, individuals in Moscow and St. Petersburg are more likely to switch jobs than the rest of the country except for the Far East, emphasizing the extensive labor market activity in these two major cities and the burgeoning area furthest from them.

Model E4/96 (Table 20) includes three main variables not available for 1992-93. While over 40 percent of workers were owed back wages due to the severe wage arrears crisis, this had no effect on propensity to switch jobs, become unemployed, or drop out of the labor force in 1995-96. However, having experienced an unpaid leave in the last year increases the probability that a person drops out by 3.0 percentage points and the probability that she takes on new employment by 3.7 percentage points. Employees in firms with at least 1,000 workers are significantly less likely to become unemployed, compared to firms with fewer than 25 employees. This is due in part to the excess wages tax, which was levied on the

amount by which an enterprise's average wage exceeded a threshold value. This tax created an incentive to retain workers at low wages in order to decrease the average wage, an effect compounded by the link to the minimum wage which has declined relative to the overall average.[22] Employees in firms with 25 or more employees are from 5 to 7 percent less likely to switch jobs than someone working at a small firm. This is consistent with the positive monotonic relationship between wages and firm size.[23]

Tables 21 and 22 report results for the models of unemployment exits. The unemployment rate from this sample rose sharply from 5.3 percent in 1992 to 12.1 percent in 1996.[24] Table 23 shows that women initially made up 57 percent of the unemployed as they predominated in the industries which initially contracted, but by 1995 women constituted only 45 percent of the total unemployed. However, women experienced longer unemployment spells on average, although male durations increased by a greater percentage, closing the gap to 1.4 months by 1995. Model U1/93 shows that women are more likely to exit to a job but also more likely than men to drop out of the labor force. Married women face a significantly lower re-employment rate. Inclusion of fertility indicators in Model U2/93 dampens these gender effects, but does not cause them to become insignificant. The re-employment probability is 9.8 percentage points higher for women, 23.6 percentage points higher for married persons, but 26.1 percentage points lower for married women. Older individuals appear less likely to find jobs, the effect becoming more severe with advancing age. In 1992-

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[22] Initially the threshold was four times the minimum wage, rising to six times in January 1994. The tax varied from 32 percent in 1993 to 12-25 percent in 1994 (Brainerd, 1995). Roxburgh and Shapiro (1994) discuss the effect in further detail.

[23] Controlling for gender, age, education, and region, larger firms, as measured by the number of employees, have higher wages on average.

[24] The unemployment rate estimated from this sample increases slightly to 5.5 percent in summer 1993 and then sharply to 10.9 percent in 1995.

93, less educated individuals are as likely as those with higher education to gain employment. Children are not important in affecting the chances of exiting unemployment to a job or out of the labor force.

Model U2/93 adds variables indicating receipt of unemployment benefits and household income. Greater financial resources may allow unemployed individuals to search longer and remain out of work. Although insignificant, household income and receipt of unemployment benefits have the expected negative sign for employment transitions, with an even larger, negative effect on the probability of leaving the labor force. Actual receipt of unemployment benefits is quite low, 5.1 percent, since benefits are small in nominal terms and their real value was rapidly eroded by inflation. In addition, many people did not register with the Federal Employment Service perhaps because it is responsible for a fairly small percentage of job placements. It had records for only one-third of all vacancies, most of those being for manual jobs (Layard and Richter, 1994).

The duration of unemployment at first interview is included in order to capture heterogeneity among the unemployed. Table 23 shows that in 1992 the majority of current unemployment spells were of short duration, with a significant percentage of long-term unemployed, raising the overall average.[25] Since 15 percent of unemployed individuals were missing data on the duration of their spell, a dummy variable was included to identify any systematic differences from those with duration data. The unemployment duration variables have substantial, significant effects in explaining exit probabilites from unemployment. In the model of exits to employment from unemployment, individuals unemployed 3 months or less

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[25] Spells of unemployment that are completed quickly have a lower probability of still being in existence when the stock of currently unemployed persons is observed. Longer spells have a higher probability of appearing in the sample, a problem known as "length-biased sampling" (Kiefer, 1988).

have a higher probability of re-employment. Durations from 4 to 6 months are not significantly different from spells over 1 year, the excluded category. However, persons unemployed between 7 and 12 months are again more likely to exit to a job. This is consistent with the hump-shaped re-employment hazard identified in Foley (1996).

Table 23 **Duration of Unemployment: By Gender**		
Elapsed Months	Distribution (column percentage)	
	1992	1995
≤ 1	23.9	12.5
Women	20.6	11.3
Men	28.3	13.6
2 - 3	18.6	12.0
Women	20.0	10.6
Men	16.7	13.1
4 - 5	13.6	8.0
Women	13.1	6.9
Men	14.2	8.9
6 - 7	7.9	7.4
Women	8.1	10.0
Men	7.5	5.2
8 - 9	4.6	6.0
Women	4.4	6.3
Men	5.0	5.8
10 - 11	2.1	8.8
Women	2.5	6.9
Men	1.7	10.5
12 - 17	10.7	9.7
Women	10.6	11.9
Men	10.8	7.8
18 - 23	3.2	6.5
Women	3.1	7.5
Men	3.3	5.8
≥ 24	15.4	29.1
Women	17.5	28.9
Men	12.5	29.3
Total	100	100
Women	57.1	45.6
Men	42.9	54.4
Mean duration (months)	11.3 months	17.6 months
Women	12.9	18.4
Men	9.1	17.0
Median duration (months)	4.5 months	10.0 months
Women	5.0	10.5
Men	4.0	10.0
N (missing data)	280 (51)	351 (89)

By 1996, significant changes have occurred in the prospects for unemployed persons.

Focusing on Model U2/96, women in general are now no more likely to exit to a job, although

the significant negative effect for married women remains. Education has become a factor in

exiting unemployment to a job. Where no type of education held a significant advantage in 1992-93, by 1995-96 individuals with higher education, special secondary, or ordinary secondary education are more likely to find employment than those with primary or less. University or graduate degrees carry the greatest weight, increasing the re-employment probability by 27.5 percentage points. Higher and ordinary secondary education deter individuals from dropping out of the labor force, suggesting that the prospects for the less-educated are compounded by the shift to a market economy. There has been a marked shift in the effects of unemployment duration on finding a job. Individuals unemployed from 4 to 6 months are now more likely than the long-termunemployed to find jobs, while the short-term unemployed and those out of work for 7 to 12 months have chances similar to the long-term unemployed. This is a direct reversal of the pattern present in the first couple years of economic transition. Since average duration increased by over 50 percent from 1992 to 1995, the new pattern may reflect an increase in the amount of time needed to search for and obtain employment. Finally, in 1992-93 there was a limited degree of regional heterogeneity in unemployment outflows, but by 1995-96 there is considerable regional differentiation in attaining employment. Each provincial region estimated to be significant is negative, implying that the labor markets of Moscow and St. Petersburg present the greatest employment opportunities.

VI. Conclusion

Underlying the limited extent of open, registered unemployment and the buoyant level of aggregate employment relative to the severe output decline, the Russian labor market has been characterized by extensive labor market reallocation. Under Markovian assumptions, the pattern of transitions between labor market states is identified. During the initial stages of

economic transition in Russia, the probability of re-employment within one year for unemployed individuals was 0.52, high relative to selected OECD countries. However, by 1995-96, this figure has fallen 24 percent to levels typical of the OECD. There are also extensive job-to-job movements, as individuals move to more attractive positions, with approximately one-third of individuals changing labor market status. Moreover, the probability of losing a job in 1996 has increased to 5.6 percent, 75 percent above its 1992 level.

With respect to demographic characteristics, women, older individuals, and married persons are less likely to change employment. While women overall are more likely than men to leave the labor force, married women have become less likely to exit the labor force over time. Men are more likely to make a transition to non-state employment, namely the private sector and self-employment. Among job-to-job movers, younger workers appear more likely to shift to the private sector and self-employment.

State sector jobs are relatively more stable than employment in the private sector, work collectives or self-employment. A persistence of hiring is apparent across all sectors, including the state sector in which fully one-third of the unemployed and a significant proportion of private sector and work collective employees found jobs. However, in contrast to the state sector, hiring in the private sector and work collectives is primarily from the pool of *employed* individuals, a fact which supports investment in retraining programs for the unemployed.

While the growing wage arrears crisis has not significantly influenced labor market transitions, the incidence of forced leaves is strongly and positively associated with changing jobs and dropping out of the labor force. Education has become a factor in exiting

unemployment to a job. Where no type of education held a significant advantage in 1992-93, by 1995-96 individuals with higher, special secondary, or ordinary secondary education are more likely to find employment than those with primary or less. University or graduate degrees carry the greatest weight, increasing the re-employment probability by 27.5 percentage points. Initially secondary and higher education provided protection against job loss, but by 1996 only higher education provides a distinct advantage in maintaining employment. These results are suggestive of a divergence between the education and skills acquired in the Soviet era and those demanded by the jobs of an emerging market economy.

Table 11	Transition Probabilities By Gender 1992 to 1993								
		Destination State							
		Employed						Unemployed	OLF
i	**Origin State**	State	Private	Work Collective	Other	Self-Employed	Total		
1	*State Enterprise*	*.729*	*.018*	*.147*	*.015*	*.007*	*.917*	*.028*	*.055*
w	Women	.749	.015	.122	.012	.005	.903	.027	.070
m	Men	.707	.021	.175	.019	.010	.931	.029	.040
2	*Private*	*.179*	*.451*	*.111*	*.019*	*.092*	*.852*	*.092*	*.056*
w	*Enterprise*	.179	.582	.090	.015	.030	.895	.060	.045
m	Women Men	.179	.358	.126	.021	.137	.821	.116	.063
3	*Work Collective*	*.184*	*.043*	*.635*	*.018*	*.019*	*.899*	*.030*	*.071*
w	Women	.230	.044	.552	.028	.016	.869	.036	.095
m	Men	.153	.043	.691	.011	.022	.919	.027	.054
4	*Otherwise Owned*	*.438*	*.081*	*.256*	*.138*	----	*.912*	*.038*	*.050*
w	Women	.455	.065	.260	.117	----	.909	.039	.052
m	Men	.422	.096	.253	.157	----	.930	.035	.035
5	*Self-employed*	*.093*	*.175*	*.093*	*.010*	*.392*	*.763*	*.113*	*.124*
w	Women	.107	.107	.107	----	.393	.715	.071	.214
m	Men	.087	.203	.087	.014	.391	.783	.130	.087
	Employed (Total)	*.638*	*.037*	*.199*	*.019*	*.017*	*.910*	*.032*	*.058*
	Women	.680	.032	.161	.016	.010	.899	.029	.072
	Men	.596	.041	.239	.022	.025	.923	.034	.043
6	*Unemployed*	*.347*	*.051*	*.060*	*.012*	*.048*	*.520*	*.323*	*.157*
w	Women	.365	.032	.058	.016	.037	.508	.286	.206
m	Men	.324	.077	.063	.007	.063	.535	.373	.092
7	*OLF*	*.057*	*.006*	*.013*	*.004*	*.007*	*.087*	*.014*	*.899*
w	Women	.058	.006	.013	.003	.009	.089	.013	.898
m	Men	.054	.007	.011	.007	.002	.080	.017	.903

N_{ix} = number in original labor market state i for subset x ∈ {w,m}; ----- = no transition observed
N_1 = 4,870 ; N_2 = 162; N_3 = 624 ; N_4 = 160 ; N_5 = 97 ; N_6 = 331 ; N_7 = 3,440 ; N_{Total} = 9,684
N_{1w} = 2,584 ; N_{2w} = 67 ; N_{3w} = 252 ; N_{4w} = 77 ; N_{5w} = 28 ; N_{6w} = 189 ; N_{7w} = 2,536 ; $N_{Total, w}$ = 5,733
N_{1m} = 2,286 ; N_{2m} = 95 ; N_{3m} = 372 ; N_{4m} = 83 ; N_{5m} = 69; N_{6m} = 142 ; N_{7m} = 904 ; $N_{Total, m}$ = 3,951

Table 12	Transition Probabilities By Gender 1995 to 1996		
		Destination State	
i	**Origin State**	Employed	Unemployed	OLF
1	*Employed*	*.881*	*.056*	*.062*
w	Women	.879	.044	.078
m	Men	.884	.069	.047
2	*Unemployed*	*.395*	*.459*	*.145*
w	Women	.378	.423	.199
m	Men	.410	.490	.100
3	*OLF*	*.076*	*.034*	*.891*
w	Women	.080	.030	.890
m	Men	.064	.044	.892

N_{ix} = number in original labor market state i for subset x ∈ {w,m} ; ----- = no transition observed
N_1 = 3,586; N_2 = 440 ; N_3 = 2,396; N_{Total} = 6,422
N_{1w} = 1,813; N_{2w} = 201; N_{3w} = 1,737; $N_{Total, w}$ = 3,751
N_{1m} = 1,773; N_{2m} = 239; N_{3m} = 659; $N_{Total, m}$ = 2,671

i	Origin State	State	Private	Work Collective	Other	Self-Employed	Total	Unemployed	OLF
				Destination State					
				Employed				Unemployed	OLF
1	*State Enterprise*	*.729*	*.018*	*.147*	*.015*	*.007*	*.917*	*.028*	*.055*
a	18-24	.729	.027	.118	.021	----	.894	.050	.056
b	25-39	.748	.022	.149	.014	.011	.945	.034	.021
c	40-54	.739	.012	.160	.017	.007	.936	.023	.041
d	55+	.622	.013	.111	.011	.002	.759	.006	.235
2	*Private*	*.179*	*.451*	*.111*	*.019*	*.092*	*.852*	*.092*	*.056*
a	*Enterprise*	.107	.500	.036	----	.143	.786	.143	.071
b	18-24	.192	.436	.077	.026	.103	.834	.115	.051
c	25-39	.216	.470	.176	.020	.059	.941	.039	.020
d	40-54 55+	----	.200	.400	----	----	.600	----	.400
3	*Work Collective*	*.184*	*.043*	*.635*	*.018*	*.023*	*.899*	*.030*	*.071*
a	18-24	.233	.070	.465	.070	.022	.861	.023	.116
b	25-39	.162	.043	.664	.014	.032	.917	.040	.043
c	40-54	.207	.046	.672	.008	.008	.942	.029	.029
d	55+	.159	.016	.476	.032	.016	.683	----	.317
4	*Otherwise Owned*	*.438*	*.081*	*.256*	*.138*	----	*.912*	*.038*	*.050*
a	18-24	.231	.154	.308	----	----	.692	.154	.154
b	25-39	.485	.106	.256	.256	----	.955	.030	.015
c	40-54	.464	.058	.232	.188	----	.942	.029	.029
d	55+	.250	----	.333	.167	----	.750	----	.250
5	*Self-employed*	*.093*	*.175*	*.093*	*.010*	*.392*	*.763*	*.113*	*.124*
a	18-24	.111	.111	.111	----	.444	.778	.222	----
b	25-39	.121	.155	.103	.017	.397	.794	.103	.103
c	40-54	.038	.269	.038	----	.423	.769	.077	.154
d	55+	----	----	.250	----	----	.250	.250	.500
	Employed (Total)	*.638*	*.037*	*.199*	*.019*	*.017*	*.910*	*.032*	*.058*
	18-24	.611	.067	.153	.023	.021	.875	.060	.065
	25-39	.646	.043	.204	.017	.024	.934	.039	.027
	40-54	.656	.030	.214	.021	.013	.934	.025	.041
	55+	.559	.014	.155	.016	.002	.746	.006	.248
6	*Unemployed*	*.347*	*.051*	*.060*	*.012*	*.048*	*.520*	*.323*	*.157*
a	18-24	.312	.039	.091	.039	.091	.571	.325	.104
b	25-39	.319	.094	.065	.007	.036	.522	.333	.145
c	40-54	.417	.009	.028	----	.028	.481	.315	.204
d	55+	.250	----	.125	----	.125	.500	.250	.250
7	*OLF*	*.057*	*.006*	*.013*	*.004*	*.007*	*.087*	*.014*	*.899*
a	18-24	.127	.015	.030	.003	.009	.184	.052	.764
b	25-39	.169	.025	.049	.003	.028	.273	.055	.672
c	40-54	.117	.023	.036	.009	.036	.220	.050	.730
d	55+	.028	.002	.004	.004	.002	.040	.000	.960

Table 13

Transition Probabilities By Age
1992 to 1993

N_{ix} = number in original labor market state i for subset x ∈ {a,b,c,d} ; ----- = no transition observed
N_1 = 4,870 ; N_2 = 162 ; N_3 = 624 ; N_4 = 160 ; N_5 = 97 ; N_6 = 331 ; N_7 = 3,440 ; N_{Total} = 9,684
N_{1a} = 339 ; N_{2a} = 28 ; N_{3a} = 43 ; N_{4a} = 13 ; N_{5a} = 9 ; N_{6a} = 77 ; N_{7a} = 330 ; $N_{Total, a}$ = 839
N_{1b} = 2,059; N_{2b} = 78 ; N_{3b} = 277; N_{4b} = 66 ; N_{5b} = 58 ; N_{6b} = 138 ; N_{7b} = 326 ; $N_{Total, b}$ = 3,002
N_{1c} = 1,932; N_{2c} = 51 ; N_{3c} = 241; N_{4c} = 69 ; N_{5c} = 26 ; N_{6c} = 108 ; N_{7c} = 222 ; $N_{Total, c}$ = 2,649
N_{1d} = 540 ; N_{2d} = 5 ; N_{3d} = 63 ; N_{4d} = 12 ; N_{5d} = 4 ; N_{6d} = 8 ; N_{7d} = 2,562 ; $N_{Total, d}$ = 3,194

i	Origin State	Destination State		
		Employed	Unemployed	OLF
1	*Employed*	*.881*	*.056*	*.062*
a	18-24	.813	.098	.089
b	25-39	.898	.068	.034
c	40-54	.909	.049	.042
d	55+	.803	.010	.187
2	*Unemployed*	*.395*	*.459*	*.145*
a	18-24	.414	.405	.180
b	25-39	.385	.503	.113
c	40-54	.412	.471	.118
d	55+	.267	.200	.533
3	*OLF*	*.076*	*.034*	*.891*
a	18-24	.201	.125	.674
b	25-39	.322	.106	.573
c	40-54	.115	.132	.753
d	55+	.020	.001	.979

Table 14 — **Transition Probabilities By Age 1995 to 1996**

N_{ix} = number in original labor market state i for subset $x \in \{a,b,c,d\}$; ----- = no transition observed

N_1 = 3,586 ; N_2 = 440 ; N_3 = 2,396 ; N_{Total} = 6,422

N_{1a} = 337; N_{2a} = 111; N_{3a} = 264; $N_{Total, a}$ = 712

N_{1b} = 1,418; N_{2b} = 195; N_{3b} = 227; $N_{Total, b}$ = 1,840

N_{1c} = 1,354; N_{2c} = 119; N_{3c} = 174; $N_{Total, c}$ = 1,647

N_{1d} = 477; N_{2d} = 15; N_{3d} = 1,731; $N_{Total, d}$ = 2,223

Table 15	Transition Probabilities By Education Level 1992 to 1993								
		Destination State							
		Employed						Unemployed	OLF
i	**Origin State**	State	Private	Work Collective	Other	Self-employed	Total		
1	*State Enterprise*	*.729*	*.018*	*.147*	*.015*	*.007*	*.917*	*.028*	*.055*
a	University/Grad	.802	.024	.098	.016	.012	.953	.015	.032
b	Special Secondary	.758	.008	.152	.009	.004	.930	.024	.046
c	Ordinary Secondary	.683	.022	.181	.017	.012	.914	.036	.050
d	≤ Primary	.677	.018	.150	.020	.003	.867	.037	.096
2	*Private Enterprise*	*.179*	*.451*	*.111*	*.019*	*.092*	*.852*	*.092*	*.056*
a	University/Grad	.231	.538	.051	.026	.103	.948	.026	.026
b	Special Secondary	.095	.524	.143	----	.119	.881	.071	.048
c	Ordinary Secondary	.222	.378	.133	.044	.044	.822	.111	.067
d	≤ Primary	.167	.361	.111	----	.111	.750	.167	.083
3	*Work Collective*	*.184*	*.043*	*.635*	*.018*	*.019*	*.899*	*.030*	*.071*
a	University/Grad	.250	.145	.461	.026	.039	.922	.039	.039
b	Special Secondary	.224	.048	.588	.018	.030	.909	.030	.061
c	Ordinary Secondary	.128	.047	.719	.025	.010	.911	.025	.064
d	≤ Primary	.183	.011	.656	.006	.011	.957	.033	.010
4	*Otherwise Owned*	*.438*	*.081*	*.256*	*.138*	----	*.912*	*.038*	*.050*
a	University/Grad	.424	.061	.273	.212	----	.970	----	.030
b	Special Secondary	.500	.139	.139	.167	----	.944	.028	.028
c	Ordinary Secondary	.500	.060	.200	.067	----	.900	.067	.033
d	≤ Primary	.317	.073	.366	.122	----	.878	.024	.098
5	*Self-employed*	*.093*	*.175*	*.093*	*.010*	*.392*	*.763*	*.113*	*.124*
a	University/Grad	.129	.194	.129	----	.452	.903	.032	.065
b	Special Secondary	.136	.227	.045	----	.409	.818	.091	.091
c	Ordinary Secondary	.071	.179	.107	----	.321	.678	.179	.143
d	≤ Primary	----	.063	.063	.063	.375	.562	.188	.250
	Employed (Total)	*.638*	*.037*	*.199*	*.019*	*.017*	*.910*	*.032*	*.058*
	University/Grad	.726	.052	.124	.021	.027	.950	.017	.033
	Special Secondary	.672	.031	.194	.013	.015	.925	.027	.048
	Ordinary Secondary	.583	.037	.249	.021	.018	.908	.040	.052
	≤ Primary	.584	.028	.218	.021	.011	.862	.041	.097
6	*Unemployed*	*.347*	*.051*	*.060*	*.012*	*.048*	*.520*	*.323*	*.157*
a	University/Grad	.441	----	.047	----	.140	.628	.256	.116
b	Special Secondary	.404	.022	.045	.034	.045	.550	.270	.180
c	Ordinary Secondary	.286	.098	.054	----	.045	.482	.357	.161
d	≤ Primary	.322	.046	.092	.011	.011	.483	.368	.149
7	*OLF*	*.057*	*.006*	*.013*	*.004*	*.007*	*.087*	*.014*	*.899*
a	University/Grad	.085	.019	.011	.016	.014	.146	.016	.838
b	Special Secondary	.104	.011	.024	.004	.015	.157	.015	.828
c	Ordinary Secondary	.062	.006	.024	.002	.005	.097	.014	.889
d	≤ Primary	.036	.003	.006	.003	.005	.051	.013	.936

N_{ix} = number in original labor market state i for subset x ∈ {a,b,c,d} ; ----- = no transition observed

$N_1 = 4,870$; $N_2 = 162$; $N_3 = 624$; $N_4 = 160$; $N_5 = 97$; $N_6 = 331$; $N_7 = 3,440$; $N_{Total} = 9,684$

$N_{1a} = 1,098$; $N_{2a} = 39$; $N_{3a} = 76$; $N_{4a} = 33$; $N_{5a} = 31$; $N_{6a} = 43$; $N_{7a} = 365$; $N_{Total, a} = 1,685$

$N_{1b} = 1,355$; $N_{2b} = 42$; $N_{3b} = 165$; $N_{4b} = 36$; $N_{5b} = 22$; $N_{6b} = 89$; $N_{7b} = 540$; $N_{Total, b} = 2,249$

$N_{1c} = 1,267$; $N_{2c} = 45$; $N_{3c} = 203$; $N_{4c} = 50$; $N_{5c} = 28$; $N_{6c} = 112$; $N_{7c} = 665$; $N_{Total, c} = 2,370$

$N_{1d} = 1,150$; $N_{2d} = 36$; $N_{3d} = 180$; $N_{4d} = 41$; $N_{5d} = 16$; $N_{6d} = 87$; $N_{7d} = 1870$; $N_{Total, d} = 3,380$

i	Origin State	Destination State		
		Employed	Unemployed	OLF
1	*Employed*	*.881*	*.056*	*.062*
a	University/Grad	.936	.018	.046
b	Special Secondary	.884	.062	.054
c	Ordinary Secondary	.869	.066	.065
d	≤ Primary	.835	.073	.095
2	*Unemployed*	*.395*	*.459*	*.145*
a	University/Grad	.571	.371	.057
b	Special Secondary	.440	.418	.143
c	Ordinary Secondary	.441	.480	.078
d	≤ Primary	.240	.529	.231
3	*OLF*	*.076*	*.034*	*.891*
a	University/Grad	.150	.023	.833
b	Special Secondary	.322	.047	.804
c	Ordinary Secondary	.065	.024	.910
d	≤ Primary	.041	.035	.925

Table 16 — **Transition Probabilities By Education Level 1995 to 1996**

N_{ix} = number in original labor market state i for subset x ∈ {a,b,c,d} ; ----- = no transition observed

N_1 = 3,586 ; N_2 = 440 ; N_3 = 2,396 ; N_{Total} = 6,422

N_{1a} =   722; N_{2a} = 35; N_{3a} =   222; $N_{Total, a}$ =   979

N_{1b} = 1,411; N_{2b} = 182; N_{3b} =   460; $N_{Total, b}$ = 2,053

N_{1c} =   755; N_{2c} = 102; N_{3c} =   413; $N_{Total, c}$ = 1,270

N_{1d} =   698; N_{2d} = 121; N_{3d} = 1,301; $N_{Total, d}$ = 2,120

Table 17   **Multinomial Logit Model of Employment Transitions: 1992 to 1993**

	Model E1/93			Model E2/93			
	E to U	E to OLF	E to E_{new}	E to U	E to OLF	E to E_{new}	
Independent Variable	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Mean
Demographic							
Female	-0.669**	0.705**	-0.266	-0.591**	0.651*	-0.275	0.509
	(0.28)	(0.33)	(0.18)	(0.28)	(0.33)	(0.19)	
Married	-0.930**	0.240	-0.127	-0.879**	0.273	-0.094	0.784
	(0.24)	(0.32)	(0.17)	(0.25)	(0.32)	(0.17)	
Married*Female	0.767**	0.250	-0.233	0.683**	0.199	-0.281	0.358
	(0.33)	(0.36)	(0.21)	(0.33)	(0.36)	(0.21)	
Age	0.064	-0.360**	-0.010	0.067	-0.354**	-0.005	40.6
	(0.05)	(0.03)	(0.03)	(0.05)	(0.03)	(0.03)	(10.9)
Age squared (/100)	-0.130*	0.482**	-0.010	-0.136*	0.475**	-0.017	17.7
	(0.07)	(0.04)	(0.03)	(0.07)	(0.04)	(0.03)	(9.3)
Number of Children	----	----	----	----	----	----	
Children*Female	----	----	----	----	----	----	
Education (Primary or less excluded)							
University/Graduate	-0.972**	-0.984**	-0.007	-0.570*	-0.786**	0.030	0.216
	(0.26)	(0.20)	(0.14)	(0.32)	(0.25)	(0.17)	
Special Secondary	-0.577**	-0.518**	0.094	-0.403*	-0.454**	0.136	0.274
	(0.21)	(0.16)	(0.13)	(0.22)	(0.17)	(0.13)	
Ordinary Secondary	-0.142	-0.228	0.326**	-0.096	-0.178	0.359*	0.269
	(0.19)	(0.16)	(0.12)	(0.19)	(0.16)	(0.12)	
Skill Level (Clerks, Service workers, Machine operators excluded)							
Professionals	----	----	----	-0.453	-0.096	0.092	0.187
				(0.33)	(0.25)	(0.16)	
Technicians & Associate Professionals	----	----	----	-0.415	0.308	0.061	0.130
				(0.30)	(0.20)	(0.15)	
Elementary Occupations	----	----	----	0.694**	0.375*	0.493*	0.129
				(0.21)	(0.17)	(0.13)	
Unclassified	----	----	----	-0.173	-1.072*	0.054	0.052
				(0.54)	(0.62)	(0.24)	
Income, Private Economic Activity, and Personal Ownership							
Household Income (/10^5)	-0.294	0.127	-0.104	-0.244	0.133	-0.122	0.099
	(0.76)	(0.09)	(0.42)	(0.70)	(0.09)	(0.43)	(0.324)
Engaged in private economic activity	1.048**	0.376	0.432*	1.078*	0.416	0.418	0.027
	(0.34)	(0.39)	(0.27)	(0.34)	(0.39)	(0.27)	
Owner/Co-owner of enterprise	-0.526	-0.297	-0.061	-0.532	-0.227	-0.081	0.057
	(0.40)	(0.30)	(0.21)	(0.40)	(0.30)	(0.21)	

Table 17 (continued) **Multinomial Logit Model of Employment Transitions: 1992 to 1993**

Independent Variable	Model E1/93 E to U Estimate	Model E1/93 E to OLF Estimate	Model E1/93 E to E_new Estimate	Model E2/93 E to U Estimate	Model E2/93 E to OLF Estimate	Model E2/93 E to E_new Estimate	Mean
Establishment Ownership(State sector excluded)							
Private Sector	1.164**	0.838**	0.775**	1.096	0.888**	0.766**	0.027
	(0.30)	(0.37)	(0.21)	(0.31)	(0.37)	(0.21)	
Work Collective	0.216	0.390*	0.094	0.177	0.396*	0.117	0.106
	(0.28)	(0.21)	(0.16)	(0.29)	(0.22)	(0.16)	
Otherwise owned	0.251	0.106	0.038	0.208	0.173	0.051	0.027
	(0.43)	(0.39)	(0.26)	(0.44)	(0.40)	(0.26)	
Self-Employed	0.854*	1.458**	-31.638	0.904	2.535**	-9.616	0.016
	(0.44)	(0.44)	(1.9e6)	(0.67)	(0.74)	(32.75)	
Region & Type of Settlement(Moscow & St. Petersburg excluded)							
Northern/North Western	----	----	----	0.168	-0.003	0.226	0.107
				(0.31)	(0.27)	(0.17)	
Central/Central Black Earth	----	----	----	-0.116	0.129	0.092	0.086
				(0.37)	(0.27)	(0.19)	
Volga-Vyatski/Volga Basin	----	----	----	-0.192	0.174	0.129	0.096
				(0.35)	(0.27)	(0.18)	
North Caucasian	----	----	----	0.318	0.044	0.223	0.172
				(0.27)	(0.23)	(0.15)	
Ural	----	----	----	0.267	0.309	0.201	0.185
				(0.27)	(0.22)	(0.15)	
Western Siberian	----	----	----	0.368	0.245	0.098	0.100
				(0.31)	(0.26)	(0.19)	
Eastern Siberian/ Far Eastern	----	----	----	-0.184	0.008	0.125	0.096
				(0.36)	(0.28)	(0.18)	
Urban	0.204	0.363**	0.374**	0.447**	-0.246	0.467**	0.795
	(0.20)	(0.15)	(0.12)	(0.22)	(0.16)	(0.13)	
constant	-2.815**	2.913**	-1.596**	-3.338**	2.479**	-2.003**	
	(0.99)	(0.69)	(0.55)	(1.03)	(0.73)	(0.57)	
Log-Likelihood		-3,719.5			-3693.43		
Pseudo-R^2		0.090			0.0963		
Model $\chi^2(48)$, Model $\chi^2(81)$		735.4**			787.5**		

Notes: Standard errors in parentheses. * and ** denote significance at .10 and .05 levels respectively
Sample size = 5,913   Sample Transition Probabilities: E to U = .032 , E to OLF = .058, E to E_{new} = .108
Default category is origin state (stayers).
Income is in June 1992 rubles, deflated using Goskomstat CPI. Children are$\leq$ 15 years old.
Unclassified skill levels are armed forces, legislators/senior officials/managers, and the self-employed.
Independent variables are dummies except for age, age squared, children, children*female, and income.

Table 18   **Multinomial Logit Model of Employment Transitions: 1992 to 1993**

		Model E3/93					
	E to U		E to OLF		E to E$_{new}$		
Independent Variable	Estimate	dPu/dx$_i$	Estimate	dPo/dx$_i$	Estimate	dPe/dx$_i$	Mean
Demographic							
Female	-0.757**	-0.018	0.781**	0.027	-0.290	-0.018	0.509
	(0.30)		(0.34)		(0.19)		
Married	-0.929**	-0.022	0.453	0.016	-0.157	-0.009	0.784
	(0.27)		(0.33)		(0.18)		
Married*Female	0.642*	0.016	0.069	0.002	-0.231	-0.015	0.358
	(0.36)		(0.37)		(0.22)		
Age	0.050	0.002	-0.353**	-0.012	-0.011	0.000	40.6
	(0.05)		(0.03)		(0.03)		(10.9)
Age squared (/100)	-0.108	-0.003	0.464**	0.016	-0.007	-0.001	17.7
	(0.07)		(0.04)		(0.04)		(9.3)
Number of Children	0.043	0.001	-0.310**	-0.011	0.067	0.005	0.827
	(0.12)		(0.15)		(0.06)		(0.922)
Children*Female	0.178	0.004	-0.029	-0.001	-0.025	-0.002	0.403
	(0.16)		(0.18)		(0.10)		(0.744)
Education (Primary or less excluded)							
University/Graduate	-0.586*	-0.013	-0.739**	-0.024	0.028	0.004	0.216
	(0.32)		(0.25)		(0.17)		
Special Secondary	-0.416*	-0.010	-0.420**	-0.014	0.132	0.010	0.274
	(0.22)		(0.17)		(0.13)		
Ordinary Secondary	-0.098	-0.003	-0.169	-0.006	0.360**	0.023	0.269
	(0.19)		(0.16)		(0.12)		
Skill Level (Clerks, Service workers, Machine operators excluded)							
Professionals	-0.420	-0.010	-0.138	-0.004	0.097	0.007	0.187
	(0.33)		(0.25)		(0.16)		
Technicians &	-0.407	-0.010	0.274	0.009	0.061	0.004	0.130
Associate Professionals	(0.30)		(0.20)		(0.15)		
Elementary Occupations	0.668**	0.015	0.397**	0.012	0.482**	0.028	0.129
	(0.21)		(0.17)		(0.13)		
Unclassified	-0.168	-0.003	-1.042*	-0.035	0.048	0.006	0.052
	(0.54)		(0.61)		(0.24)		
Income, Private Economic Activity and Personal Ownership							
Household Income (/10^5)	-0.252	-0.006	0.117	0.004	-0.135	-0.008	0.099
	(0.72)		(0.09)		(0.44)		(0.324)
Engaged in private	1.082**	0.025	0.462	0.014	0.410	0.023	0.027
economic activity	(0.34)		(0.39)		(0.27)		
Owner/Co-owner of	-0.521	-0.012	-0.230	-0.007	-0.079	-0.004	0.057
enterprise	(0.40)		(0.30)		(0.21)		

Table 18 (continued) **Multinomial Logit Model of Employment Transitions: 1992 to 1993**

	Model E3/93						
	E to U		E to OLF		E to E_{new}		
Independent Variable	Estimate	dPu/dx_i	Estimate	dPo/dx_i	Estimate	dPe/dx_i	Mean
Employment Sector (State sector excluded)							
Private Sector	1.101**	0.024	0.852**	0.026	0.766**	0.044	0.027
	(0.31)		(0.37)		(0.21)		
Work Collective	0.179	0.004	0.389*	0.013	0.115	0.006	0.106
	(0.29)		(0.22)		(0.16)		
Otherwise owned	0.196	0.004	0.184	0.006	0.046	0.002	0.027
	(0.44)		(0.40)		(0.26)		
Self-Employed	0.904	0.071	2.491**	0.154	-31.349	-1.946	0.016
	(0.67)		(0.74)		(1.7e6)		
Region & Type of Settlement (Moscow & St. Petersburg excluded)							
Northern/North Western	0.154	0.003	0.013	0.000	0.225	0.014	0.107
	(0.31)		(0.27)		(0.17)		
Central/Central Black Earth	-0.138	-0.004	0.152	0.005	0.087	0.005	0.086
	(0.37)		(0.27)		(0.19)		
Volga-Vyatski/Volga Basin	-0.220	-0.006	0.216	0.007	0.122	0.007	0.096
	(0.35)		(0.27)		(0.18)		
North Caucasian	0.290	0.007	0.094	0.002	0.212	0.012	0.172
	(0.27)		(0.23)		(0.15)		
Ural	0.240	0.005	0.333	0.010	0.192	0.011	0.185
	(0.28)		(0.22)		(0.15)		
Western Siberian	0.333	0.008	0.286	0.009	0.089	0.004	0.100
	(0.32)		(0.26)		(0.19)		
Eastern Siberian/ Far Eastern	-0.219	-0.005	0.055	0.002	0.117	0.007	0.096
	(0.36)		(0.28)		(0.18)		
Urban	0.473**	0.011	-0.262*	-0.010	0.474**	0.029	0.795
	(0.22)		(0.16)		(0.13)		
constant	-3.097**	-0.073	2.655**	0.095	-1.932**	-0.121	
	(1.03)		(0.72)		(0.58)		
Log-Likelihood	-3684.22						
Pseudo-R^2	0.0986						
Model $\chi^2(87)$	805.9**						

Notes: Standard errors in parentheses. * and ** denote significance at .10 and .05 levels respectively
Sample size = 5,913   Sample Transition Probabilities: E to U = .032 , E to OLF = .058, E to E_{new} = .108
Default category is origin state (stayers).
Income is in June 1992 rubles, deflated using Goskomstat CPI. Children are ≤ 15 years old.
Unclassified skill levels are armed forces, legislators/senior officials/managers, and the self-employed.
Independent variables are dummies except for age, age squared, children, children*female, and income.

Table 19 **Multinomial Logit Model of Employment Transitions: 1995 to 1996**

	Model E1/96			Model E2/96		
	E to U	E to OLF	E to E_{new}	E to U	E to OLF	E to E_{new}
Independent Variable	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Demographic						
Female	-0.714**	1.491**	-0.007	-0.664**	1.470**	0.036
	(0.31)	(0.46)	(0.22)	(0.32)	(0.46)	(0.23)
Married	-0.282	1.109**	0.041	-0.279	1.054**	0.067
	(0.25)	(0.45)	(0.20)	(0.25)	(0.45)	(0.20)
Married*Female	0.409	-0.858*	-0.503*	0.386	-0.799*	-0.535**
	(0.36)	(0.49)	(0.26)	(0.36)	(0.49)	(0.26)
Age	0.060	-0.303**	-0.004	0.069	-0.300**	0.003
	(0.05)	(0.04)	(0.03)	(0.05)	(0.04)	(0.04)
Age squared (/100)	-0.134**	0.389**	-0.043	-0.149**	0.384**	-0.054
	(0.07)	(0.04)	(0.04)	(0.07)	(0.04)	(0.04)
Number of Children	----	----	----	----	----	----
Children*Female	----	----	----	----	----	----

Education (Primary or less excluded)

	E to U	E to OLF	E to E_{new}	E to U	E to OLF	E to E_{new}
University/Graduate	-1.485**	-0.645**	-0.174	-1.297**	-0.415	-0.011
	(0.32)	(0.24)	(0.18)	(0.36)	(0.29)	(0.21)
Special Secondary	-0.314*	-0.279	-0.035	-0.284	-0.207	0.039
	(0.19)	(0.19)	(0.16)	(0.20)	(0.20)	(0.16)
Ordinary Secondary	-0.198	-0.068	0.045	-0.220	-0.019	0.053
	(0.22)	(0.22)	(0.18)	(0.22)	(0.22)	(0.18)

Skill Level (Clerks, Service workers, Machine operators excluded)

	E to U	E to OLF	E to E_{new}	E to U	E to OLF	E to E_{new}
Professionals	----	----	----	-0.442	-0.305	-0.248
				(0.38)	(0.30)	(0.22)
Technicians & Associate Professionals	----	----	----	-0.321	-0.199	-0.382*
				(0.28)	(0.25)	(0.20)
Elementary Occupations	----	----	----	0.348	0.267	0.408**
				(0.22)	(0.21)	(0.17)
Unclassified	----	----	----	0.139	0.297	0.090
				(0.40)	(0.39)	(0.27)

Income & Private Economic Activity

	E to U	E to OLF	E to E_{new}	E to U	E to OLF	E to E_{new}
Household Income (/10^5)	0.260	-0.309	-0.483	0.388	-0.096	-0.689
	(0.93)	(1.09)	(0.71)	(0.95)	(1.09)	(0.75)
Engaged in private economic activity	0.372	0.063	0.186	0.309	0.059	0.151
	(0.26)	(0.35)	(0.20)	(0.26)	(0.35)	(0.20)

(continued next page)

Table 19 (continued) **Multinomial Logit Model of Employment Transitions: 1995 to 1996**

Independent Variable	Model E1/96			Model E2/96		
	E to U	E to OLF	E to E_{new}	E to U	E to OLF	E to E_{new}
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Establishment Ownership						
Government	-0.459**	-0.353**	-0.640**	-0.424**	-0.299*	-0.593**
	(0.17)	(0.18)	(0.13)	(0.18)	(0.18)	(0.13)
Foreign firms/individuals	0.012	0.138	0.373	0.054	0.238	0.402
	(0.42)	(0.42)	(0.26)	(0.42)	(0.43)	(0.26)
Russian firms/individuals	0.330*	0.182	0.406**	0.336*	0.192	0.389**
	(0.19)	(0.21)	(0.14)	(0.19)	(0.21)	(0.14)
Personal owner/co-owner	-0.622**	-0.448**	-0.632**	-0.604**	-0.431**	-0.610**
	(0.21)	(0.21)	(0.15)	(0.21)	(0.21)	(0.15)
Self-Employed	1.064**	0.687	1.208**	0.914*	0.412	1.148**
	(0.35)	(0.47)	(0.25)	(0.50)	(0.59)	(0.35)
Region & Type of Settlement (Moscow & St. Petersburg excluded)						
Northern/North Western	----	----	----	0.177	0.133	-0.552**
				(0.46)	(0.41)	(0.27)
Central/Central Black Earth	----	----	----	0.635*	0.191	-0.570**
				(0.38)	(0.33)	(0.21)
Volga-Vyatski/Volga Basin	----	----	----	0.287	0.221	-0.537**
				(0.40)	(0.34)	(0.22)
North Caucasian	----	----	----	0.830**	0.586	-0.440*
				(0.40)	(0.35)	(0.24)
Ural	----	----	----	0.314	0.465*	-0.385*
				(0.40)	(0.34)	(0.22)
Western Siberian	----	----	----	-0.149	-0.227	-0.713**
				(0.45)	(0.42)	(0.25)
Eastern Siberian/Far Eastern	----	----	----	0.547	0.030	-0.189
				(0.43)	(0.39)	(0.24)
Urban	-0.127	-0.408**	0.223*	0.014	-0.330*	0.255*
	(0.17)	(0.16)	(0.13)	(0.18)	(0.17)	(0.14)
constant	-1.689*	2.105**	-0.693	-2.394**	1.676**	-0.444
	(0.92)	(0.79)	(0.65)	(1.00)	(0.85)	(0.68)
Log-Likelihood		-2564.96			-2536.08	
Pseudo-R^2		.0931			.1033	
Model $\chi^2(48)$, $\chi^2(81)$, $\chi^2(87)$		526.49**			584.23**	

Notes: Standard errors in parentheses. * and ** denote significance at .10 and .05 levels respectively
Sample size = 3,586 Sample Transition Probabilities: E to U = .056 , E to OLF = .063, E to E_{new} = .116
Default category is origin state (stayers).
Income is in June 1992 rubles, deflated using Goskomstat CPI. Children are≤ 15 years old.
Unclassified skill levels are armed forces, legislators/senior officials/managers, and the self-employed.
Independent variables are dummies except for age, age squared, children, children*female, and income.

Table 19 (continued) **Multinomial Logit Model of Employment Transitions: 1995 to 1996**

	Model E3/96		
	E to U	E to OLF	E to E$_{new}$
Independent Variable	Estimate	Estimate	Estimate
Demographic			
Female	-0.600*	1.412**	0.100
	(0.33)	(0.47)	(0.24)
Married	-0.372	1.108**	0.063
	(0.26)	(0.45)	(0.21)
Married*Female	0.499	-0.868*	-0.493*
	(0.37)	(0.50)	(0.27)
Age	0.061	-0.299**	0.006
	(0.05)	(0.04)	(0.04)
Age squared (/100)	-0.137*	0.381**	-0.060
	(0.07)	(0.04)	(0.05)
Number of Children	0.113	-0.136	0.004
	(0.11)	(0.15)	(0.08)
Children*Female	-0.146	0.165	-0.107
	(0.17)	(0.18)	(0.13)
Education (Primary or less excluded)			
University/Graduate	-1.293**	-0.416	-0.014
	(0.36)	(0.29)	(0.21)
Special Secondary	-0.284	-0.211	0.036
	(0.20)	(0.20)	(0.16)
Ordinary Secondary	-0.223	-0.023	0.052
	(0.22)	(0.22)	(0.18)
Skill Level (Clerks, Service workers, Machine operators excluded)			
Professionals	-0.444	-0.305	-0.259
	(0.38)	(0.30)	(0.22)
Technicians &	-0.331	-0.200	-0.390*
Associate Professionals	(0.28)	(0.25)	(0.20)
Elementary Occupations	0.346	0.268	0.415**
	(0.22)	(0.21)	(0.17)
Unclassified	0.143	0.288	0.088
	(0.40)	(0.39)	(0.27)
Income & Private Economic Activity			
Household Income (/10^5)	0.397	-0.080	-0.695
	(0.95)	(1.08)	(0.75)
Engaged in private	0.310	0.058	0.150
economic activity	(0.26)	(0.35)	(0.20)

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Table 19 (continued)   **Multinomial Logit Model of Employment Transitions: 1995 to 1996**

| | Model E3/96 | | |
Independent Variable	E to U Estimate	E to OLF Estimate	E to E$_{new}$ Estimate
Establishment Ownership			
Government	-0.411**	-0.305*	-0.591**
	(0.18)	(0.18)	(0.13)
Foreign firms/individuals	0.050	0.230	0.404
	(0.42)	(0.43)	(0.26)
Russian firms/individuals	0.339*	0.190	0.388**
	(0.19)	(0.21)	(0.14)
Personal owner/co-owner	-0.606**	-0.435**	-0.609**
	(0.21)	(0.21)	(0.15)
Self-Employed	0.926*	0.413	1.149**
	(0.50)	(0.59)	(0.35)
Region & Type of Settlement(Moscow & St. Petersburg excluded)			
Northern/North Western	0.179	0.126	-0.543**
	(0.46)	(0.41)	(0.27)
Central/Central Black Earth	0.638*	0.186	-0.572**
	(0.38)	(0.33)	(0.21)
Volga-Vyatski/Volga Basin	0.287	0.210	-0.536**
	(0.40)	(0.34)	(0.22)
North Caucasian	0.824**	0.583*	-0.434*
	(0.41)	(0.35)	(0.24)
Ural	0.308	0.457	-0.380*
	(0.40)	(0.34)	(0.22)
Western Siberian	-0.149	-0.231	-0.716**
	(0.45)	(0.42)	(0.25)
Eastern Siberian/Far Eastern	0.548	0.016	-0.188
	(0.43)	(0.39)	(0.24)
Urban	0.026	-0.331*	0.246*
	(0.18)	(0.17)	(0.14)
constant	-2.336**	1.730**	-0.493
	(1.00)	(0.85)	(0.68)
Log-Likelihood	-2534.48		
Pseudo-R^2	.1039		
Model χ^2(87)	587.44**		

Notes: Standard errors in parentheses. * and ** denote significance at .10 and .05 levels respectively
Sample size = 3,586   Sample Transition Probabilities: E to U = .056 , E to OLF = .063, E to E$_{new}$ = .116
Default category is origin state (stayers).
Income is in June 1992 rubles, deflated using Goskomstat CPI. Children are≤ 15 years old.
Unclassified skill levels are armed forces, legislators/senior officials/managers, and the self-employed.
Independent variables are dummies except for age, age squared, children, children*female, and income.

Table 20   **Multinomial Logit Model of Employment Transitions: 1995 to 1996**

Model E4/96

Independent Variable	E to U Estimate	E to U dPu/dx_i	E to OLF Estimate	E to OLF dPo/dx_i	E to E_{new} Estimate	E to E_{new} dPe/dx_i	Mean
Demographic							
Female	-0.638*	-0.026	1.392**	0.062	0.013	-0.003	0.506
	(0.33)		(0.47)		(0.24)		
Married	-0.377	-0.016	1.109**	0.049	0.060	0.002	0.768
	(0.27)		(0.45)		(0.22)		
Married*Female	0.492	0.022	-0.872*	-0.037	-0.506*	-0.042	0.349
	(0.38)		(0.50)		(0.27)		
Age	0.059	0.003	-0.306**	-0.013	0.007	0.002	40.216
	(0.05)		(0.04)		(0.04)		(11.47)
Age squared (/100)	-0.134*	-0.005	0.391**	0.017	-0.059	-0.006	17.489
	(0.07)		(0.04)		(0.05)		(9.68)
Number of Children	0.105	0.004	-0.140	-0.006	0.017	0.002	0.829
	(0.11)		(0.15)		(0.09)		(0.89)
Children*Female	-0.152	-0.005	0.161	0.008	-0.120	-0.011	0.393
	(0.18)		(0.18)		(0.13)		(0.71)
Education (Primary or less excluded)							
University/Graduate	-1.265**	-0.047	-0.379	-0.014	0.036	0.010	0.201
	(0.36)		(0.29)		(0.21)		
Special Secondary	-0.258	-0.010	-0.196	-0.008	0.062	0.007	0.393
	(0.20)		(0.21)		(0.16)		
Ordinary Secondary	-0.224	-0.009	0.002	0.000	0.066	0.007	0.211
	(0.22)		(0.22)		(0.18)		
Skill Level (Clerks, Service workers, Machine operators excluded)							
Professionals	-0.468	-0.016	-0.307	-0.011	-0.250	-0.019	0.149
	(0.38)		(0.30)		(0.22)		
Technicians &	-0.334	-0.011	-0.160	-0.005	-0.379*	-0.031	0.135
Associate Professionals	(0.28)		(0.25)		(0.20)		
Elementary Occupations	0.325	0.010	0.271	0.009	0.398**	0.032	0.133
	(0.22)		(0.21)		(0.17)		
Unclassified	0.067	0.002	0.344	0.015	-0.002	-0.002	0.074
	(0.40)		(0.39)		(0.28)		
Income & Private Economic Activity							
Household Income (/10^5)	0.592	0.024	0.103	0.006	-0.496	-0.046	0.076
	(0.96)		(1.08)		(0.76)		(0.08)
Engaged in private	0.323	0.012	0.022	0.000	0.106	0.008	0.062
economic activity	(0.27)		(0.35)		(0.21)		

Notes: Standard errors in parentheses. * and ** denote significance at .10 and .05 levels respectively
Sample size = 5,913   Sample Transition Probabilities: E to U = .032 , E to OLF = .058, E to E_{new} = .108
Default category is origin state (stayers).
Income is in June 1992 rubles, deflated using Goskomstat CPI. Children are≤ 15 years old.
Unclassified skill levels are armed forces, legislators/senior officials/managers, and the self-employed.
Independent variables are dummies except for age, age squared, children, children*female, and income.

Table 20 (continued) **Multinomial Logit Model of Employment Transitions: 1995 to 1996**

Model E4/96

Independent Variable	E to U		E to OLF		E to E_new		Mean
	Estimate	dPu/dx_i	Estimate	dPo/dx_i	Estimate	dPe/dx_i	
Establishment Ownership							
Government	-0.350**	-0.011	-0.289	-0.010	-0.527**	-0.043	0.698
	(0.18)		(0.18)		(0.13)		
Foreign firms/individuals	0.067	0.000	0.196	0.006	0.443*	0.038	0.033
	(0.43)		(0.43)		(0.26)		
Russian firms/individuals	0.385*	0.013	0.194	0.006	0.337**	0.027	0.247
	(0.20)		(0.21)		(0.14)		
Personal owner/co-owner	-0.547**	-0.018	-0.447**	-0.016	-0.553**	-0.044	0.211
	(0.22)		(0.22)		(0.16)		
Self-Employed	0.945*	0.032	0.446	0.014	0.755**	0.060	0.028
	(0.53)		(0.61)		(0.36)		
Region & Type of Settlement (Moscow & St. Petersburg excluded)							
Northern/North Western	0.111	0.006	0.129	0.008	-0.525*	-0.047	0.075
	(0.46)		(0.42)		(0.27)		
Central/Central Black Earth	0.619	0.025	0.189	0.010	-0.554**	-0.052	0.195
	(0.39)		(0.34)		(0.22)		
Volga-Vyatski/Volga Basin	0.236	0.011	0.179	0.010	-0.574**	-0.052	0.180
	(0.41)		(0.35)		(0.25)		
North Caucasian	0.744*	0.028	0.563	0.025	-0.459*	-0.045	0.123
	(0.41)		(0.35)		(0.25)		
Ural	0.294	0.011	0.442	0.020	-0.343	-0.033	0.155
	(0.41)		(0.35)		(0.22)		
Western Siberian	-0.205	-0.005	-0.195	-0.005	-0.707**	-0.060	0.098
	(0.46)		(0.42)		(0.26)		
Eastern Siberian	0.454	0.018	0.000	0.000	-0.288	-0.027	0.093
/Far Eastern	(0.43)		(0.40)		(0.25)		
Urban	0.156	0.005	-0.304*	-0.015	0.393**	0.035	0.737
	(0.19)		(0.18)		(0.15)		
Economic Conditions							
Owed Back Wages	0.228	0.008	0.122	0.004	0.168	0.013	0.431
	(0.16)		(0.16)		(0.12)		
Experienced Involuntary	0.364	0.010	0.760**	0.030	0.480**	0.037	0.066
Leave	(0.29)		(0.26)		(0.21)		
Establishment Size (1-24 employees excluded)							
≥ 1,000 employees	-1.308**	-0.045	-0.192	-0.002	-0.846**	-0.068	0.110
	(0.44)		(0.33)		(0.23)		
100-999	-0.308	-0.008	-0.184	-0.004	-0.831**	-0.070	0.219
	(0.27)		(0.26)		(0.19)		
25-99	0.189	0.009	0.240	0.012	-0.546**	-0.049	0.175
	(0.25)		(0.25)		(0.19)		
Missing size	-0.057	0.000	0.130	0.009	-0.635**	-0.056	0.311
	(0.24)		(0.23)		(0.16)		
constant	-2.378**		1.675*		-0.215		
	(1.01)		(0.87)		(0.69)		
Log-Likelihood	-2505.37						
Pseudo-R^2	0.1141	Model $\chi^2(105) = 645.67$**					

Table 21   **Multinomial Logit Model of Unemployment Transitions: 1992 to 1993**

Independent Var.	Model U1/93 U to E Estimate	dPe/dx$_i$	U to OLF Estimate	dPo/dx$_i$	Model U2/93 U to E Estimate	dPe/dx$_i$	U to OLF Estimate	dPo/dx$_i$	Mean
Demographic									
Female	1.018**	0.133	1.535**	0.104	0.777*	0.098	1.213*	0.084	0.571
	(0.456)		(0.706)		(0.478)		(0.732)		
Married	1.409**	0.257	1.175	0.031	1.340**	0.236	1.212	0.040	0.631
	(0.449)		(0.748)		(0.540)		(0.845)		
Married*Female	-1.287**	-0.268	-0.646	0.022	-1.299**	-0.261	-0.765	0.010	0.378
	(0.588)		(0.880)		(0.663)		(0.966)		
Age	-0.158	-0.018	-0.274**	-0.020	-0.201*	-0.025	-0.322**	-0.023	35.13
	(0.099)		(0.128)		(0.104)		(0.134)		(11.2)
Age squared (/100)	0.188	0.016	0.392**	0.032	0.254*	0.027	0.464**	0.035	13.58
	(0.133)		(0.168)		(0.142)		(0.178)		(8.50)
Number of Children	----		----		0.092	0.026	-0.039	-0.012	0.807
					(0.286)		(0.438)		(0.98)
Children*Female	----		----		0.280	0.032	0.481	0.035	0.529
					(0.344)		(0.484)		(0.87)
Education (Primary or less excluded)									
University/Graduate	0.695	0.196	-0.317	-0.091	0.696	0.198	-0.341	-0.094	0.130
	(0.492)		(0.716)		(0.494)		(0.717)		
Special Secondary	0.308	0.053	0.293	0.011	0.280	0.051	0.234	0.006	0.269
	(0.412)		(0.545)		(0.417)		(0.549)		
Ordinary Secondary	-0.314	-0.076	-0.020	0.022	-0.348	-0.078	-0.097	0.015	0.338
	(0.360)		(0.495)		(0.363)		(0.498)		
Unemployment Duration (> 12 months excluded)									
0 - 3 months	1.115**	0.267	0.100	-0.074	1.245**	0.287	0.253	-0.066	0.360
	(0.416)		(0.530)		(0.426)		(0.541)		
4 - 6 months	0.134	0.080	-0.608	-0.082	0.237	0.099	-0.522	-0.080	0.160
	(0.471)		(0.654)		(0.480)		(0.664)		
7 - 12 months	0.993*	0.161	1.090*	0.053	1.105**	0.177	1.234**	0.061	0.142
	(0.520)		(0.612)		(0.527)		(0.621)		
Missing duration	0.955*	0.202	0.436	-0.022	1.034	0.215	0.515	-0.019	0.154
	(0.520)		(0.702)		(0.529)		(0.712)		
Income									
Received UI	-0.588	-0.043	-1.329	-0.113	-0.695	-0.057	-1.476	-0.121	0.051
	(0.617)		(1.148)		(0.623)		(1.155)		
Household Income (/10^5)	0.230	-0.054	1.446	0.154	0.238	-0.056	1.490	0.158	0.065
	(1.480)		(1.420)		(1.430)		(1.331)		(0.138)

(continued on next page)

Table 21 (continued) **Multinomial Logit Model of Unemployment Transitions: 1992 to 1993**

Independent Var.	Model U1/93				Model U2/93				Mean
	U to E		U to OLF		U to E		U to OLF		
	Estimate	dPe/dx_i	Estimate	dPo/dx_i	Estimate	dPe/dx_i	Estimate	dPo/dx_i	
Region & Type of Settlement(Moscow & St. Petersburg excluded)									
Northern/	-0.748	-0.096	-1.152	-0.079	-0.699	-0.089	-1.080	-0.074	0.118
North Western	(0.571)		(0.888)		(0.573)		(0.890)		
Central/	-0.342	-0.069	-0.200	0.002	-0.297	-0.062	-0.139	0.006	0.091
Central Black Earth	(0.621)		(0.841)		(0.623)		(0.845)		
Volga-Vyatski/	-1.516**	-0.339	-0.452	0.063	-1.596**	-0.351	-0.547	0.058	0.085
Volga Basin	(0.624)		(0.839)		(0.628)		(0.845)		
North Caucasian	-2.128**	-0.427	-1.269	0.013	-2.200**	-0.438	-1.345	0.010	0.221
	(0.512)		(0.688)		(0.515)		(0.692)		
Ural	0.037	0.002	0.086	0.007	0.044	0.003	0.104	0.009	0.124
	(0.598)		(0.806)		(0.602)		(0.809)		
Western Siberian	-0.662	-0.144	-0.252	0.021	-0.719	-0.153	-0.309	0.019	0.127
	(0.605)		(0.809)		(0.610)		(0.817)		
Eastern Siberian/	-0.603	-0.156	0.100	0.058	-0.630	-0.161	0.081	0.058	0.091
Far Eastern	(0.680)		(0.841)		(0.684)		(0.844)		
Urban	0.449	0.063	0.616	0.039	0.488	0.065	0.708	0.046	0.870
	(0.448)		(0.649)		(0.453)		(0.658)		
constant	2.299		1.860		2.817		2.444		
	(1.806)		(2.429)		(1.844)		(2.480)		
Log-Likelihood			-282.53				-280.54		
Pseudo-R^2			0.143				0.149		
Model $\chi^2(44)$, Model $\chi^2(48)$			94.28**				98.25**		

Notes: Standard errors in parentheses. * and ** denote significance at .10 and .05 levels respectively
Sample size = 331   Sample Transition Probabilities: U to E = .520 , U to OLF = .157
Default category is origin state (stayers).
Income is in June 1992 rubles, deflated using Goskomstat CPI. Children are ≤ 15 years old.
Independent variables are dummies except for age, age squared, children, children*female, and income.

Table 22   **Multinomial Logit Model of Unemployment Transitions: 1995 to 1996**

Independent Var.	Model U1/96 U to E Estimate	dPe/dx_i	Model U1/96 U to OLF Estimate	dPo/dx_i	Model U2/96 U to E Estimate	dPe/dx_i	Model U2/96 U to OLF Estimate	dPo/dx_i	Mean
Demographic									
Female	0.827**	0.208	-0.226	-0.052	0.630	0.180	-0.709	-0.084	0.457
	(0.376)		(0.561)		(0.408)		(0.630)		
Married	0.942**	0.240	-0.336	-0.066	0.983**	0.251	-0.359	-0.068	0.625
	(0.336)		(0.533)		(0.357)		(0.559)		
Married*Female	-1.290**	-0.378	1.705**	0.198	-1.406**	-0.401	1.596**	0.189	0.298
	(0.471)		(0.727)		(0.491)		(0.751)		
Age	-0.106	-0.009	-0.420**	-0.032	-0.119	-0.011	-0.470**	-0.035	33.70
	(0.078)		(0.107)		(0.081)		(0.112)		(10.77)
Age squared (/100)	0.150	0.013	0.593**	0.046	0.170	0.016	0.668**	0.050	12.51
	(0.107)		(0.143)		(0.113)		(0.152)		(7.81)
Number of Children	----		----		-0.050	-0.014	0.035	0.005	0.870
					(0.182)		(0.269)		(0.887)
Children*Female	----		----		0.307	0.050	0.633*	0.042	0.416
					(0.276)		(0.365)		(0.713)
Education (Primary or less excluded)									
University/Graduate	0.869*	0.276	-1.689*	-0.181	0.869*	0.275	-1.697*	-0.177	0.080
	(0.479)		(0.943)		(0.482)		(0.964)		
Special Secondary	0.799**	0.199	-0.143	-0.044	0.814**	0.199	-0.058	-0.036	0.414
	(0.304)		(0.379)		(0.307)		(0.388)		
Ordinary Secondary	0.697**	0.206	-0.972*	-0.112	0.692**	0.203	-0.923*	-0.105	0.232
	(0.327)		(0.491)		(0.328)		(0.496)		
Unemployment Duration (> 12 months excluded)									
0 - 3 months	0.515	0.146	-0.562	-0.069	0.515	0.146	-0.560	-0.067	0.195
	(0.324)		(0.517)		(0.324)		(0.523)		
4 - 6 months	0.801*	0.202	-0.217	-0.050	0.790*	0.198	-0.175	-0.045	0.091
	(0.425)		(0.650)		(0.427)		(0.659)		
7 - 12 months	0.194	0.060	-0.342	-0.037	0.186	0.060	-0.384	-0.040	0.166
	(0.338)		(0.495)		(0.339)		(0.502)		
Missing duration	-0.090	0.002	-0.613	-0.050	-0.085	0.004	-0.633	-0.050	0.202
	(0.331)		(0.473)		(0.333)		(0.477)		
Income									
Received UI	-0.033	-0.018	0.262	0.024	-0.015	-0.015	0.307	0.027	0.109
	(0.376)		(0.502)		(0.378)		(0.513)		
Household Income (/10^5)	1.756	0.551	-3.253	-0.351	1.816	0.554	-2.989	-0.323	0.068
	(1.406)		(2.564)		(1.417)		(2.539)		(0.122)

Table 22 (continued) **Multinomial Logit Model of Unemployment Transitions: 1995 to 1996**

Independent Var.	Model U1/96				Model U2/96				
	U to E		U to OLF		U to E		U to OLF		
	Estimate	dPe/dx_i	Estimate	dPo/dx_i	Estimate	dPe/dx_i	Estimate	dPo/dx_i	Mean
Region & Type of Settlement (Moscow & St. Petersburg excluded)									
Northern/	-0.076	-0.018	-0.012	0.002	-0.077	-0.021	0.058	0.008	0.055
North Western	(0.657)		(1.166)		(0.658)		(1.171)		
Central/	-1.313**	-0.285	-0.814	-0.019	-1.357**	-0.295	-0.876	-0.022	0.177
Central Black Earth	(0.512)		(0.956)		(0.515)		(0.963)		
Volga-Vyatski/	-1.102**	-0.259	-0.177	0.028	-1.120**	-0.265	-0.155	0.030	0.175
Volga Basin	(0.534)		(0.913)		(0.537)		(0.919)		
North Caucasian	-1.068**	-0.290	0.826	0.113	-1.098**	-0.294	0.756	0.106	0.180
	(0.531)		(0.902)		(0.532)		(0.912)		
Ural	-0.880*	-0.192	-0.535	-0.012	-0.904*	-0.198	-0.543	-0.011	0.166
	(0.530)		(0.940)		(0.532)		(0.947)		
Western Siberian	-0.191	-0.095	1.254	0.116	-0.260	-0.106	1.130	0.106	0.082
	(0.623)		(0.982)		(0.628)		(0.994)		
Eastern Siberian/	-0.972*	-0.225	-0.255	0.016	-1.020*	-0.234	-0.320	0.012	0.098
Far Eastern	(0.578)		(1.024)		(0.581)		(1.031)		
Urban	0.273	0.056	0.259	0.012	0.250	0.050	0.269	0.013	0.652
	(0.258)		(0.354)		(0.259)		(0.360)		
constant	0.759	-0.039	5.676**	0.463	1.004	0.001	6.326**	0.497	
	(1.443)		(2.027)		(1.474)		(2.077)		
Log-Likelihood			-379.60				-376.36		
Pseudo-R^2			0.1413				0.1486		
Model χ^2(44) , Model χ^2(48)			124.9**				131.4**		

Notes: Standard errors in parentheses. * and ** denote significance at .10 and .05 levels respectively
Sample size = 440   Sample Transition Probabilities: U to E = .396 , U to OLF = .146
Default category is origin state (stayers).
Income is in June 1992 rubles, deflated using Goskomstat CPI. Children are≤ 15 years old.
Independent variables are dummies except for age, age squared, children, children*female, and income.

Appendix

Table 3A	**Labor Market Transition Probabilities**		
	Corrected for Classification Errors*		
	1992 to 1993	**Destination State**	
i	**Origin State**	Employed	Unemployed	OLF
1	Employed	.910	.032	.058
2	Unemployed	.523	.335	.154
3	OLF	.087	.014	.899
	1995 to 1996	**Destination State**	
i	**Origin State**	Employed	Unemployed	OLF
1	Employed	.881	.056	.062
2	Unemployed	.397	.500	.143
3	OLF	.076	.034	.891

N_{it} = number in labor market state *i* at time *t* (t=round number)
N_{11} = 5,913 ; N_{21} = 331 ; N_{31} = 3,440 ; OLF = Out of the Labor Force
N_{16} = 3,586 ; N_{26} = 440 ; N_{36} = 2,396 ;
* Corrections based on Misclassification Probability Matrix for US data (Poterba and Summers, 1993)

Table 5A		**Gross Labor Market Flows**						
		1992 to 1993						
		Destination State						
		Employed					Unemployed	OLF
Original State (N = 9,684)	N	State	Private	Work Collective	Other	Self		
State Enterprise	4,870	3,552	86	715	75	36	136	270
Private Enterprise	162	29	73	18	3	15	15	9
Work Collective	624	115	27	396	11	12	19	44
Otherwise Owned	160	70	13	41	22	0	6	8
Self-employed	97	9	17	9	1	38	11	12
Unemployed	331	115	17	20	4	16	107	52
OLF	3,440	195	22	44	14	25	47	3093

Table 8A								
Labor Market Transition Probabilities								
1992 to 1993								
Augmented for Churning and Adjusted for "Nameplate" Ownership Changes								
		Destination State						
		Employed					Unemp.	OLF
i	**Origin State**	State Enterprise **Same New**	Private Enterprise **Same New**	Work Collective **Same New**	Other	Self		
1	State Enterprise	.883 **.810 .073**	.007	.017	.002	.007	.028	.055
2	Private Enterprise	.049	.698 **.636 .062**	.006	.006	.092	.092	.056
3	Work Collective	.027	.011	.838 **.792 .046**	.003	.019	.030	.071
4	Otherwise Owned	.069	.031	.013	.800	...	.038	.050
5	Self-employed	.093	.175	.093	.010	.392	.113	.124
6	Unemployed	.347	.051	.060	.012	.048	.323	.157
7	OLF	.057	.006	.013	.004	.007	.014	.899

N_{it} = number in labor market state i at time t (t=1 indicates Round 1 data) ; ... = no transition observed
N_{11} = 4,870 ; N_{21} = 162 ; N_{31} = 624 ; N_{41} = 160 ; N_{51} = 97 ; N_{61} = 331 ; N_{71} = 3,440 ; N_{Total} = 9,684

Table 10A				
Gross Labor Market Flows				
1995 to 1996				
		Destination State		
Original State (N = 6,422)	N	Employed	Unemployed	OLF
Employed	3,586	3,161	201	224
Unemployed	440	174	202	64
OLF	2,396	181	81	2,134

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