Worker Displacement in Russia and Ukraine: A Comparative Analysis using Micro Data

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Abstract

Using unique data from a supplement to the RLMS on displaced workers in Russia and from the Ukrainian Longitudinal Monitoring Survey (ULMS) we analyze and provide the first solid evidence on displacement in Russia and Ukraine in a period of growth. Our estimates establish that quits dominate separations but that displacement rates are clearly not negligible amounting to between 2.5 and 3 percent of employment in Russia and between 2 and 5 percent in Ukraine. We also show that displacements are not random. Results that are valid across both countries demonstrate that unskilled and less educated workers are more affected as are workers in the agricultural sector. In countries like Russia and Ukraine where unemployment benefits are not generous or non-existent for the average worker long spells of non-employment can impose large monetary costs on workers. Presenting cumulative return rates for job movers we point to these costs by highlighting the fact that there is a very sizable privileged group of displaced workers who finds a new job within a very short time while the majority has difficulty in finding new employment. It is this group (larger in Ukraine than in Russia), which is not so rapidly absorbed by the labor market, that should be the target of social policy intervention by the Russian and Ukrainian governments.

1. Introduction

Kletzer (1998) and Kuhn (2002) summarize the large empirical Western literature on job displacement which establishes the extent, incidence, and costs of displacement. Despite the extensive literature that examines large-scale privatization and structural reforms in developing and transition economies, e.g. Djankow and Murell (2002), little has been written about job displacement in these countries. As Jacobsen, LaLonde and Sullivan (1993a, 1993b) point out, policymakers need to know the size of the losses borne by displaced workers when considering intervention, training, or compensation. These issues are particularly pertinent for transition economies in which institutional structures are often evolving rapidly alongside mass privatization, large scale restructuring, and the reallocation of labor. Most transition economies also experienced deep recessions at the onset of the shift from the planned to the market economy. Even if quits comprise the major share of separations from jobs in transition economies, the scale of the reallocation process may be so large that many involuntary job separations occur.

There are thus far only very few papers on workers' displacement in transition economies, e.g., Lehmann, Philips and Wadsworth (2005) on Estonia, Orazem, Vodopivec and Wu (2005) on Slovenia, and Lehmann, Pignatti and Wadsworth (2006) on Ukraine. This is the first paper that takes a comparative perspective analyzing the incidence and non-monetary costs of worker displacement in Russia and Ukraine in a period of late transition. Two data sets, which we initiated, the three waves of the Ukrainian Longitudinal Monitoring Survey (waves of 2003, 2004 and 2007) and the supplement on displacement to the 2008 round of the RLMS, enable us to estimate and compare displacement rates across the two countries in a time of growth (2002 to 2006 for Ukraine, 2003 – 2008 for Russia). Up to now researchers only had a vague idea of the extent of worker displacement in the Russian labor market. In this paper we, therefore, provide the first hard evidence on economy-wide separations and how these separations are divided into voluntary quits and displacement. We then look at the incidence of quits and displacement and compare these across the two countries.

Finally, we also compare the return-to-employment rates of quitters and displaced workers across Russia and Ukraine.

This paper is of a descriptive nature providing first evidence on the extent of worker displacement in Russia and Ukraine, on the factors determining displacement and on the costs that displaced workers experience in the two countries via the channel of non-employment. Our initial results are interesting since they show that displacement rates in Russia are somewhat lower than in Ukraine and that in the years 2003 to 2008, at least, separations are strongly dominated by voluntary quits. We can also show that the determinants of quits and separations are similar to those in Western economies. Importantly, Russian displaced workers have large return-to-employment rates comparable to those in flexible Western labor markets like the ones in the U.K. and the U.S. Ukrainian displaced workers, on the other hand, have more difficulty to get back into employment leading to a high incidence of long-term non-employment.

The next section discusses the era of restructuring and workers reallocation in Russia and Ukraine. This is followed by a description of the data. The fourth section presents our results, while a final section concludes pointing to policy implications regarding the found data patterns.

2. Worker relocation in Russia and Ukraine: survey of the evidence

The transition from plan to market, which Russia and Ukraine embarked in the late 1980s, implied profound changes in the countries' labor markets. Until the late 1980s, these countries, then parts of the USSR, were characterized by huge job vacancies, no open unemployment, and high labor force participation. Estimates of the actual unemployment in the Soviet time by Western scholars show very low numbers, of the order of 1 to 2 percent only (Gregory and Collier 1988; Granick 1987) and the available statistics on employment shows employment ratios among those aged 15-59 being as high as 83 percent in the late 1980s (see Table 1). These very high employment rates and close to

zero open unemployment came, however, at a price as extremely low labor productivity and substantial labor hoarding were pervasive features of the centrally planned economy (Granick 1987).

The earnings of workers and salaried employees were determined according to the wage grid, which implied rather small wage differentials and low returns to education. As a result, both Russia and Ukraine had one of the most egalitarian distributions of income in the world, similar to other socialist economies (Munich, Svejnar, and Terrell 2005). Indeed, at the end of the Soviet period, returns to schooling in these countries were of the order of 3-4 percent only (Gorodnichenko and Sabirianova Peter 2005) while the GINI coefficient for earnings was in the range of 0.24-0.27 (see Table 1), which is fairly small by international standards. Importantly, the excess demand for labor coupled with "job rights" incorporated in the socialist law were an important source of the economic security enjoyed by workers. While job separations were not unusual, most of them were voluntary quits and only a negligible fraction were dismissals. In particular, the pace of job flows was well below those typically found in market economies, with virtually no firm turnover (Brown and Earle 2008).

The start of the transition in Russia and Ukraine saw a rapidly collapsing demand for labor. In part, it was a consequence of inefficient use of labor resources during the central planning period (Adam 1982 and Granick 1987). More importantly, it reflected the collapse of output that these economies were facing starting in 1989. Indeed, from the onset of the transition in 1989 until the resumption of robust economic growth in 1999, Russia lost about 45 percent of its pre-transition level of GDP while Ukraine – about 60 percent (Table 1), a dramatic decline in economic activity, rivaling that of the Great Depression in the 1930s.

Adjustment of the labor market to declining demand for labor occurred via falling employment rates, rising unemployment, reduction in working hours, and decreasing real wages – essentially the whole gamut of the adjustment mechanisms available in the labor market. For example, in Russia the employment-to-population ratio fell from 83.6 percent in 1990 to 63.0 percent

in 1998 and unemployment rose from tiny numbers to 13.4 percent by the end of this period (Table 1). In Ukraine, the picture was quite similar: the employment-to-population ratio fell from 83.2 to 65.3 percent over 1989-1999, with the unemployment rate approaching 12 percent towards the end of the period. However, in contrast to the typical adjustment patterns in developed market economies as well as in most transition countries of Central Europe, where demand shocks led to falling employment rates and growing unemployment with only modest declines in real wages, the Russian and Ukrainian economies instead saw collapsing real wages with a relatively limited increase in unemployment and decrease in employment (Boeri and Terrell 2002). As shown in Table 1, Ukraine experienced a single dramatic decline in real wages in 1993 and several smaller ones, such as those in 1994 and 1999, while in Russia there were three significant falls of real wages in 1992, 1995 and 1999. Moreover, the two countries saw many non-standard mechanisms of labor market adjustment during the phase of the prolonged economic decline in 1989-1999. These included wage arrears, forced leaves, reduction in working hours and in-kind payments in lieu of cash wages (Lehmann, Wadsworth and Acquisti 1999; Earle and Sabirianova 2002; Haltiwanger, Lehmann and Terrell 2003) as well as a rise in informal employment.[1] For example, according to some estimates, over 60 thousand firms in Russia owed their workers back wages with the aggregate stock of overdue wages amounting to 50 trillion rubles or 8 billion US$ (Earle and Sabirianova 2002) and more than half of the workforce was affected (Lehmann, Wadsworth, and Acquisti 1999).[2] There is also some evidence that for most of the nineties, these non-standard adjustment mechanisms were more pronounced in Ukraine that in Russia (Konings, Kupets, and Lehmann 2003; Lehmann, Kupets, and Pignatti 2005).

After bottoming out in the late 1990s with GDP equal to a mere 55% of the pre-transition (1989) level in Russia and below 40% in Ukraine, the two economies experienced robust economic

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[1] About the latter phenomenon there is, however, no hard evidence available. This prompted our team, jointly with researchers from the Higher School of Economics in Moscow, to collect data on informality in the fall of 2009 within the RLMS project.

[2] The evidence on wage arrears in Ukraine is limited and fragmented. A few available studies however suggest that the general pattern was not very different from what one observed in Russia (see e.g., Boyarchuk et al. 2005).

growth averaging 7 percent per annum during 1999-2007 (Table 1). In parallel, the unemployment rate was gradually falling from the peak of the late 1990s, reaching the level of 6-7 percent towards the end of the period in both countries. At the same time, real wages rose sharply, far outpacing the growth in labor productivity. With the resumption of economic growth, the incidence of the non-standard mechanisms such as wage arrears was reduced considerably (Gerry, Kim and Li 2004; Boyarchuk, Maliar and Maliar 2005). For example, in Russia the number of workers experiencing wage arrears fell from over 20 mln in 1999 to less than 1 million in 2006 and the volume of arrears decreased by a factor of 13 in nominal terms (and much more in real terms) during the same period (RosStat).

The picture arising from the above macro-statistics is complemented by the evidence from a few studies that focus on job flows in the Russian and Ukrainian labor markets. As shown by Brown and Earle (2008) for Russia, the pace of job flows was very low at the onset of the transition. While it increased considerably since 1992, no extraordinarily high job reallocation occurred in the countries, contrary to widespread expectations of large-scale labor shedding accompanied by large transitional unemployment (Grogan 2003). In the early 1990s, the reallocation rates in both Russia and Ukraine approached the levels typical of developed economies and then stabilized. This evidence is complemented by Mitra, Muravyev, and Schaffer (2008), who show that for the later transition period, the job reallocation rate is actually no higher in transition economies (including Russia and Ukraine) than in mature market economies – about 20% – and has been very steady in the transition region. Several studies have also shown that job destruction prevailed over job creation in the early transition (Acquisti and Lehmann 2000; Brown and Earle 2008). According to Brown and Earle (2008), over 1993-1998 the difference amounted to about 10 percent in Russia and about 6.5 percent in Ukraine. As was expected at the start of the transition and similarly to other transition economies, most job destruction in the two economies occurred in the old sector, that is, state-owned and privatized firms that existed before 1991. The new private sector was instead responsible for the bulk

of job creation (see e.g. Konings, Kupets, and Lehmann 2003). Interestingly, the destruction of jobs in the old sector continued even in the 2000s, as the study by Mitra et al. (2008) shows. The experiences of the two countries were pretty similar, a notable difference was that the speed of the increase in reallocation as well as its effect on productivity was slightly slower in Ukraine than in Russia, perhaps reflecting a slower pace of reforms in the former country (Brown and Earle 2006 a).

Brown and Earle (2008) show that high job destruction rates in both Russia and Ukraine did not have much to do with firm exit, which remained very small, and almost negligible until 1995. Other studies focusing on the early transition period in Russia have also shown that mass layoffs accounted for a rather small share of total separations and employment reductions were largely implemented via attrition, early retirement and other voluntary means (Commander et al. 1995). Gimpelson and Lippoldt (2001) also find that the contribution of layoffs to the relatively high separation rate observed in Russia in 1990-1998 was minimal. Finally, Brown and Earle (2003) conclude that firm-initiated layoffs, while increasing significantly compared with the Soviet time, never accounted for more than 14.7 percent of separations over 1990-1999 in Russia. Thus, downsizing of firms was implemented mainly via attrition. This is in contrast to many other transition economies, where displacements became an important source of transitions out of employment already in the early 1990s (e.g., Lehmann, Philips, and Wadsworth 2005; Orazem, Vodopivec, and Wu 2005). Interestingly, there is some evidence that with respect to displacements the experiences of the two countries were not the same. In particular, the study by Lehmann, Pignatti, and Wadsworth (2005) finds that the displacement rates in Ukraine were considerably larger than in Russia and also closer to levels typically observed in several Western economies.

The evidence on job flows from the later transition period is much scarcer and more fragmented. In 1999-2002, job creation exceeds job destruction in Russia, but this pattern changes in

2003-2004 with job destruction dominating job creation again (Brown and Earle 2008).[3] Similarly, the same source suggests that job creation dominates job destruction in Ukraine in 1999-2000 and then again in 2003-2005, but in 2005-2006 the pattern reverses, largely because of a considerable fall in job creation.[4] Consistent with the observation of a negative job growth rate in Russia in 2003-2004, macro-data show a small increase in unemployment in 2003 (Table 1). Interestingly, this increase in job destruction and in unemployment occurred on the background of a brisk economic growth observed in the country at that time. In Ukraine, in contrast, the unemployment rate was persistently falling in 2000-2007. Overall, the data seems to confirm the earlier finding that job destruction rates in Russia and Ukraine continue to be significant well into the transition (Haltiwanger et al. 2003), presumably because of delayed restructuring of firms in the 1990s (Kapeliushnikov 2002). It is not known whether employment reductions in firms during the later transition period implied more displacement of workers or still relied on attrition, early retirement and other voluntary means, as in the 1990s (Commander et al. 1995; Brown and Earle 2003). Brown and Earle (2008) report no noticeable changes in the exit share of employment in 1997-2004 for the old manufacturing sector in Russia and relatively small numbers with no clear trend for the same sector in Ukraine in 1997-2006.

Interestingly, the unexpectedly low pace of job reallocation has been combined with huge worker flows during the entire period of transition in both Russia and Ukraine (e.g., Brown and Earle 2006 b). It should be noted that in contrast to job flows, worker flows were considerable already in the Soviet time, as witnessed both in the official statistics and in academic research. For example, Brown and Earle (2003) report high and remarkable steady accession rates in 1990-1999, about 20 percent, and somewhat more volatile separation rates, averaging 26 percent in Russia. As noted by

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[3] It should be noted that the study by Brown and Earle (2008) uses data on the 'traditional' manufacturing sector in Russia that exclude most of the de novo firms. Because the share of this traditional sector in total employment shrinks over time, the precision of estimates of job flows in the whole economy decreases over time.

[4] Note, however, that the study by Lehmann, Kupets, and Pignatti (2005), which is based on individual-level survey, find no evidence of a positive job growth in Ukraine in 1999-2000.

Grogan (2000) and Lehmann and Wadsworth (2000) for the early transition period, the rates of worker flows and direct job-to-job transitions were quite high in Russia as compared with Western European and Central European transition countries. Moreover, according to RosStat, both accession and separation rates increased during the 2000s, approaching 30 percent in 2006-2007.

There has been a hot debate concerning the appropriate interpretation of the rather peculiar adjustment path in the Russian and Ukrainian labor markets, which showed features of both extreme flexibility (especially with respect to real wages and worker flows) and rigidity (in particular, as regards low elasticity of employment with respect to output). For example, Layard and Richter (1994) suggested that the Russian labor market is extremely competitive and flexible or even "a neoclassical dream" while Garibaldi and Brixova (1998) point out high separation and firing costs. Grosfeld et al. (2001) offer a model that explains coexistence of elements of inertia and dynamism in the Russian labor market, which is also applicable to Ukraine. What most researchers agree upon is that the developments in the Russian and Ukrainian labor markets suggest the slow progress and incompleteness of enterprise restructuring even in the 2000s, when the economies were rapidly growing. Some scholars argued that due to the lack of competition and because of poor corporate governance, as well as other institutional features, the economy retains many inefficient firms with unproductive and badly paid jobs (Kapeliushnikov 2002). This implies that well into the transition the Russian and Ukrainian economies have a significant potential for job cuts in the form of layoffs. In fact, some institutional reforms of the early 2000s, such as the adoption of the new Labor Code in Russia that made employment protection less stringent, may be an important factor contributing to a wider use of displacements in the economy.[5] These institutional reforms might also impact on the incidence of informal employment among workers. Also, the financial crisis that unfolded at the end of the decade suggests that the peak of labor adjustment is not over either in Russia or in Ukraine.

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[5] The evolution of labor market institutions in transition economies, including Russia, is discussed in detail in a recent paper by Lehmann and Muravyev (2009).

That's why a study of worker displacement and informal employment relationships remains of particular interest.

3. Data

The analysis performed in this work is based on the a special Supplement to the national representative survey in Russia (Russian Longitudinal Monitoring Survey, RLMS) and on the Ukrainian Longitudinal Monitoring Survey (ULMS). The Supplement to the RLMS was added in 2008 and currently it is the main dataset for the analysis of job separations in Russia. The questionnaire was constructed by us with the cooperation of the Higher School of Economics Moscow and RLMS staff; the fieldwork was conducted in the period of October to December 2008. The data includes retrospective information on respondents' job and non-employment spells (start and stop dates) for around 8,000 individuals over 2003-2008 together with the start dates of their first employment spell (if earlier than 2003). It also includes information on hours worked, occupation and sector of employment, wages and bonuses in each job as well as unemployment benefits. We have merged this Supplement with the main RLMS data for the waves 2003-2008 to obtain demographic and household characteristics as well as educational attainment and region of residence. Crucial for the purpose of our analysis, the Supplement includes information on the reasons for separation from the job, which are comparable to the ULMS

The survey instrument of Ukrainian Longitudinal Monitoring Survey (ULMS) was developed by us and administered with the cooperation of the Kyiv International Institute of Sociology (KIIS). The ULMS is a household panel established to monitor Ukraine's path of transition from Communism to a market-oriented economy. The three ULMS waves were undertaken respectively in the spring of 2003, in April to July 2004, and in April to September 2007. Thanks to the collection of a large amount of retrospective data it is possible to reconstruct full individual working histories back to 1998, with additional information starting from 1986. The panel size is of about 5,000

individuals who are in all three waves, with the first wave having more than 8,600 individuals and the third having about 6,700 individuals. The data used in this paper are those from the individual questionnaires, both in reference weeks and retrospective parts. The main focus of the Ukrainian section of the paper is on about 3,500 individuals who were employed at the beginning of the 2003-2006 period. For these individuals, as in the case of RLMS, we have a very detailed retrospective information on employment and non-employment spells (start and stop dates). We also have information on hours worked, occupation and sector of employment, wages and bonuses in each job as well as unemployment benefits.

The reasons for job separation in both datasets are listed in Table A2. For the purpose of our analysis, we adopt a conservative definition of displacement and classify separations due to the end of contract or probation time as quits. In contrast to the ULMS that allows multiple answers to the reasons for a job separation, the RLMS allows to select only one main reason. In the ULMS, to cope with the existence of possible multiple reasons for job separation we have chosen a very conservative approach insofar as a reason classified as a quit always supersedes a reason classified as displacement.

For our comparative analysis we keep individuals between 15-59 years and those with non-missing information on the key variables in both datasets. The final sample size is 26025 person-years for Russia (over 2003-2008) and 10076 person-years for Ukraine (over 2003-2006). Displacement rates reported in Table 1 are calculated as the number of displacement events during year t divided by the number of employed individuals at the beginning of year t (including multiple events) for both countries.

When constructing individual and job characteristics we have generated comparable variables for Russia and Ukraine. The main differences are the absence of ethnicity variables in the RLMS, the negligible number of foreign-owned firms in Ukraine and different firm size categories due to different coding in the RLMS and ULMS questionnaires. In addition, when merging together

different RLMS waves, in order not to lose observations, marital status, children, education and region variables were extrapolated back if missing in year t using the closest value available.

4. Empirical Results

Annual separation rates in Russia are large as the upper panel of figure 1a shows, amounting to nearly 20 percent in some years. What is particularly striking, however, is that the vast bulk of separations are voluntary quits since quits are roughly 5 times as large as layoffs. The picture is somewhat different for Ukraine as we can see from the upper panel of figure 1b. On the one hand, overall separations are smaller than in Russia throughout the period, and in the years 1998 to 2001 displacement accounts for about one third of all separations. Only in the years 2002 to 2006, a period of strong growth in the Ukrainian economy, do we have similar relative magnitudes of quits and layoffs as in Russia. The middle panels of the two figures and the last rows of tables 1a and 1b show overall displacement rates. They are between 2.5 and 3 percent of employment for Russia, while the spread is between 2 and 5 percent and thus larger in Ukraine. It is also striking that in the years of strong growth we see a monotonically declining displacement rate in Ukraine, a pattern that we do not observe in Russia. Like in mature capitalist economies (see Kuhn 2000) the majority of displacements are redundancies; firm or plant closures, on the other hand, while the smaller component of displacements are clearly not negligible (see middle panels of figures 1a and 1b).

How do these displacement rates compare to layoff numbers in other transition economies and in mature capitalist economies? The Russian and Ukrainian figures are of the same magnitude as the displacement rates found in Slovenia in the early years of transition (Orazem et al. 2005). In Estonia displacement rates were very high in early transition, reaching 13 percent in 1992 and coming down to around 6 percent at the end of the decade. The Estonian economy was, however, shedding labor in a very aggressive fashion at the beginning of the transition, leading to excessively high rates in international perspective. The Russian and Ukrainian figures, which relate to a period of

strong growth after the initial transition process, are broadly comparable with those from the Western literature; for example, U.S., Dutch, German and British displacement rates average between 3 to 6 percent of the employed workforce in a year (Kuhn, 2002). So, the Russian displacement rates are clearly not negligible as mooted by some scholars of the Russian labor market but at the lower end of estimates for mature capitalist economies, while the Ukrainian displacement rates take intermediate values in the indicated range.

Even though displacement rates are substantial in both countries separations are predominantly driven by quits. In addition, as the lower panels of figures 1a and 1b show us, "voluntary" quits, i.e., quits that occur in search of better opportunities in the labor market, are the dominant component of quits. Since the Russian and the Ukrainian economies are in a boom in the analyzed period, the large numbers of "voluntary" quits are in line with the Western literature that has established pro-cyclical movements of quits (Pissarides 1994).

Table 1a reports that Russian workers with higher education are far less likely to experience displacement than their less educated counterparts, a result that also holds for Ukraine (Table 1b). In both Russia and Ukraine displacement rates are relatively uniform across gender, marital status and age. It is striking that layoff rates are far higher for worker with short tenure in Russia but not in Ukraine. On the other hand, unskilled workers are especially hard hit by displacement in both countries, as are workers in agriculture. In contrast, workers in public administration and in education and health seem relatively protected from layoffs. In both countries layoff rates are larger in the private than in the state-owned sector. The regional patterns are not very clear cut, although in the Ukrainian case, workers residing in the Center-North seem to experience more displacements than workers in the rest of the country. Overall, we find that in Russia short-tenured, low educated and unskilled workers are particularly affected by displacement, a result that has also been established in Western economies.

All survey data on displacement are plagued to some degree by selection bias. If workers have rational expectations about the economic viability of their firm, those workers with good prospects in the labor market may quit the firm before the firm is closed down or before mass redundancies occur. Hence, workers with worse characteristics remain. In restructuring firms that do not close down but initiate mass layoffs, the opposite scenario may occur and the better-quality workers may stay with the firm because of potential post-restructuring productivity gains that generate high wage growth (Pfann 2001).

If a truly exogenous shock affects all sectors equally, displaced workers would not be different from other workers, i.e. from those who quit and those who remain in their jobs. However, Tables 1a and 1b suggest that displacement is non-random across observable characteristics. Multinomial logit estimates of relative displacement probabilities shown in Tables 2a and 2b confirm this point. Since these regression results are often different across the two countries regarding the importance and significance of covariates we present them separately for the two countries.

Turning to Russia (table 2a), we find that young and married workers and workers with children are slightly less likely to be displaced. While gender has no effect on displacement, female workers and married workers are less likely to quit by one percentage point, while young workers have a higher propensity to leave their jobs voluntarily. Workers with higher education experience less layoffs than their less educated counterparts, a result that does not hold for those who quit. Tenure, on the other hand, is a good predictor of both displacement and quits. Tenure up to 5 years raises the likelihood of layoffs and quits; for those workers with very short tenure this effect is particularly strong (2 percentage points for displacement and 22 percentage points for quits). The tenure results also reflect the fact that we analyze a period of boom when the propensities to quit conditional on tenure are large multiples of the likelihood of being laid off. Firm ownership does not affect displacement or quits, while occupation does predict propensities to quit but not the likelihood of displacement. The reported marginal effects imply that unskilled workers and workers in services

have higher propensities to quit than workers in other occupations. As one would expect, working in certain industries has a significant differential impact on displacement, as workers in agriculture are more and workers in public administration and health and education less likely to be displaced than workers in manufacturing, mining and construction, services and "other sectors." The same relative patterns hold in the determination of the propensities to quit. Firm size plays no role when it comes to displacement, while workers in firms with 100 employees or more have a two percentage points lower probability to quit than workers in smaller firms. Finally, workers with residence in the North-West and the Central and Volga regions are less likely to be displaced than workers residing in the rest of the country. Quits are roughly two percentage points lower in the southern regions of Russia.

The results for Ukraine in table 2b show that female workers have a higher probability to be displaced than their male counterparts, while they have a propensity to quit that is 1 percentage point lower than for male workers. This latter effect was also found in the Russian case, the small but highly significant effect of gender on displacement is, however, not found in the Russian sample. Age has no relevance for the prediction of displacement. However, as is the case with Russian workers, members of young age cohorts exhibit a substantially higher propensity to quit. We find other demographic characteristics to also have some predictive power. Workers with children have a slightly lower probability of being displaced as have workers with secondary and higher education. University graduates also have a propensity to quit that is 2 percentage points lower than workers with less education. It is striking that in the Ukrainian sample displacement seems to be random across the tenure distribution and across firm ownership. While the latter result is also present in the estimates for the Russian sample, we find no randomness across the tenure distribution since Russian workers with short tenure spells are more prone to displacement. However, in Ukraine like in Russia workers with such spells are more likely to quit from their jobs. Occupation plays some role in the likelihood of displacement, senior managers and officials, clerks and skilled agricultural workers are less likely to be displaced than unskilled workers, while service workers are more prone to be

displaced. Workers in nearly all occupations have much larger propensities to quit than unskilled workers, a result that is opposite to the one found with the Russian sample. Relative to workers in manufacturing, workers in agriculture are more, workers in all other industries less affected by layoffs, while we find a higher propensity to quit only in agriculture. Ukrainian workers, who have their jobs in firms with 100 employees or more, experience less displacement than workers in mini-firms. The factor firm size is even stronger with quits, since voluntary separations are nearly monotonically decreasing in firm size. Finally, residence plays a very subordinate role in the Ukrainian estimates: only workers living in the center and north of Ukraine have a likelihood of displacement that is 2 percentage points higher than workers living in other parts of Ukraine.

The multinomial estimates of displacement and quits in Russia and Ukrainian allow us two arrive at three general conclusions in spite of the observed differences in the estimation results. First, displacement is clearly not random but linked to observable characteristics of workers. Second, factors, which are related to the job and the firm, have more power predicting displacement than have demographic factors, while the latter factors are more important in the prediction of quits. Third, the substantially larger marginal effects in the quits column is also a reflection of the fact that the analyzed years represent a boom period in the labor markets of both countries.

The main costs of displacement consist in the duration of non-employment and in potential earnings losses after re-employment. In this paper, we concentrate on the duration of non-employment. In countries like Russia and Ukraine, where unemployment benefit eligibility is limited and benefit levels are low for the average unemployed, displacement, when it is followed by a long spell of non-employment, can impose large monetary costs on workers.[6] We report the cumulative return rates to employment, conditional on non-employment duration, of displaced workers and compare these to return rates of quits for the years 2003 to 2008 in Russia (table 3a) and for the years

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[6] We do not distinguish between unemployment and inactivity here for two reasons. First, the number of observations of displaced workers is small which makes it difficult to find reliable estimates for the two separate labor market states. Second, given the very non-generous unemployment benefit systems in the two countries, it is difficult for most workers to maintain themselves and their families entirely with the help of unemployment benefits. This leads to fluid borders between the states of unemployment and inactivity. Hence, it is better to treat the two states as one.

2003 to 2006 in Ukraine (table 3b). These rates are based on the complement of the Kaplan-Meier estimator of survivor functions in non-employment (Smith 2002).

In Russia, around 50% of displaced workers return to full-time work within the first three months after displacement while one-third of the workers returns within one month of displacement. At least half of all those who return to work within six months do so during the first month. These job moves within one month can be considered job-to-job moves. Kuhn (2002) finds similar results for displaced workers in the U.S.; two-thirds of them are re-employed within six months. In Britain, half of the displaced workers return within two months. In Russia, it takes a year for two thirds of the displaced to find re-employment, leading to relatively modest levels of long-term non-employment. Lehmann et al. (2005) find a similar picture in the case of Estonian displaced workers in the 1990s, with between 53 and 65 percent gaining re-employment within 6 months. Since Estonia has been considered one the most dynamic economies in the 1990s among transition countries, this seems to indicate that the Russian labor market has become quite dynamic in the growth period of 2003 to 2008, capable of absorbing the majority of displaced workers within a year.

In Ukraine, the situation for displaced workers is slightly worse, since less than half of the displaced find re-employment within 6 months and only around 59 percent within a year. It is noteworthy that nearly two thirds of those finding a new job within a year do so within the first month, i.e., the bulk of the re-employed displaced workers in Ukraine engage in job-to-job moves that entail no intermediate non-employment spell. In comparison with the period 1998 to 2002, when Ukraine laid the foundations for the growth period that we analyze in this paper, the Ukrainian labor market shows clear improvements. In the earlier period only around 45 percent of displaced workers found re-employment within 12 months, with the majority lingering on in long-term non-employment. So, the Ukrainian labor market has clearly become more efficient in absorbing displaced workers, even though it is less efficient than the Russian labor market on our measure.

The return rates for those job movers who quit are far higher than for displaced workers across the entire distribution of non-employment spells. The fact that around four fifths of those who quit their jobs in Russia and nearly three quarters of quitters in Ukraine are re-employed within a year is a reflection of a booming labor market in both countries. In other words, in boom times workers who voluntarily separate from their old jobs in search of new opportunities have correct expectations since they are successful to a great extent in their job search. This contrast strongly with very low cumulative return rates for those who quit in Ukraine in the years 1992 to 1997, years of a deep transition recession, when only 47 percent found re-employment after 12 months (Lehmann et al. 2006).

4. Conclusions and policy implications

Using unique data from a supplement to the RLMS on displaced workers in Russia and from the Ukrainian Longitudinal Monitoring Survey (ULMS) we analyze displacement in Russia and Ukraine in a period of growth, covering the years 2003 to 2008 for Russia and the years 2003 to 2006 for Ukraine. Our estimates establish that quits dominate separations but that displacement rates are clearly not negligible amounting to between 2.5 and 3 percent of employment in Russia and between 2 and 5 percent in Ukraine. This is the first solid evidence on displacement rates in Russia, which shows that these rates are at the lower end of the range of estimates found for mature capitalist economies.

We also show that displacements are not random. Results from multinomial logit estimates demonstrate for Russia that unskilled and less educated workers and workers with short tenure are more affected as are workers in the agricultural sector, while those who are employed in public administration and in health and education have a lower likelihood to be displaced. The Ukrainian estimates show the same patterns apart from the fact that the length of tenure spells does not predict displacement. In Ukraine, workers who are employed in large firms experience less layoffs, a result

not found with the Russian sample where firm size is not a predictor of displacement. The regressions produce marginal effects that are larger for quits by an order of magnitude hinting at the far greater importance of quits especially in times of a booming economy.

In countries like Russia and Ukraine where unemployment benefits are not generous or non-existent for the average worker long spells of non-employment can impose large monetary costs on workers. Presenting cumulative return rates for job movers we point to these costs by highlighting the fact that there is a very sizable privileged group of displaced workers who find a new job within a very short time while the majority has difficulty in finding new employment. It is this group (larger in Ukraine than in Russia), which is not so rapidly absorbed by the labor market, that should be the target of social policy intervention by the Russian and Ukrainian governments. A second policy implication than can be inferred from the results is the simple message that the best policies addressing the social consequences of labor reallocation are policies that generate sustained growth. When we compare cumulative return rates in Ukraine in a period of sustained growth with a period of a deep transition recession we find that a majority of displaced workers is absorbed into new jobs when the economy is booming, while a majority lingers on in long-term non-employment in recessionary times.

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FIGURES AND TABLES

Figure 1a. Worker Separation Rates in Russia by Year

Separations (sample: working age 15-59 years)

Layoffs (sample: working age 15-59 years)
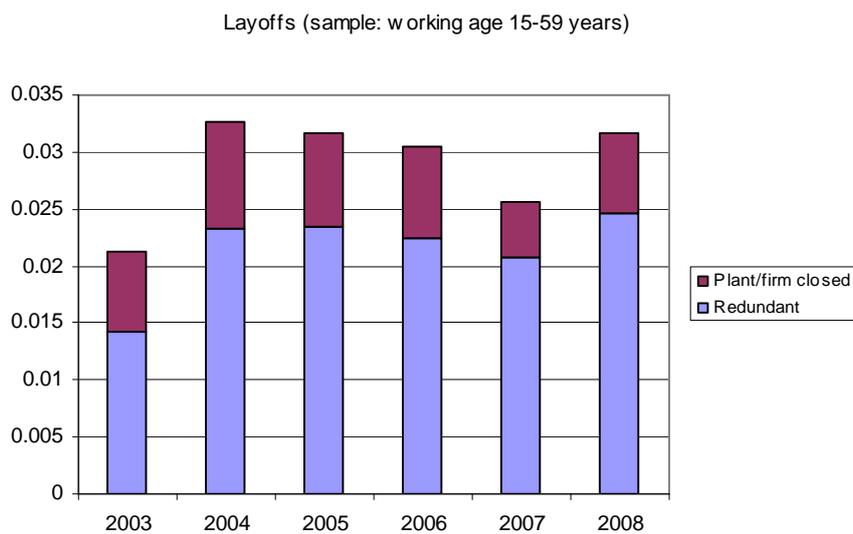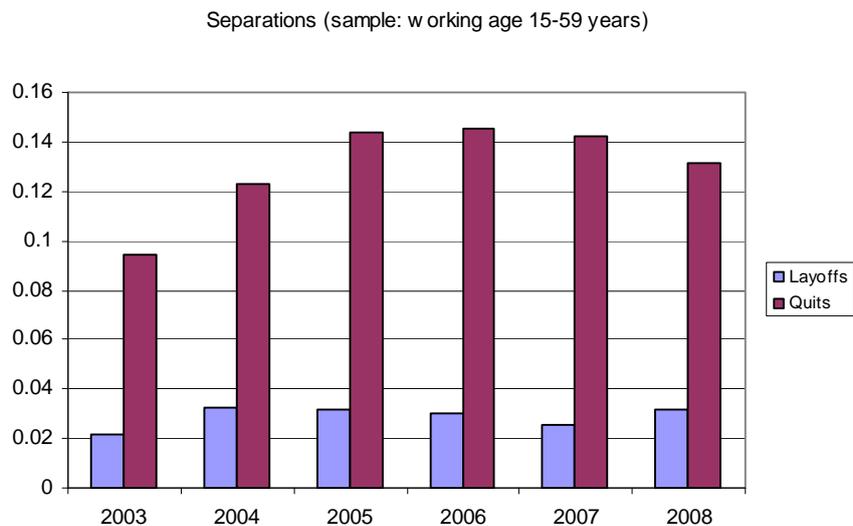
Quits (sample: working age 15-59 years)
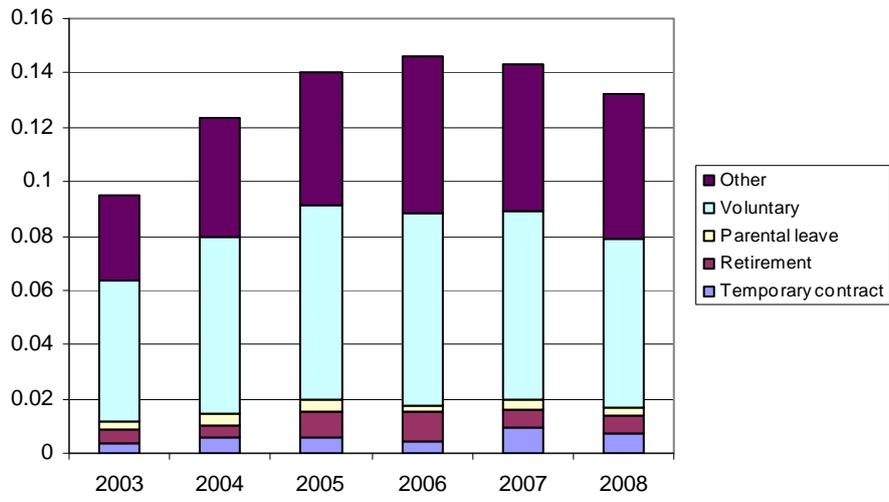
Notes: final sample used in the regressions with non-missing information on explanatory variables.

Figure 1b. Worker Separation Rates in Ukraine by Year

Separations (sample: working age 15-59 years)

Layoffs (sample: working age 15-59 years)

Quits (sample: working age 15-59 years)

Table 1a. Job Displacement Rates (in percent) in Russia, 2003-2008. Working age 15-59

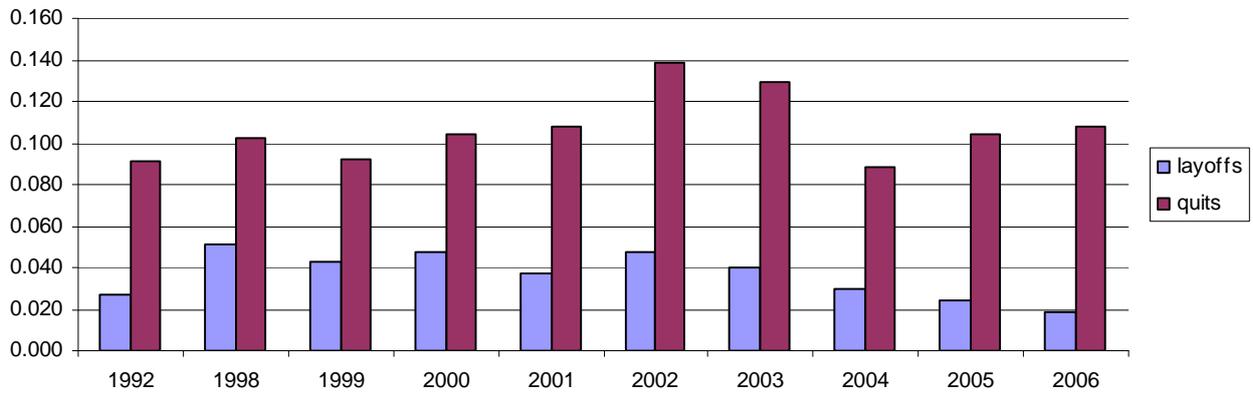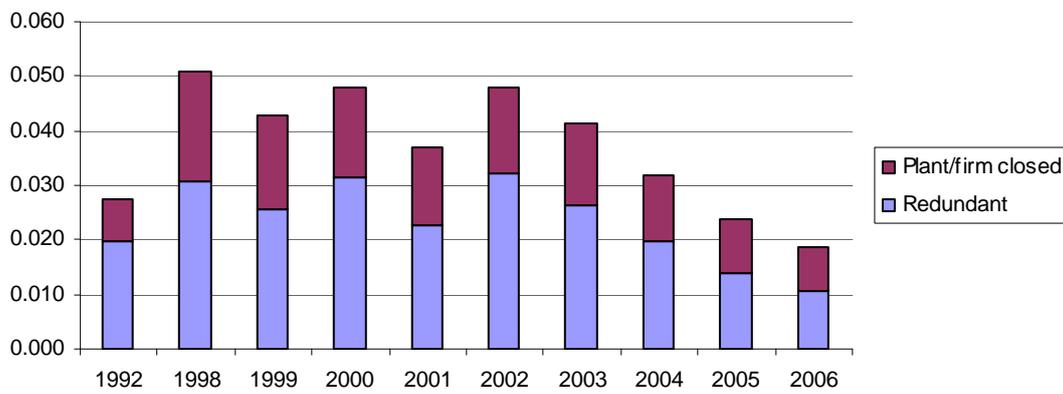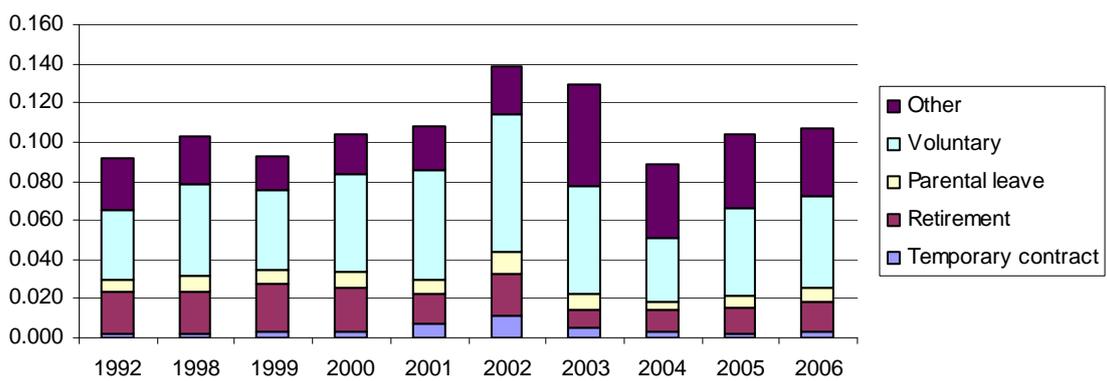|	2003	2004	2005	2006	2007	2008
Males	2.08	3.29	2.99	3.10	2.34	3.52
Females	2.17	3.25	3.29	2.99	2.73	2.90
Married	1.95	2.85	2.94	3.05	2.68	3.08
Not married	2.88	5.02	4.05	3.01	2.06	3.56
With children	2.13	3.05	3.00	2.81	2.44	3.26
Without children	2.13	3.66	3.37	3.54	2.54	3.01
Age						
15-24	2.13	4.13	2.15	5.46	3.40	4.67
25-39	2.54	2.80	3.00	2.59	2.63	3.26
40-54	1.65	3.51	3.24	2.88	2.48	2.82
55+	2.85	3.52	4.08	4.18	2.27	3.68
Education						
Primary	2.37	5.31	4.60	5.26	2.56	4.26
Secondary	2.33	3.64	3.59	3.20	3.00	3.29
Higher	1.50	1.60	1.56	1.86	1.55	2.51
Job tenure						
<1 year	4.82	10.99	15.87	14.06	13.85	18.18
1-2 years	1.29	3.82	2.26	4.39	3.54	3.45
2-5 years	3.01	3.57	3.13	2.99	2.38	3.22
6-10 years	1.24	2.64	2.13	2.44	1.45	2.02
11 years+	1.86	2.57	2.73	1.88	1.96	1.70
Occupation						
Legislators, senior managers, officials (oc1)	3.06	4.04	2.50	2.46	3.23	4.82
Professionals	1.15	0.87	1.49	2.11	2.04	1.63
Technicians and Associate Professionals	1.36	2.75	3.69	2.62	1.80	2.42
Clerks	2.67	3.79	2.56	2.52	2.53	4.48
Service workers and market workers	2.29	5.76	4.01	3.17	4.02	3.19
Skilled agricultural and fishery workers	-	-	-	-	-	-
Craft and related trades	2.77	2.91	2.90	2.76	3.39	3.02
Plant and Machine operators	2.44	3.80	3.92	3.84	1.45	3.05
Elementary (unskilled) occupations (oc9)	3.33	5.08	4.12	4.27	3.67	4.57
Industry						
Agriculture	4.07	7.01	6.78	5.32	3.42	*3.06*
Manufacturing, construction etc	2.66	3.55	4.19	3.20	2.66	3.70
Services: transport/communications+trade+finance+housing	2.15	4.22	3.45	4.60	3.16	4.47
Public administration + defence	*0.94*	*1.89*	-	*2.52*	*1.58*	*1.55*
Education&health + science and culture	0.94	*1.21*	*1.32*	*0.61*	1.31	1.30
Other	3.20	2.64	3.06	2.44	3.60	4.35
Type of enterprise / organization						
State-owned	1.88	2.38	2.78	2.15	2.00	2.02
Private and self-owned	2.26	4.35	3.13	3.84	2.68	4.13
Foreign-owned	-	-	-	-	-	-
Region						
Moscow / St. Petersburg	2.91	4.24	3.30	2.52	2.23	4.20
North-West	-	*2.80*	*3.12*	*2.03*	*2.82*	*2.92*
Center +Volga	1.77	2.57	2.76	2.05	2.18	2.17
South	3.23	3.04	*1.60*	4.74	*2.07*	3.11
East	2.01	3.91	4.55	4.22	3.62	3.96
Total	**2.13**	**3.27**	**3.16**	**3.04**	**2.56**	**3.15**

Notes: final sample used in the regressions. Displacement rates are calculated as the number of displacement events during year t divided by the number of employed individuals at the beginning of year t (including multiple events). Figures have to be treated with caution due to the small number of displacement events. In italics are figures with very small sample size. "-" stands for not available due to the negligible number (or 0) of displacements.

Table 1b. Job Displacement Rates (in percent) in Ukraine, 2002-2006. Working age 15-59

	2002	2003	2004	2005	2006
Males	5.81	4.29	3.18	2.49	1.70
Females	3.88	3.99	3.16	2.27	2.03
Married	4.51	3.65	3.59	2.29	2.01
Not married	5.63	5.37	1.34	1.06	0.61
With children	4.21	3.08	3.32	2.26	1.92
Without children	5.42	5.04	3.92	3.15	2.62
Age					
15-24	6.48	5.10	2.27	2.48	0.72
25-39	3.92	3.33	3.08	2.38	1.77
40-54	5.11	4.61	3.54	2.35	2.48
55+	4.93	3.35	2.90	2.24	0.80
Education					
Primary	5.24	6.50	4.02	3.48	2.33
Secondary	5.07	4.23	3.53	2.41	2.23
Higher	3.67	1.72	3.60	1.34	0.32
Job Tenure					
<1 year	5.73	6.54	5.31	2.40	1.24
1-2 years	4.65	5.42	4.93	2.56	1.41
2-5 years	3.81	3.76	3.62	2.66	1.96
6-10 years	4.21	3.08	3.32	2.26	1.92
11 years+	5.04	3.59	2.51	2.12	1.55
Occupation					
Legislators, senior managers, officials (oc1)	2.62	2.97	1.20	2.30	1.06
Professionals	2.32	2.84	1.85	1.72	0.91
Technicians and associate professionals	2.39	1.13	3.02	2.25	1.81
Clerks	6.03	5.38	1.59	2.99	0.98
Service workers and market workers	4.69	5.52	4.58	3.35	4.28
Skilled agricultural and fishery workers	7.04	9.09	-	1.89	1.70
Craft and related trades	5.78	3.34	4.32	1.81	2.46
Plant and machine operators	6.02	3.91	3.70	3.64	3.23
Elementary (unskilled) occupations (oc9)	5.96	6.23	8.51	7.05	6.21
Industry					
Agriculture	4.46	7.89	10.97	8.16	5.22
Manufacturing, Construction , Energy	6.34	3.76	2.55	2.56	2.50
Services:	5.65	5.01	3.49	2.61	1.69
Public Administration and Defense	2.42	4.72	0.83	-	0.71
Education Health	0.97	0.49	0.34	0.65	0.32
Other	2.77	3.07	2.86	0.79	1.92
Type of enterprise / organization					
State-Owned	4.21	2.87	2.41	2.01	1.63
Private-self-owned	4.25	5.29	4.36	3.03	2.33
Region					
Kyiv	5.93	1.76	0.79	-	1.91
West	2.86	4.17	2.91	2.46	2.45
Center-North	6.12	4.42	5.77	3.68	2.56
South	5.25	3.72	3.04	2.51	1.78
East	4.74	4.36	2.91	1.84	1.40
Total	**4.81**	**4.13**	**3.17**	**2.37**	**1.87**

Notes: Displacement rates are calculated as the number of displacement events during year t divided by the number of employed individuals at the beginning of year t (including multiple events). In italics are figures with very small sample size. "-" stands for not available due to the negligible number (or 0) of displacements.

Table 2a. Displacements and Quits in Russia: Multinomial Logit Estimation, 2003-2008

	Displaced	Quit
Female	0.003	-0.011**
	(0.002)	(0.004)
Age 15-24	-0.005*	0.020**
	(0.003)	(0.008)
Age 25-34	0.0001	0.013**
	(0.003)	(0.006)
Age 35-44	0.0005	-0.002
	(0.002)	(0.005)
Married	-0.005**	-0.008*
	(0.002)	(0.005)
Children	-0.002*	0.003
	(0.001)	(0.003)
Education		
Secondary	-0.001	-0.010*
	(0.003)	(0.006)
Higher	-0.009***	-0.003
	(0.003)	(0.007)
Tenure		
<1 year	0.019***	0.220***
	(0.005)	(0.015)
1 to 2 years	0.006**	0.090***
	(0.003)	(0.009)
2 to 5 years	0.006**	0.048***
	(0.003)	(0.006)
5 to 10 years	-0.003	0.010
	(0.002)	(0.006)
Ownership		
Foreign owned	-0.005	0.0003
	(0.006)	(0.014)
Private	0.0003	0.005
	(0.002)	(0.004)
Occupation		
Military	-0.001	0.018
	(0.013)	(0.026)
Legislators, senior managers, officials	0.006	-0.034***
	(0.005)	(0.007)
Professionals	-0.004	-0.035***
	(0.003)	(0.006)
Technicians and Associate Professionals (with secondary edu.)	-0.002	-0.030***
	(0.003)	(0.005)
Clerks	-0.006*	-0.017**
	(0.003)	(0.007)
Service workers and market workers	-0.003	-0.009
	(0.003)	(0.007)
Skilled agricultural and fishery workers	-0.003	-0.061***
	(0.009)	(0.013)
Craft and related trades	-0.004	-0.017***
	(0.003)	(0.006)
Plant and Machine operators	-0.004	-0.019***
	(0.003)	(0.005)
Industry		
Agriculture	0.007*	0.020**
	(0.004)	(0.009)
Public administration	-0.011***	-0.014*
	(0.003)	(0.007)

Education and health	-0.019***	-0.016***
	(0.002)	(0.006)
Services	-0.003	-0.002
	(0.002)	(0.005)
Other sectors	-0.003	-0.001
	(0.003)	(0.007)
Firm size		
6-20	0.006	-0.008
	(0.005)	(0.008)
21-50	0.003	-0.005
	(0.005)	(0.008)
51-100	0.004	-0.001
	(0.005)	(0.009)
101-500	0.0002	-0.018**
	(0.004)	(0.008)
500+	-0.004	-0.025***
	(0.004)	(0.008)
Region		
North-West	-0.006**	0.008
	(0.003)	(0.008)
Central+Volga	-0.007***	-0.006
	(0.002)	(0.005)
South	-0.003	-0.017***
	(0.003)	(0.006)
East	0.001	0.0000
	(0.002)	(0.005)
Years		
2003	-0.007***	-0.039***
	(0.002)	(0.005)
2004	0.001	-0.010*
	(0.003)	(0.006)
2005	-0.002	-0.003
	(0.003)	(0.006)
2006	-0.0003	0.006
	(0.003)	(0.006)
2007	-0.005*	0.0003
	(0.002)	(0.006)
N	26025	
Pseudo R^2	0.0602	

Notes: Marginal effects are reported. Robust standard errors are in parentheses. ***significant at the 1% level, significant at the 5% level, significant at the 10% level. Reference categories are male, age 45-59, not married, primary education, tenure more than 10 years, state-owned, elementary occupation, manufacturing/construction/etc. sector, firm size 1-5 employees, Moscow/St. Petersburg, year 2008. Marital status, children, education and region variables are extrapolated back if missing in year t.

Table 2b. Displacements and Quits in Ukraine: Multinomial Logit Estimation, 2003-2006

	Displaced	Quit
Female	0.007***	-0.010*
	(0.002)	(0.006)
Age 15-24	-0.003	0.049***
	(0.004)	(0.013)
Age 25-34	0.00004	0.025***
	(0.003)	(0.008)
Age 35-44	-0.002	-0.008
	(0.003)	(0.007)
Married	-0.003	0.003
	(0.003)	(0.006)
Children	-0.003*	-0.004
	(0.002)	(0.004)
Education		
Secondary	-0.005*	-0.009
	(0.003)	(0.007)
Higher	-0.009***	-0.019**
	(0.003)	(0.008)
Tenure		
<1 year	0.007	0.035***
	(0.005)	(0.010)
1-2 years	0.0001	0.014*
	(0.003)	(0.007)
2-5 years	0.001	0.007
	(0.002)	(0.006)
6-10 years	0.0004	0.007
	(0.003)	(0.007)
Ownership		
Private	-0.002	0.003
	(0.002)	(0.006)
Occupation		
Legislators, senior managers, officials (oc1)	-0.007*	0.023
	(0.004)	(0.019)
Professionals	0.004	0.137***
	(0.006)	(0.023)
Technicians and associate professionals	-0.003	0.152***
	(0.005)	(0.023)
Clerks	-0.011***	0.153***
	(0.004)	(0.032)
Service workers and market workers	0.011**	0.143***
	(0.006)	(0.021)
Skilled agricultural and fishery workers	-0.009**	-0.104***
	(0.004)	(0.004)
Craft and related trades	0.002	0.176***
	(0.004)	(0.019)
Plant and machine operators	0.007	0.117***
	(0.005)	(0.020)
Industry		
Agriculture	0.019***	0.036***
	(0.006)	(0.012)
Public Administration and Defense	-0.011***	0.004
	(0.003)	(0.014)
Education Health	-0.027***	-0.013
	(0.002)	(0.008)
Services	-0.007***	-0.006
	(0.003)	(0.007)
Other	-0.011***	0.006

	(0.003)	(0.010)
Firm size		
5-19	0.0001	-0.022***
	(0.003)	(0.007)
20-49	0.004	-0.016
	(0.004)	(0.007)
50-99	-0.001	-0.027***
	(0.004)	(0.007)
100-499	-0.010***	-0.041***
	(0.003)	(0.006)
500+	-0.010***	-0.041***
	(0.003)	(0.006)
Region		
West	0.012	-0.015
	(0.011)	(0.010)
Center - North	0.019*	0.005
	(0.012)	(0.012)
East	0.009	-0.009
	(0.009)	(0.011)
South	0.010	-0.007
	(0.011)	(0.011)
Years		
2004	0.001	0.030***
	(0.003)	(0.010)
2005	-0.003	0.038***
	(0.003)	(0.010)
2006	-0.006**	0.064***
	(0.003)	(0.012)
N	10076	
Pseudo-R2	0.0990	

Notes: Marginal effects are reported. Robust standard errors are in parentheses. ***significant at the 1% level, **significant at the 5% level, *significant at the 10% level. Reference categories are male, age 45-59, not married, primary education, tenure more than 10 years, state-owned, elementary occupation, manufacturing/construction/etc. sector, firm size 1-5 employees, Kyiv, year 2003. Marital status, children, education and region variables are extrapolated back if missing in year t.

Table 3a. Cumulative return rates for job movers in Russia: 2003-2008

% returning	Displaced	Quit
<1 month (job to job)	32.29	47.35
<3 months	50.45	67.50
<6 months	58.88	74.92
<=12 months	69.13	81.36
Median completed duration (months)	1	0
Median number of spells	1	1
N completed spells	601	2859

Notes: The fraction are based on the cumulative Kaplan-Meier survival function. Retirements are excluded from quits.

Table 3b. Cumulative return rates for job movers in Ukraine: 2003-2006

% returning	Displaced	Quit
<1 month (job to job)	37.50	57.70
<3 months	42.33	61.13
<6 months	48.30	65.85
<=12 months	58.52	73.03
Median completed duration (months)	6	0
Median number of spells	1	1
N of completed spells	147	929

Notes: The fraction are based on the cumulative Kaplan-Meier survival function. Retirements are excluded from quits.

Table A1. Selected economic indicators for Russia and Ukraine.

Russia

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
GDP per capita (2000 US$)	2693	2602	2465	2106	1926	1686	1618	1564	1591	1511	1614	1775	1870	1968	2122	2286	2444	2637	2868
GDP growth rate, %		-3,0	-5,0	-14,5	-8,7	-12,6	-4,1	-3,6	1,4	-5,3	6,4	10,0	5,1	4,7	7,3	7,1	6,4	7,4	8,1
GDP as % of GDP 1989	100,0	97,0	92,1	78,7	71,9	62,7	60,2	58,0	58,8	55,7	59,3	65,2	68,5	71,7	77,0	82,5	87,8	94,6	102,2
Employment ratio, %	83,6	83,4	81,7	78,6	75,5	70,9	69,6	68,2	65,1	63,0	67,7	69,9	69,6	70,7	69,7	69,8	70,3	70,9	72,8
Employment in industry							34,0	32,5	30,0	29,1	28,2	28,4	29,4	29,5	30,4	29,7	29,8	29,3	29,2
Employment in agriculture							15,7	15,3	12,2	11,7	15,0	14,5	12,0	11,3	10,9	10,2	10,2	10,0	9,0
ILO unemployment rate, %				5,2	5,9	8,1	9,4	9,7	11,8	13,3	13,0	10,6	9,0	7,9	8,2	7,8	7,2	7,2	6,1
Long-term unemployment rate, %				12,2	15,2	23,1	29,7	32,8	38,1	41,0	47,2	42,3	36,9	39,2	37,6	39,0	38,5	41,7	38,9
Youth unemployment rate, %				13,0	13,5	16,3	18,8	19,3	23,5	27,1	23,9	20,7	18,0	15,6	17,5	17,2	15,7	16,5	14,7
Gini coefficient (earnings)	0,271	0,269	0,325	0,371	0,461	0,446	0,471	0,483					0,521	0,491		0,469	0,445	0,451	0,439
Real wages growth rate, %			-3,4	-32,7	0,4	-7,9	-28,0	6,0	4,7	-13,0	-22,0	21,0	20,0	16,0	10,9	10,6	12,6	13,3	17,2

Sources: Transmonee database, World Bank, ILO, Osteuropa-Institut Regensburg, and Rosstat.

Ukraine

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
GDP per capita (2000 US$)	1487	1389	1270	1143	980	759	672	610	597	591	594	636	701	745	823	930	962	1039	1125
GDP growth rate, %	3,9	-6,3	-8,4	-9,7	-14,2	-22,9	-12,2	-10,0	-3,0	-1,9	-0,2	5,9	9,2	5,2	9,4	12,1	2,7	7,3	7,9
GDP as % of GDP 1989	100,0	93,7	85,8	77,5	66,5	51,2	45,0	40,5	39,3	38,5	38,4	40,7	44,4	46,7	51,2	57,3	58,9	63,2	68,2
Employment ratio, %	83,2	81,9	80,5	78,5	76,2	73,1	76,8	77,2	76,7	74,9	65,3	67,1	67,1	68,0	68,2	67,0	68,0	68,1	68,9
Employment in industry							28,0	26,4	24,6	23,8	22,6	20,8	26,3	25,2	24,6	24,6	24,2	24,2	23,9
Employment in agriculture							22,5	21,9	22,1	22,6	22,7	23,4	20,9	20,6	20,4	19,7	19,4	17,6	16,7
ILO unemployment rate, %							5,6	7,6	8,9	11,3	11,9	11,7	11,1	10,1	9,1	8,6	7,2	6,8	6,4
Long-term unemployment rate, %												45,4	51,8	51,1	47,7	29,3	28,2	24,5	34,9
Youth unemployment rate, %							14,3	18,3	22,7	22,5	26,5	24,0	22,2	19,7	16,6	15,7	14,9	14,1	12,5
Gini coefficient (earnings)	0,244	-	-	0,251	0,364	-	-	0,413	0,406	0,391	0,427	0,462	0,452	0,418	0,408	0,410-		0,410	0,414
Real wages growth rate, %		9,3	4,5	8,3	-48,9	-10,6	10,6	-3,4	-3,4	-3,8	-8,9	-0,9	19,3	18,2	15,2	23,8	20,3	18,3	12,5

Sources: Transmonee database, World Bank, ILO, Osteuropa-Institut Regensburg, and Ukrstat.

Table A2. Reasons for leaving job classification: ULMS and RLMS[7]

REASON	ULMS CLASSIFICATION	RLMS CLASSIFICATION
1 Closing down of enterprise/organization	Displacement	Displacement
1a. Reallocation/move of enterprise/organization		Displacement
2 Reorganization of enterprise/organization	Displacement	Displacement
3 Bankruptcy of enterprise/organization	Displacement	Displacement
4 Privatization of enterprise/organization	Displacement	Displacement
5 Dismissal initiated by employer	Displacement	Displacement
6 Personnel reduction	Displacement	Displacement
7 Expiring of employment contract	Quit	Quit
8 Expiring of probation time	Quit	Quit
9 Military service	Quit	Quit
10 Imprisonment	Quit	Quit
11 Own illness or injury	Quit	Quit
12 Studies	Quit	Quit
13 Retirement	Quit	Quit
14 Early retirement	Quit	Quit
15 Marriage	Quit	Quit
16 Parental leave	Quit	Quit
17 Need to take care of other members of family	Quit	Quit
18 Change of residence	Quit	Quit
19 Wanted/was proposed higher salary	Quit	Quit
20 Wanted/was proposed better working conditions	Quit	Quit
21 Wanted/was proposed more interesting work	Quit	Quit
22 Wanted to start own business	Quit	Quit
23 Main job became second job	Quit	Quit
24 End of farming/sole proprietorship	Quit	Quit
25 Other	Mostly quit	Mostly quit

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[7] The ULMS allows the respondent to give multiple answers as to the reasons for a job separation. In cases where this occurs, we use the following classification criteria:
- We ignore displacements caused by expiration of the employment contract (we focus on displacement of workers with permanent positions);
- If any of the answers is closing down of enterprise/organization, the person is displaced
- If among the answers there is no displacement, priority goes to answers suggesting a voluntary quit (wanted/was proposed higher salary, better working conditions, more interesting work, wanted to start own business, studies, marriage, parental leave, need to take care of family member)
- in all the remaining cases priority goes again to causes of displacement (reorganization, bankruptcy, privatization, personnel reduction);
- when we have dismissal initiated by the employer together with any of the causes classified as quit, we have a quit.