Job Creation and Job Destruction in the Russian Federation

Trinity Economic Paper Series

Paper No. 2000/1

JEL Classification: P52, J40

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Abstract

We study Russian job dynamics in transition using micro-level data sets from the December 1996 and June 1997 administrative records of firms in manufacturing, mining, trading and construction, for a pool of representative regions. We show that in 1997 small firms were the most successful at creating jobs while medium and large firms were mainly destroying them. Privatised firms fared no better than state-owned firms whilst *de novo* private firms had a considerably superior record relative to other firms with respect to job creation. However, much of this superior performance was related to labour market entry.

Acknowledgements

Financial support from the European Commission (TACIS-ACE project T95-4099-R) is gratefully acknowledged. The authors would like to thank Tatyana Gorbacheva, Vassilis Hajyvassilious, Vladimir Gimpelson, the members of the Department of Economics, Trinity College, Dublin, and the participants at the conference of the Atltantic Economic Association, Boston 1998, for helpful discussions. Acquisti wishes to thank the Banca Nazionale del Lavoro for financial assistance from the "Borsa di Studio BNL per il perfezionamento all'estero nelle discipline economiche". Views expressed belong solely to the authors and do not reflect the opinions of the Bank.

I. Introduction

More than five years after the transition to a market economy began in Russia, macro-economic evidence indicated that, despite the initial phenomenon of hyper-inflation and a halving of industrial production, the performance of the Russian labour market diverged from those of other reform-oriented transition economies and mass unemployment was slow to emerge. Many enterprises seemed to have reacted to the negative shock of transition by reducing working hours, not indexing salaries to inflation and allowing wage arrears to build. As a result real wages had fallen steeply since the beginning of the reforms and wage payments had been systematically withheld from workers in many industrial branches of the economy (see e.g. Layard and Richter, 1996). The flip side of this strong "price adjustment" (Lehmann, Wadsworth and Acquisti, 1998) in the Russian labour market is a quite sluggish downsizing of the workforce. Even keeping measurement problems in mind, it is clear that in the first years of transition employment has fallen by substantially less than GDP and by much less than industrial production. Foley (1997) and Gimpelson and Lippoldt (1998) document, using micro data, other important stylised facts of labour market adjustment in Russia: compared to most Central European countries transitions between employment and non-employment are large and hiring rates are high.

To fully understand this "dynamic" labour market adjustment more hard evidence, in particular at the micro level, is needed. In this paper we use a large enterprise level data set for four representative regions[1] to look at job creation and job destruction, one of the central elements of labour market adjustment in transition economies. Job creation and job destruction in Russia was analysed by Richter and Schaffer (1996). However, the data that they used consisted of a sample of 435 firms collected in 1994 while we have around 6,000 medium and

large establishments and 5,000 small firms in our data set, which covers the above mentioned regions. The observations on medium and large enterprises are census-type data in the industries manufacturing, construction and trade for 1996 and 1997, while the data on small firms is a random sample in the same industries and for the same years. We thus are able to extend the analysis to firms of all sizes and ownership types. In this paper we only look at the data from the year 1997 as these data have been particularly well collected and processed.

There is now an emerging consensus in the literature that labour market flows in CEE are at least as much determined by demand factors as by supply factors. Looking at how firm behaviour influences job creation and destruction and labour turnover is, therefore, essential if one wants to get a complete picture of labour market adjustment in a transition economy. By studying the enterprise level data we will have a fuller picture of labour market dynamics in Russia. By analysing gross job and workers flows we also provide an empirical contribution to the literature on restructuring that has been mainly theoretical (e.g. Aghion and Blanchard, 1994; Chadha, Coricelli and Kranjak, 1993; Blanchard, 1997).

There are at least three reasons why it is important to look at job creation and job destruction when analysing labour market adjustment in transition economies. First, there is a recent increased interest from both labour and industrial organisation economists in the theoretical and empirical aspects of gross flows of jobs (e.g. Davis and Haltiwanger, 1992). However, we know very little about gross job flows in Russia, despite the obvious relevance given the shocks affecting the Russian economy. We expect to gain some insights into the nature of firm adjustment in the Russian economy by studying various aspects of gross job flows, such as sector-specific, ownership and size effects.

Secondly, there is now a large literature on labour market adjustment in transition economies using aggregate employment data and micro-data from household and labour force surveys. This literature characterises unemployment in virtually all countries as a "stagnant pool" which imposes a heavy social burden on transition economies. Recent evidence shows that supply-side factors cannot only be held responsible for this result (Boeri, Lehmann and Wörgötter, 1996). None of the policy measures in CEE countries meant to increase job search efforts by the unemployed seem to have raised outflow rates from unemployment in a discernible way. Weak labour demand seems to drive labour market flows in most transition economies. As was already stressed, labour market flows are different in Russia. How much labour demand contributes to this difference can be partially explained by examining gross job flows.

Thirdly, the evidence collected in this part of the project will allow us to address the question of the sources of growth of the new private sector. Because of the distorted structure of output at the start of transition, one could expect initial rapid growth in certain sectors: trade, services, certain consumer goods, etc. This could imply that overall private sector growth will slow down after the stock adjustment process has come to an end and new firms stop entering and expanding in underrepresented sectors. Similarly, small and medium-sized enterprises (SMEs) were rare under the socialist system. One might, therefore, expect initial rapid growth by new firms as they enter and fill the SME "niche", followed by a slowdown as the niche is filled. One of the crucial questions we will ask when analysing the evidence will be whether there is robust job creation by new private firms in Russia (as found by Richter and Schaffer, 1996, and by Konings, Lehmann and Schaffer, 1996, in the case of Poland) and whether this appears to be driven by ownership and/or life-cycle effects rather than purely sectoral or size effects.

The paper has four more sections. In the next section we define the job flow measures that we use in our analysis and discuss the Russian enterprise-level data. Section III presents gross job flow rates across ownership types, industries, regions and size categories. Section IV tries to rigorously estimate the determination of net employment growth rates using OLS and Instrumental Variables regressions, while section V offers some tentative conclusions.

II. Definitions and Data

Net employment change in an economy is the result of firm expansion and firm entry on the one hand and firm contraction and firm exit on the other. The employment flows underlying this firm behaviour are referred to as "gross flows of jobs". We construct these flows using the net growth rates that are conventional in this literature rather than the more common log growth rates. Following Davis and Haltiwanger (1992) we define this growth rate as

$$g_{it} = n_{it} - n_{i,t-1} / x_{it} \qquad (1)$$

where n_{it} stands for employment of firm i at time t and $x_{it} = (n_{it} + n_{i,t-1}) / 2$ is the average size of firm i. This net employment growth rate, being symmetric and lying in the interval [-2,2], can take account of entry, expansion, contraction and exit of firms.[2] Let X_t be total average employment of the economy or of the sector under investigation, i.e. let $X_t = \Sigma_{i \hat{I} I} x_{it}$, where I stands for the set of all firms in the economy or in the sector. The job creation rate is then defined as

$$\boldsymbol{pos} \equiv \Sigma_{i \hat{I} I+} \, g_{it}(x_{it}/X_t) = \Sigma_{i \hat{I} I+} \, (n_{it} - n_{i,t-1}) / X_t, \qquad (2)$$

where I_+ is the subset of expanding/entering firms. The job creation rate is thus defined as the weighted sum of all positive net growth rates in the economy or in the sector. Alternatively we can think of this rate as the increase in employment in expanding firms expressed as a proportion of total employment. The job destruction rate is defined analogously as

$$\boldsymbol{neg} \equiv \Sigma_{i \hat{I} I-} \, |g_{it}|(x_{it}/X_t) = \Sigma_{i \hat{I} I-} \, |n_{it} - n_{i,t-1}| / X_t, \qquad (3)$$

where we now sum over the subset of contracting/exiting firms, I_-. The job destruction rate, normally expressed in absolute value, can also be interpreted as the absolute value of the decrease in employment in contracting firms as a proportion of total employment.

The gross job reallocation rate (*gross*) is defined as the sum of *pos* and *neg*, while the net change of employment is represented by *net* = *pos* – *neg*. If net employment changes are very large and mainly driven by contraction and exit, as will be the case particularly during the early phase of transition, then *gross* might not capture the reallocation of jobs very well.[3] The alternative measure of job reallocation, *excess* = *gross* - |*net*|, is therefore often used to catch job reallocation in excess of the amount necessary to accommodate a net aggregate employment change. We can also think of *excess* as an index of firm heterogeneity with respect to job creation and destruction in an economy or a given sector.

The 1997 data sets for medium and large firms and small firms respectively are described in Tables 1 and 2. The data on the medium and large firms show that the lion's share of employment is in manufacturing and mining, with about two thirds of all employees. This contrasts with a frequency of around one third of manufacturing and mining firms in the sample. Average employment must, therefore, be much larger in manufacturing than in construction and distribution and trade. This is confirmed in the last two columns of Table 1. Nearly half of all firms in the sample are in distribution and trade; this industry had, however, only 11% of employment in 1997, of which around 60% are in the private sector. On the other hand, around two thirds of employees in manufacturing and mining work in firms with mixed ownership which make up about half of all manufacturing firms. A majority of construction workers are also employed in firms with mixed ownership. Firms where the state is the sole owner represent about a third of the firms in the three industries, but have a lower employment share, varying between 15% and 24%.

Our random sample of small firms consists of more than 80% of private firms as Table 5.2 shows. It is likely that firms which are identified as private in Table 2 are actually *de novo* private firms. Most probably, firms labelled "mixed domestic" are spin-offs from large partly privatised firms. They make up the rest of the small firms data set as other ownership types are absent from our data in 1997. Most of the firms in the two relevant ownership categories are continuing firms. However, the proportion of new firms entering the three industries reaches nearly 25% in the case of *de novo* private, and 35% in the case of mixed firms. These numbers would suggest that it is important to distinguish between the performance of all small firms and of small continuing firms only.

The distributions of the net growth rates as defined in this section are presented in Figures 1-5. A look at the four regions combined shows that these rates are very different for large and medium firms on the one hand and for small firms on the other hand (Figure 1). Job destruction is prevalent among the former, while small firms seem overall to create more jobs than they seem to destroy. The other point one can take from these figures is the difference in the importance of entry to overall job creation. While there are some large and medium firms that are new entrants in both years, the frequency of the net growth rate 2 is small in the distributions of net employment growth rates for these firms. In contrast, the net growth rate 2, representing entry, is by far the most frequent rate in the 1997 distribution of net employment growth rates of small firms. Much of the difference in job reallocation between large and medium state, privatised and private firms and small *de novo* private firms might be driven by this large proportion of entrants in the latter sector. Therefore, estimated job flow rates are presented for all medium and large firms, for all small firms and for continuing small firms as well. In the performed regressions, where the data for medium and large and small firms are pooled, we distinguish between the determination of employment growth for all firms and for continuing firms. Finally, regional differences in net growth rates of employment should be pointed out (cf. Figures 2-5). As far as medium and large firms are concerned these differences are small, as job destruction dominates in all regions. The distributions of net employment growth rates for small firms, on the other hand, differ substantially by region. In particular Moscow, but also Chuvashia, have a very large fraction of entrants so much of the job creation in these two regions is caused by new firms entering the market. Chelyabinsk has a much lower fraction of new entrants and most of its

job creation in the small firms sector comes from relatively small positive net employment changes of continuing firms.[4]

III. Job Reallocation across Ownership, Industries, Size and Regions

Tables 3 – 5 present various statistics describing job flows in the chosen four Russian regions in 1997 for large and medium firms. In Table 3 we aggregate across regions along industries and within industry we also look at job flows by ownership type. As the data cover only three industries out of ten it is not possible to aggregate across industries along regional or ownership lines. This might imply that overall job creation and destruction rates can only be computed for each industry separately, but not for each region or ownership type.[5] Since firm size, measured as average employment, seems to be an important determinant of job creation and destruction in western countries (see e.g. Davis and Haltiwanger, 1992), but also in transition economies (see Konings, Lehmann and Schaffer, 1996), size categories are introduced in the remaining four tables. Table 4 presents the five job flow measures, which were defined above, as well as job creation and destruction shares in two-way cells (size by industry) while Table 5 presents the same measures in three-way cells (size by industry by ownership).

Large and medium firms in the three industries destroyed many more jobs than they created in 1997 as Table 3 clearly shows. For manufacturing and mining job destruction was 4 times as large as job creation in 1997, while in construction this ratio was around 8. Only distribution and trade had at about 6% a substantial job creation rate in 1997, whilst having a similar job destruction rate as the construction industry. This larger job creation rate of the former industry can also explain why, on our measure of excess job reallocation, it has a job reallocation

process, which is much more pronounced than in the other two industries. The results presented thus far also hold across ownership types. A further interesting fact is the relatively low job destruction rate in manufacturing and mining. If one takes job destruction as a proxy for labour shedding, which seems sensible in the case of downsizing firms in a transition economy, the data show a manufacturing and mining industry with very sluggish labour adjustment. It is also interesting that privatised firms do not behave differently in this regard from state owned firms or firms with mixed domestic ownership. Finally, in distribution and trade privatised firms account for around 70% of job creation in 1997, and for around 63% of job destruction. In manufacturing, mining and construction, on the other hand, the bulk of job creation and destruction occurs in firms with mixed domestic ownership.

There is a strong negative correlation between firm size and job creation in all three industries: Table 4 shows job creation rates that are monotonically decreasing in size. Such a negative correlation also exists in 1997 for job destruction in manufacturing and mining and construction. In distribution and trade, on the other hand, no clear pattern emerges as far as size and job destruction is concerned. The clear lack of relationship between size and net employment growth rate is also noteworthy. The estimated excess job reallocation rates show a much stronger job reallocation process among firms with modest employment levels, while the job flows of large firms are dominated by job destruction. The larger excess job reallocation rates among smaller firms also imply a more heterogeneous behaviour of these firms as far as job creation and destruction are concerned. In contrast, large firms in the three industries are much more uniform in their employment policies: they do not create many new jobs, while destroying a substantial fraction of the existing jobs. However, in manufacturing and mining

a very small job creation rate among large enterprises does not necessarily mean that large firms did not contribute to the job creation that occurred. The job creation share statistics say that firms with more than 200 employees created in 1997 around 80% of all jobs created in manufacturing and mining. In construction and distribution and trade, on the other hand, firms with less than 200 employees contributed with 76% to job creation. As far as job destruction is concerned, very large firms in manufacturing and mining and in construction destroyed in 1997 most jobs, while in distribution and trade job destruction was much more uniform across the size distribution.

The three-way cells (size by industry by ownership) presented in Table 5 show very few clear patterns as far as firm size and job flows are concerned. In 1997, a negative correlation between size and job creation and job reallocation can be seen only with private firms in manufacturing. With job destruction this correlation is less clear no matter what the ownership type or the industry. Additional information can be gained from inspecting these three-way cells, though. Especially in manufacturing and mining and distribution and trade, state firms with less than 50 employees lag far behind private and mixed firms when it comes to job creation and job destruction. Apart from state-owned firms in distribution and trade firms with less than 100 employees have the highest job destruction rates no matter what the industry or the ownership type, reaching a maximum of 31% in 1997 in the case of private manufacturing firms. In these size categories, similar patterns for excess job reallocation can be observed. What is also noteworthy is the fact that private and mixed firms with more than 2000 employees destroyed a large fraction of their existing jobs in the industries construction and distribution and trade, varying between one fifth and one third of all jobs. Clearly, large firms in manufacturing and mining were much more

conservative in 1997 when it came to eliminating jobs. In construction, the contributions to job creation and job destruction seem to be different across the two years for construction. With respect to manufacturing and mining as well as distribution and trade we observe, however, that, irrespective of ownership type, the largest job creation shares can be found in medium-sized firms. Finally, in manufacturing despite a conservative employment policy among large firms between a third and half of all jobs, which were eliminated in 1997, were destroyed by firms with more than 2000 employees.

As already stated, the employment dynamics graphed in Figures 1 – 5 seem to hint at different job flows for small firms in general and for continuing small firms. Therefore, estimates of job flow measures for the two groups are presented separately: Tables 6 and 7 present one way cells of ownership type and size categories, Tables 8 and 9 present two way cells of ownership by size for the two groups of firms. Figures 2, 4 and 5 also show differences in regional performance as far as the net employment growth of small firms is concerned. Hence Table 10 shows the four basic job flow measures[6] for small firms in three regions. One needs to stress, though, that the job flow measures are calculated only for the three industries of the regional economies for which we have collected data.

Tables 6 and 7 give the surprising result that both in terms of job creation and job destruction “mixed domestic firms”, i.e. firms owned by the state and by private residents, perform better than “private firms”, i.e. *de novo* private firms. When we take all firms, the job creation rate is about 25 percentage points higher, the job destruction rate about 5 percentage points lower for mixed firms. This superior performance of mixed firms is still present when we calculate these measures for continuing small firms only, however, it becomes less pronounced. When we look at all small firms job creation is monotonically decreasing in size

as is net employment growth. This inverse relationship between size and these two job flow measures disappears when we restrict ourselves to continuing firms. It is important to note that the positive net employment growth for firms with less than 100 employees is entirely due to entry as a comparison of column 3 in Tables 6 and 7 makes apparent. In other words, continuing firms destroy more jobs than they create and most of the job creation observed in the three regions for which data are available relates to new firms entering the labour market. The excess job reallocation rate is large relative to medium and large firms of comparable size, [7] whether all or only continuing firms are considered. This is what we would expect; small, mainly *de novo* firms show much more heterogeneity in job creation than medium and large firms. Especially for continuing firms this heterogeneity is not a function of size. Finally, inspection of the last three columns in Tables 6 and 7 shows that *de novo* private firms are under-represented as far as job creation is concerned, but that they have more than their proportional job destruction share. One can also infer from these columns that firms, which employ between 20 and 49 employees, create and destroy the lion's share of jobs, but that these shares are approximately proportional to their size share.

When interacting ownership with size in Tables 8 and 9, the same results are obtained as previously with respect to the job creation rates. With the full sample *pos* is monotonically decreasing in size for both private and mixed firms that have less than 100 employees. This inverse relationship disappears when we look only at continuing firms. For private and mixed continuing firms the excess job reallocation rate points to heterogeneity in job reallocation that is pretty uniform across size categories. Firms with between 20 and 49 employees dominate job creation in particular in the case of mixed ownership with a job creation share of more than one half in both samples. It is also noteworthy that in

this size category mixed firms perform decisively better than private firms as far as net employment growth is concerned. Even in the case of continuing firms net employment growth is still positive with 3% whilst private firms have a net employment growth rate of roughly –11%.

With the full data set Moscow performs particularly well, Chelyabinsk particularly poorly as far as job creation and job destruction are concerned. A comparison of the first rows of the upper and lower panels of Table 10 shows that this difference in performance nearly disappears when we exclude entering firms. So, entry of new firms is absolutely crucial for the better performance of small firms in Moscow. In all three regions private firms create less jobs and destroy more jobs than do mixed firms even if this difference in performance becomes much weaker with continuing firms only. For both samples job creation is inversely related to size in Moscow, but not in the other two regions. Finally, in all three regions firms of employee size between 20 and 49 dominate both job creation and job destruction. In Chelyabinsk, though, this size class has not only a much larger job destruction share than in the other two regions, but also a large negative employment growth rate (in absolute value) in both samples. So, the poor performance of Chelyabinsk should be related to poorly performing firms of this size class that performs well elsewhere.

IV. The Determination of Employment Growth: Ownership, Size and Regional Effects

The rates calculated to measure job creation, destruction and reallocation are all based on net growth rates at the enterprise level. It is possible therefore to take advantage of the variation across individual firms to establish the underlying

determinants of job creation. In the industrial organisation literature there exists a large body of research analysing firm growth, looking at the relationship between firm level growth rates and initial size.[8] Following Konings, Lehmann and Schaffer (1996) we extend this analysis by including ownership effects. The firm-level growth rate is then a function of firm size and ownership type. One hypothesis, which we wish to test, says that in transition economies *de novo* private firms behave differently to firms of all other ownership types: they are more dynamic than state-owned and privatised firms and contribute, relative to their employment share, disproportionately to positive employment growth. We are also interested in the question whether regional location matters for Russian firms' performance once we control for industrial composition, size and ownership factors. Lehmann, Wadsworth and Acquisti (1998) showed that the labour market experience of workers varies dramatically across Russian regions. Here, we would like to see whether and how the regional environment affects labour demand of firms that belong to different industries and ownership types.

We estimate a class of models, which in its most restricted form is:

$$g_{it} = \alpha_0 + \alpha_1 ln(x_{it}) + \alpha_2\, ownership_i + \alpha_3\, ln(x_{it}) \times ownership_i + u_{it} \qquad (4)$$

where g_{it} is the net growth rate defined in (5.1) and $ownership_i$ is an indicator for the ownership category into which firm i falls,[9] while u_{it} is an error term which is independently but not necessarily normally distributed. First, these equations are estimated for the joint data of medium and large firms and small firms. These data represent the 'full' data set. It is also possible to look at the determination of the net growth rates using a smaller data set that includes continuing firms only. [10]

Finally we investigate how size and ownership type impact on employment growth in medium and large firms. All the estimations are done for the year 1997 only, as we have more complete data for that year.

One econometric issue needs to be mentioned in connection with these estimations. In equation (4) the average annual employment, x_{it}, appears both on the left-hand and the right-hand side. If an important component of u_{it} is measurement error, which is very likely with this kind of data, then x_{it} will be correlated with the error term, and the coefficient estimates on the ownership variables and the interaction terms will be inconsistent. Following Durbin (1955), we use the size ranking of the firm as an instrument for the average annual employment and hope to eliminate this potential measurement error problem.

Tables 11 and 12 show results of weighted regressions for the pooled data of medium and large and small firms. As the small firms data set consists of around 10% of all small firms in a region while medium and large firms data are collected in a census like fashion, we give the small firms a weight that is 10 times as large as medium and large firms. Since we do not have any data on small firms in Krasnoyarsk we use this region as the default category in these pooled regressions.[11] In manufacturing and mining we have branch identifiers which allow us to control for a finer industrial structure.

The results of the regressions seem robust to the estimation method for both the full data set and continuing firms as far as significance levels are concerned. However, the instrumental variables estimation gives larger values of the significant coefficients (in absolute value) and rarely also changes the sign of the coefficients. From the results it is pretty clear that the full data set on one hand

and continuing firms on the other hand need to be discussed separately. One can furthermore infer that OLS estimation gives probably inconsistent results.

Size *per se* is clearly not a predictor of net employment growth in both Tables 11 and 12. Only when size is interacted with ownership do we see a significant positive effect of size for all firms. At first sight it seems quite surprising that private and mixed firms have a lower net employment growth than state-owned firms do. However, the coefficients on the variables private and mixed relate to all firms, medium and large and small. Once ownership is interacted with small firms we see very large and significant ownership effects in the full data set of Table 11. These ownership effects clearly dominate all other effects and generate for moderate levels of employment positive net growth rates. Inspection of the coefficients on triple interactions of size, small firm and private ownership allows to see that at employment levels exceeding e.g. 50 employees the predicted net growth rate can be negative. A firm located in Moscow has on average a much higher net employment growth than a firm located in Krasnoyarsk whilst Chuvashia and particularly Chelyabinsk perform worse in this respect even after size, ownership and industry effects are taken into account.

The results of the pooled regression for continuing firms are quite different. The significant coefficients are substantially smaller than in the case of the full data set. Also, the coefficients on the mixed ownership dummy and its interaction terms with size and small are no longer significant apart from the interaction term *mixed*small* in the instrumental variables estimation. Continuing firms both in Moscow and Chuvashia perform now better than Krasnoyarsk, albeit only slightly, whilst a continuing firm located in Chelyabinsk is *ceteris paribus* not different from such a firm located in Krasnoyarsk. The main difference to the regression results using the full data set relates to the coefficient estimates on the double and

triple interaction terms that involve small firms. Assuming that the instrumental variables estimates are consistent, the sign of the coefficient on the term that interacts private ownership and small firm becomes negative while the coefficient on the triple interaction term *lnsize*small*private* takes a positive value. As far as continuing firms are concerned, small *de novo* private firms perform only better than state-owned or mixed firms do when they are relatively large. When we look at all firms including those which just entered the reverse seems to be the case: small *de novo* private but also mixed firms with relatively few employees create more jobs than do state-owned firms.

Table 13 presents some predicted net employment growth rates for firms with selected characteristics. The predictions are based on significant coefficients of the regressions in Tables 11 and 12 and allow us to calculate size-dependent net growth rate differentials. One of the most striking results from these predictions is the very good performance of small firms with mixed ownership that have 10 employees, which is the average employment level of this firm type. Mixed firms of this size perform slightly better than small private firms of a comparable size and much better than state-owned or private medium and large firms. Moreover, the size-dependent differentials between large and medium state and mixed firms on the one hand and small private firms on the other hand are very small for continuing firms.

The regressions for medium and large firms show for all firms and for continuing firms that size does not predict net employment growth. From Table 14, and in particular from Table 15, it is also possible to see that state-owned firms seem to actually create more jobs than private and mixed firms, albeit the ownership effects are rather small. Size interacted with private ownership compensates somewhat for the negative ownership effect such that a large private

firm (with for example more than 500 employees) can overtake a state-owned firm of any size. A medium-and-large-sized firm located in Chuvashia performs slightly better than such firms in the other regions. Being located in Moscow does not improve net employment growth for a medium-and-large-sized firm. Finally, relative to energy and mining the industries trade/distribution and construction as well as the branches within manufacturing perform substantially worse on our measure of net employment growth.

V. Conclusions

In this paper we have used unique micro-evidence to explore job turnover in the Russian Federation in 1997.

Figures 1 – 5 made it clear that medium and large firms are mainly destroying jobs while small firms contribute significantly to job creation in the country. If we assume that private firms in the data set of medium and large firms are mainly privatised and that private firms in the sample of small firms are mainly *de novo* private firms, we can also see a clear difference in the job creation performance of these two types of private firms. Privatised firms are no better than state-owned firms whilst *de novo* private firms have a decisively superior record relative to these firms when it comes to job creation. As is also clear from the analysis, much of this better performance is due to entry into the labour market. Entry actually seems to drive many of the presented results: the surprisingly good performance of small firms with mixed ownership is mainly due to entry. Also, the spectacular job creation rate of small firms in Moscow vanishes if we exclude entering firms.

Appendix: Tables and Figures

Table 1 - Description of large and medium firms according to ownership type – 1997

		Total Employment*	Number of Firms	Average Employment	Employment share**	Frequency**
All	**Manufacturing, mining**	1364033	2029	672	0.67	0.35
	Construction	438068	1162	377	0.22	0.20
	Distribution trade	229133	2635	87	0.11	0.45
State* **	**Manufacturing, mining**	209654	644	326	0.15	0.32
	Construction	95352	362	263	0.24	0.31
	Distribution trade	51527	913	56	0.23	0.35
Private	**Manufacturing, mining**	236686	425	557	0.17	0.21
	Construction	116263	335	347	0.29	0.29
	Distribution trade	139113	1547	90	0.61	0.59
Mixed domestic	**Manufacturing, mining**	917694	960	956	0.67	0.47
	Construction	186865	464	403	0.47	0.40
	Distribution trade	37881	170	223	0.17	0.06

** Calculated as yearly average total employment. ** Ownership shares and frequencies refer to the total for a given industry.*

**** The ownership category of 3 firms in 1997 could not be identified.*

Source: Authors' calculations based on firm-level data provided by Gostkomstat.

Table 2 - Description of small firms according to ownership type – 1997

	All**	Private	Mixed domestic
Total Employment*	54175	44979	9197
	40339	*34380*	*5960*
Number of Firms	5163	4512	650
	3755	*3359*	*395*
Average Employment	10.5	9.9	14.1
	10.7	*10.2*	*15.1*
Employment share		0.83	0.17
		0.85	*0.15*
Frequency		0.87	0.13
		0.89	*0.11*

** Calculated as yearly average total employment.*

*** In italics: continuing firms.*

***** The ownership category of 2 firms in 1996 and of 1 firm in 1997 could not be identified.*

Source: Authors' calculations based on firm-level data provided by Gostkomstat.

Table 3 - Job flows by ownership type and industry – 1997, large and medium firms

	Industry	All	State	Private	Mixed domestic
Pos	**Manuf., mining**	0.026	0.026	0.033	0.024
	Construction	0.020	0.013	0.022	0.026
	Distr., trade	0.063	0.045	0.071	0.032
Neg	**Manuf., mining**	0.100	0.099	0.104	0.099
	Construction	0.167	0.143	0.180	0.180
	Distr., trade	0.157	0.122	0.162	0.190
Net	**Manuf., mining**	-0.075	-0.073	-0.071	-0.076
	Construction	-0.147	-0.131	-0.158	-0.154
	Distr., trade	-0.094	-0.076	-0.091	-0.158
Gross	**Manuf., mining**	0.126	0.125	0.137	0.123
	Construction	0.187	0.156	0.202	0.206
	Distr., trade	0.220	0.167	0.233	0.222
Excess	**Manuf., mining**	0.051	0.052	0.065	0.047
	Construction	0.039	0.025	0.045	0.052
	Distr., trade	0.126	0.091	0.143	0.064
Job creat. share*	**Manuf., mining**		0.156	0.221	0.623
	Construction		0.138	0.302	0.560
	Distr., trade		0.164	0.695	0.085
Job destr. share*	**Manuf., mining**		0.152	0.180	0.668
	Construction		0.200	0.307	0.493
	Distr., trade		0.174	0.626	0.200

** Shares refer to the total for a given industry and add up to 1 across ownership categories.*

Source: Authors' calculations based on firm-level data provided by Gostkomstat.

Table 4 - Job flows by size and industry – 1997, large and medium firms

	Industry	0-49	50-99	100-199	200-499	500-999	1000-1999	>2000
Pos	**Manuf., mining**	0.081	0.078	0.070	0.055	0.039	0.024	0.011
	Construction	0.097	0.093	0.056	0.037	0.034	0.002	0
	Distr., trade	0.101	0.076	0.088	0.064	0.018	0	0
Neg	**Manuf., mining**	0.193	0.184	0.145	0.136	0.111	0.114	0.080
	Construction	0.283	0.224	0.179	0.136	0.147	0.127	0.174
	Distr., trade	0.150	0.170	0.143	0.125	0.131	0.203	0.239
Net	**Manuf., mining**	-0.112	-0.106	-0.075	-0.081	-0.072	-0.090	-0.069
	Construction	-0.187	-0.131	-0.123	-0.099	-0.113	-0.125	-0.174
	Distr., trade	-0.049	-0.093	-0.055	-0.062	-0.113	-0.203	-0.239
Gross	**Manuf., mining**	0.274	0.262	0.214	0.192	0.150	0.138	0.090
	Construction	0.380	0.316	0.236	0.172	0.180	0.129	0.174
	Distr., trade	0.250	0.246	0.230	0.189	0.148	0.203	0.239
Excess	**Manuf., mining**	0.162	0.156	0.139	0.111	0.079	0.048	0.021
	Construction	0.193	0.185	0.112	0.074	0.067	0.004	0
	Distr., trade	0.201	0.153	0.175	0.127	0.035	0	0
Job creat.	**Manuf., mining**	0.016	0.051	0.136	0.260	0.189	0.118	0.231
share*	**Construction**	0.082	0.184	0.291	0.277	0.159	0.007	0
	Distr., trade	0.316	0.220	0.225	0.212	0.027	0	0
Job destr.	**Manuf., mining**	0.010	0.031	0.072	0.163	0.136	0.143	0.446
share*	**Construction**	0.028	0.053	0.109	0.121	0.082	0.046	0.561
	Distr., trade	0.188	0.195	0.147	0.167	0.081	0.065	0.156

** Shares refer to the total for a given industry and add up to 1 across ownership categories.*

Source: Authors' calculations based on firm-level data provided by Gostkomstat.

Table 5 - Job flows by size, industry and ownership – 1997, large and medium firms

		Pos			Neg			Net			Excess			Job creat. share*			Job destr. share*		
Size	**Ownership**	**Man**	**Cons**	**Dist**	**Man**	**Cons**	**Dist**	**Man**	**Cons**	**Dist**	**Man**	**Cons**	**Dist**	**Man**	**Cons**	**Dist**	**Man**	**Cons**	**Dist**
0-	**State**	0.035	0.085	0.067	0.149	0.301	0.074	-0.114	-0.216	-0.007	0.069	0.170	0.134	0.030	0.243	0.468	0.034	0.075	0.193
49	**Private**	0.149	0.085	0.112	0.311	0.276	0.191	-0.162	-0.190	-0.079	0.299	0.171	0.224	0.012	0.049	0.308	0.008	0.020	0.231
	Mixed domestic	0.194	0.120	0.254	0.277	0.263	0.223	-0.083	-0.143	0.031	0.389	0.239	0.446	0.014	0.060	0.334	0.005	0.019	0.050
50-	**State**	0.062	0.021	0.066	0.140	0.253	0.096	-0.078	-0.231	-0.031	0.124	0.043	0.131	0.105	0.098	0.177	0.062	0.101	0.098
99	**Private**	0.143	0.065	0.070	0.170	0.220	0.178	-0.027	-0.155	-0.108	0.286	0.130	0.140	0.081	0.112	0.227	0.030	0.047	0.253
	Mixed domestic	0.062	0.164	0.124	0.235	0.204	0.242	-0.173	-0.040	-0.118	0.124	0.329	0.248	0.026	0.245	0.306	0.023	0.044	0.101
100-	**State**	0.037	0.029	0.082	0.113	0.142	0.158	-0.077	-0.113	-0.076	0.073	0.058	0.165	0.121	0.232	0.193	0.099	0.100	0.138
199	**Private**	0.079	0.044	0.093	0.137	0.190	0.139	-0.058	-0.146	-0.046	0.158	0.087	0.186	0.177	0.301	0.253	0.097	0.164	0.167
	Mixed domestic	0.083	0.085	0.057	0.166	0.189	0.152	-0.082	-0.104	-0.095	0.167	0.170	0.114	0.125	0.299	0.209	0.059	0.096	0.094
200-	**State**	0.030	0.020	0.029	0.109	0.124	0.152	-0.079	-0.105	-0.122	0.059	0.040	0.059	0.195	0.245	0.158	0.188	0.135	0.303
499	**Private**	0.078	0.040	0.064	0.144	0.131	0.108	-0.066	-0.090	-0.044	0.156	0.081	0.128	0.395	0.308	0.177	0.229	0.124	0.133
	Mixed domestic	0.056	0.043	0.019	0.144	0.144	0.149	-0.088	-0.102	-0.130	0.112	0.085	0.039	0.228	0.269	0.120	0.139	0.131	0.156
500-	**State**	0.028	0.016	0.002	0.077	0.154	0.235	-0.049	-0.138	-0.233	0.055	0.033	0.003	0.124	0.183	0.004	0.091	0.151	0.218
999	**Private**	0.025	0.053	0.030	0.111	0.124	0.088	-0.086	-0.071	-0.059	0.050	0.106	0.060	0.121	0.230	0.035	0.168	0.067	0.046
	Mixed domestic	0.047	0.034	0.008	0.119	0.157	0.107	-0.072	-0.123	-0.099	0.094	0.068	0.015	0.230	0.115	0.030	0.138	0.076	0.072
1000-	**State**	0.063	0	0	0.132	0.179	0.095	-0.069	-0.179	-0.095	0.126	0	0	0.363	0	0	0.199	0.090	0.019
1999	**Private**	0.026	0	0	0.077	0.217	0.236	-0.051	-0.217	-0.236	0.052	0	0	0.166	0	0	0.153	0.030	0.075
	Mixed domestic	0.010	0.003	0	0.129	0.091	0.171	-0.119	-0.087	-0.171	0.019	0.007	0	0.040	0.012	0	0.127	0.046	0.073
>2000	**State**	0.004	0	0	0.079	0.113	0.052	-0.075	-0.113	-0.052	0.008	0	0	0.061	0	0	0.328	0.348	0.031
	Private	0.004	0	0	0.087	0.197	0.331	-0.083	-0.197	-0.331	0.008	0	0	0.048	0	0	0.316	0.549	0.096
	Mixed domestic	0.012	0	0	0.079	0.206	0.245	-0.066	-0.206	-0.245	0.025	0	0	0.338	0	0	0.509	0.589	0.454

** Shares refer to the total for a given industry and ownership type and add up to 1 across row entries in the corresponding ownership category.*

Source: Authors' calculations based on firm-level data provided by Gostkomstat.

Table 6 - Separate job flows by ownership type and by size – 1997, small firms

	Pos	Neg	Net	Gross	Excess	Job creat. share	Job destr. share	Size share
All	0.595	0.167	0.428	0.763	0.335			
Private	0.554	0.176	0.378	0.729	0.352	0.772	0.871	0.830
Mixed domestic	0.800	0.127	0.673	0.926	0.254	0.228	0.129	0.170
0-4	0.872	0.170	0.703	1.042	0.339	0.070	0.048	0.048
5-9	0.842	0.217	0.625	1.059	0.433	0.152	0.140	0.108
10-19	0.698	0.184	0.514	0.882	0.368	0.219	0.205	0.187
20-49	0.647	0.170	0.477	0.817	0.340	0.459	0.429	0.423
50-99	0.254	0.123	0.131	0.377	0.246	0.098	0.169	0.230
>100	0.132	0.323	-0.191	0.454	0.263	0.001	0.008	0.004

Source: Authors' calculations based on firm-level data provided by Gostkomstat.

Table 7 - Separate job flows by ownership type and by size – 1997, continuing small firms

	Pos	Neg	Net	Gross	Excess	Job creat. share	Job destr. share	Size share
All	0.126	0.211	-0.085	0.338	0.253			
Private	0.122	0.216	-0.094	0.338	0.244	0.821	0.868	0.852
Mixed domestic	0.153	0.190	-0.036	0.343	0.307	0.179	0.132	0.148
1-4	0.133	0.231	-0.098	0.364	0.266	0.039	0.041	0.038
5-9	0.126	0.328	-0.202	0.454	0.252	0.088	0.137	0.088
10-19	0.134	0.261	-0.127	0.395	0.268	0.185	0.216	0.175
20-49	0.134	0.217	-0.084	0.351	0.267	0.430	0.418	0.408
50-99	0.111	0.133	-0.022	0.244	0.222	0.251	0.180	0.286
>100	0.132	0.323	-0.191	0.454	0.263	0.006	0.009	0.006

Source: Authors' calculations based on firm-level data provided by Gostkomstat.

Table 8 - Job flows by size and ownership – 1997, small firms

Size	Ownership	Pos	Neg	Net	Gross	Excess	Job creat. share*	Job destr. share*
0-4	**Private**	0.857	0.169	0.688	1.026	0.338	0.081	0.050
	Mixed without foreign	1.019	0.173	0.846	1.192	0.345	0.033	0.035
5-9	**Private**	0.789	0.229	0.559	1.018	0.459	0.159	0.145
	Mixed without foreign	1.161	0.141	1.020	1.303	0.283	0.132	0.101
10-19	**Private**	0.633	0.186	0.447	0.819	0.372	0.216	0.200
	Mixed without foreign	1.037	0.172	0.865	1.209	0.344	0.229	0.239
20-49	**Private**	0.590	0.186	0.404	0.776	0.373	0.441	0.439
	Mixed without foreign	0.892	0.099	0.792	0.991	0.198	0.520	0.364
50-99	**Private**	0.244	0.126	0.118	0.369	0.251	0.102	0.165
	Mixed without foreign	0.307	0.109	0.198	0.416	0.218	0.087	0.195
>100	**Private**	0.308	0	0.308	0.308	0	0.001	0
	Mixed without foreign	0	0.563	-0.563	0.563	0	0	0.065

** Shares refer to the total for a given ownership type.*

Source: Authors' calculations based on firm-level data provided by Gostkomstat.

Table 9 - Job flows by size and ownership – 1997, continuing small firms

Size	Ownership	Pos	Neg	Net	Gross	Excess	Job creat. share*	Job destr. share*
1-4	**Private**	0.131	0.233	-0.102	0.364	0.262	0.044	0.044
	Mixed without foreign	0.155	0.197	-0.043	0.352	0.309	0.019	0.020
5-9	**Private**	0.125	0.334	-0.209	0.459	0.250	0.095	0.144
	Mixed without foreign	0.139	0.275	-0.136	0.414	0.278	0.056	0.089
10-19	**Private**	0.137	0.251	-0.114	0.388	0.274	0.204	0.211
	Mixed without foreign	0.111	0.337	-0.226	0.448	0.222	0.101	0.247
20-49	**Private**	0.122	0.228	-0.106	0.350	0.244	0.402	0.425
	Mixed without foreign	0.195	0.161	0.033	0.356	0.323	0.561	0.376
50-99	**Private**	0.108	0.135	-0.027	0.243	0.216	0.249	0.176
	Mixed without foreign	0.128	0.121	0.007	0.248	0.241	0.263	0.201
>100	**Private**	0.308	0.000	0.308	0.308	0.000	0.007	0.000
	Mixed without foreign	0.000	0.563	-0.563	0.563	0.000	0.000	0.067

** Shares refer to the total for a given ownership type.*

Source: Authors' calculations based on firm-level data provided by Gostkomstat.

Table 10 - Separate job flows by ownership type and by size – 1997, small firms

	Moscow				Chelyabinsk				Chuvashya			
	Pos	Neg	Job creat. Share	Job destr. Share	Pos	Neg	Job creat. Share	Job destr. Share	Pos	Neg	Job creat. Share	Job destr. Share
All	0.802	0.147	0.867	0.566	0.159	0.231	0.065	0.334	0.355	0.147	0.068	0.100
Private	0.771	0.152	0.772	0.828	0.143	0.244	0.791	0.929	0.306	0.155	0.754	0.922
Mixed domestic	0.928	0.128	0.228	0.172	0.280	0.137	0.209	0.071	0.707	0.093	0.246	0.078
0-4	1.113	0.150	0.059	0.043	0.373	0.254	0.114	0.053	0.783	0.117	0.166	0.060
5-9	1.179	0.163	0.154	0.116	0.234	0.354	0.172	0.178	0.375	0.197	0.111	0.141
10-19	0.962	0.162	0.225	0.206	0.131	0.229	0.155	0.187	0.405	0.214	0.205	0.261
20-49	0.870	0.141	0.466	0.413	0.151	0.267	0.384	0.468	0.374	0.135	0.448	0.391
50-99	0.331	0.131	0.096	0.206	0.116	0.109	0.176	0.113	0.100	0.109	0.056	0.147
>100	0.000	0.563	0.000	0.015					0.308	0.000	0.014	0.000

Source: Authors' calculations based on firm-level data provided by Gostkomstat.

Table 11 - Separate job flows by ownership type and by size – 1997, continuing small firms

	Moscow				Chelyabinsk				Chuvashya			
	Pos	**Neg**	**Job creat. Share**	**Job destr. Share**	**Pos**	**Neg**	**Job creat. Share**	**Job destr. Share**	**Pos**	**Neg**	**Job creat. Share**	**Job destr. Share**
All	0.136	0.214	0.590	0.557	0.095	0.228	0.235	0.337	0.162	0.164	0.175	0.106
Private	0.135	0.214	0.821	0.822	0.091	0.238	0.842	0.926	0.144	0.169	0.793	0.923
Mixed domestic	0.137	0.215	0.179	0.178	0.132	0.149	0.158	0.074	0.317	0.120	0.207	0.077
1-4	0.187	0.238	0.043	0.035	0.052	0.258	0.022	0.046	0.145	0.169	0.049	0.056
5-9	0.168	0.323	0.089	0.108	0.090	0.373	0.105	0.182	0.097	0.230	0.060	0.142
10-19	0.156	0.287	0.191	0.222	0.095	0.226	0.191	0.190	0.150	0.248	0.161	0.262
20-49	0.139	0.211	0.413	0.397	0.089	0.261	0.377	0.462	0.210	0.149	0.559	0.393
50-99	0.111	0.148	0.264	0.222	0.116	0.109	0.305	0.120	0.100	0.109	0.136	0.147
>100	0.000	0.563	0.000	0.016					0.308	0.000	0.035	0.000

Source: Authors' calculations based on firm-level data provided by Gostkomstat.

Table 12 - Weighted regression results. Dependent variable: Employment growth rate of firm *i* in 1997 – All Firms

	OLS			Instrumental Variables		
Explanatory Variable	**Coefficient**	**Robust Standard Error**	**P>|t|**	**Coefficient**	**Robust Standard Error**	**P>|t|**
ln(size)	-0.0166	0.0107		-0.0033	0.0076	
State						
Private	-0.4713	0.0774	***	-0.3064	0.0462	***
Mixed	-0.1522	0.0883	*	-0.0192	0.0587	
Large and State						
Private*small	1.4685	0.0781	***	3.2176	0.2430	***
Mixed*small	1.2619	0.1271	***	3.1147	0.5836	***
Ln(size)*private	0.0998	0.0161	***	0.0710	0.0102	***
Ln(size)*mixed	0.0447	0.0164	***	0.0185	0.0108	*
Ln(size)*small*private	-0.2554	0.0195	***	-0.8921	0.0898	***
Ln(size)*small*mixed	-0.1419	0.0398	***	-0.8252	0.2116	***
Energy and Mining						
Trade and Distribution	0.1184	0.1751		0.1260	0.1809	
Construction	-0.1665	0.1763		-0.1782	0.1821	
Metallurgic	-0.3523	0.2025	*	-0.3421	0.2094	
Chemical	-0.2875	0.2175		-0.2839	0.2210	
Engineering	-0.0550	0.1785		-0.0569	0.1843	
Wood Industry	-0.0069	0.1915		-0.0188	0.1977	
Light Industry	0.0122	0.1867		-0.0205	0.1922	
Building Industry	0.1488	0.1983		0.1326	0.2043	
Food Industry	0.1302	0.1939		0.1209	0.1989	
Other Industries	0.0094	0.1892		0.0077	0.1946	
Krasnoyarsk						
Moscow	0.2548	0.0245	***	0.2528	0.0247	***
Chuvashya	-0.2048	0.0411	***	-0.1862	0.0419	***
Chelyabinsk	-0.5033	0.0340	***	-0.5020	0.0345	***
Constant	-0.0750	0.1787		-0.1291	0.1797	
Observations = 9636						
Prob. F>0 = 0.000						

** Statistically significant at the 10% level ** Statistically significant at the 5% level *** Statistically significant at the 1% level*

Source: Firm-level data provided by Gostkomstat.

Table 13 - Weighted regression results. Dependent variable: Employment growth rate of firm *i* in 1997 – Continuing Firms

	OLS			Instrumental Variables		
Explanatory Variable	**Coefficient**	**Robust Standard Error**	**P>|t|**	**Coefficient**	**Robust Standard Error**	**P>|t|**
ln(size)	0.0025	0.0056		0.0037	0.0046	
State						
Private	-0.1671	0.0400	***	-0.0983	0.0264	***
Mixed	-0.0828	0.0517		-0.0513	0.0349	
Large and State						
Private*small	0.1592	0.0467	***	-0.4335	0.1410	***
Mixed*small	0.1151	0.0864		-0.3419	0.3736	**
Ln(size)*private	0.0302	0.0081	***	0.0169	0.0057	***
Ln(size)*mixed	0.0090	0.0093		0.0037	0.0062	
Ln(size)*small*private	-0.0230	0.0113	**	0.1836	0.0509	***
Ln(size)*small*mixed	-0.0032	0.0263		0.1572	0.1333	
Energy and Mining						
Trade and Distribution	-0.0199	0.0963		-0.0156	0.0963	
Construction	-0.1506	0.0971		-0.1621	0.0970	*
Metallurgic	0.0122	0.1185		0.0139	0.1188	
Chemical	-0.1360	0.1115		-0.1327	0.1116	
Engineering	-0.0216	0.0984		-0.0264	0.0985	
Wood Industry	0.0143	0.1057		0.0100	0.1058	
Light Industry	-0.0784	0.1042		-0.0863	0.1042	
Building Industry	-0.0029	0.1091		-0.0097	0.1091	
Food Industry	0.0295	0.0991		0.0136	0.0989	*
Other Industries	-0.0666	0.1037		-0.0734	0.1036	
Krasnoyarsk						
Moscow	0.0391	0.0152	**	0.0383	0.0152	**
Chuvashya	0.0801	0.0258	***	0.0830	0.0258	***
Chelyabinsk	-0.0319	0.0212		-0.0278	0.0213	
Constant	-0.0847	0.0980		-0.0862	0.0958	
Observations = 8088						
Prob. F>0 = 0.000						

** Statistically significant at the 10% level ** Statistically significant at the 5% level *** Statistically significant at the 1% level*

Source: Firm-level data provided by Gostkomstat.

Table 14 - Predicted net employment growth rates

All	OLS	Instrumental variable
Large and Medium State Firm, Krasnoyarsk	-0.0750	-0.1291
Large and Medium State Firm, Moscow	0.1799	0.1237
Private Firm, Krasnoyarsk, 500 workers	0.0738	0.0061
Private Firm, Krasnoyarsk, 2000 workers	0.2121	0.1046
Private Firm, Moscow, 500 workers	0.3286	0.2588
Private Firm, Moscow, 2000 workers	0.4669	0.3573
Small Mixed Ownership Firm, Moscow, 50 workers	0.9092	0.0634
Small Mixed Ownership Firm, Moscow, 10 workers	1.0657	1.3617
Small Mixed Ownership Firm, Chelyabinsk, 10 workers	0.3076	0.6069
Small Private Firm, Chelyabinsk, 50 workers	-0.1899	-0.9318
Small Private Firm, Chelyabinsk, 10 workers	0.0606	0.3896
Small Private Firm, Moscow, 100 workers	0.4603	-0.7461
Small Private Firm, Moscow, 50 workers	0.5682	-0.1770
Small Private Firm, Moscow, 10 workers	0.8187	1.1444

Continuing	OLS	Instrumental variable
Large State or Mixed Firm, Krasnoyarsk or Chelyabinsk	-0.0847	-0.0862
Small Private Firm, Chuvashya, 100 workers	0.0207	0.3885
Small Private Firm, Chuvashya, 50 workers	0.0157	0.2495
Small Private Firm, Chuvashya, 10 workers	0.0042	-0.0733
Small Private Firm, Moscow, 100 workers	-0.0203	0.3438
Small Private Firm, Moscow, 50 workers	-0.0253	0.2048
Small Private Firm, Moscow, 10 workers	-0.0369	-0.1180

Source: Authors' calculations based on regressions of Tables 12 and 13.

Table 15 - Regression results. Dependent variable: Employment growth rate of firm *i* in 1997 – All medium and large Firms

	OLS			Instrumental Variables		
Explanatory Variable	**Coefficient**	**Robust Standard Error**	**P>|t|**	**Coefficient**	**Robust Standard Error**	**P>|t|**
ln(size)	-0.0133	0.0090		-0.0022	0.0050	
State						
Private	-0.1016	0.0634		-0.0679	0.0338	**
Mixed	-0.0865	0.0773		-0.0233	0.0465	
Ln(size)*private	0.0189	0.0129		0.0112	0.0067	*
Ln(size)*mixed	0.0166	0.0139		0.0026	0.0078	
Energy and Mining						
Trade and Distribution	-0.0786	0.0453	*	-0.0719	0.0441	
Construction	-0.1612	0.0460	***	-0.1619	0.0452	***
Metallurgic	-0.0906	0.0694		-0.0900	0.0694	
Chemical	-0.1090	0.0626	*	-0.1130	0.0620	*
Engineering	-0.1081	0.0455	**	-0.1120	0.0449	**
Wood Industry	-0.1363	0.0516	***	-0.1400	0.0508	***
Light Industry	-0.2070	0.0472	***	-0.2069	0.0463	***
Building Industry	-0.1472	0.0499	***	-0.1495	0.0493	***
Food Industry	-0.0688	0.0457		-0.0716	0.0447	
other Industry	-0.1271	0.0481	***	-0.1276	0.0471	***
Krasnoyarsk						
Moscow	-0.0124	0.0175		-0.0126	0.0176	
Chuvashya	0.0811	0.0247	***	0.0840	0.0245	***
Chelyabinsk	0.0048	0.0212		0.0053	0.0213	
Constant	0.0915	0.0640		0.0442	0.0507	
Observations = 5810						
Prob. F>0 = 0.000						

** Statistically significant at the 10% level ** Statistically significant at the 5% level *** Statistically significant at the 1% level*

Source: Firm-level data provided by Gostkomstat.

Table 16 - Weighted regression results. Dependent variable: Employment growth rate of firm *i* in 1997 – All medium and large continuing firms

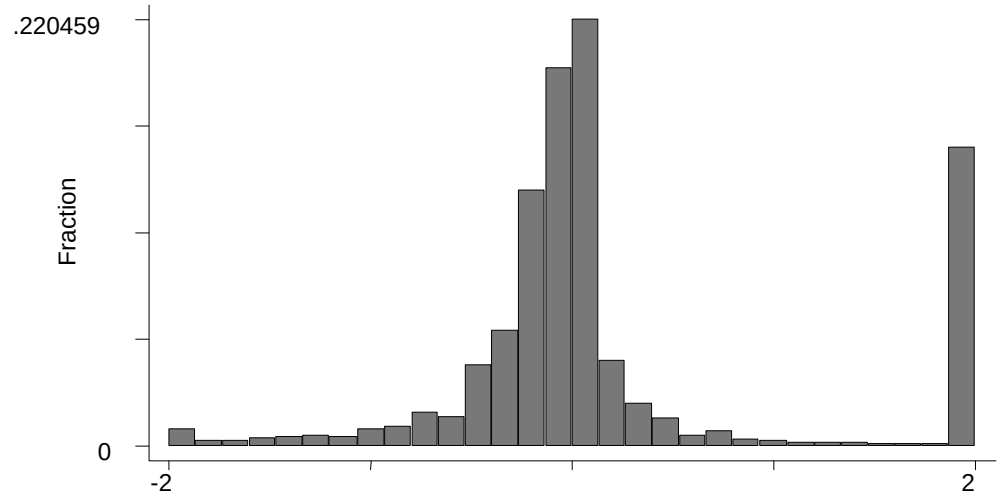
	OLS			Instrumental Variables		
Explanatory Variable	**Coefficient**	**Robust Standard Error**	**P>|t|**	**Coefficient**	**Robust Standard Error**	**P>|t|**
ln(size)	0.0062	0.0049		0.0054	0.0038	
State						
Private	-0.1681	0.0362	***	-0.0929	0.0233	***
Mixed	-0.1156	0.0485	**	-0.0793	0.0319	**
Ln(size)*private	0.0276	0.0075	***	0.0135	0.0050	***
Ln(size)*mixed	0.0151	0.0086	*	0.0085	0.0055	
Energy and Mining						
Trade and Distribution	-0.0622	0.0225	***	-0.0677	0.0214	***
Construction	-0.1308	0.0232	***	-0.1316	0.0225	***
Metallurgic	-0.1476	0.0350	***	-0.1427	0.0350	***
Chemical	-0.1171	0.0373	***	-0.1150	0.0372	***
Engineering	-0.1324	0.0219	***	-0.1321	0.0213	***
Wood Industry	-0.1176	0.0276	***	-0.1172	0.0270	***
Light Industry	-0.1640	0.0270	***	-0.1638	0.0262	***
Building Industry	-0.1265	0.0292	***	-0.1249	0.0287	***
Food Industry	-0.0209	0.0252		-0.0205	0.0243	
other Industry	-0.0975	0.0260	***	-0.0996	0.0253	***
Krasnoyarsk						
Moscow	-0.0014	0.0113		-0.0024	0.0113	
Chuvashya	0.0406	0.0146	***	0.0405	0.0146	***
Chelyabinsk	0.0154	0.0147		0.0150	0.0147	
Constant	-0.0313	0.0326		-0.0229	0.0271	
Observations = 5670						
Prob. F>0 = 0.000						

** Statistically significant at the 10% level ** Statistically significant at the 5% level *** Statistically significant at the 1% level*

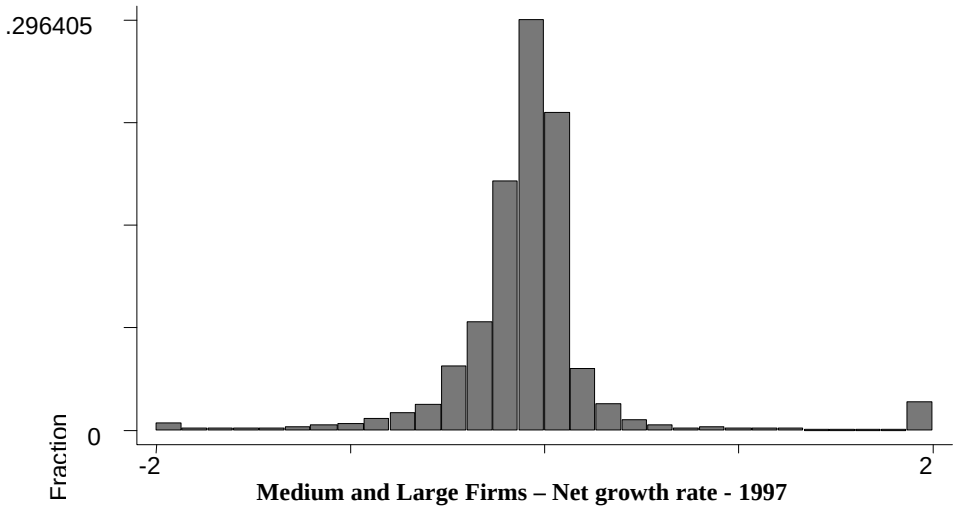
Source: Firm-level data provided by Gostkomstat.

Figure 1- Net employment growth rates by firms size – All regions

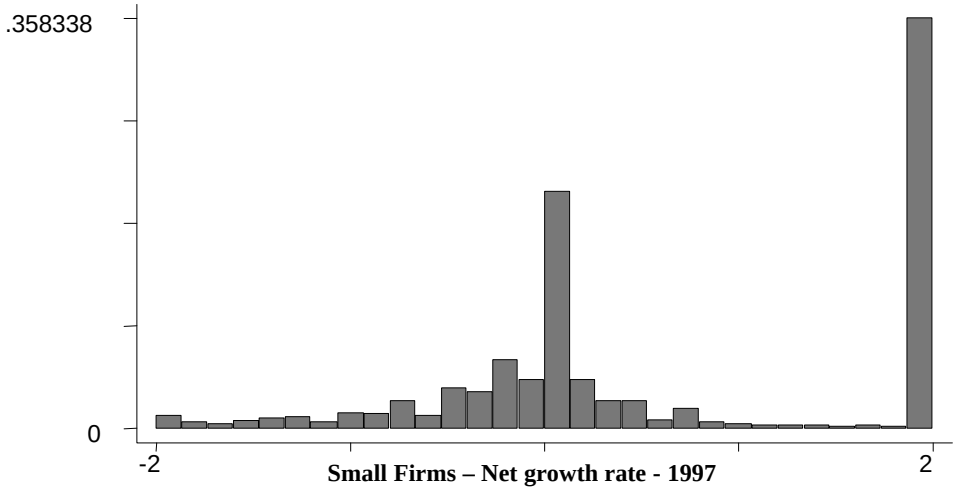
Manufacturing and mining, construction and retail trade sectors



All Firms – Net growth rate - 1997



Medium and Large Firms – Net growth rate - 1997



Small Firms – Net growth rate - 1997

Figure 2 – Net employment growth rates by firms size - Moscow

Manufacturing and mining, construction and retail trade sectors

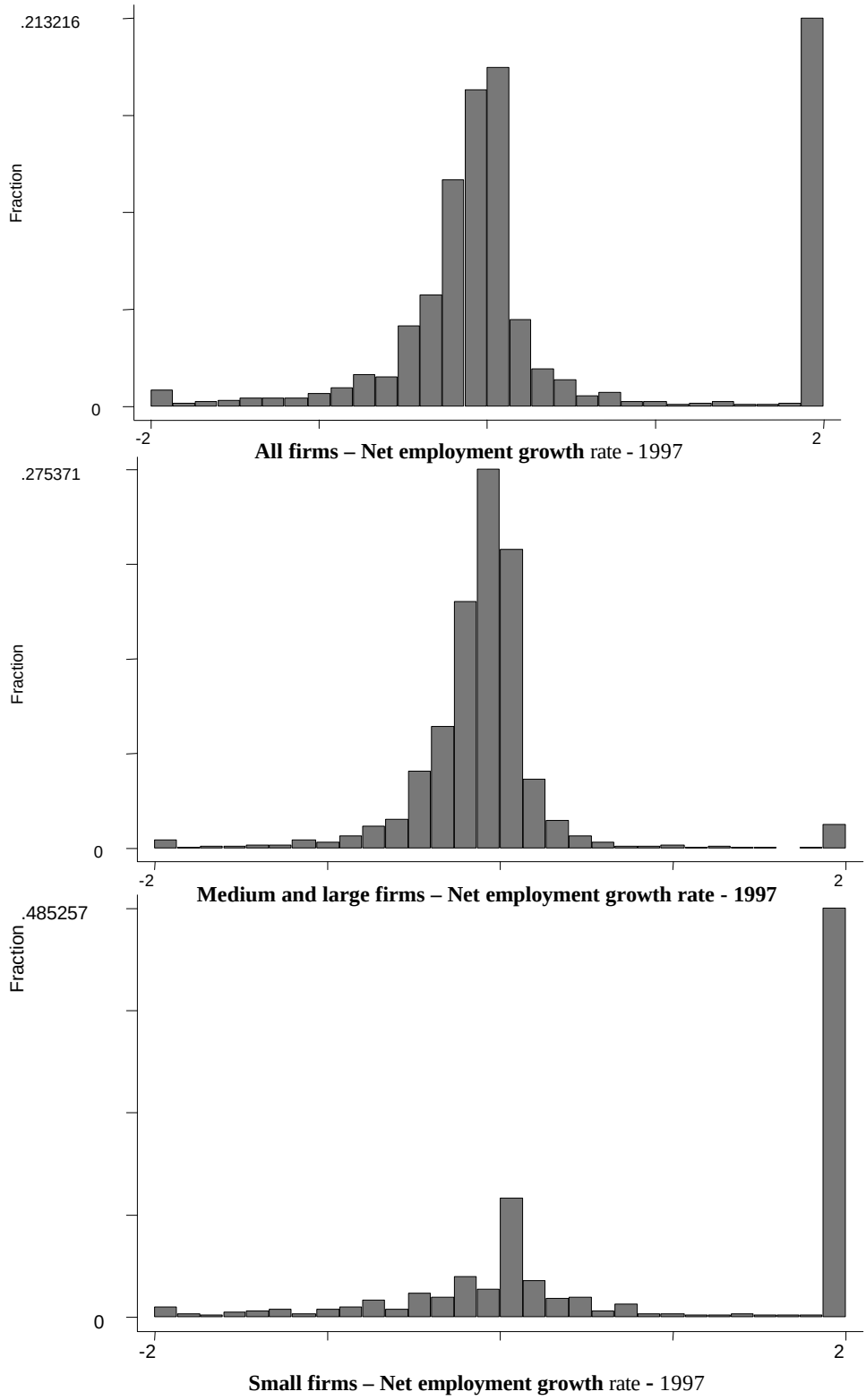
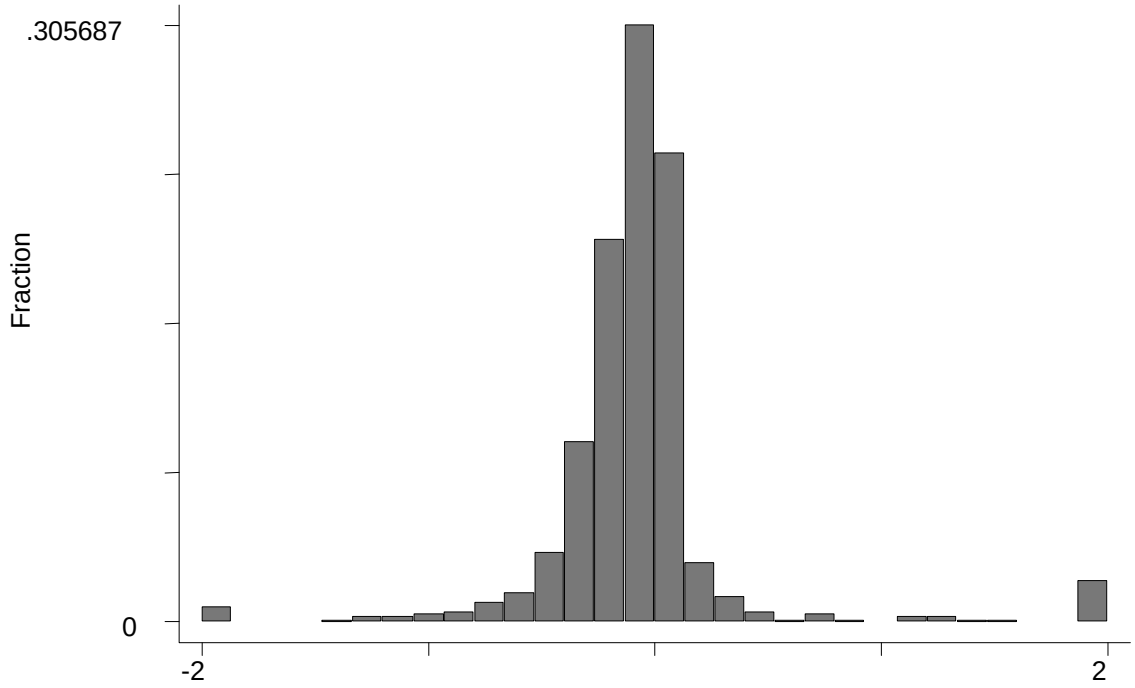


Figure 3 - Net employment growth rates by firms size – Krasnoyarsk

Manufacturing and mining, construction and retail trade sectors



Medium and large firms – Net employment growth rate - 1997

Figure 4 - Net employment growth rates by firms size - Chelyabinsk

Manufacturing and mining, construction and retail trade sectors

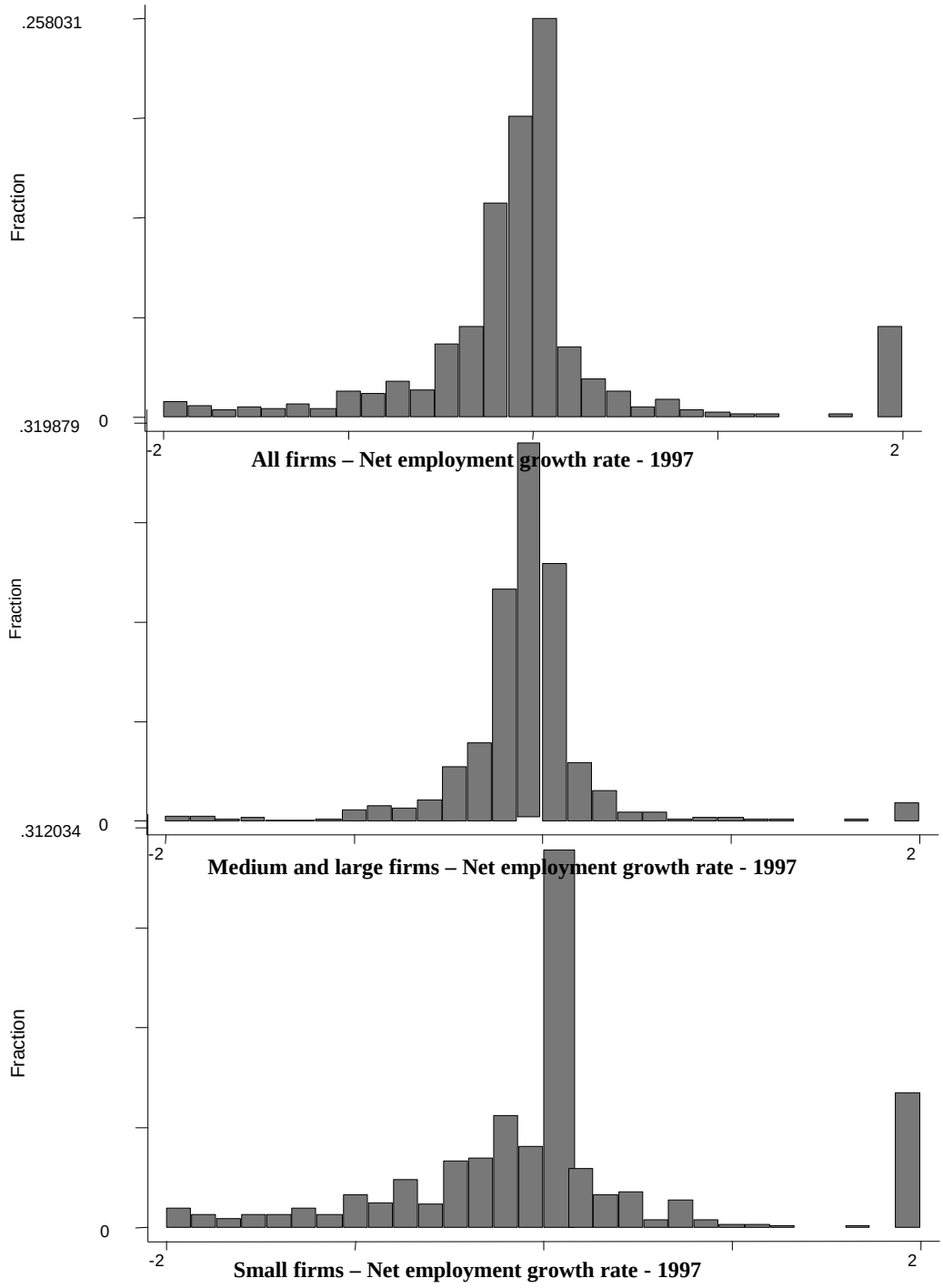
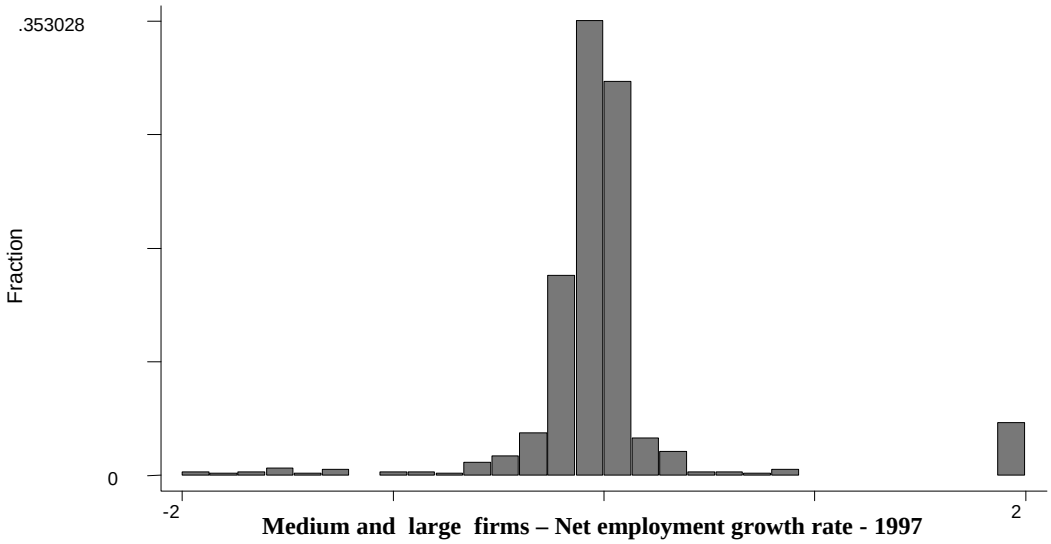


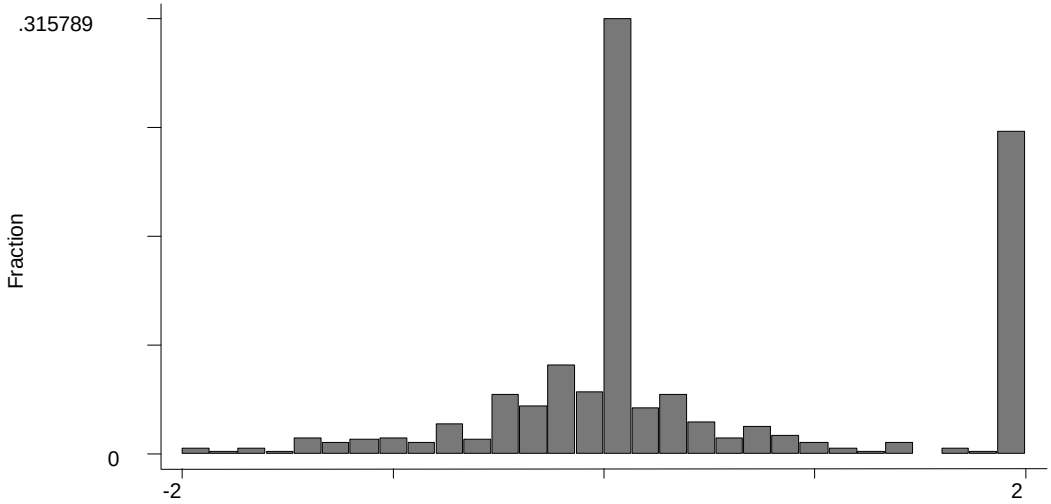
Figure 5 - Net employment growth rates by firms size – Chuvashia

Manufacturing and mining, construction and retail trade sectors

All firms – Net employment growth rate - 1997



Medium and large firms – Net employment growth rate - 1997



Small firms – Net employment growth rate - 1997

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Notes

1 These regions are Moscow City, Krasnoyarsk, Chuvashia and Chelyabinsk. The reasons for choosing them as representative economic regions within the Russian Federation are discussed in Lehmann, Wadsworth and Acquisti (1998).

2 Exit and entry take on the polar values –2 and 2, while contraction and expansion will be represented by intermediate negative and positive values respectively.

3 Assume that all firms have contracted by *p*% and that no firm expanded employment. Then *gross* would give a job reallocation rate of *p*% even though no job reallocation occurred.

4 Unfortunately, due to logistic problems data for small firms in Krasnoyarsk were not made available.

5 Gimpelson and Lippoldt (1998), using the same data set, give such overall rates for regions and ownership types. This, however, requires too strong assumptions about how representative these three industries are in the job creation and job destruction process of the entire economy of the chosen regions.

6 These are *pos*, *neg*, job creation and destruction shares.

7 Compare e.g. the excess rate for firms in categories 1-49 and 50-99 in Table 4.

8 Cf. For example Evans (1987a,b) and Dunne *et al.* (1989).

9 Ownership categories do not vary over time, so we only need one subscript across firms.

10 We exclude firms whose net growth rate takes on the value of 2 or -2.

11 Experiments with other regressions where we all firms from Krasnoyark had been eliminated provided very similar results.