Entry of New Firms in Russia: An Empirical Analysis

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ABSTRACT

We analyse a three-year panel data set of Russian firms spanning from 2000 to 2002 and investigate the effect of institutional and regional economic factors on entry rates across time, industries and regions. The paper builds on a novel database and exploits inter-regional variation in a large number of institutional variables. By using entry rates in a Tobit model we discover that they are correlated with equilibrium entry rates, institutions and firm size. Furthermore, industries that - for scale and technological reasons - are characterised by higher entry rates will experience lower entry within regions affected by higher business risk (lower business potential). In other words industries that naturally have low entry barriers are most affected by business constraints.

JEL Classification: D21, L26, P31
Keywords: Entry Rates, Business Environment, Tobit Model

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1 Introduction

This paper explores the effect of institutions on firm entry rates in a big emerging economy. Entry of new firms into market is often held to be beneficial for economic efficiency as new entrants stimulate competition and may also new technologies or innovative strategies. However, this would require operation of strong anti-monopoly laws as well as a developed and fair market infrastructure. As argued by Tybout (2000):

"Incumbent producers are comfortably entrenched in the semi-industrialized countries and … turnover takes place among fringe producers who do not seriously discipline the pricing behavior of large firms."

Drawing on Tybout's insight that weak institutions debilitate the competitive process of entry and enhance market power of incumbent firms, we investigate the effect of institutions on firm entry in a transition economy. In order to do so, we exploit the concept of "natural entry rates" found in advanced Western Countries as a benchmark to assess the impact of institutions on regional entry rates variation.

In fact, in this paper we investigate the determinants of entry across time, industries and regions in the largest transition economy from the CIS, Russia. We focus both on structural entry barriers – demand factor, level of economic development, industrialization rate, urban population, poverty rate[4], etc. - as well as institutional determinants, measured by business environment variables -such as legislative, political, economic, social and criminal risk/potential[5]-.

We explore the extent to which Schumpeterian "creative destruction" process has occurred in a transition economy, by focusing on a country which showed a much slower process of institutional change with respect to the Central European Economies. The following main research questions are put forward:

[4] This is, for example, important in order to distinguish "export led" from "market seeking" entry, as referred in the wide Foreign Direct Investment literature.
[5] For a review on the effect of institutions on economic performance and development see the Symposium on Institutions and Economic Performance, A. Benerjee & m. Ghatak, *Economics of Transition* 13(3) 2005.

Are entry rates registered in Russia of the same magnitude of Western Economies and what are the main difficulties in measuring *de-novo* entry in this country?

Do business environment institutions matter when looking at entry rates across time, industry and regions beyond the structural/economic entry barriers at the level of the regions?

This paper attempts to answer these questions by exploiting a novel and comprehensive longitudinal data set of firms, spanning from 2000 to 2002. The entry magnitude is likely to be an indirect mirror of the effect of both *formal* laws and *informal* institutions on firms' turnover and performance. We will show that entry does not appear to be particularly low, but, nonetheless, it appears to be restrained by an adverse business environment.

The paper is organised as follows: in the second section we briefly review the literature on entry in connection with institutions and business environment in transition countries, by analyzing the theoretical underpinnings of our empirical research; in the third section the data set is described and the magnitude of entry is reported across regions, industry and time; section four is dedicated to the empirical strategy and regressions' results; we draw our main conclusions in section five.

2 A bird-eye view on the literature: which are the determinants of entry?

The theory suggests that entry rates will be a function of structural entry barriers, such as minimum efficiency scale (average firm size), sunk costs (capital – labour ratios), industry concentration (measured by Herfindahl Index), extent of regional integration or fragmentation, level of economic development, urbanization, industrialization, scale of the local market, etc. However, other possible variables have been investigated by the literature, among which the most important ones are ownership mode, institutions -often measured by business environment indices- and sector's profitability.

We are interested in understanding whether the Schumpeterian “Creative Destruction” argument can be applied to Russia[6].

Djankov, LaPorta, Lopez-de-Silanes and Shleifer (2002) report data on regulations of entry (start-ups) in 85 countries and argue that there is a positive relationship between the size of informal economy, which is usually highly correlated with the corruption index, and the burden of the entry regulation, measured by the number of procedures, time and cost of starting a firm. According to the `Doing Business' statistics compiled by the World bank, Russia registers a high number of procedures (especially for the screening), but does not impose high barriers in terms of registration time and cost. For example advanced western countries such as Austria and Italy impose significantly higher entry barriers in terms of registration time and fees required in order to open a business. According to these statistics, it appears that Russia is only partially constrained by the regulatory environment, at least as far as entry of new firms is concerned. However, the same country scores relatively high in corruption levels and prevalence of informal economy[7].

The discrepancy between relatively low formal regulations cost and high corruption index can be explained by the high impact of informal institutions. As argued by Aidis & Estrin (2007) and Aidis, Estrin & Mickiewicz (2008), studies that tend to analyse *de jure* regulations only fail to measure real costs to entry, as transition countries, such as Russia, are characterised *de facto* by a much more complex system of entry barriers or entry fostering mechanisms. According to these authors, institutional environment, informal networks and entrepreneurial activity size play an important role in the process of entrepreneurship development in transition countries. Formal and informal institutions -i.e. *de jure* and *de facto* laws and social norms- work side by side, and it is very difficult to disentangle their marginal effect on the economic environment when they coexist. What is more, Aidis & Adachi (2007) argue that the `Doing Business' Statistics compiled by the World Bank could be misleading. In Russia ``regulatory uncertainty, lack of enforcement, regional

[6] E.g. see A Model of Growth through Creative Destruction, P. Aghion, and P. Howitt, *Econometrica*, 1992.
[7] For example according to the Index of economic freedom, Heritage Foundation and The Wall Street Journal Index.

differences and unfair playing fields'' are broadly diffused and they are constantly affecting the process of opening and running a new business. Furthermore, industry variation could be very high and, as for example, the IT sector appears to be relatively less affected by entry barriers, even if it is still affected by bureaucrats' rent-seeking behavior.

Similarly, Tybout (2000) points out that in least developed countries cost of entry varies with firm size and prevalence of shadow economy in a specific sector. In such countries antitrust enforcement is very weak, the reason being that firms with high capital/output intensity do have lobbying power in restraining entry of new firms, and in strengthening the incumbents' power. Formal business licensing and labour laws constraints have a relatively less important role. In other words, a judicial system is not working *in a vacuum*: embedded social norms and informal institutions (networks, shared business practices, etc), play a crucial role. The difficulty lies in disentangling and measuring their effect.

Therefore the question remains on how to apply these findings of the literature on regulation and entry to the transition countries context. In Russia, for example, the business environment is affected by a high height of entry barriers and the researcher expectation would be low entry rates. However, it will be shown that this does not appear to be the case. Geroski (1995) provides an interpretation: ``it is a little difficult to reconcile high entry barriers with high entry rates, not least because entry are commonly thought of as an obstacle which prevent firms from entering a market. If, however, barriers to entry are thought of as an obstacle which prevents new firms from surviving long in the market, then the data present less than a puzzle''. In other words, if the cost of adjustment discourages large scale initial entry, the small size of entrants could turn out to be a clear disadvantage with respect to incumbents.

On the same line of thought, Dosi & Lovallo (2000) quote Geroski (1991 & 1995) in their review of the four major stylized facts emerging from the literature on entry: 1) there is low survival rate for new entrants; 2) different measures of entry (gross, net, entry rates, penetration rates) are not correlated among themselves (however, entry rates tend to be very correlated with exit rates); 3) different type of entrants (e.g. *de novo* vs. diversifying; low vs. high tech industry) imply different probability of success; 4) the effect of entry on market performance is fairly modest. Thus the literature provides various methodological frameworks that are useful for the interpretation of the results on entry. In particular Dosi & Lovallo 2000 provide an interesting perspective on the link between ``nature of the decision biases of individuals and organizations'' and ``the pattern of corporate entry, exit and industrial dynamics'', that is missing in other part of the literature. This appears to be of particular importance in the analysis of transition countries such as Russia, burdened by uncertain and fast changing business environment and institutions.

3 Data Description

Our dataset contains information on entry rates by industry, regions and years and covers measures of business environment as well as structural variables at the level of the region. To build our dataset we drew on three data sources: Ruslana database, Russian State Statistics Agency and Expert RA regional database.

The firm level panel data used in this paper is drawn from Ruslana database[8] and consists of firm level balance-sheet information spanning from 1997 to 2005, covering around 70 % of registered firms in Russia in its latest release. The data provide a good approximation of the universe of firms in the country. Data cover industries down to 4 digits and provide information on shareholders, company's finances, employment count, firm's location, legal status of the firm (e.g. limited liability companies, single proprietorship, etc.), year of incorporation (as declared by the firm), and company name. This database closely matches information provided by Amadeus data base[9] and this will allow us to compare Russian entry rates to statistics provided by other

[8] © copyright Bureau van Dijk, Credit Reform S. Petersburg.
[9] © copyright Bureau van Dijk.

studies (e.g. Klapper, Laeven & Rajan 2007) using exactly the same definitions, methodology and variables.

Notwithstanding the theoretical possibility to construct a panel around 1997-2005 (9 years), the 1997, 1998 and 1999 data have been excluded from the analysis because of mis-reporting and missing values. The sample is reduced dramatically in 1999 (the year after the 1998 crisis) and this induces a strong selection effect on the remaining firms. The firms reporting financial data in 1999 are likely to be less severely affected by the crisis, while a significant part of the sample did not report financial details. We avoid this effect by including observations on firms which report from 2000 onwards, when a consistent number of firms re-entered the database. As far as entry is concerned, we want to assess its magnitude as much independently as possible from any type of sample selection due to the shake-out of the 1998 crisis.

Furthermore, virtually no firm reports year of incorporation after 2002 (this is due to mis-reporting and not absence of entry) and therefore the available years for the analysis are restricted to 2000, 2001 and 2002 only.

Information on socio-economic characteristics of the regions and their business environment, which reflects on the quality of local institutions, was sourced from Russian State Statistics Agency's publications (former Goskomstat) and from Expert Rating Agency's database, respectively. Information from the Russian State Statistics Agency was compiled for the period of 1995-2005, covering all of the 89 Russian regions. This dataset includes information on nominal gross regional product (GRP), GRP per head, GRP growth, industrial production volume and industrial production growth, urbanisation level (measured as percent of city dwellers in total regional population), consumer price growth, number of heavy crimes and share of population with incomes below poverty level. From this data, we have constructed a real GRP per head variable by, first, deflating nominal GRP using regional GRP price growth figures and later dividing by the population count.

Information on institutional variables was sourced from a leading Russian Ranking Agency, Expert RA. Its database provides information on region’s risk index, which reflects the likelihood of loosing one’s investments or profits from investments. The agency also calculates an economic potential index, which takes into account each region’s macroeconomic standing. In total, 17 different indices are calculated, each representing a weighted sum of several indicators. These indices are based on statistics provided by various government agencies and on analysis of regional legislative documents and press articles. The weights, attributed to different indicators which compose each of the 17 indices are determined through a survey of managers and specialists in both Russian and international consulting firms. For example, legislative risk index is based on analysis of legislative documents enacted by regional government bodies, and takes into account establishment of free economic zones, the extent of regulation of production activities and investment. Political risk index reflects polarisation of election outcomes, political inclinations of regional heads, political views of the electorate, popularity of local administration, ethnic tensions, court action undertaken against regional government and cabinet reshuffles. Social risk is a composite measure of poverty levels, living costs and the state of regional heating system. Crime risk index reflects the number of murders and heavy crimes committed in the region. Economic risk index measures economic stability and development of market institutions. The 17 indices are provided in form of a rank and thus constitute an ordinal measure of quality of regional institutions. The only exceptions are overall regional potential and regional risk indices, which are a cardinal measure.

Thus these indices are a combination of quantitative measures (hard data) and qualitative information (soft data). These measurements are well suited for our needs as they reflect region’s attractiveness to investors, thus approximating institutions, likely to hinder or promote entry of new firms.

3.1 Russian Institutions

3.1.1 Economic and Institutional Heterogeneity among Russian Regions.

Russian regions provide a useful laboratory for research on potential factors affecting entry rates. The large number of regions and the difference in their economic and institutional environments allows us to disentangle various institutional factors and possibly measure their effect on entry rates. The diversity of economic conditions and the large scope for regional governments to influence local institutions have resulted in significant divergence of regional development paths. Regions differ in their wealth, population's income levels, risk of social tensions and administrative barriers to start-ups. For example, while several regions have been shown to have a legislative climate favourable to investors, such as Nizny Novgorod, Yaroslavl and Moscow regions, others, such as Kursk and Magadan regions lag behind. At the same time, financial resources of rich regions such as Tyumen oblast significantly exceed those of poor territories, such as the Ingush Republic. Below we will explore how these differences affect entry rates in these regions. To our knowledge this is the first attempt to measure effect of institutions on entry rates in Russia. Although previous attempts include work by Berkowitz & DeJong (2005) on entrepreneurial activity in Russian regions, these papers approximate new start ups by the number of SMEs already operating in the region.

3.1.2 Beyond Cross-Countries Studies

The diversity among Russian regions allows us to explore the impact of institutional variation on entry rates in a novel way. Previous studies have analyzed cross–country variations in entry rates and suggested a link between entry rates and domestic institutional context. These studies, however, could only partially control for macroeconomic policy differences and various trading regimes. Our paper contributes to the debate on institutional effect on entry by exploring entry rates within one country, Russia, which allows us to control for economic heterogeneity and investigate institutional variation.

Russia provides a rich empirical field for exploring the link between institutional context and entry rates. As the central government is responsible for a large share of macroeconomic policy, economic playing fields across the regions is approximately the same. Russian constitution gives central government exclusive authority in regulation of foreign trade, legal framework of a single market as well as financial, currency and customs regulations (OECD, 2003). Thus we can assume that all firms entering Russian regions face similar constraints in terms of currency exchange rates, customs levies and central bank's interest rates.

At the same time regional authorities have significant discretion in such areas of join responsibility as ownership, land use and management, mineral resources, as well as in establishing general principles of taxes and levies. Moreover, regional authorities have formal power and responsibility over local financial aid and subsidies, government procurement, investment and trade promotion, control over natural resources, environment protection and licensing. Control over these areas has led to significant diversity in regional legislation and administrative practices affecting entry of new firms into the market. OECD (2003) report on trading policy in Russian regions has demonstrated the diversity of institutional setting facing new entrants. For example, Cheliabinsk oblast introduced additional procedures and higher fees then those stipulated by federal law for such activities as employment services, international tourism, passenger transportation as well as production and marketing of alcohol. Primorskiy krai decreed higher fees for licensing pharmaceuticals, while Nizhny Novgorod extended licensing requirements for engineering systems, building and road maintenance. Republic of Udmurtia and Mordova introduced regional certification of companies, effectively restricting entry.

In addition to differences in formal regulation, regional authorities exercise informal control over local market institutions, which affect ease of creating and operating a firm. As a result, number of inspections, costs of obtaining a license may differ from one region to another. For example, an average small company in Kurgan oblast in 2001 was inspected 10 times compared to 2.5 times in Samara oblast over the same time period (CEFIR, 2002). These differences in institutional environment allow us to investigate the effect of institutions on entry rates across Russian regions.

[INSERT TABLE A ABOUT HERE]

3.2 Definition of Entry

In our regressions we use two measures of entry, in order to compare our findings with other studies. First measure calculates entry over one year period while the second measure calculates entry over two year period.

Entry 1 year rate = (number of companies with incorporation year = T) / (number of companies with the incorporation year <=T)

Entry 2 years rate = (Number of companies with incorporation year = T or T-1) / (number of companies with the incorporation year <=T).

We build entry rates e_{irt} as the combination of three indexes:

Industries: i = 58 Nace 2 digit industries dummies (excluding such sectors as agriculture, mining, utility, financial intermediation and public administration);

Regions: r = 87 regions dummies (Nenets AO and Komi Permiatsk AO are missing) ;

Time: t = year 2000, 2001 and 2002

The theoretical overall number of data of the database is therefore 3 x 58 x 87 = 15138. In the regression analysis this will not be the case because of many missing industries in some regions. Despite missing variables, our dataset contains over 5000 observations.

This dataset has two advantages. First, it provides a huge number of observations, distributed across virtually all Russian regions. Second, it allows us to discern the entry of a new firm, as it provides the date of firm's registration. Potentially this could present a problem, since incorporation in the early years of the transition could simply reflect privatization of a company. However, since our dataset covers the 2000-2002 period, we avoid this pitfall, as the dominant share of Russian economy was privatized by 1997. We can not distinguish between new entry and legal change of name, which may have occurred in later years. The legal change of name, however, is often a result of change of ownership and thus represents a new way of recombining a firm's resources and introduction of a new strategy. While this does not constitute a de novo entry, it still often signifies entry of a new player or a new approach to the market.

However the data appear to be quite "dirty" – changing firms' numbers and reliability - and we computed bootstrapped SE in order to allow for a reduction of a sample bias. Furthermore, we do not trust entry rates for small firms[10] (those with less then 50 workers) and we re-estimate our Econometric Models on a new four dimensions database (region, industry, size and year).

3.3 The Magnitude of Entry

The measurement of entry rates exploits three dimensions: time; industry; and regions' variation (as well size in a second iteration). Table 1 reports entry rates (as defined in section 3.1) by year[11] –column 1- by year and industries[12] –columns 2-5- by year and regions[13] -column 6-9-. Table 2 reports entry rates by year, industry and regions[14]. Small, Medium and Large samples are defined according to the number of employees declared by the firm: small 1-50, medium 51-250, large above 250.

[INSERT TABLE 1 –PANEL A- ABOUT HERE]

[INSERT TABLE 1 -PANEL B- ABOUT HERE]

4 Empirical Strategy

4.1 The Econometric Model

Our main hypothesis predicts that industries that, for technological and structural reasons, are characterized by high entry rates will experience lower

[10] The main problem is the high number of small firms entering in the unregistered big informal sector, not captured by our year of incorporation self declared variable.
[11] The 2000-2003 firm level database is converted into yearly averages (this is why no SD is reported).
[12] The 2000-2003 firm level database is converted into year-industry (3 times 58) averages (SD within each year, among industries).
[13] The 2000-2003 firm level database is converted into year-region (3 times 87) averages (SD within each year among regions.
[14] The 2000-2003 firm level database is converted into year-industry-region (3 times 58 times 87) averages (SD within each year among region-industry).

entry rates within regions with higher business risk (lower business potential). In other words we expect industries that naturally have low entry barriers to be most affected by business constraints. Since the "structural" amount of entry in each industry is unknown, we use entry rates measures for the United States (calculated by Klapper, Laeven and Rajan, 2006) as a proxy for the "natural" propensity to enter that industry. To check for robustness, we also use European entry rates as an alternative measure. In order to test this hypothesis we run Tobit estimation models for the truncated [0.1] entry variable computed from the year of incorporation declaration of the firm (see Klapper, Laeven, Rjan, 2006), who follow the difference in difference approach used by Rajan and Zingales (1998).

The basic Tobit equation specification is the following, where the subscript “i” stands for industry, “r” stands for region and “t” stands for time, expressed in years:

$$\text{Entry Rate}_{rit} =$$
$$a_o + [\text{Institution}_r\text{*Entry(USA/EU)}_i] + {}_{I}\ {}_{i}\text{Dummy}_i + {}_{MR}\ {}_{mr}\ \text{Dummy}_{macro\_r} + {}_{T}\ {}_{t}\text{Dummy}_t + a_1\text{Log(Value Added)}_{irt} + a_2\text{Log(Population)}_{r(t-1)} + a_3\text{Log(Industrialization)}_{r(t-1)} + a_4\text{Log(GRP per capita)}_{r(t-1)} + a_5\text{Log(GRP growth)}_{r(t-1)} + a_6\text{Log(City Population)}_{r(t-1)} + a_7\text{Log(Below Poverty)}_{r(t-1)} + a_8\text{Log(Crime Rate)}_{r(t-1)} + e_{rit} \quad (1)$$

All right hand side variables are lagged one year[15]. All regressions have bootstrapped SE with 100 replications.

Furthermore, we test the different impact of the size (just for the summary potential and risk index and the 1 year entry) on entry rates decomposing the database in three size sectors, with *s* denoting samples consisting of large, medium and small firms:

$$\text{Entry Rate}_{rist} =$$
$$a_o + {}_{S}\ {}_{s}(\text{Institution}_r\text{*Entry\_US}_i) + {}_{I}\ {}_{S}\ {}_{i,s}\text{Dummy}_{i,s} + {}_{MR}\ {}_{S}\ {}_{mr,s}\text{Dummy}_{macro\_r,s} + {}_{T}\ {}_{t}\text{Dummy}_t + a_1\text{Log(Value Added)}_{irt} + a_2\text{Log(Population)}_{r(t-1)} +$$

[15] With the exception of Logarithm of the VA at the level of the Sector and Region, that is contemporaneous, (see Klapper, Laeven, Rjan, 2006, JFE).

a_3Log(Industrialization) $_{r(t-1)}$ + a_4Log(GRP per capita) $_{r(t-1)}$ + a_5Log(GRP growth) $_{r(t-1)}$ + a_6Log(City Population) $_{r(t-1)}$ + a_7Log(Below Poverty) $_{r(t-1)}$ + a_8Log(Crime Rate) $_{r(t-1)}$ + e_{rist} (2)

4.2 Estimation Results

Tables 2 to 9 show the TOBIT estimations controlling for industry fixed effects, time fixed effects and macro regions[16] fixed effects, and they show that the interaction term ($Institution_r$ X $Entry_i$) has a negative sign the bulk of all specifications[17]. In particular, tables 2 to 5 show the use of the eight business potential variables (columns 1 to 8) and the overall business potential rank (column 9) on the right hand side (interacted with entry rates 1 year and two years in US and EU), whilst both 1 year and 2 years entry are used as the dependent variable.

[INSERT TABLE 2 to 5 ABOUT HERE]

On the contrary, tables 6 to 9 exploit the seven risk variables (columns 1 to 7) and the overall risk rank (column 8)

[INSERT TABLE 6 to 9 ABOUT HERE]

Finally, table 10 exploits the augmented database on four dimensions (region, industry, size and year) to show the different impact of business environment institutions on the three size categories, s1 (1-50), s2 (51-250) and s3 (over 250).

[INSERT TABLE 10 ABOUT HERE]

[16] See graphs at the end of the text.

[17] For some sub-indexes, Institutional Potential Rank and Criminal Risk Rank a positive and significant coefficient appears. This is not surprising given the fact the former is accounting for the number of entrepreneurs not registered as legal entity (informal sector), and this is strongly influenced by the under-estimation of small firms entry. The latter is highly correlated with mafia and network activities (Centre for Economic and Financial Research at New Economic School (2007), Monitoring the Administrative Barriers to Small Business Development in Russia. Round 6, http://www.cefir.ru/index.php?l=eng\&id=260.) and therefore higher “corruption” could, paradoxically, enhance entry.

The regression results confirm our main hypothesis: industries characterised by higher “structural” entry rates suffer relatively more in terms of entry rates within regions with low investment potential. For example, within a NACE 2 digit industry characterised by approximately 10% entry rate, an increase of the investment constraints of 10 positions (ranks) entails a decrease of entry rates by around 1.2-2.8%. The empirical analysis is robust to: 1) the use of USA entry rates or EU entry rates as proxy of natural propensity to entry in an industry; 2) one year or two years entry definition; 3) use of potential rank or risk rank as independent institutional variables.

According to our findings, small firms (with 0-50 employees) appear to be less constrained by investment opportunities, while medium (51-250 employees) and big firms (over 250 employees) show higher responsiveness, a result which can partially explained by the fact that small firms entry rates are underestimated and they tend to rely more on informal institutions as pointed out by Aidis, Estrin and Mickiewicz (2008).

As far as the structural regional variables are concerned, there is a *positive* effect (robust to all specifications) of the size of the region and the urbanization rate on entry rates, while there is a *negative* effect (robust to all specifications) of industrialization (less industrialized regions register higher entry rates), poverty and crime rate. Surprisingly, the regional level of development (GRP per capita) and the growth of the region do not appear to impinge on entry. On a different note, the contemporaneous value added variable is always negative and significant (as in Klapper, Laeven, Rjan, 2006, JFE), signaling that there is industry specific convergence effect, i.e. sectors that are relatively large in the economy register less entry, as expected.

The regressions controlling for industry fixed effects, time fixed effects and 87 Regions fixed effects, are not reported. They wash out all the effect for the institutional and regional variables, because of the relatively short time span of the sample (3 years), i.e. the regional and institutional variables do not change sufficiently in the three years to be statistically different from a ‘pure’ regional fixed effects, generating multicollinearity. This is one of the major drawbacks of the regression, the inability to disentangle regional and institutional effects when analyzing the impact of institutions on growth as well as entry.

5 Conclusions

We exploited a comprehensive database on Russian firms to compute entry rates by region, industry (2 digits NACE) and time as dependent variable. Our regressions exploit regional, industry and time variations of the RHS variables in a Tobit model and show that entry rates can be explained by both structural barriers as well as institutional determinants at the level of the region in Russia. We demonstrate that entry is negatively affected by the business environment, which we interpret as reflecting the quality of regional institutions. On the other hand the regional level of industrialization, urbanization, poverty and registered crime do impinge significantly on entry. These results are robust to using: both the one year entry and two year entry rates as LHS variable; both the EU and the USA entry rates by industry as a proxy for equilibrium entry rates; both the risk rank indicators and potential rank indicators as RHS. When the firm size dimension of the database is further exploited, a higher relative effect of entry barriers for medium and large firms seems to prevail. This could be partially explained by the fact that small firms tend to rely more on informal institutions.

Appendices

Variables

CONTEMPORANEOUS Logarithm of the VA at the level of the Sector and Region (i.e. it captures an industry specific convergence effect: we correct for the possibility that sectors that are large relative to the rest of the economy experience lower entry rates) ;

LAGGED 1 YEAR Logarithm of the population at the level of the region;

LAGGED 1 YEAR Logarithm of the industrialization rate;

LAGGED 1 YEAR Logarithm of the gross regional product per capita at 2000 constant prices;

LAGGED 1 YEAR Logarithm of the growth rate of the gross regional product;

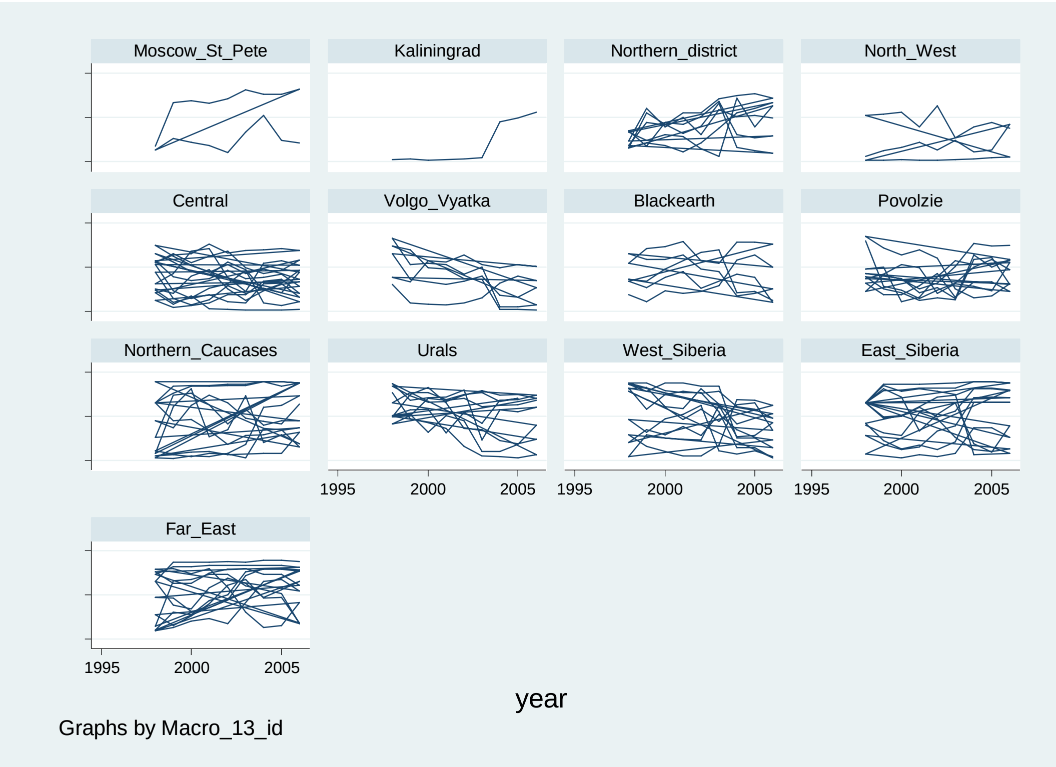
LAGGED 1 YEAR Logarithm of the % city population;

LAGGED 1 YEAR Logarithm of the % of people below the poverty line;

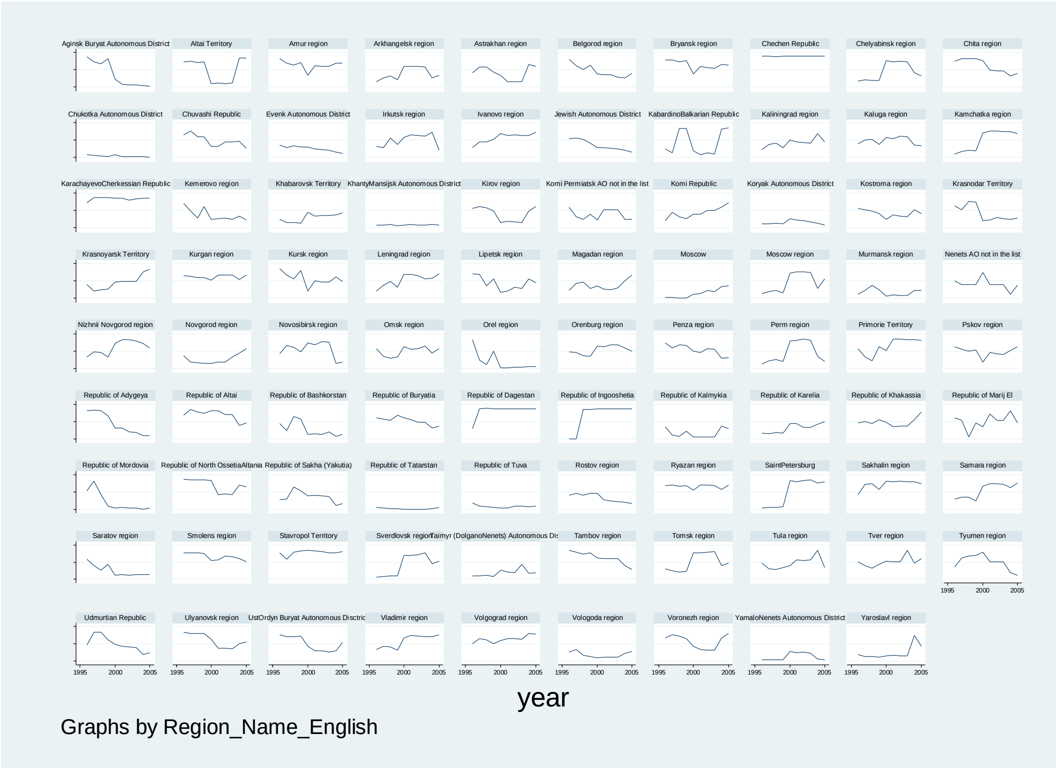
LAGGED 1 YEAR Logarithm of the crime rate on 1000 inhabitants;

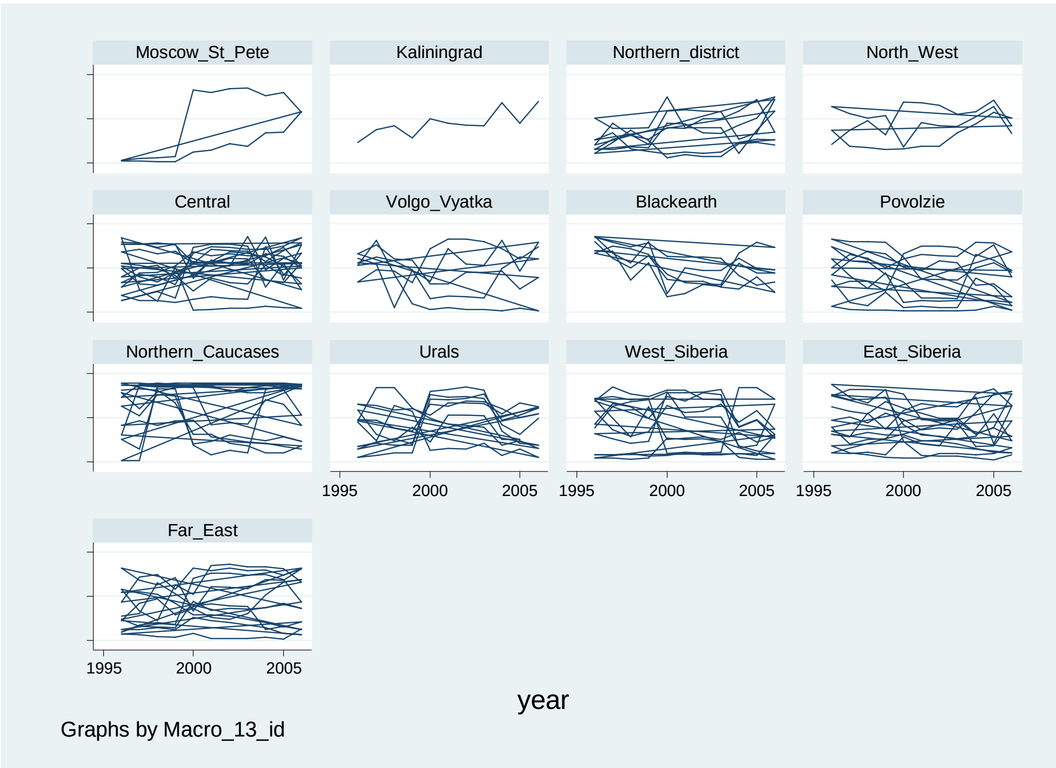
Institutional Variables variation across time, regions and Macro regions

LEGISLATIVE RISK

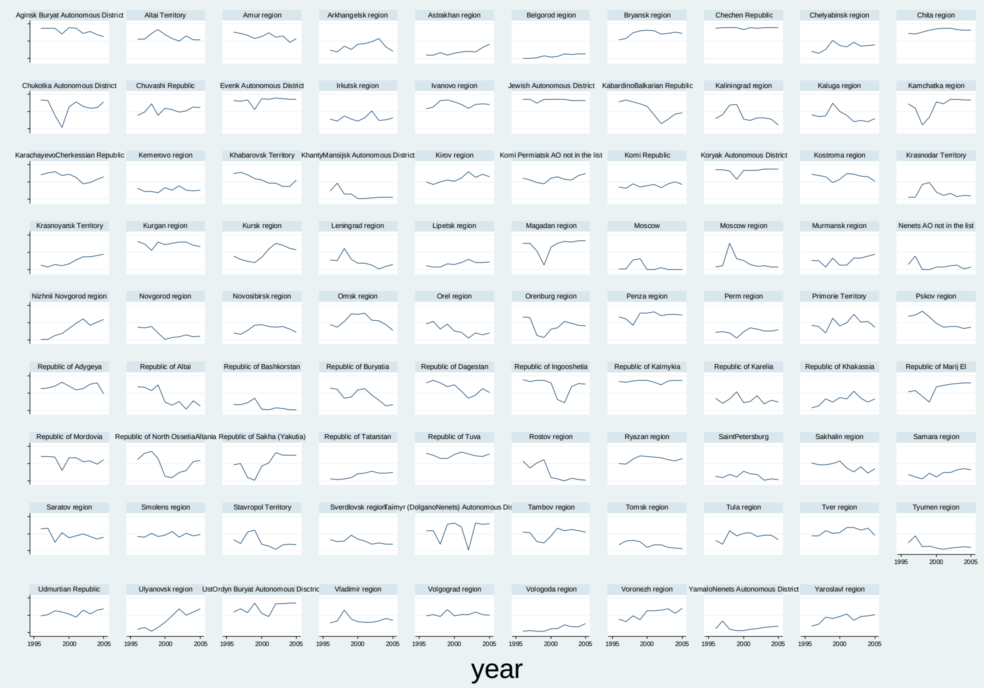


POLITICAL RISK

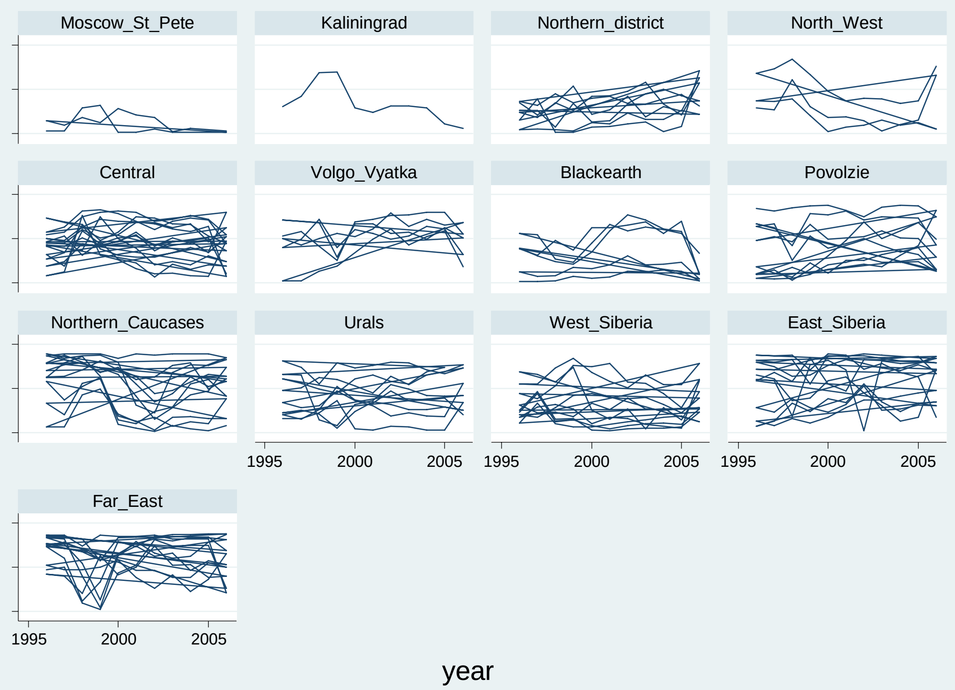




ECONOMIC RISK

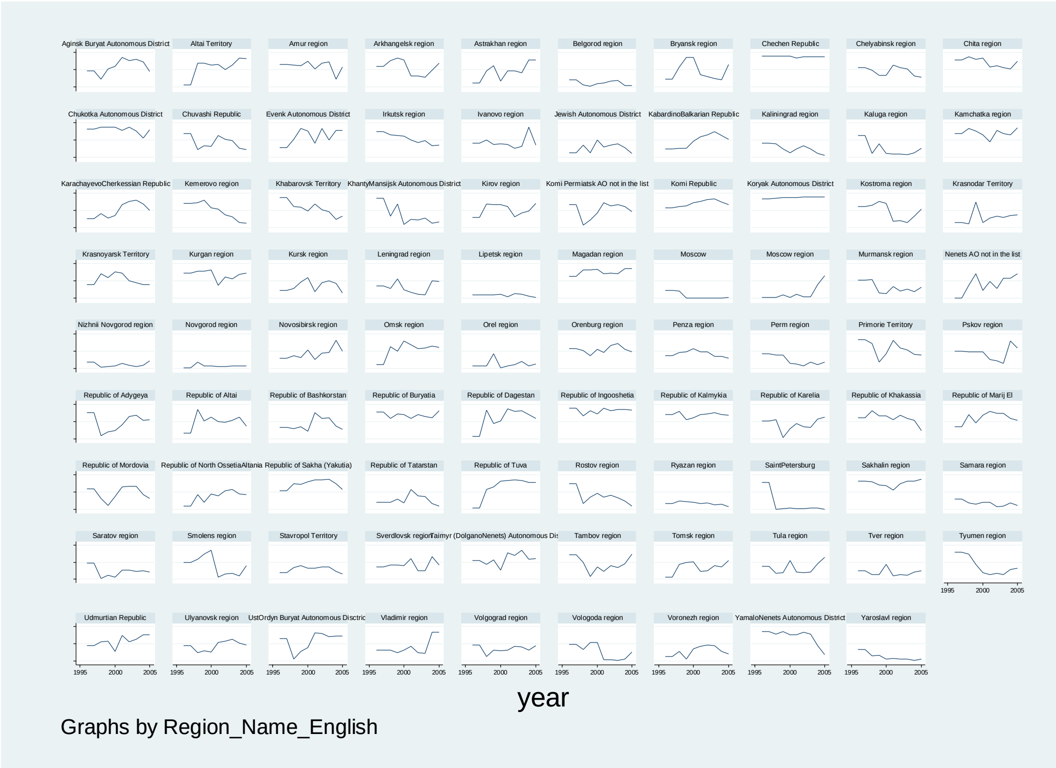


Graphs by Region_Name_English

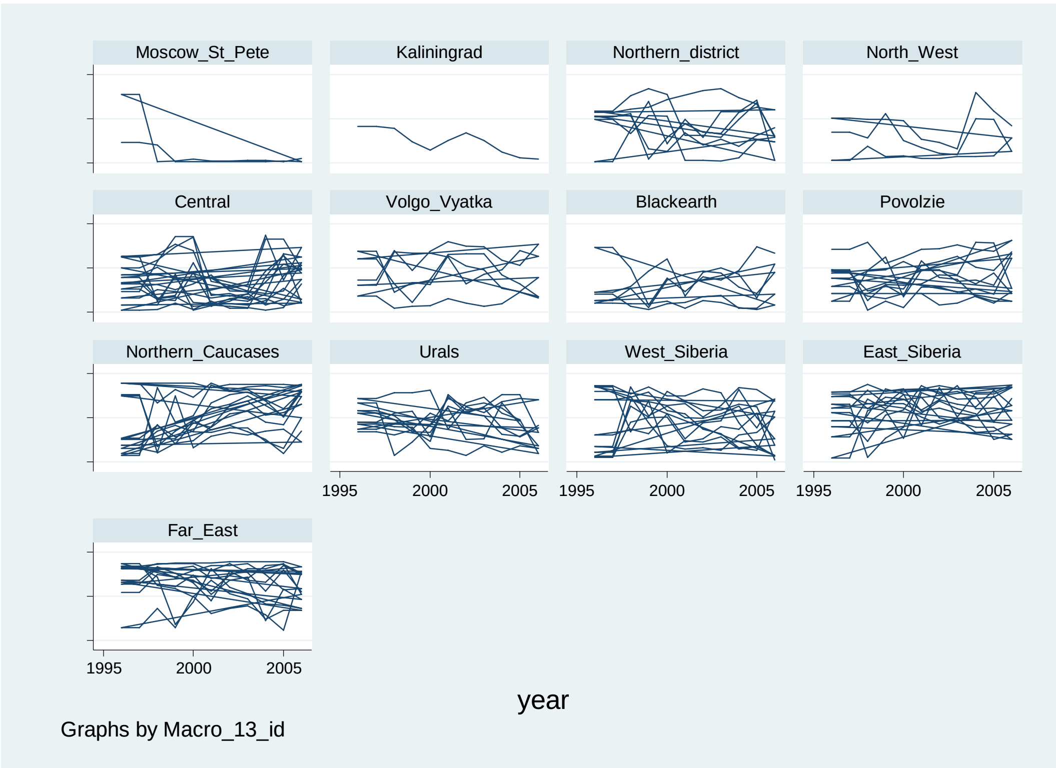


Graphs by Macro_13_id

SOCIAL RISK

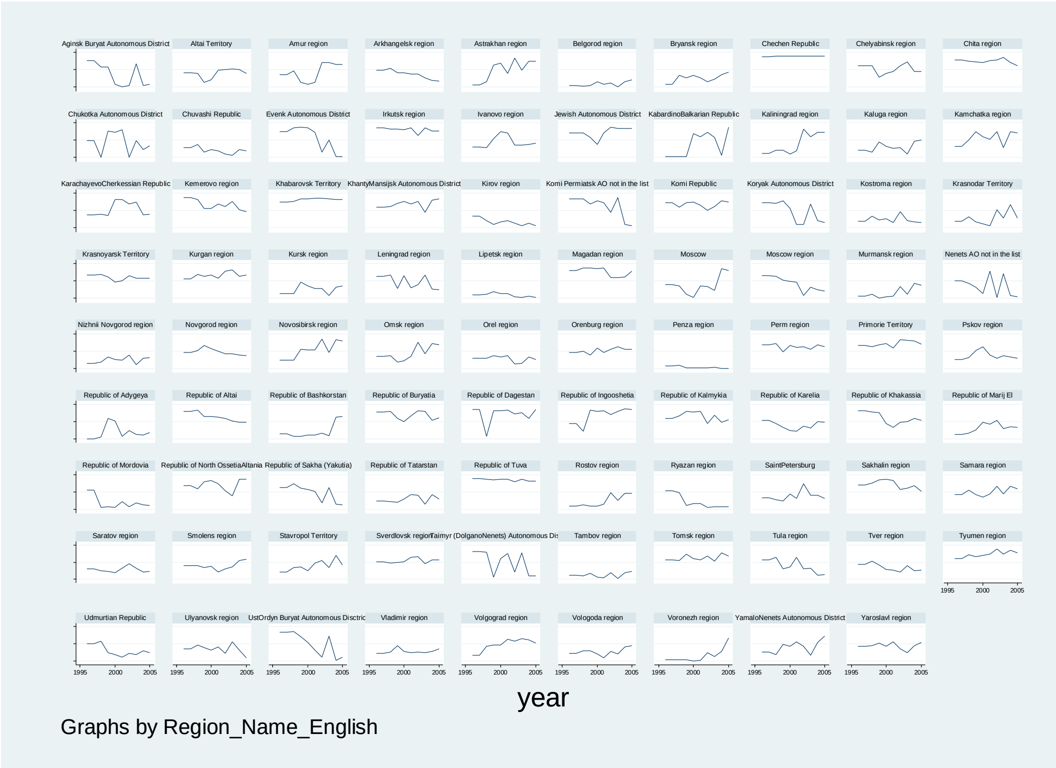


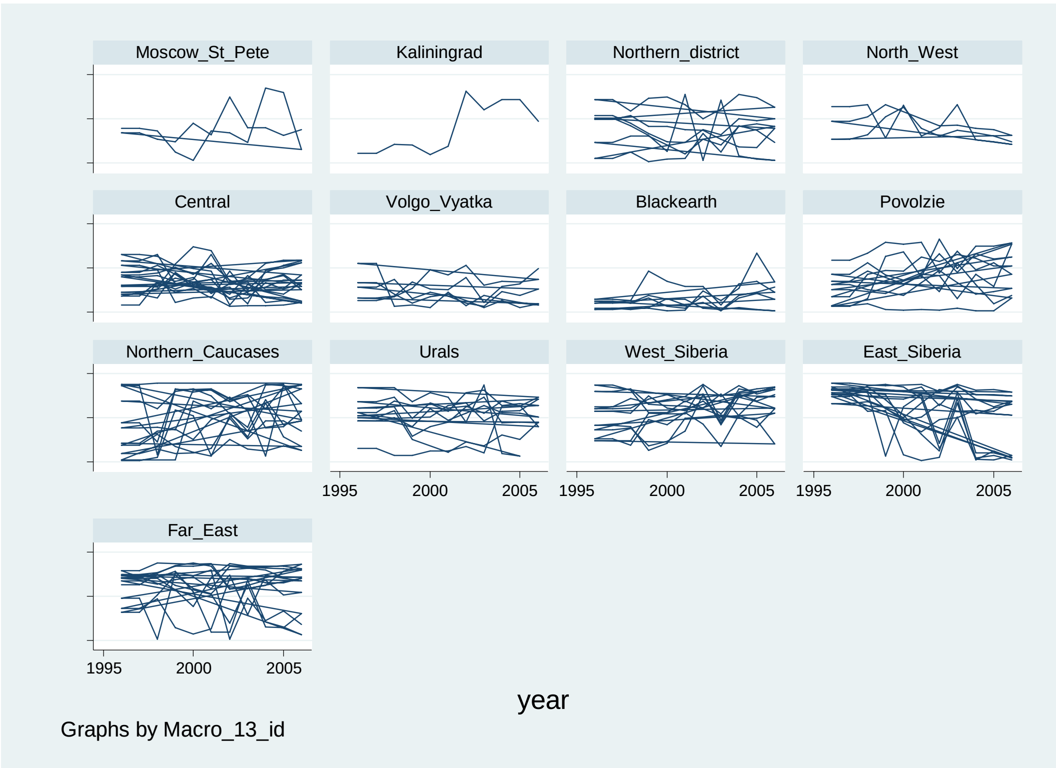
Aginsk Buryat Autonomous District
Altai Territory
Amur region
Arkhangelsk region
Astrakhan region
Belgorod region
Bryansk region
Chechen Republic
Chelyabinsk region
Chita region
Chukotka Autonomous District
Chuvashi Republic
Evenk Autonomous District
Irkutsk region
Ivanovo region
Jewish Autonomous District
KabardinoBalkarian Republic
Kaliningrad region
Kaluga region
Kamchatka region
KarachayevoCherkessian Republic
Kemerovo region
Khabarovsk Territory
KhantyMansijsk Autonomous District
Kirov region
Komi Permiatsk AO not in the list
Komi Republic
Koryak Autonomous District
Kostroma region
Krasnodar Territory
Krasnoyarsk Territory
Kurgan region
Kursk region
Leningrad region
Lipetsk region
Magadan region
Moscow
Moscow region
Murmansk region
Nenets AO not in the list
Nizhnii Novgorod region
Novgorod region
Novosibirsk region
Omsk region
Orel region
Orenburg region
Penza region
Perm region
Primorie Territory
Pskov region
Republic of Adygeya
Republic of Altai
Republic of Bashkorstan
Republic of Buryatia
Republic of Dagestan
Republic of Ingooshetia
Republic of Kalmykia
Republic of Karelia
Republic of Khakassia
Republic of Marij El
Republic of Mordovia
Republic of North OssetiaAltania
Republic of Sakha (Yakutia)
Republic of Tatarstan
Republic of Tuva
Rostov region
Ryazan region
SaintPetersburg
Sakhalin region
Samara region
Saratov region
Smolens region
Stavropol Territory
Sverdlovsk region
Taimyr (DolganoNenets) Autonomous Dis
Tambov region
Tomsk region
Tula region
Tver region
Tyumen region
Udmurtian Republic
Ulyanovsk region
UstOrdyn Buryat Autonomous Disctric
Vladimir region
Volgograd region
Vologoda region
Voronezh region
YamaloNenets Autonomous District
Yaroslavl region
1995
2000
2005
year
Graphs by Region_Name_English



Moscow_St_Pete
Kaliningrad
Northern_district
North_West
Central
Volgo_Vyatka
Blackearth
Povolzie
Northern_Caucases
Urals
West_Siberia
East_Siberia
Far_East
1995
2000
2005
year
Graphs by Macro_13_id

CRIMINAL RISK





References

Aghion, Blundell, Griffith, Howitt and Prantl (2004), 'Entry and Productivity Growth: Evidence form Microlevel Panel Data', *Journal of the European Economic Association*, 2 (2-3), pp. 265-276.

Aghion, P. Fally and Scarpetta (2007), Credit constraints as barrier to entry and post-entry growth of firms, *Economic Policy*, pp. 731-779.

Aghion, P. and P. Howitt (1992), 'A Model of Growth through Creative Destruction', *Econometrica*, vol. 60 (2), pp. 323-351.

Aidis, R. and Y. Adachi (2007), 'Russia: Firm Entry and Survival Barriers', *Economic Systems*, 31 pp. 391-411.

Aidis, R., S. Estrin and T. Mickiewicz (2008), 'Institutions, Networks and Entrepreneurship Development in Russia: an Exploration', *Journal of Business Venture*, forthcoming.

Bartelsman, E. J. and M. Doms (2000) 'Understanding Productivity: Lessons from Longitudinal Microdata', Journal *of Economic Literature*, vol. 38, pp. 569-594.

Berkowitz, Daniel and DeJong, David (2005). “Entrepreneurship and Post-socialist Growth”. *Oxford Bulletin of Economics and Statistics*, 67 (1): pp25-46.

Brown, J. David and J. S. Earle (2006), 'The Microeconomics of Creating Productive Jobs: a Synthesis of Firm-Level Studies in Transition Economies', World Bank Policy Research Working Paper 3886, April.

Centre for Economic and Financial Research at New Economic School (2007), Monitoring the Administrative Barriers to Small Business Development in Russia. Round 6, http://www.cefir.ru/index.php?l=eng\&id=260.

Ciccone, A. and Elias Papaionnaou (2007), Red Tape and Delayed Entry, *Journal of European Economic Association*, pp. 444-458.

Commander, C. and Jan Svejnar (2007), ‘Do Institutions, Ownership, Exporting and Competition Explain Firm Performance? Evidence from 26 Transition Countries’, IZA DP no. 2637, 2007

Deaton, Angus (1997), The *Analysis of Household Survey. A Microeconometric Approach to Development Policy*, World Bank, The Johns Hopkins University Press, Baltimore and London.

Djanko, S., R. La Porta, F. Lopez-de-Silanes and A Shleifer (2002), 'The Regulation of Entry', Quarterly *Journal of Economics*, vol. 67 (1).

Dosi, G. (2006), Statistical Regularities in the Evolution of Industries. A Guide through some Evidence and Challenges for the Theory, in Stefano Brusoni and Franco Malerba (eds.) Perspectives on Innovation, Cambridge University Press.

Dosi, G. and M. Egidi (1991), Substantive and Procedural Uncertainty. An Exploration of Economic Behaviors in Changing Environments, *Journal of Evolutionary Economics*, No. 1, pp. 145-168.

Dosi, G. and M. Grazzi (2006), Technology as Problem-Solving Procedures and Technology as Input-Output Relations: Some Perspective on the theory of production, *Industrial and Corporate Change*, Vol. 15 (1), pp. 173-202.

Dosi, G. and D. Lovallo (2000), Rational Entrepreneurs or Optimistic Martyrs? Some considerations on technological regimes, corporate entry, and the Evolutionary role of decision biases, in G. Dosi, Innovation, Organization and

Economic Dynamics: Selected Essays, Edward Elgar Publishing, UK and USA.

European Bank for Reconstruction and Development (2005), Transition Report ' Chapter 4: The Performance of Firms in Transition', pp. 82-92.

Federal State Statistics Service (2006). Russian Regions. Moscow: Federal State Statistics Service.

Geroski, P. A. (1991) Entry and Market Contestability: An International Comparison, Oxford; Basil Blackwell.

Geroski, P. A. (1995), What Do We Know About Entry? International *Journal of Industrial Organization*, 13, pp. 421-440.

Goskomstat (1997). Russian Regions. Moscow: Goskomstat

Goskomstat (1998). Russian Regions. Moscow: Goskomstat

Goskomstat (2000). Russian Regions. Moscow: Goskomstat

Klapper, L., L. Laeven and R. Rajan (2006), 'Entry Regulation as a Barrier to Entrepreneurship', Journal *of Financial Economics*.

OECD (2002), Trade Politics in Russia: The Role of Local and Regional Governments". Paris: OECD

Olley, G. S. and A. Pakes (1996), 'The Dynamics of Productivity in the Telecommunications Equipment Industry', Econometrica, vol. 64 (6), pp. 1263-1297.

Rutkowski, J. J. and S. Scarpetta (2005), 'Enhancing Job Opportunities: Europe and Central Asia Region', The World Bank.

Sabirianova, P., J. Svejnar and K. Terrell (2005), Distance to the Efficiency Frontier and FDI Spillovers, Journal *of European Economic Association Papers and Proceedings*.

Tybout, J. R. (2000), 'Manufacturing Firms in Developing Countries: How Well Do They Do, and Why', Journal *of Economic Literature*, vol. 38 (1), pp. 11-44.

Table Regions' Institutional and Economic Variables

	Ingushetia	Khabarovsk krai	Krasnodar oblast	Moscow city
Risk index, Russia=1 2001	2.060	1.250	0.860	0.750
Volume of innovative products, Rb thousand, 1999	-	926717	96166	1072
Number of patents granted in 1999	-	158	285	4441
Density of motorways, km, 1999	-	5.6	135	-
Number of murders and attempted murders, 1999	62	515	825	1206
Number of economic crimes, 1999	306	4750	8011	12300
Population, thousand, 1999	488	1518	5067	8631

Institutional variables, adjusted by population count

	Ingushetia	Khabarovsk krai	Krasnodar oblast	Moscow city
Risk index, Russia=1 2000	2.06	1.25	0.86	0.75
Number of patents granted in 1999	n/a	0.10408	0.05625	0.51454
Density of motorways, km, 1999	n/a	0.00369	0.02664	n/a
Number of murders and attempted murders, 1999	0.12704918	0.33926	0.16282	0.13973
Number of economic crimes, 1999	0.62704918	3.12912	1.58101	1.4251

Population, thousand, 1999	488	1518	5067	8631

Source: Expert RA, Goskomstat (2000)

