

National systems of entrepreneurship in transition economies: An empirical analysis of spatial institutional variation in Russia

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Abstract:

National Systems of Entrepreneurship theory recognizes that entrepreneurship processes and market entry are always embedded in a country's institutional framework. Particularly the context of the Russian Federation provides an ideal setting for investigation, especially in view of regionally differentiated processes of transition to a market economy. The paper investigates which institutional factors significantly influence Russia's spatial entrepreneurship activity, and which factors act as institutional bottleneck constraints for the Russian national system of entrepreneurship. The paper builds on a comprehensive data set from the ORBIS database and exploits spatial institutional variation. My results demonstrate that spatial entry can be explained by institutional factors at the regional level. Particularly high rates of crime and an unequal distribution of wealth constrain market entry and thus hamper spatial economic development.

Keywords: Entry Rate, Transition Economies, National Systems of Entrepreneurship, Institutional Variation

1. INTRODUCTION

Entrepreneurship researchers have focused to a great extent on individuals and tended to ignore the regulating effect of context on individual action. Nonetheless, a great deal of the trade-offs and opportunity costs faced by entrepreneurs are regulated by national context – namely through a broad range of different institutional settings, formal and informal, different cultures, norms and values and attitudes toward entrepreneurship which all affect entrepreneurial performance (Autio et al., 2015). With regard to this, Acs et al. (2014) introduced a novel theoretical framework concept, i.e. National Systems of Entrepreneurship (NSE). NSE are defined as “resource allocation systems that are driven by individual-level opportunity pursuit, through the creation of new ventures” (Acs et al., 2014, p. 476). In this respect NSE consider the context of the entrepreneur and not just its personal characteristics and aspirations, which recognizes that national entrepreneurship processes and market entry as their result are always embedded in a given country's institutional framework (Acs et al., 2014 & 2016).

Moreover, the literature on entrepreneurship and market entry generally assumes that most of its findings are universal and valid across countries. Various studies have analyzed cross-country heterogeneity in entry rates and hypothesized a link with the domestic institutional context. These studies, nevertheless, could only partially control for macroeconomic differences, legislation, socio-cultural and other country specific factors – a major disadvantage of cross-country studies (Bruno et al., 2013; Klapper et al., 2006; Djankov et al., 2002). Thus, as countries usually are not homogeneous, regional systems of entrepreneurship provide a useful focus for empirical research. Numerous studies emphasize the local incentive structure for entrepreneurship. Local market potential at the regional level is an important factor influencing the decision for firms to enter (Fritsch and Wyrwich, 2012, 2014a, 2014b; Audretsch et al., 2006; Berkowitz and DeJong, 2005; Baumol, 1990). However, there is significant spatial variation in the entrepreneurship context across regions that impacts entrepreneurial activity and which calls for a profound analysis.

Further, a country's or a region's entrepreneurial performance might be constrained by specific bottleneck factors (Acs et al., 2014). This assumption is based on two related theories, the theory of the weakest link and the theory of constraints, which argue that the performance of dynamic systems is characterized by interdependencies and feedback loops depends on the element with the lowest value. According to those theories, improvements can only be achieved by reinforcing the weakest link (i.e.

the bottleneck) that constrains the performance of the system (Acs et al., 2014; Tol and Yohe, 2006; Goldratt, 1994; Yohe and Tol, 2001).

The context of the Russian Federation provides an ideal setting to address the question of how spatial institutions influence new firm entry, especially in view of regionally differentiated processes of transition to a market economy. Particularly in Russia, the variety of economic conditions and the considerable scope for regional governments to influence local institutions have resulted in significant divergence of regional development paths. Additionally, even after more than twenty-five years of transition, Russia is still one of the countries with the lowest share of founders and innovative companies (Chepurenko, 2011). Moreover western best practices in an environment of apparently hampered institutions could neither prevent nepotism nor meet the special context of a transition economy (Chepurenko, 2011). This is in line with literature, which argues that in malfunctioning institutional frameworks, entrepreneurs do not take new ventures or restrict their activities to unproductive types of entrepreneurship (Glaeser et al., 2003; Johnson et al., 1997; Baumol, 1990). Hence, spatial variation in both formal and informal institutions might have a significant effect on regional entry rates in Russia (Bruno et al., 2013; Popov, 2001).

With regard to this, two research questions shall be addressed:

- 1) Which institutional factors significantly influence Russia's spatial entrepreneurship activity?
- 2) Is the performance of the Russian national system of entrepreneurship subject to institutional bottleneck constraints?

This article is divided into five sections. Section 2 provides an overview of relevant theoretical foundations. Section 3 focuses on the methodological approach and sample selection. Results are presented in Section 4 and conclusions are provided in Section 5.

2. THEORY

2.1 Capturing entrepreneurship in transition economies

Whereas entrepreneurship lacks a common definition, Joseph Schumpeter understands entrepreneurship primarily as “the assumption of risk and responsibility in designing and implementing a business strategy or starting a business” (Schumpeter, 1911). Accordingly, Gough (1969) stated that entrepreneurship “refers to a person who undertakes and operates a new enterprise or venture, and assumes some accountability for the inherent risks”. For the purposes of the analysis in this study, I adhere to this perspective and define entrepreneurship as individual opportunity pursuit through creation of new-ventures under a legal form of business. Usually, there are numerous advantages to formal sector participation, e.g. legal protection, lower exposure to corruption, access to financial means, formal labor contracts, and a better access to foreign markets (Schneider and Enste, 2000). The benefits of formal legal registration might however vary by country or region. As being illustrated later, higher marginal tax rates, higher regulations and higher attention of corrupt administration employees or state bureaucrats might foster tendencies to avoid registration. Notably, this definition excludes any informal sector activities. This is due to the lack of available data in Russian regions, the lack of comparability of the founded entities and their limited economic value in terms of growth opportunities, job creation and value added. As regards to quantification, as the essential act of entrepreneurship is new firm entry (Lumpkin and Dess, 1996; Acs, 2006), this shall also be the key measure of this analysis. However, given that entrepreneurship is a multidimensional concept (Acs and Szerb, 2009), the results of this study might not apply to other measures than entry. The advantage of registration data though is, that it is assumed to be the most consequential measure of Entrepreneurship (Acs, Autio, and Szerb, 2014).

As a matter of principle, high gross entry do not necessarily imply high net entry if survival rates are low (Brown and Earle, 2006; Rutkowski and Scarpetta, 2005). Hence the most preferable measure would be to measure net entry instead of gross entry, the former being calculated by gross entries less all suspended or bankrupt businesses per year. This perspective is particularly attractive, given that it reflects not just entry barriers but also obstacles to grow firms from seed to growth or expansion stages, the latter being important with regards to economic growth. Notably institutional shortfalls might be accountable to hamper company development. Nevertheless I assume institutional barriers

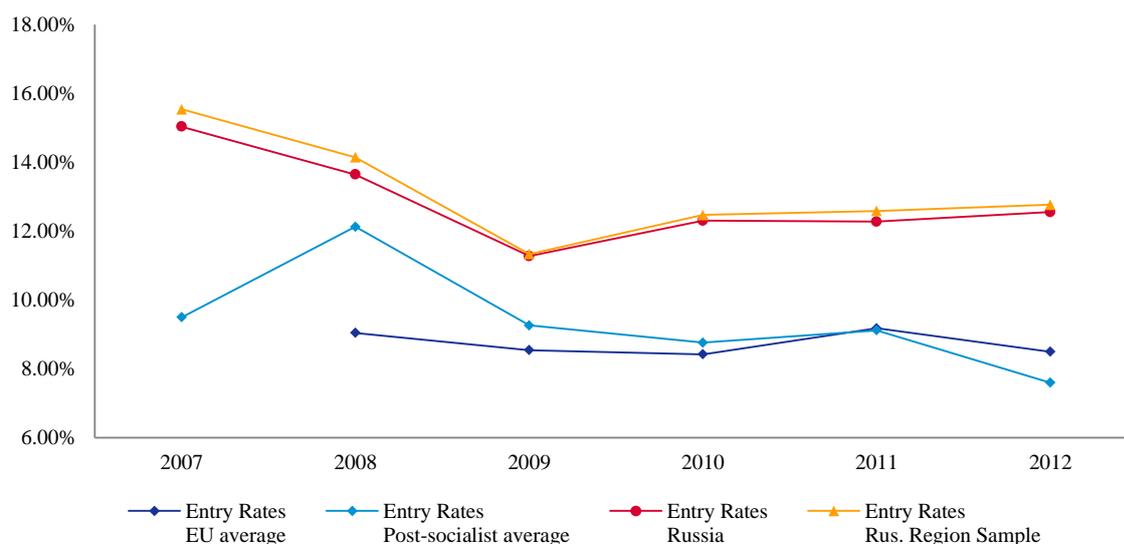
for gross and net entry to be approximately similar, as the entry decision might be influenced by both entry barriers and the expectation of survival barriers.

Whereas literature suggests that gross entry rates in Russia up to the early 2000s were extremely low by international standards (Aidis and Adachi, 2007), studies with more current observation periods indicate that entry in Russia does not appear to be particularly low in international comparison. E.g. Bruno et al. (2013) register entry rates in an interval between 11.9% and 2.4% throughout 1996–2008, compared with 7.09% in Europe and 6.65% in the United States.

Table 1. Comparison of average gross entry rates per year

Year	Entry Rates EU average	Entry Rates Post-socialist average	Entry Rates Russia	Entry Rates Rus. Region Sample
2007		9.50%	15.03%	15.54%
2008	9.05%	12.13%	13.64%	14.14%
2009	8.54%	9.26%	11.28%	11.33%
2010	8.42%	8.76%	12.30%	12.47%
2011	9.18%	9.12%	12.28%	12.59%
2012	8.50%	7.60%	12.55%	12.77%

Figure 1. Development of gross entry rates over time



With regard to table and figure 1, this study tells the same story and registers even higher-than-average entry rates for Russia compared to EU and Eastern European post-socialist countries¹. This is generally in agreement with literature that suggests typical entry rates in Western Europe and North America in the 5–15% range, whereas developing and transition economies show slightly higher rates (Aidis and Adachi, 2007). With regard to the chosen sample regions for this study, the average entry rates shown are largely representative to the average for Russia as a whole.

As there are obvious differences in the presented entry rates in contrast to the very low 2.4% entry rate in 2008 observed by Bruno et al. (2013) though using the same database, I assume this might be primarily due to technical issues in the ORBIS database. Data coverage in ORBIS for approximately 2 years before the date of the data excerpt is rather fragmented and unreliable. This is, amongst others, attributable to the time it takes companies to prepare and publicize annual reports, for government entities and information offices to encompass this information and eventually forward information to Bureau van Dijk.

¹ Data is based on the Bureau van Dijk ORBIS database and Eurostat, details are presented in chapter 3.

Another aspect to mention is, that on the one hand it is generally assumed that the bulk of businesses in Russia today is legally registered, maybe except for small petty traders, even though some share of their activities might be conducted informally (Kontorovich, 1999). Nonetheless, there are some reasons why the observed number of firms might be overestimated, e.g. entrepreneurs might either register several new businesses to remain under a certain size threshold in order to avoid attention of corrupt state bureaucrats, or large enterprises may register small shell businesses to disperse profits and benefit from lower tax rates for smaller firms (Aidis and Adachi, 2007). This at least provides some indications, that the real rate of entry might be slightly lower.

2.3 Regional Systems of Entrepreneurship

Acs, Autio, and Szerb (2014) recommended that a systemic approach to Entrepreneurship is always helpful when it comes to design policies to nurture and leverage entrepreneurship for sustainable economic development. As already stated in the introduction, national systems of entrepreneurship constitute such a systemic approach. They are resource allocation systems that account for the fact, that individual entrepreneurship choice is always embedded in institutional settings that reflect costs and benefits of actions on the individual level (Acs et al., 2016). Moreover, those costs and benefits do not have to be static but may vary over time, due to both endogenous developments and exogenous shocks. Thus, the market entry decision is subject to the regulating effect of the entrepreneur's dynamic institutional framework conditions. Schillo and Persault (2016) contribute to this view by concluding that an individual's entrepreneurial intentions are not only a function of their personal entrepreneurial readiness, but also of contingencies between individual entrepreneurial readiness and a number of dimensions of the national environment.

Whereas Acs, Autio, and Szerb (2014) concentrate on the national entrepreneurship system of a given country, they also state that countries are not homogeneous, and regional systems of entrepreneurship thus provide a useful focus for empirical research. There is broad evidence that differences in local market potential have a great impact in influencing the decision for firms to enter (Fritsch and Wyrwich, 2012, 2014a, 2014b; Audretsch et al., 2006; Berkowitz and DeJong, 2005; Baumol, 1990). Also, numerous studies suggest that entrepreneurial activity and framework conditions may vary substantially across different regions of a country, even if there are nation-wide common formal rules (Westlund, Larsson and Olsson, 2014; Andersson, 2012; Aoyama, 2009). With regard to Russia, its regions are – on the one hand – subject to the same federal law, they share a nation-wide common market and besides similar characteristics with regard to policy, society and culture (Bruno et al., 2013; Klapper et al., 2006; Djankov et al., 2002). On the other hand, there is also a broad ethnic composition in various regions along with ample competence in policy design for local government and administration, which cause a sufficient degree of spatial institutional variation to analyze in contrast to comparable peers (i.e. regions). Given the evidence that spatial levels of entrepreneurial entry tend to be path dependent and persistent over time (e.g. Wyrwich, 2012; Acs and Mueller, 2008; Mueller, van Stel and Storey, 2008; Fritsch and Mueller, 2007), this also allows for a longitudinal analysis.

2.5 Institutional Framework & bottleneck factors

According to North (1990, p. 3) institutions comprise both, formal rules and legislation as well as informal influences like cultural and social norms. Even though there was a certain degree of entrepreneurial activity during the tsarist period, in decades of the soviet administration entrepreneurship was rather associated with thievery from the community in lieu of wealth creation. In an ironic twist, dissolving soviet formal institution and entering the transition process in the early 90s led to a void of formal institutions and the evolution of a so-called laissez-faire capitalism (Puffer, McCarthy, and Boisot, 2010).

With regard to the specific transformation context of Russia undesirable effects for business formation could also be triggered by poor implementation practices with regard to formal institutions. For example, Baranov et al. (2015) state that lax and arbitrary implementation of formal rules compensates for excessive rigidity of statutory requirements. Moreover, Polishchuk (2008) sees legislation and in

principle adequate institutions in Russia as commonly misused, causing the gap between formal institutions and the actual conditions on the ground to spread further. With a focus on formal institutions, the specific situation of transition economies and Russia in particular led to a high degree of insecurity and numerous institutional challenges that are briefly outlined as follows².

Criminality

Weak institutions may boost returns of unproductive or rather criminal activity, which diminishes incentives to concentrate on more productive types of entrepreneurship and also raises transaction costs for entrepreneurs in general. Criminality also affects the invulnerability of property rights, and the entrepreneur's ability over how a resource or the income generated from that resource are used (North, 1990). DeSoto (2001) states that the lack of a reliable system of property rights is the key obstacle that prevents entrepreneurs from risk taking and utilizing assets to turn them into real capital. According to Hartarska and Gonzalez-Vega (2006) securing property rights is considered to be an inevitable prerequisite for the establishment of new businesses, as well as for decreasing transaction costs for firms overall. Unfortunately there are rarely any measures of property rights available on a regional basis in Russia, but there is an observable phenomenon that is closely related – the wide-scale practice of corporate raiding, where business owners are forced or pressured into selling, often by state-connected officials (Puffer, McCarthy, and Boisot, 2010). The frailty of private property as a formal institution in Russia is detrimental to entrepreneurship, and is symptomatic of the broader void in formal institutions like effective laws, trustworthy enforcement bodies, and a fair and impartial justice system. This leads to the following assumption:

Hypothesis 1: *The level of criminality has a significant negative impact on market entry of new firms.*

Corruption

Another important aspect to mention is corruption. Particularly post-soviet countries show levels of corruption that are among the highest in the world (Bjornskov and Paldam, 2002). Literature commonly mentions corruption to introduce further uncertainty into business development, inhibiting the starting and growth of new and aspiring companies (Bowen and De Clercq, 2008; Puffer, McCarthy and Boisot, 2010). Guseva (2007), and Aidis and Adachi (2007) argument likewise, as especially in transition economies the highly corrupt nature of business operations and a lack of ties to banks or state bureaucrats act as barriers to business development. Thus, even for legally registered businesses, it is very difficult to engage in legal business practices without also engaging in illegal ones, such as bribing and corruption. I thus derive the following hypothesis:

Hypothesis 2: *The regional level of corruption has a significant negative impact on market entry of new firms.*

Bureaucracy

Another important aspect to highlight is the resistance to change in the bureaucratic-administrative business culture, administrative discretion and low quality of service in public offices and restrictive taxation (Luthans, Stajkovic, and Ibrayeva, 2000), or plain bureaucracy in short. Those circumstances describe the hostile maze that entrepreneurs still face when founding a company and they led to quotes like “It takes a determined entrepreneur to endure the bureaucratic maze, partly inherited and partly generated by the current Russian government” (Yavlinsky, 2001), or “Russian Entrepreneurs fear bureaucrats more than criminals” (Smolchenko, 2005, p. 1). In this study, I want to concentrate on the following aspects related to bureaucracy.

Firstly, according to official statistics, the public sector in Russia is very large, and halfhearted federal government announcements to reduce the size of the state administration have been without consequences. However, the public sector still lacks a profound service mentality. According to Grozovsky (2013), civil administration is still busy building administrative barriers, imposing unnecessary services on the public, and extracting profits from wherever possible. Moreover,

² I exclude factors with regard to availability of financial means in this study. However, limited access to finance is a well-researched entry barrier, e.g. Yukhanaev et al. (2015), Starodubrovsky (2013), Estrin and Mickiewicz (2010), Klapper et al. (2006) and Johnson et al. (2000).

administration employees also perceive their work as a chance to exert pressure to their subject of regulation aiming to extract profits. The low quality of civil services thus has an impeding effect on market entry, investment and business development.

Secondly, whereas complaints about taxation are rather an universal issue, it is noticeable that in the CIS and particularly in Russia, tax administration is scored as more problematic than the tax rate in almost half of all countries (Carlin, Schaffer, and Seabright, 2006). Generally, in most countries, incorporated firms pay higher taxes since they pay both, corporate income tax as well as income and dividend taxes payable by the investor. Moreover, corporations are more visible to tax and regulatory authorities and might be subject to additional oversight and controls, along with some other effects as mentioned before. Thus choice of entry and legal form can be affected by the amount of taxes payable and the quality of tax administration including its potential costs (Demirguc-Kunt, Love, and Maksimovic, 2006). Additionally, tax rates can be used as an instrument of spatial development stimulation. On the other hand there is also the risk of overcentralization at federal level, transforming regional authorities merely to passive executors (Zubarevich, 2009) unable to create incentives for spatial entrepreneurship. I thus expect the following relationship:

Hypothesis 3: *The magnitude of bureaucratic barriers has a significant negative impact on market entry of new firms.*

Democracy and transparency

Democracy and transparency of regional authorities are also deemed to be relevant aspects for spatial entrepreneurship activity. Democratic systems (and their sub elements like political openness, free elections, pluralism, transparency, etc.) are expected to show disciplinary effects. They can serve to discourage corruption and undesirable connections to politicians and administration, particularly because political opponents have an incentive to discover and publicize abuses of office. Further, those connections may be seen as less valuable if the respective officials can be voted out of office (Faccio, 2006). On the contrary, a lack of transparency and information facilitate corruption and opportunism, with negative impact on entrepreneurial activity. Moreover Acemoglu and Johnson (2005) see a link between security of property rights and democracy, and Persson et al. (1997) expect that different government bodies also discipline each other to its citizens' benefit. According to this, the following hypotheses are derived:

Hypothesis 4: *The level of regional democracy has a significant positive impact on market entry of new firms.*

Hypothesis 5: *The extent of executive authorities' transparency and disclosure has a significant positive impact on market entry of new firms.*

Civil Society

As regards to regional heterogeneity, particularly with a focus on cultural diversity, studies general state various positive effects for entrepreneurial activity. Audretsch et al. (2010) show that cultural diversity, measured by a index of different ethnic groups in the region's total labor force, facilitates the exploitation of knowledge spillovers. Cheng and Li (2012) show that cultural or racial diversity have a positive impact on new venture creation in given industries and neighboring counties.

Nevertheless ethnic diversity might also trigger social tension and conflicts. Though being characterized by varied ethnic composition, Russia in general (maybe except of its North Caucasus regions) is not considered as a conflict-ridden society. However, as suggested by Belokurova (2014), competition among regional economic elites might cause problems as well. Moreover a weak civil society, deep divisions within the elites, unresolved conflicts, high income inequality or a high rate of unemployment may also contribute to social conflicts which is deemed unfavourable for entrepreneurship and firm entry. Thus I expect the level of social risk to be negatively correlated with entrepreneurial entry.

Hypothesis 6: *The stability of civil society or rather the absence of social risk has a significant positive impact on market entry of new firms.*

3. METHODOLOGY

3.1 Methodological approach

The approach of this study is a cross-regional one, and thus the results are expected to be more comparable within same country borders. Notwithstanding their specific regional development paths, the different Russian regions are subject to the same federal law, a common market, the same history and similar social/cultural characteristics that influence the appearance of entrepreneurship. Considering this, the statistical model will be more reliable regarding the *ceteris paribus* assumption and omitted variable bias. Additionally, as Aidis and Adachi (2007) suggest, cross country comparative data may not provide many clues, since in terms of mere formal legislation Russia does not fare comparatively bad.

In addition, to capture the impact of institutions on entry, it is essential to know how entry rates would look like if there were relatively few institutional barriers. With regard to this, Klapper et al. (2006) expect the rate of entry in an industry in the United States to be a suitable proxy for the natural capacity for entry in that industry. So-called natural entry rates reflect technological barriers in that industry, e.g. organizational efficiencies and advantages that incumbents gained from experience as well as economies of scale. Furthermore Klapper et al. (2006) suppose the institutional impact to be particularly low in the United States, according to relatively low barriers of entry – entry costs in the U.S. only amount to approximately 0.5% of per capita GNP.

I take up this thought with some modifications. Firstly, I want to avoid a certain degree of glorification in supposing that entry rates in the United States do not suffer from barriers. Secondly, I want to point out the apparent lack of comparability between the institutional environments in Russia and the United States. Hence, by interpreting natural entry rates generally as entry in a sound institutional environment, I use average entry rates from the European Union³ and average entry rates from various post-socialist countries⁴ as benchmark. Particularly the latter seem more adequate as a benchmark, particularly with regard to the more comparable socio-economic background.

3.2 Sample selection

The empirical work is driven by a combination of different data sources. The exogenous variable is derived from a comprehensive longitudinal enterprise data set taken from Bureau van Dijk's "ORBIS" database. The database contains comprehensive information covering private and listed companies in numerous countries. From this data set⁵ I calculated entry rates per year, Russian region and industry (according to two digit NACE classification) and analogously benchmark natural entry rates on national level for Eastern European post-socialist countries. The benchmark entry rates for European Union countries were calculated based on data from Eurostat.

The analysis is restricted to gross entry rates. Although preferable, net entries could not be considered due to the fact that suspension or bankruptcy dates in ORBIS are only available for few companies. Furthermore, inactive companies are removed from the database after approximately three years, which does not allow for a historical calculation of net entry rates.

To guarantee comparability of entry rates several filter criteria were applied⁶.

- 1) Only companies with a minimum of financial information (assets, sales) were considered. This is to avoid biases caused by different criteria to consider companies without reported financial information. Moreover, "phantom" companies that merely exist for tax reasons shall be excluded this way.
- 2) Companies that only report consolidated annual reports are removed as well, to avoid double-counting companies and subsidiaries.

³ EU-27 (without Cyprus, Malta and Greece, because no data was available).

⁴ Post-socialist countries that were considered: Bosnia and Herzegovina, Bulgaria, Estonia, Latvia, Macedonia, Poland, Rumania, Serbia, Slovakia, Slovenia, Czech Republic, Ukraine and Hungary.

⁵ The data set is based on an August 2016 excerpt from ORBIS.

⁶ The criteria apply for ORBIS; criteria 3 & 4 apply for Eurostat respectively.

- 3) All legal forms except public and private limited liability companies, or their national equivalents respectively, were removed. This is for two reasons. Firstly, the main advantage of registration as a corporation is limited liability, which allows entrepreneurs to take risks. By contrast, the benefits of registration as other forms (e.g. proprietorships and partnerships) vary considerably across countries, which impedes comparability. Secondly, the coverage of proprietorships and other unincorporated legal forms in ORBIS is rather poor, e.g. due to lower reporting requirements.
- 4) Moreover, I removed several industries based on their NACE code. First of all, certain branches of primary industries were removed due to their country-specific character (agriculture, forestry, fishing and mining, NACE codes 1-10). Furthermore branches from the government and public sector and closely related industries were removed as well, e.g. the health and social sector, activities of organizations, private households, extra-territorial organizations, and firms that cannot be classified (NACE codes 84 – 88, 90-94, 97-99).

With regard to institutional factors at the regional level, I consider several sources of information (see table 2). I use several measures to assess the impact of criminality on entrepreneurial entry. At first I consider two citizen satisfaction indicators whereas satisfaction is measured as the percentage of total positive responses per region pertaining to a specific subject⁷. With regard to this, I consider the assessment of the criminal situation in region by its citizens and the citizen satisfaction with the executive authority's performance in public safety. Since official statistics may be distorted for some reasons, and to account for the specific phenomenon of raidership I consider two additional factors. Hence I use comprehensive data on the number of business-related attacks on business executives, publicized in media, police and press releases, and court decisions gathered by Belokurova (2014). Correspondingly I also use an indicator by Rochlitz (2014) on the number of raider attacks per region, covered in the media. Although the latter may be potentially biased due to erratic media development, coverage and freedom across regions they nevertheless provide the advantage of reflecting the immediate perception of the criminal situation by any potential entrepreneurs in a given region. The citizen satisfaction indicators are also used to assess the impact of government transparency and disclosure. Data on the extent of corruption per region is derived from Opora Rossii reports, Russia's business association of small and medium-sized enterprises. Opora used to analyze regional business climates and ranked regions for a broad set of indicators, varying between 35 and 40 regions. I use a number of corruption related indicators gathered between 2006 and 2012 and consolidate them into one single index, reflecting the general prevalence-level of corruption in the respective region. Because the number of observed regions varies each year, I standardize the rankings in a [0, 1] interval in each year. In this context, values close to zero represent very good positions, i.e. low corruption, whereas values close to 1 represent very bad positions, i.e. high levels of corruption. Bureaucracy measures are threefold – firstly, the share of legislative, executive and judicial employees per region in the employed workforce of the respective region is calculated from data provided by Rosstat. Additionally, indicators on the quality of the regional tax administration as well as the degree of freedom from administration barriers are derived from Opora. Parametrization is similar to the corruption indicator, i.e. a [0, 1] interval with values close to zero signaling for good quality or few barriers. The institutional impact of democracy is assessed by a regional democracy rating, prepared by Carnegie Center Moscow (Petrov and Titkov, 2013). The rating reflects expert opinions on openness and transparency of the political life, plurality of political actors, fairness of elections, etc. in the respective regions with the highest potential obtainable score of 45. Social risk is captured from an RA Expert rating. It captures investment risk of a region, according to factors like level of social tension, number of unemployed people, share of people with income below subsistence level, and various ethnic characteristics of a specific region. The final indicator is comprised by an ordinal ranking of 80 regions from low (rank 1) to high risk (rank 80). The specific methodology and weightings of sub-factors is not disclosed by the agency. Finally various structural economic factors are obtained from Rosstat (average wage and GRP per capita) and the ICSID database from the Moscow Higher School of Economics (Gini coefficients and public expenditure index). The latter is

⁷ The indicators were calculated up to 2010/11 pursuant to the President's Decree No. 825 of 28 June 2007 "On Evaluating the Performance of Regional Government Authorities in the Russian Federation".

used by the Russian Ministry of Finance to determine federal transfers to regional governments in order to adjust for cross regional variations in the cost of public services.

Table 2. Institutional factors and data sources

Institutional Factors	Availability	Source⁸
Criminality <ul style="list-style-type: none"> – Raiding Cases – Victims of Business Violence – Assessment of criminal situation in region by citizens – Citizen satisfaction with executive authorities' performance in public safety 	up to 2010, up to 2010, 2007-2011, 2008-2011	Rochlitz (2014), Belokurova (2014), UniSIS, UniSIS
Corruption <ul style="list-style-type: none"> – Avg. level of corruption indicator 	2006-2007, 2010, 2012	Opora Rossii
Bureaucracy <ul style="list-style-type: none"> – Share of legislative, executive and judicial employees in all employees – Quality of Tax administration – Administration barriers 	2006-2013 both: 2006- 2007, 2010, 2012	Rosstat, Opora Rossii, Opora Rossii
Democracy and transparency <ul style="list-style-type: none"> – Regional democracy score – Citizen satisfaction with executive authorities' transparency and disclosure 	2006-2010 2007-2010	Petrov & Titkov (2013), UniSIS
Civil Society <ul style="list-style-type: none"> – Regional social risk 	2006, 2009-2014	RA Expert
(Structural) Economic Factors <ul style="list-style-type: none"> – Gross Regional Product – Public Expenditure – Gini Coefficient – Average Wage 	2006 – 2013/14	Rosstat, ICSID Database

Whereas ORBIS data is available up to 2014, the other data sources are somewhat limited in data availability. EU benchmark natural entry rates as well as post-socialist natural entry rates are calculated as average per industry over the years 2008-2012. ORBIS & institutional data covering the same Russian regions are available for 33 Regions, and 5 years from 2007-2011. Due to the fragmentation of data sources for institutional factors with data not available in every year, the panel dataset in the 2007-2011 observation timeframe is an unbalanced panel. Hence, the analysis is conducted both with linearly imputed data⁹ as well as – to check robustness of results – separately for all years between 2006 and 2014 where data for the respective institutional factor is available without any imputation. Table 3 provides summary statistics of all institutional variables used.

⁸ UniSIS and Rosstat are governmental statistical databases (<http://www.fedstat.ru/user/about.do>, www.rosstat.ru), RA Expert is a Russian Rating Agency (<http://www.raexpert.ru/ratings/regions/>) and Opora Rossii the Russian business association of small and medium-sized enterprises (<http://new.opora.ru>). The ICSID database (<https://iims.hse.ru/en/csid/databases>) was created by the HSE International Center for the Study of Institutions and Development and gathers comprehensive data on Russian regional economics, politics and social development.

⁹ There are no indications not to assume data is missing completely at random (MCAR).

Table 3. Summary statistics of variables

Variables	Obs.	Mean	Std. Dev.	Min	Max
Raiding Cases	10.890	0.542	1.528	0	12
Business Violence	10.890	3.583	7.097	0	50
Criminal situation assessment	10.890	0.502	0.104	0.234	0.751
Public safety satisfaction	10.890	0.285	0.090	0.129	0.526
Avg. level of corruption	10.890	0.517	0.226	0.025	0.975
Admin. employee share	10.890	0.034	0.007	0.018	0.052
Quality of tax administration	10.890	0.505	0.254	0.029	1
Administration barriers	10.890	0.497	0.254	0.029	0.971
Regional democracy score	10.890	33.234	5.236	20	45
Transparency and disclosure	10.890	0.313	0.092	0.140	0.526
Regional social risk	10.890	31.314	19.097	1	80
Log Average Wage	10.890	9.975	0.276	9.409	10.787
Public Expenditure	10.890	0.985	0.240	0.799	1.652
Gini Coefficient	10.890	0.403	0.032	0.342	0.545
Log GRP per capita	10.890	12.230	0.473	11.299	13.996

The average level of corruption, quality of tax administration and administration barriers indicators were already standardized during data preparation. The other indicators were standardized to [0, 1] intervals after presentation of summary statistics but before running the regressions (except for average wage and GRP p.c. which are utilized as log).

3.3 Estimation Strategy

To analyze the relationship between entry and spatial institutional environment, I employ a Tobit estimation model. I use regional entry rates in Russia as dependent censored [0,1] variable, calculated as share of new entrants per year on incumbents. To capture institutional impacts the model follows the difference-in-difference approach of Klapper et al. (2006) and Bruno et al. (2013). The model specification includes regional fixed effects, industry fixed effects and time fixed effects. The impacts of spatial institutional factors are captured by interaction terms of natural entry rates and the respective institutional factor. The model specification aims to test how institutions differentially affect entry rates given the natural entry rate.

The institutional variables are loaded with the institutional factors from table 2. To consider the effect, that today's institutional environment may influence entry either today or in the future, the institutional factor variables are parametrized for t in the current period, and with one- or two-year lag.

The model specifications, by using EU- and Post-socialist natural entry rates, are as follows

$$EntryRate_{r,i,t} = \beta * [Nat. Entry_{2008-2012}^{EU} \times Inst_{r,t}] + \sum_{r=1}^R \beta_r D_r + \sum_{i=1}^i \beta_i D_i + \sum_{t=1}^t \beta_t D_t + e_{r,i,t} \quad (1)$$

$$EntryRate_{r,i,t} = \beta * [Nat. Entry_{2008-2012}^{Post-Soc} \times Inst_{r,t}] + \sum_{r=1}^R \beta_r D_r + \sum_{i=1}^i \beta_i D_i + \sum_{t=1}^t \beta_t D_t + e_{r,i,t} \quad (2)$$

with r denominating the Russian region, i the industry according to NACE two-digit code and t year. The two regressions include region, sector, and time dummies to control for fixed regional, industrial and time effects.

The estimation results for both models are reported with a particular interest on the sign of the β coefficient stemming from the interaction term. To facilitate the interpretation of the coefficients of the Tobit regression model, two transformations were made: At first, all institutional variables were rescaled so that they are restricted to a [0, 1] interval. In addition, Tobit marginal effects are reported on truncated expected value at 0 (lower bound) and 1 (upper bound). This allows for interpreting the magnitude of the β coefficients as the percentage decrease of the natural entry rate for an average region passing from the best to the most uncertain institutional environment.

4. FINDINGS

The regression results are presented in table 3. The criminality related factors show a highly significant impact on entry. The number of raiding cases and victims of business violence per region variables (i.e. people involved) show a significantly negative impact on entry rates over all periods of interest and of quite similar magnitude. Also citizen satisfaction with executive authorities' performance in public safety suggests a significantly positive impact on entry rates with a one- or two-year lag, meaning that transparent measures against criminality taken by local governments also encourage potential company founders in the near future. It can be noticed, that the magnitude of the effect of all three variables rises with time elapsed, suggesting that an entrepreneur's criminality perception in the recent past is even more important for his entry decision than the current state of criminality. Irritatingly, model 1 shows a significantly negative impact on entry for the assessment of the criminal situation. This means, a more positive assessment regarding criminality today implies lower rates of entry in the same period. This is odd at first glance, but might be interpreted as a short run effect. The criminal situation is highly correlated with mafia, organized crime and network activities which also concentrate some of their activities on businesses - therefore higher criminality could, paradoxically and in the short run, enhance entry. Thus overall I consider the hypothesis as confirmed.

With regard to corruption the hypothesis could not be confirmed. This is remarkable, because it contradicts the assumption that perceptions of low corruption combined with a favourable attitude towards entrepreneurship increase the probability to become an entrepreneur (Djankov et al., 2005; Desai et al., 2003). In contrast the results could possibly indicate that due to a long history of a corrupt environment for business in Russia, perception of corruption might be an integral part of everyday life and thus higher or lower corruption levels do not significantly influence the market entry decision. This is also in line with Djankov et al. (2005), who assumes entrepreneurs have come to a point where they simply accept corruption as a part of doing business. With regard to this, conclusions that corruption is negatively correlated with market entry, are primarily derived from cross-country studies. In those studies, a higher variation of corrupt and non-corrupt institutional environments from developed and developing countries makes differences better observable. Hence it can still be assumed that corrupt institutional environments distort entrepreneurial opportunities and returns by acting as a barrier that impedes entry or growth by entrepreneurs who are not willing to engage in corrupt practices (Aidis, Estrin, and Mickiewicz, 2012).

Apparently, bureaucracy variables like quality of tax administration and administrative barriers do also not have a significant impact on entry. Regarding taxation, this is apparently in contradiction to existing literature (Klapper et al, 2006; Demirguc-Kunt et al., 2006). In this regard, e.g. Carlin, Schaffer and Seabright (2006) also observe insignificant regression coefficients for tax levels, though providing evidence that in fact taxes are highly important for firm growth in their sample – especially due to endogeneity. Another possible reason might be the limited degree of creative leeway for local governments to make alignments in regional taxation. Due to the fact that most of the taxes levied are federal taxes, except for land and fixed assets taxation, there might be too few regional tax incentives and variation between regions to significantly impact the entry decision on a spatial level.

The same considerations can be made for the non-significant indicator of administrative barriers. Unfortunately, I cannot provide any reliable explanations why administrative barriers apparently do not have a significant impact on entrepreneurial entry in Russia. On the other hand, the number of employees in the administrative body (executive, legislative and judicative personell) as a share in the employed workforce per region seems to have a significant positive current period effect in model 2.

Table 2. Regression results

	Model 1 (EU)			Model 2 (Post-soc. Countries)		
	Current Period	Lag 1	Lag 2	Current Period	Lag 1	Lag 2
Criminality						
- Raiding Cases	-0.388* (.152)	-0.040 (.144)	-0.483*** (.138)	-0.215 (.115)	-0.060 (.124)	-0.464*** (.123)
- Business Violence	-0.115 (.126)	-0.421*** (.119)	-0.202 (.139)	-0.250* (.115)	-0.393** (.128)	-0.225 (.131)
- Criminal situation assessment	-0.860*** (.003)	0.122 (.002)	-0.088 (.002)	-0.021 (.002)	0.186 (.002)	0.050 (.002)
- Public safety satisfaction	0.612 (.318)	0.954*** (.288)	1.018** (.322)	0.246 (.268)	0.677* (.295)	0.726* (.341)
Avg. level of corruption	-0.140 (.095)	-0.130 (.080)	-0.170 (.107)	0.035 (.078)	-0.044 (.073)	-0.090 (.100)
Bureaucracy						
- Admin. employee share	8.788 (5.298)	5.862 (5.750)	-4.349 (4.481)	10.800* (4.855)	9.834 (5.542)	0.352 (4.759)
- Quality of tax administration	-0.072 (.093)	-0.083 (.093)	-0.132 (.126)	-0.052 (.074)	-0.054 (.092)	-0.091 (.135)
- Administration barriers	0.159 (.090)	0.153 (.090)	0.075 (.130)	0.161 (.074)	0.167 (.089)	-0.006 (.133)
Regional democracy score	0.316 (.294)	0.166 (.262)	0.181 (.252)	-0.150 (.255)	0.261 (.274)	0.441 (.272)
Transparency and disclosure	0.029 (.306)	0.107 (.216)	0.090 (.199)	0.142 (.235)	0.145 (.206)	0.052 (.189)
Regional social risk ¹	-0.029 (.070)	-0.019 (.102)	0.119 (.124)	-0.006 (.064)	0.003 (.097)	0.122 (.120)
Economic Factors						
- Log Average Wage	-0.231 (.159)	-0.349* (.147)	-0.288* (.146)	-0.488** (.155)	-0.340* (.148)	-0.308 (.158)
- Public Expenditure	6.079* (2.454)	7.202** (2.427)	2.471 (2.475)	5.014* (2.521)	6.496** (2.327)	4.102 (2.249)
- Gini Coefficient	-3.112** (1.025)	-2.980** (.914)	-1.638 (.864)	-3.172*** (.832)	-2.284** (.962)	-1.586 (.940)
- Log GRP p.c.	-0.135 (.085)	-0.129 (.082)	-0.042 (.078)	-0.228** (.074)	-0.109 (.082)	-0.026 (.092)

White (1980) standard errors are reported in parentheses. *, **, and *** denote significance at 5%, 1%, and 0.01% levels. Results for region, sector, and time dummies are not reported. The number of observations is 10.890 obs. for the current period.

¹ With non-imputed data, social risk shows a significant positive impact on entry in the Lag 2 columns for model 1 (1% significance, $\beta=0.332$) and model 2 (5% significance, $\beta=0.241$).

Whereas one would expect an excess of controls, paperwork and other barriers to entrepreneurs, the positive effects of a sufficiently equipped administration on market entry, e.g. through better service, shorter processing times, etc., seem to dominate the aforementioned effects (particularly with regard to the relatively high magnitude of the coefficient). However, it would be necessary to analyze this relationship in more detail, e.g. what types of public personnel and which services are the root cause of this effect, than just to consider a bigger administration body as a cure for a lack of entrepreneurial entry.

With regard to the regional democracy and transparency and disclosure variables, no effect could be measured and hypotheses 4-5 have to be rejected. This can be partially attributable to the fact that the political and market system are at least to a certain degree disconnected from each other, and other economies in transition provide evidence that sound entrepreneurial entry might also happen without political openness and pluralism, e.g. as in the case of China. Another important policy lesson is provided by Bhaumik et al. (2006), who state that the impacts on entry decisions go well beyond factors like democracy. They argue, that specific regional factors that influence entry decisions might be intangible, e.g. quality of law enforcement, policy continuity at state level and quality of governance in general – which might apply to a certain degree to Russian regions, although there are obviously factors that could be addressed and should show sufficient variation. Also, Aidis (2005) and Kobeissi (2001) remark, though business owners are often critical with regards to the government, they tend to adopt a passive rather than pro-active attitude, which might be due to the post-socialist legacy.

On first glance, social risk does not appear to have a significant impact if imputed data is used. Surprisingly however, in both models the variable has a two year lagged positive impact on entry if non-imputed data is used. Potential causes could be found in the composition of the social risk measure. Due to the fact that social risk is not merely composed of ethnic tension but a significant portion of the indicator being based on low income and unemployment in a specific region, the latter might amplify the attractiveness of entrepreneurship as an alternative income. Moreover, mobilization of ethnic communities or groups driven by alternative ideologies is largely suppressed by the government, particularly due to historic experiences (Gorenburg, 2006; Beissinger, 2002). Hence it is assumed, that the observable effect on entrepreneurial entry is primarily attributable to the structural economic elements of the index. The delay of the effect can be attributed to the time it takes between opportunity recognition, realization of a business idea and official registration which is marked as entry. Additionally, the magnitude of the observable effect is comparatively low with regard to other significant factors. Hence hypothesis 6 is rejected.

Finally, with regard to the economic factors, all of them show significant results in at least one period. Higher average wages per region lead to lower entry rates, which makes sense from a perspective of attractive alternatives to founding a company. Generally one can observe a current and lagged impact, whereas the current impact is higher than the lagged one. The level of the public expenditure index, i.e. the amount of federal monetary transfers to a specific region, has a positive impact on entry, both in the same period and with a one-year delay. The latter has an even higher impact, particularly because it takes time for investments to show effects. The Gini coefficient shows a significant negative impact in the current and one-year lagged period, which means the more unequal wealth is distributed, the lower the expected entry of new firms. Concentration of wealth in the arms of a few thus leaves entrepreneurs without financial means to bring their ideas to life in form of newly founded companies. Notably the magnitude of this effect is one of the highest observable. Due to the fact that the estimation method via surveys covers mainly lower-income groups, and according to expert and Rosstat employee assessments, the index might also underestimate the level of inequality.¹⁰ We thus can expect the real impact of an unequal distribution of wealth to be even higher. Log GRP p.c. shows a negative same period impact on entry in model 2. Whereas Bruno et al. (2013) assumed regional GRP not to affect entry due to the limited time span of their dataset, my results underline these results even with a larger time period, thus, time does not seem to be the mere cause of this observation. All over, all structural economic factors show even higher significance if the non-imputed data is used, hence, structural variables are important in explaining the overall process of founding a new business in Russia.

¹⁰ Ref. to the ICSID documentation (<https://ims.hse.ru/en/csid/databases>)

5. CONCLUSION

This analysis shows that spatial entry can be explained by institutional factors at the regional level. A lot of factors like democratization, corruption, taxation, etc. do not show any significant impact on entry. This is partly in line with existing literature e.g. for democratization (Bhaumik et al., 2006), whereas on the other hand, literature identified a significant negative impact from e.g. corruption (Desai et al., 2003) and from taxation (Klapper et al, 2006; Demircuc-Kunt et al., 2006). In contrast, especially structural economic factors and crime rates show a significant impact on spatial entry in Russia. Particularly high rates of crime and an unequal distribution of wealth seem to constrain market entry as bottleneck factors and thus hamper spatial economic development.

Nevertheless, there are several limitations that need to be mentioned. The fragmentation of data sources and the resulting unbalanced panel requires imputation of data, in order to get a common data basis for all regions and years to be analyzed. Without imputing the data, hardly any common timeframes for all indicators would remain. However, to prove the robustness of the results, the models were run without imputed data with different timeframes for each institutional variable, and the results were largely confirmed. It also would have been interesting to test the models with more current data, but unfortunately data availability in Russian regions appears to have worsened in recent years. Moreover, the consideration of net entry rates would have been of tremendous interest for this analysis, particularly to consider the impact of the institutional environment on company survival. Unfortunately this data is only available for few companies in ORBIS. Finally, with regard to the identification of bottlenecks, it would also be interesting to capture interrelating effects and dependences of different institutional factors, particularly to allocate root causes of institutional bottlenecks for entrepreneurial activity.

This paper contributes to the emerging literature on national systems of entrepreneurship, particularly with regard to spatial institutional contexts. Additionally, the results contribute to the discussion on institutional impacts on entry in a general context, pioneered by Djankov et al. (2002), Wennekers et al. (2005) and Van Stel et al. (2007) as well as particularly to literature with focus on transition economies contexts (Chepureenko, 2011 & 2015). My results support the assumption that regional institutional ecosystems play an important role in nurturing new venture seeds into value-adding growth ventures (Autio and Thomas, 2013), hence, there is also a practical impact in identifying bottleneck factors constraining entrepreneurial performance. Policy discussions around shaping framework conditions for entrepreneurship should focus not only on the size of government spending but also on its design (Aidis et al., 2009), with particular attention to bottleneck components like criminality and wealth distribution for example, which require most attention. This will help to set tangible targets for policies and support initiatives designed to alleviate the bottleneck factors identified.

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