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**Institutions and Entrepreneurship Development in Russia:
A Comparative Perspective**

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Institutions and Entrepreneurship Development in Russia: A Comparative Perspective ¹

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Abstract

In this paper we use a comparative perspective to explore the ways in which institutions and networks have influenced entrepreneurial development in Russia. We utilize Global Entrepreneurship Monitor (GEM) data to study the effects of the weak institutional environment in Russia on entrepreneurship, comparing it first with all available GEM country samples and second, in more detail, with Brazil and Poland. Our results suggest that Russia's institutional environment is important in explaining its relatively low levels of entrepreneurship development, where the latter is measured in terms of both number of start-ups and of existing business owners. In addition, Russia's business environment and its consequences for the role of business networks contribute to the relative advantage of entrepreneurial insiders (those already in business) to entrepreneurial outsiders (newcomers) in terms of new business start-ups.

Keywords: Entrepreneurship, Institutions, Networks, Russia, Poland, Brazil

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Abstract

In this paper we use a comparative perspective to explore the ways in which institutions and networks have influenced entrepreneurial development in Russia. We utilize Global Entrepreneurship Monitor (GEM) data to study the effects of the weak institutional environment in Russia on entrepreneurship, comparing it first with all available GEM country samples and second, in more detail, with Brazil and Poland. Our results suggest that Russia's institutional environment is important in explaining its relatively low levels of entrepreneurship development, where the latter is measured in terms of both number of start-ups and of existing business owners. In addition, Russia's business environment and its consequences for the role of business networks contribute to the relative advantage of entrepreneurial insiders (those already in business) to entrepreneurial outsiders (newcomers) in terms of new business start-ups.

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1. Executive Summary

The work of both William Baumol (1990, 1993, 2005) and Douglass North (1990, 1994, 1997, 2005) has highlighted the relationship between the institutional environment and entrepreneurship development. In this paper, we explore this relationship empirically in Russia, relative to developed, other transition and emerging economies. A number of studies have indicated the hostile nature of the business environment in Russia, though there is surprisingly little evidence about its impact on entrepreneurial behavior. We begin to address this knowledge gap by exploring findings with respect to two hypotheses regarding this relationship.

Our first part of hypothesis one stipulates that institutional weaknesses will contribute to lower levels of entrepreneurship in all the formerly centrally planned countries. We test this in a cross-country regression by exploring the effects of legal origin, namely the centralized planning system vs. other legal forms such as English and French, on entrepreneurial activity. Given the extensive body of literature highlighting the particular weaknesses of the institutional environment in Russia, in the second part of the hypothesis we test whether entrepreneurial entry levels are lower in Russia, even in comparison with other transition economies.

Our second hypothesis focuses on the possible influence of networks on entrepreneurship development in Russia. Networks, for example via the peculiarly Russian form of 'blat', continue to be used to circumvent the inadequacy of the institutional environment. We use more detailed comparative country specific regressions on three emerging markets (Russia, Poland and Brazil) to test whether individuals already embedded in entrepreneurial networks have a significant advantage in Russian start-ups.

For our analysis, we use the Global Entrepreneurship Monitor's (GEM) dataset collected in 2001 and 2002. The findings from our empirical analysis of Russian entrepreneurs lead us to several interesting insights. Firstly, we confirm both elements of the hypothesis one, namely that, while entrepreneurship levels are comparatively low in all the countries available in the GEM dataset that have made the transition from socialism, they are significantly lower than even this in Russia. The relatively few individuals who undertake start-up activities in Russia are also different in several interesting respects from their counterparts in developed Western economies. For example they are relatively more likely to be older, male and educated. We also find evidence for significant network effects. The strong ties between businesses and state administration in the Russian economy seems to provide greater opportunities for existing entrepreneurial insiders to develop new ventures rather than newcomers taking the plunge of establishing start-ups. Moreover, entrepreneurial outsiders who have attempted to break into the web of business-government relations but failed are less likely to try again.

2. Introduction

In this paper, we use a comparative approach to explore empirically the ways in which institutions and networks have influenced entrepreneurial development in Russia. Our approach builds on the work of Baumol (1993) and North (1990) in highlighting the impact of institutional incentives and structures on entrepreneurial activity. We utilize data collected as part of the Global Entrepreneurship Monitor (GEM) to explore the ways in which the Russian context influences the characteristics of individuals embarking on entrepreneurial activities. We do this in a comparative way by first comparing entrepreneurship in Russia with all available GEM country samples and second in more detail on the basis of a comparison with Brazil and Poland. Poland illustrates the case of a country that has also switched from a centrally planned economy to a free market system, while Brazil is comparable to Russia in terms of GDP per capita but has lower levels of corruption.² This paper therefore supplements the relatively sparse empirical literature on entrepreneurship development in weak institutional environments (Johnson *et al*, 1999, 2000; McMillan and Woodruff, 1999, 2000; Djankov *et al*, 2005, 2006).

North (1990) and Baumol (1993) both emphasize the role that the institutional environment plays in fostering entrepreneurial development. Baumol in particular suggests that productive entrepreneurship will be at low levels where the incentives supporting it are weak. Building on this, we develop two hypotheses to explore the impact of the entrepreneurial environment by comparing Russia with other economies. The literature has highlighted the weak institutional environment with respect to entrepreneurship in Russia, with for example negative informal values towards private business, a lack of property rights enforcement (e.g. Puffer and McCarthy, 2001, Aidis and Adachi, 2005), corruption to the detriment of private sector development (Frye and Shleifer, 1997) and a "grabbing hand" model of government intervention (Shleifer and Vishny, 1999). Given these specific institutional weaknesses, our first hypothesis argues that entrepreneurial activity will be lower in transition economies than in other developed and emerging markets, and even more so in Russia than in other former socialist countries. Our second hypothesis focuses on networks

² Smallbone and Welter (2001) argue that family tradition was of particular importance in Poland, which permitted the continuation of small-scale private activities throughout the communist era. Russia of course, was under communist rule for much longer and lacked this tradition (Puffer and McCarthy 2001; Szelenyi, 1988; Webster, 1992). Roberts and Zhou (2000) suggest how entrepreneurial strategy might differ between Central Europe and the former Soviet Union.

that can support entrepreneurship and in many emerging markets might offset institutional weakness (Johanisson, 2000; Radaev, 2005). We hypothesize that embeddedness in entrepreneurial networks yields significant benefits in the Russian context.

Our results confirm that levels of entrepreneurial activity are low in all the former socialist economies in comparison with the countries covered in the GEM survey and especially so in Russia. This is consistent with the hypothesized impact of Russia's particular institutional environment on entrepreneurial development. We also identify some positive benefits from networking in the Russian context; for example, entrepreneurial insiders (those already in business) have an advantage relative to outsiders (newcomers) in terms of business start-ups.

The remainder of this paper is structured as follows. In section three we briefly discuss the theoretical inspiration for our empirical analysis based on institutional theory. Section four presents a literature review that of the specific Russian context and develops our hypotheses. The data used to test our hypotheses are discussed in the fifth section and the results are presented in the sixth, before conclusions are drawn in the seventh.

3. Institutional theory and entrepreneurship development

The work of Douglass North (1990, 1994, 1997, 2005) and William Baumol (1990, 1993, 2005) provide important theoretical insights about entrepreneurial development in differing institutional environments that form the foundations for this paper. According to North, entrepreneurs are the main agents of change. Organizations such as firms set up by entrepreneurs will adapt their activities and strategies molded to fit the opportunities and limitations provided through the formal and informal institutional framework. Though ideally, formal rules are designed to facilitate exchange reducing transaction costs, they are also likely to affect individuals or groups in different ways. Formal rules and institutions, since individuals create them in their own private interest, do not necessarily operate in the interest of social well-being (North 1994).

Baumol (1993) follows a similar logic but provides greater analysis of the types of entrepreneurship that can emerge under different institutional environments. Institutions are important as the structures that provide the incentives for different types of economic activity. In an environment where the benefits and rewards for rent-seeking activities outweigh their costs, unproductive entrepreneurship i.e. entrepreneurship that benefits the entrepreneur but not the economy will flourish. Similarly, if the benefits of engaging in illegal entrepreneurial activity outweigh their costs, entrepreneurs tend to be more inclined to engage in destructive entrepreneurship i.e. entrepreneurship that is detrimental for economic development. Conversely if the incentives are for 'productive' entrepreneurship (contributing positively to growth) then this form will predominate. In each case entrepreneurs will weigh the incentives present in the environment both in the form of regulations (formal rules according to North) as well as in terms of the prevailing cultural values and norms (informal rules according to North). This does not mean that the same individual will engage in productive, unproductive or destructive entrepreneurship depending on the incentive structure; rather, different individuals will embark on entrepreneurial activities under different incentive structures.

This framework is useful for analysing entrepreneurship in Russia. As with other centrally planned economies, Russia's ideology in the communist era was not conducive to entrepreneurial development and this hostility probably also pertained to the transition period (Puffer and McCarthy, 2001). In the Soviet period, entrepreneurs were equated with 'speculators' and often deemed criminals for making a profit and the ideology allowed for a

punishment-oriented ‘inspection culture’ to develop, where discretionary power of officials led to corruption. This environment had also persisted for much longer, from at least the Russian revolution in 1917, while the economies of Central and Eastern Europe only introduced communism after entering the Soviet sphere of influence after World War 2. The economy was run bureaucratically and the concentration of reward on plan attainment suppressed the appetite for risk taking and instead bred habits of obedience and ‘playing it safe’ behavior (Ellman, 1994). As a result, in North’s terms, the weakness of formal institution enforcement (e.g. commercial law) in post-transition Russia combined with the informal norms and values (negative attitudes towards entrepreneurship) to create an atmosphere that is relatively less conducive to the development of new entrepreneurial firms, even than in countries of comparable levels of development. Indeed, a study of the economic environment in Russia (e.g. Desai, 2006), might lead Baumol to conclude that Russia does not yet fulfil the preconditions he set forth for the existence of a ‘workable free-market economy’ (2005).

4. Hypotheses and Control Variables

A considerable literature attests the importance of a stable rule of law, in terms of the existence and enforcement of a commercial code and a functioning court system, for private business development (McMillan and Woodruff, 1999, 2002; Djankov *et al.*, 2004). There is also evidence that in the former socialist economies of Central and Eastern Europe, the communist heritage left a particular legacy of serious institutional weakness, especially with respect to entrepreneurial activity (Johnson *et al.*, 2000; Estrin *et al.*, 2006), though there have been real improvements, especially in the European Union Accession economies such as Poland, in recent years (European Bank for Reconstruction and Development (EBRD), *Transition Report*, various years). The literature also indicates that market-supporting institutions are especially problematic in Russia (Estrin, 2002). For example, the legal and regulatory framework is marred by numerous inconsistencies, with many Soviet regulations still in force (OECD 2005); ‘No one really knows which laws and regulations are implemented and observed, although it is clear that many are not implemented at all, or only partially’ (*ibid.*). It is not surprising that under the current situation, ‘*Russian entrepreneurs fear bureaucrats more than criminals*’ (Smolchenko, 2005, p.1) and corruption is commonplace.³ Law enforcement is also rather arbitrary: according to Radaev (2002), over 80 percent of Russian entrepreneurs have suffered from broken contracts. An earlier study by Johnson *et al.* (1999) indicates that relational contracting plays a significant role in the transition economies, especially in countries like Russia where the court systems are inadequate. Similarly, reputational incentives substitute for court enforcement of contracts. These factors can form further barriers to entry (Aidis and Adachi 2005).

Quantitative indicators of Russian institutional quality are consistent with these arguments. Russia consistently scores below the economies of Central and Eastern Europe in the EBRD Transition Indicators (EBRD, various years). Kauffman, *et al.* 2005 find the institutional environment in Russia to be poor in terms of percentile rank, relative to the transition economies of Central and Eastern Europe, though some improvement has taken place recently. The data are reported in Table 1. We observe that the rank is strikingly low, with indicators measuring voice and accountability, political stability and regulatory quality all deteriorating since 1998. However, the percentile rank for government effectiveness, rule of law and control of corruption has improved somewhat.

³ Based on a survey carried out by OPORA in 2001; see also OPORA (2005).

INSERT TABLE 1 ABOUT HERE

Another important indicator of institutional weakness is corruption. Thus Tanzi (1998) argues that corruption reflects the multi-dimensional impact of poor institutions while for Djankov *et al* (2002), corruption reflects an inefficient, over regulated environment with officials endowed with discretionary power. Incidence of corruption may prevent businesses from growing above some threshold level, to avoid expropriation by corrupt officials, especially the tax administration (Barkhatova, 2000; Aidis and Mickiewicz, 2006). Moreover, expectations of such behaviour may discourage potential entrepreneurs from starting a business.

According to the Corruption Perceptions Index compiled by Transparency International, transition countries generally exhibit higher levels of corruption compared to western countries, though the highest corruption levels occur in the countries that comprised the former Soviet Union. Moreover, Russian entrepreneurs have also been found to be more corrupting than the population as a whole (Djankov *et al*, 2005), perhaps because they are more susceptible to extortion by the government officials. The Business Environment and Enterprise Performance Survey (BEEPS) conducted by the EBRD indicates that in 2005 more than 39 percent of the respondents in Russia agreed that they have to make some irregular payments or gifts for activities related to customs, taxes, licenses, regulations and services frequently. The average percentage of corruption for transition countries as a whole was under 21 percent.

The relationship between institutional development and legal origin, which can be viewed as a proxy for the government's proclivity to intervene in the economy and the stance of the law toward security of property rights, has been addressed by La Porta *et al* (1999). In their original study, different legal systems were classified into five categories, according to their origins as English, French, German, Scandinavian and Socialist (post-Soviet). Djankov *et al* (2002) went on to utilise this framework to demonstrate that countries of French, German and Socialist legal origin have more entry regulations than English legal origin countries, while countries of Scandinavian legal origin have about the same. In this paper, we incorporate these legal origin categories to investigate if Russia's situation is unique vis-à-vis other former socialist economies. We hypothesize that the Soviet heritage shared with other countries is not alone sufficient to explain why Russia differs in terms of its level of entrepreneurship. Our hypothesis is consistent with the conclusions of Leeson and Trumbull (2006) but contradicts Shleifer and Treisman (2005) who argue that Russia already has the characteristics of a normal middle income country.

Accordingly, we postulate that:

Hypothesis 1a: Due to their weak institutional environments, entrepreneurial development will be lower in former Soviet-type economies than in other economies, including emerging markets at comparable levels of development.

Hypothesis 1b: Levels of entrepreneurial activity will be even lower in Russia than in other former socialist economies in Central and Eastern Europe.

In the literature on developed western economies, networks are argued to assist entrepreneurs in accessing the resources needed for business formation (Aldrich *et al* 1987). Thus, Johannisson (2003) postulates that the 'birth of a new venture' is the 'institutionalization of a part of the entrepreneur's personal network into a venture' (p.37).

Networks have been found to be important for access to resources (such as information, finance and labor) and to enhance the entrepreneur's opportunity recognition capabilities (Hills *et al*, 1997). Ardichvili *et al* (2003) identify social networks as an antecedent for entrepreneurial alertness that constitutes a necessary condition for opportunity recognition. Some scholars have argued that a cohesive or densely embedded network provides a competitive advantage for entrepreneurs (Coleman, 1988, 1990; Walker *et al*, 1997; Ahuja, 2000), while others have suggested that sparsely connected networks full of 'structural holes' provide competitive advantage (Burt, 1992). For example, Singh *et al* (1999) have found that the size and number of weak ties in an entrepreneur's social network were positively related to the number of new venture ideas and opportunities recognized. Moreover, network entrepreneurs were found to identify significantly more opportunities than solo entrepreneurs.

Given the Russian institutional context, the role of networks would seem likely to be of even greater importance at the start-up phase for business development than in more developed economies. In fact, individuals had already developed networked strategies as a way of obtaining scarce resources within the malfunctioning Soviet system, and these took the form of 'blat' (Ledeneva, 2006).⁴

Studies in Russia have found evidence to support the importance of networks for business performance. Batjargal (2003) uses a social embeddedness approach to examine the impact of entrepreneurs' social capital on their firm's performance in Russia. Based on interviews conducted in 1995 and 1999, he finds that relational embeddedness (the quality of personal relations on economic actions) and resource embeddedness (networks allowing access and use of resources) have direct positive impacts on firm performance whereas structural embeddedness (the structure of the overall network of relations) has no direct impact on performance (as measured by revenue and profit margin). Similarly, case study material supports the notion that having the right network connections facilitates business success in Russia whereas not having access to networks may make private businesses more vulnerable to rent-seeking officials (Kets de Vries and Florent-Treacy, 2003). Aidis and Adachi (2005) find that networks between enterprises and officials are significant for business survival and growth, so new businesses without such connections are more likely to fail. Glasser (2004) and Djankov *et al* (2006) show, in their comparative study of entrepreneurs in Russia and China, that social networks play a major role in explaining entrepreneurship in both contexts. For example, they establish that in Russia, having a father who was a communist party member increases the likelihood of becoming an entrepreneur: even though the communist party has lost its pre-eminence, the informal networks it established remain powerful.

However, Puffer and McCarthy (2001) have noted, that 'commitment and trust among network members in Eastern European business networks are typically low, the ties extremely weak, the network knowledge poor and participants few' (p.32). Trust in the Russian business environment seems to develop only through repeated business interactions allowing little opportunities for newcomers to enter the market (Radaev, 2005). This suggests that existing entrepreneurs (i.e. entrepreneurial insiders) would have an advantage in extending their entrepreneurial activities vis-à-vis new entrepreneurs (entrepreneurial

⁴ Blat indicates a means of obtaining resources through connections. Hsu (2005) argues that blat has since evolved into a sophisticated form of corruption mainly available to the elite. Since it worked by utilizing strong ties, individuals closest to power were able to benefit relatively more. This suggests that networked strategies for business formation in Russia may be primarily the preserve of the elite. However, Radaev (2005) argues that blat has lost importance over time, especially in the regional centres like Moscow or St Petersburg where the institutional framework functions better.

outsiders).⁵ To summarize, ‘entrepreneurial insiders’ (those already in business) may have relatively more advantage over newcomers in starting new ventures in Russia (as compared with other countries) because:

- a) In the environment of weak formal enforcement of property rights, the latter is partly substituted by relational contracting enforcement via business networks (Johnson *et al*, 1999; McMillan and Woodruff, 2002).
- b) Those without access to existing business networks are more vulnerable to opportunistic behavior by extortion-seeking officials (Kets de Vries and Florent-Treacy, 2003; Aidis and Adachi, 2005).
- c) Trust is a substitute for weak institutions. However, there seems to be a relatively low level of trust in Russian society, and it takes time for trust to be established through repeated business interactions. Therefore those already in a business network may have a significant advantage over newcomers (Radaev, 2005).

This leads us to formulate our second hypothesis:

Hypothesis 2: Those individuals already embedded in entrepreneurial networks have a significant advantage in Russian firm start-ups.

The institutional environment may pose a special barrier to entrepreneurship in Russia, but we would argue that this would not necessarily influence the impact of many of the other factors identified as relevant determinants in Western economies. We therefore control for those in our regression analysis, subject to the limitations of the dataset in providing adequate proxies. The literature stresses individual factor supply characteristics. According to Reynolds *et al* (2002) men are about twice as likely to be involved in entrepreneurial activities as women. Similarly, most research indicates that men have a higher probability of becoming entrepreneurs than women (Minniti *et al*, 2005; Verheul *et al*, 2006). Moreover, the likelihood of becoming self-employed varies with age (Levesque and Minniti, 2006). Relatively more business owners are in the 25 – 45 year old age category (Storey, 1994; Reynolds *et al*, 1999) and relatively more nascent business owners are even younger, between 25 – 34 years of age (Delmar and Davidsson, 2000).⁶ We control for age and gender in the regressions.

Human capital is an important aspect of successful entrepreneurship, though the empirical findings for developed economies about the impact of human capital measured in terms of education on entrepreneurship are mixed. Thus, Robinson and Sexton (1994) and Cooper and Dunkelberg (1987) find that the decision to become self-employed is influenced by education while the results of Delmar and Davidsson (2000) and Davidsson and Honig (2003) show a clear education effect for nascent entrepreneurs. However in a cross-country study, Uhlaner and Thurik (2005) find that a higher level of education is accompanied by lower rates of self-employment. Some country variations have also been noted. De Wit and van Winden (1989) and Blanchflower (2004) find that education is positively correlated with

⁵ A recent study contradicts these findings however: Chepurenko and Malieva (2005) provide evidence that personal trust may be less important for Russian SMEs at start-up than previously thought.

⁶ As the demographic structure of Russia, with a relatively low proportion of young people, may be an additional obstacle to entrepreneurship, it is particularly important to control for age in our empirical tests (Estrin *et al*, 2006).

self-employment in the US but is negatively correlated in Europe. More recent evidence compiled by Parker (2005) suggests that on average, entrepreneurs tend to be more educated than non-entrepreneurs.

The transition countries including Russia fare relatively well in terms of formal measures of education. Literacy rates are high and educational standards are comparable to Western Europe (Estrin *et al*, 2006). Also, Russia has a high proportion of students in ‘hard’ subjects - science, mathematics and engineering (World Bank, 2005). Indeed the high levels of education are one of the main characteristics distinguishing Russia from most other emerging markets, which it resembles more closely in terms of institutional development. One might therefore expect that the relatively high proportion of educated people in the population, and especially those with advanced levels of technological training, would offset to some extent the unpromising institutional environment. There is some evidence already for this view: Barberis *et al* (1996), find that human capital was an important ingredient for successful new entry by small firms in Russia.

Financial sectors are underdeveloped in transition economies (Pissarides, Singer, Svejnar, 2003). In such environment, trade credit substitutes for bank credit and reinvestment of profits for outside equity. Strategies documented in the literature include engagement in trade and diversification of activities as a means of capital accumulation and hedging against risks (Smallbone and Welter, 2001) and using network-based transactions to substitute for missing or costly markets (Stark, 1996; Batjargal, 2003). In an environment where outside financing is restricted, informal investors or business angels play an especially important role in providing financing for business start-ups. Former business angels who start-up their own private ventures may also signal individuals who have access to their own private sources of funding and we control for these in our empirical work.

The hostile conditions under which entrepreneurs operate suggests that business owners will also exhibit skepticism towards the national government in terms of their ability and/or willingness to support (or simply not interfere with) private business development, though they may have great confidence in their own abilities. We control for entrepreneurial confidence in our regressions.

5. Data and empirical method

5.1 Data and Methods

The Global Entrepreneurship Monitor (GEM) provided the dataset we utilise in our empirical work. GEM is an ongoing multinational project created to investigate the incidence and causes of entrepreneurship within and between countries. Data are generated by surveys, which rely on stratified samples of at least 2,000 individuals per country. The dataset includes a number of individual social and economic characteristics and perceptions. The key advantage of the GEM methodology is that the sample is drawn from the whole working age population in each country and therefore captures both entrepreneurs and non-entrepreneurs. While data on business ownership and individual business financing are included, entrepreneurial activity is primarily viewed as new, nascent *start-up* activity. More specifically, for start-ups nascent entrepreneurs are defined as those individuals between the ages of 18 – 64 years who have taken some action toward creating a new business in the past year. To qualify for this category, these individuals must also expect to own a share of the business they are starting and the business must not have paid any wages or salaries for more than three months (Minniti *et al*, 2005b). We also study the characteristics of *business owners*; established entrepreneurs, defined as individuals who own or manage a company and have paid wages or salaries for more than 42 months (*ibid*).

We use the GEM dataset for Russia collected in 2001 and 2002. In addition, to provide the maximum comparative perspective we utilise all available data from the 2001-2005 surveys. Our survey database includes the following individual country samples: Argentina, Belgium, Brazil, Canada, Denmark, Finland, France, Georgia, India, Ireland, Iceland, Italy, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Portugal, South Africa, Sweden, United Kingdom, United States (2001), Slovenia (2001-2005), Hungary (2001, 2002, 2004, 2005), Poland (2001 and 2002), Spain (2001 and 2004), Australia (2001 and 2005), Latvia (2005). The list therefore includes a number of developed and emerging market economies as well as four transition economies from Central and Eastern Europe in addition to Russia. The 2001 survey results are publicly available and were accessed online; we merged these with surveys results from 2002-2005, which were made available to us by the GEM team. All these surveys have at least 2000 observations. We do not utilise 1999 and 2000 results, as these cover a smaller number of variables. All individual level control variables are taken directly from the GEM database and country level data from the World Bank, Transparency International and La Porta *et al* (1999).

We therefore utilize the entire dataset containing thirty countries for all available years to test hypotheses 1a and 1b, by exploring whether the rate of entrepreneurial start-up in Russia is systematically different from that in other countries when we control for the other determinants of entrepreneurial activity presented in section four. Table 2 provides some information about the data used to do this.

INSERT TABLE 2 ABOUT HERE

To test hypothesis 2, we compare the impact of networks on entrepreneurial activity in Russia and two comparator economies. The first is Brazil. It is the country in our sample that is closest to Russia in its level of GDP per capita which, as documented in empirical literature, is significantly (and negatively) linked to the level of entrepreneurship (Parker, 2004). Because of the similar level of GDP, and also because it is a relatively large country, the Russia – Brazil comparison has been discussed in the past (Shleifer and Treisman, 2005). However, while Russia and Brazil are similar in many respects, they differ in terms of

institutional quality, with Brazil characterized by significantly lower levels of corruption.⁷ Our second comparator is Poland, a country that is also similar to Russia in terms of income per capita, but unlike Brazil shares with Russia the institutional past of a command economy system. While considerably smaller than Russia, the Polish economy is the second largest in the post-communist group. In addition, its common history with Russia goes far beyond the Soviet period. Between 1831 and 1915, most of Poland shared Tsarist institutions with Russia, the impacts of which are still detectable. The contrast between the similarity of heritage and the different paths of post-socialist transition has made the Russia-Poland comparison common in the transition literature (Mickiewicz, 2006).

Our equations analyse the determinants of the probability of an individual being engaged in both start-ups and as a business owners and test they differ between Russia and the two comparator countries. The mean values and standard deviations for the main independent variables employed in our empirical work for the three countries are reported in Table 3.

INSERT TABLE 3 ABOUT HERE

5.2 Specification of Equations

We test hypotheses 1a and 1b by exploring how the levels of entrepreneurial activity, proxied by new firm start-ups, vary across countries and legal arrangements in an equation that also controls for the characteristics of entrepreneurs in each country. We report the estimates of four probit equations in which we regress the probability that an individual is engaged in start-up activities against a variety of country level and individual variables. Specification (1) offers the simplest test of hypothesis 1b, where we introduce just one single dummy representing the Russian sample to test directly whether Russian entrepreneurial entry rates are significantly lower than observed on average in other countries. In specification (2) we also include four legal origin dummies, with the English legal dummy as the omitted category. A negative significant coefficient on the socialist origin dummy would provide support for hypothesis 1a. We include the Russian dummy variable independently to represent the incremental country specific difference in entrepreneurial entry, once we control for the joint effect for the post-Soviet economic legacy, to test Hypothesis 1b. We can also test Hypotheses 1a and 1b in specification (3), which is identical to specification (2) except that we control explicitly for Brazil to investigate whether it displays any of the characteristics of Russia with respect to entrepreneurship. Finally, in specification (4) we replace the socialist origin dummy with a set of country dummies, so as to test hypotheses 1a for each available transition economy separately.

In general, therefore, we estimate cross-country equations of the form:

The probability of becoming an entrepreneur = F (personal characteristics, financial characteristics, legal origin of country and/or country dummies).

⁷ Shleifer and Treisman (2005) use a UN survey that suggests the level of corruption is lower in Russia than in Brazil. In contrast, for our analysis, we follow the bulk of the literature, which uses Transparency International's indexes to assess corruption levels (Lambsdorff, 2005: 4). The Transparency International index relies on a methodology, which combines information from ten different surveys of corruption, where a score for any country is included only when there is an overlapping assessment of a country at least by three independent surveys.

Hypothesis 2 suggests that the Russian business environment relies disproportionately on networks and informal contacts, and this is likely to affect entrepreneurial activity. We have two variables related to the network position of the potential entrepreneur. First, for new business start-up, we use an indicator of whether the individual is also a current business owner. It has been noted that entrepreneurs in Russia often already have entrepreneurial experience, which may be of particular significance in the Russian business environment because of the need for networks. Second, we have an indicator for personal knowledge of other entrepreneurs⁸.

We estimate a series of country-specific probit models that explore the differences in characteristics between the individuals involved in either active start-ups or those of the population of active business owners-managers, including the indicators of network position.⁹ We estimate the same models for Russia, Poland and Brazil and draw inferences about the hypothesis from differences in the estimated coefficients between the three countries. The results are reported in Tables 5 – 7. We estimate the equations for start-ups for the pooled 2001-2002 samples (data on Brazil is only available for 2001), controlling for annual effects, and run single year comparisons to introduce some variables that were not available for both years, as well as to check for consistency.¹⁰ We also run the same model for established new firms (new business owners) to explore whether the same factors influence the determinants of who amongst the aspirant entrepreneurs have managed successfully to create a functioning business. We estimate equations of the form:

The probability of becoming / being an entrepreneur/business owner in country $i = f(\text{network position, personal characteristics, financial characteristics, personal attitudes})$

where i denotes either Russia, Brazil or Poland.

The dataset contains a number of the variables controlling the personal characteristics discussed above, such as gender, age, human capital (educational attainment) and employment status. For the 2001 sample we also have two measures of ‘optimism’, one related to the respondent’s view of his or her own situation (‘financial situation will improve in the next twelve months’) and the other to the business environment (‘Russia’s financial situation will improve in the next twelve months’). In terms of household income, we are unable to control for the possible endogeneity of household income and income from entrepreneurial activities, and we therefore choose to report regressions which omit household income.¹¹ Our proxy for financial resources is a dummy variable that denotes previous provision of funds for businesses (business angels). For the 2002 sample we also have an indicator of businesses that have shut down in the last three years. The relevance of

⁸ This variable may not be exogenous because people who intend to start a business might seek contact with current entrepreneurs to learn from their experience. This is probably the case in Western Europe, where potential entrepreneurs may go to networking events, and may apply in Russia. The endogeneity does not affect the results with respect to our hypotheses.

⁹ We do not use the variable indicating personal knowledge of other entrepreneurs in the business owner equation to avoid problems of endogeneity.

¹⁰ Note that the difference in number of observations between Table 5 (pooled results for 2001 and 2002) and Table 6 (2001) is larger than the number of observations available for 2002. This is a result of the cumulative effect of excluding 2002 and including two variables related to optimism (not available for 2002). Due to the severity of missing observations for these two variables, the number of 2001 observations in Table 6 is also lower, amplifying the difference. We include Table 6 nonetheless because it provides the only results available on the impact of personal attitudes; note that our main conclusions are not affected by the number of missing values in these regressions.

¹¹ Inclusion of household income does not affect the findings with respect to the hypotheses.

this variable relates to the fact that failed entry may lead to more realistic assessment of the business environment.¹²

6. Empirical Findings

In this section, we report the findings as related to our two hypotheses and the control variables. It should also be noted that the macro-economic environment was relatively benign for new firm creation during most of this period, including in 2001 and 2002, which were the dates of the Russia GEM surveys we utilize. After a catastrophic period of macro-economic performance immediately subsequent to transition from communism, the Russian economy had begun to recover in the second half of the 1990s. After the financial crisis of 1998, the devaluation, and subsequent increases in the price of oil and other raw materials inaugurated a long period of relatively fast growth in Russia, starting in 1999 and continuing to this day (EBRD 2002, 2005).

6.1 Cross country regressions: comparing rates of entrepreneurship in developed, emerging and former socialist economies

The results of the four cross-country equations to test hypotheses 1 are reported in Table 4. The regressions are highly significant with the pseudo- R^2 ranging from 0.118 in specification (1) (the equation with the fewest country specific controls) to 0.132 in specifications (3) and (4). The control variables all display the predicted signs and are highly significant. We find that being male, employed, relatively young, and better educated increases the probability of entrepreneurial activity across the GEM sample. Entrepreneurial activity is also significantly greater in Brazil, *ceteris paribus* (specifications 3 and 4). We consider the control variables in more detail with reference to hypothesis 2.

The findings with respect to hypotheses 1a and 1b are common across all the specifications. We find support for hypothesis 1b in that the estimated coefficient on the Russia dummy variable is always negative and significant at the 99% level. The most convincing results in this respect are in specifications (2) and (4), which simultaneously test hypotheses 1a and 1b. We find that the socialist heritage has indeed led to lower start-up rates in all the post-communist countries, whether we take them as a group (specification (2)) or separately (specification (4)). This supports Hypothesis 1a, but even then the Russia dummy is independently significant, supporting Hypothesis 1b. Thus, when we control for national differences in the characteristics of entrepreneurs, we find post-Soviet economies to be characterized by significantly lower entrepreneurial entry rates and even then, there is an additional, significant negative effect for Russia.

Specifications (1)-(4) compare country effects with the benchmark category English legal origin group so it might be argued that the significance of the Russian dummy coefficients does not strictly establish that Russia is different from other legal origin groups and individual countries. A more exact test is to impose pair-wise linear restrictions on corresponding coefficients. We report these at the bottom of Table 4. Russia is found to be different from all other legal origin groups, as well as from all other post-Soviet economies and Brazil, once again supporting hypotheses 1a and 1b. While all differences are highly

¹²Russia is diverse regionally and we initially included regional dummy variables. However, the regional heterogeneity was well captured via individual level characteristics, and the set of regional dummies was jointly insignificant. To make the specifications compatible with the Polish and Brazilian samples (for which regional controls were not available), we report regressions which omit the regional dummies.

significant, one may note that the finding suggested in specification (3), that the difference between Russia and Brazil is stronger than the difference between Russia and other post-communist economies (for the former, the corresponding χ^2 equals 224, while for the latter it remains in the range of 15-31). Clearly, post-Soviet countries share the anti-entrepreneurial legacy of the past. However, the regressions suggest that, unlike Russia, the economies of Central Europe have already come some way in overcoming this inheritance.

6.3 Country-specific regressions: testing the importance of the embeddedness in entrepreneurial networks

The findings of our country specific regressions are reported in Tables 5-8. We run the same models for Russia, Brazil and Poland in each specification. The results for active start-ups are reported in Tables 5-7 and those for established new firms in Table 8. The pooled samples on active start-ups and business owners respectively are reported in Tables 5 and 8, and the single year comparisons for 2001 and 2002 respectively, for start-ups only, in Tables 6 and 7. The 2001 sample allows us to control for personal attitudes and the 2002 sample for whether the entrepreneur had previously suffered a business failure, so we report regressions for each year separately in Tables 6 and 7 respectively. The consistency of findings with respect to the relevant independent variables across each year and in the pooled sample in Tables 5-7 suggests our results are robust.

The tables taken together contain several important findings supporting hypothesis 2. The first is that the Russian start-up regressions produce a much better fit than the Polish and Brazilian ones (Tables 5-7). For the Russian samples, the pseudo R Square for the active start-up equations range from 32%-38%, while it is between 14% and 16% for the Polish sample and 8%-9% for the Brazilian sample. A less random pattern of entrepreneurship may itself be taken as an indicator of some rigidity in entry. Some well-identified individual characteristics prevent some people from becoming entrepreneurs in Russia, while that same phenomenon is less likely to occur in Poland and even less so in Brazil.

The most significant and robust result in support of hypothesis 2 relates to the phenomenon of 'insider entrepreneurship' in Russia. While in Brazil and Poland, the probability of new start-up is not related to the current business ownership, in Russia, those who are not current business owners are far less likely to start new firms. The same result is obtained consistently when we move from pooled samples to annual samples (Tables 5, 6 and 7). In addition, knowing other entrepreneurs is also more important in Russia than in the two other economies, though the positive impact on start-up probability is significant in all three countries.

Table 7 indicates that in Poland failed entrepreneurs who have shut down their businesses in the past three years are more likely to try again. No such significant effect can be detected in Russia (we do not have this variable for Brazil). The phenomenon of 'serial entrepreneurship' naturally follows from the fact that even failed entrepreneurial endeavors result in some enhancement in 'entrepreneurial capital' and the corresponding experience may prove useful enhancing the chances of success and implying that the individual has incentives to enter the entrepreneurial sector again. This argument should hold, unless the experience collected in the previous entrepreneurial entry is negative and points to some strong barriers in the business environment difficult to overcome for the 'entrepreneurial outsider'.

In addition, a few other results merit discussion. Entrepreneurial entry in Russia is less likely for individuals with lower levels of education but the effect is less strong in Poland and absent in Brazil. This implies some greater relative advantage associated with education in Russia, perhaps linked to the relatively high quality of education in Russia and the strong

scientific educational base as was noted in section four. However, this would not explain the difference between Russia and Poland, as the relative quality of education in the latter economy is similar. A possible explanation is that higher education is a proxy for another network effect in Russia. It is reasonable to expect that people with a higher level of educational attainment are more likely to have better contacts with the state administration and other key players in the local business environment, enhancing their entrepreneurial opportunities. From the policy perspective the result is worrisome as low education is also closely correlated with poverty and a lower level of income.

Our results indicate that, as in Western countries, respondents engaged in active start-ups are more likely to be male. However, this effect is stronger for Russia than for both Poland and Brazil – it is insignificant for the two latter countries. According to our findings, young people in Poland and Brazil are more likely to be involved in start-ups, while the same effect is insignificant for Russia and the sign of the coefficient is ambiguous (Table 5). Again, this pattern may be consistent with the network (insiders-outsiders) argument. It is possible that older individuals in Russia may have a strong advantage in terms of access to networks and contacts with state bureaucracy that may facilitate start-ups.

The findings for existing business owners in Table 8 differ in some interesting respects from those for start-ups. Unlike start-ups, in Russia young people (i.e. below 45 years of age) are more likely to run established businesses than in Poland and Brazil (Table 8). This apparent contradiction may be explained once we take into account that age may mask some cohort effects. In Russia, the phenomenon of private entrepreneurship was only around ten years old at the time of sampling. In contrast, no Soviet-type restrictions ever existed in Brazil and there were also significantly weaker in Poland, even during the Soviet period. Assuming that many people tend to remain in the entrepreneurial sector, the time pattern of economic liberalization implies we would find more young entrepreneurs in Russia at time of sampling. The relative youthfulness of Russian private business people has been noted elsewhere (e.g. Desai, 2006).

We can explore the impact of personal optimism, and attitudes towards the Russian business environment for 2001 in Table 6. The effect on entrepreneurship is positive and similar in all three countries. These results are in line with the findings of Puffer and McCarthy (2001) for Russia and the preliminary findings of Djankov *et al* (2006) as well as the general findings of the relationship between optimism and the propensity to become an entrepreneur (Parker 2004, 2006). On the other hand, a positive attitude for the future of the home economy is still not significantly associated with entrepreneurial activity for any of the three country samples. Thus in all three countries, personal optimism may play a positive role in converting aspirations to reality for entrepreneurs.¹³ However, in Russia, entrepreneurs do not have any systematically different perception about the future business prospects than the rest of the population. If anything, in both Poland and Russia, they are more pessimistic about the economic future of their countries, which would suggest the importance of push factors for entrepreneurial activity, though the coefficients are (marginally) insignificant.

TABLES 5-8 ABOUT HERE

¹³ One should note however a potential endogeneity (simultaneity) problem with this variable.

7. Implications and Future Directions: The importance of networks in weak institutional environments

This paper contributes to the existing literature by further exploring the influence of a combination of weak institutions and corresponding network structures on entrepreneurial development. Our results suggest that the negative environment for business, and especially entrepreneurial activity, in Russia has led to low levels of entrepreneurship. Moreover, drawing on a sample that allows us to compare the characteristics of entrepreneurs in Russia with those of the rest of the population, we find that the relatively few who undertake some form of entrepreneurial activity in Russia are different in several interesting ways from their counterparts in more business friendly environments; for example, they are relatively more likely to be older, male and better educated than in comparator countries. We also find that networks are important in Russia. Those who are already in the business sector, more than in other countries, dominate entrepreneurial entry in Russia. Knowing other entrepreneurs also plays a more important role in Russia, and previous failed entrepreneurial attempt is not significantly associated with 'serial entrepreneurship' unlike in the comparator countries. In addition 'entrepreneurial outsiders' who attempted to break into the web of business- and government administration- connections and failed are less likely to try again in Russia.

Our findings suggest that in the case of Russia, the weakness of institutions is detrimental to entrepreneurial activity and though networks are important, they are not entirely able to offset these deficiencies. Further research in this area is needed to pin down more carefully the relationship between institutional development and levels of entrepreneurial activity and how additional factors such as the presence and strength of informal networks may act as substitutes for dysfunctional institutions in a different way for business insiders than for newcomers.

There are two distinctive features of networking in the Russian economy. First, the scale of the phenomenon is relatively wider than in developed economies. Networks do not complement the markets (to create synergies) but often substitute for them, creating significant transaction costs. Second, the nature of networking differs. Russia is characterized by an intrusive and hostile business environment, in which contacts with both other existing businesses and state administration play a decisive role in networking. Much of the networking activity is not in the real productivity-enhancing sphere but in the form of unproductive activities in the 'control' sphere. In the context of the previous discussion however, it is likely that in Russia, association with the business-government web of interests and connections is a more fundamental aspect of networking. These insights as well as our empirical result, indicates the need for developing a new direction for research in contexts such as Russia where the institutional environment is weak and property rights are poorly enforced.

Our results further indicate that additional empirical work in transition countries and emerging economies on the effects of different levels of institutional development and types of network relations specifically focused on business entry using a comparative approach could provide further insights. In future surveys, it would be interesting to supplement the questions on contacts with other businessmen with questions on contacts with government officials.

While we document the difference between Russia and other GEM countries available at the time of writing, it would also be interesting to compare Russia with a larger number of post-Soviet economies. For instance, preliminary evidence for Ukraine demonstrates, in line with our argument, that corruption may have a serious negative development on entrepreneurship (Akimova, 2001).

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Table 1: Governance Indicators for Russia in 1998 and 2004 compared

Governance Indicator	Year	Percentile Rank (0 – 100)
Voice and Accountability	2004	25.7
	1998	41.4
Political Stability	2004	21.8
	1998	23.6
Government Effectiveness	2004	48.1
	1998	23.5
Regulatory Quality	2004	30.5
	1998	31.5
Rule of Law	2004	29.5
	1998	22.7
Control of Corruption	2004	29.1
	1998	25.7

Source: Kauffman *et al.* (2005) http://info.worldbank.org/governance/kkzz2004/sc_chart.asp

Key: Voice and Accountability measure political, civil and human rights; Political Stability measures the likelihood of violent treats to, or changes in, government including terrorism; Government Effectiveness measures the competence of the bureaucracy and the quality of public service delivery; Regulatory Quality measures the incidence of market-unfriendly policies; Rule of Law measures the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence; Control of Corruption measures the exercise of public power for private gain, including both petty and grand corruption and state capture.

Table 2. General characteristics of the cross-country sample

Variables	Definition	Mean	SD	Number of observations
Institutional variables				
	Corruption perceptions index (Transparency International); higher score represents <i>less</i> corruption (i.e. <i>better</i> institutions)	6.43	1.97	104,112
Legal Origin variables				
English	1 = English legal origin, zero otherwise.	.29	.45	104,112
French	1 = French legal origin, zero otherwise.	.25	.43	104,112
German	1 = German legal origin, zero otherwise	.11	.31	104,112
Scandin	1 = Scandinavian legal origin, zero otherwise	.07	.25	104,112
Socialist	Socialist legal origin, zero otherwise.	.29	.45	104,112
Economic Development				
	GDP per capita, purchasing power parity, constant at 2000 \$ USD. 2005 figures are estimates based on 2005 real GDP growth rates and 2005 population figures*	20,209	7892,0	104,112
Personal characteristics				
Male	1= male, zero otherwise.	.48	.50	104,112
Business owner	1= current owner/manger of business, zero otherwise.	.10	.30	104,112
Business angel	1 = business angel in past three years, zero otherwise.	.02	.15	103,546
Knows entrepreneur(s)	1 = personally knows entrepreneur(s) in past two years, zero otherwise.	.33	.47	97,443
In employment	1 = respondent is either in full time or part time employment, zero otherwise.	.51	.50	98,685
Low education	1 = respondent has not attained secondary or higher education, zero otherwise.	.62	.48	98,906
Young (<45)	1 = the exact age of the respondent at time of the interview is less than 45	.56	.50	100,110

Table 3. General characteristics of the Russian, Polish and Brazilian samples

Variables	Definition	Russia	Poland	Brazil
Institutional variables				
	Corruption perceptions index (Transparency International); higher score represents <i>less</i> corruption (i.e. <i>better</i> institutions) (2001)	2.3	4.1	4.0
Economic Development				
	GDP per capita, purchasing power parity, constant at 2000 \$ USD 2005 figures are estimates based on 2005 real GDP growth rates and 2005 population figures.	7,383	10,600	7,423
		Mean (SD)	Mean (SD)	Mean (SD)
Entrepreneurial activity				
Start-up	1= the respondent has been active in starting a new business in the past year, zero otherwise (this corresponds to 'nascent entrepreneurship' category in terms of GEM terminology)	.035 (.183)	.030 (.171)	.097 (.295)
Business owner	1= current owner/manger of business, zero otherwise.	.048 (.213)	.072 (.258)	.083 (.275)
		Mean (SD)	Mean (SD)	Mean (SD)
Personal characteristics				
Male	1= male, zero otherwise.	.475 (.499)	.491 (.500)	.594 (.491)
Young (<45)	1 = the exact age of the respondent at time of the interview is less than 45.	.599 (.490)	.520 (.500)	.705 (.456)
Low education	1 = respondent has not attained secondary or higher education, zero otherwise.	.194 (.395)	.241 (.428)	.905 (.294)
Family optimism	1 = family financial situation will improve in the next 12 months, zero otherwise.	.398 (.490)	.198 (.398)	.544 (.498)
Country optimism	1 = country financial situation will improve in the next 12 months, zero otherwise.	.398 (.490)	.115 (.319)	.319 (.466)
Business angel	1 = business angel in past three years, zero otherwise.	.021 (.143)	.014 (.117)	.008 (.089)
Knows entrepreneur(s)	1 = personally knows entrepreneur(s) in past two years, zero otherwise.	.333 (.471)	.300 (.458)	.347 (.476)
In employment	1 = respondent is either in full time or part time employment, zero otherwise.	.607 (.488)	.464 (.499)	.579 (.494)
Prev. shut down	1 = shut down business in past three years	.008 (.087)	.007 (.084)	
Number of observations		4202	4000	2000

Notes:

For Poland and Russia, the mean and standard deviations values relate to pooled 2001-2002 sample. For Brazil, the 2002 sample was not available at the time of writing, thus the values relate to 2001.

There are three exceptions: the two variables measuring optimism and the indicator of previous shut down were available for one year only, for Poland and Russia. In addition, the information on previous shut down was not available for Brazil.

Table 4. Probit regression results. Dependent variable: Start-up

	(1)		(2)		(3)		(4)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Male	0.155 ***	0.013	0.155 ***	0.014	0.149 ***	0.014	0.149 ***	0.014
Business owner	0.619 ***	0.017	0.620 ***	0.017	0.624 ***	0.017	0.624 ***	0.017
Business angel	0.656 ***	0.029	0.646 ***	0.029	0.652 ***	0.029	0.652 ***	0.029
Knows entrepreneur(s)	0.444 ***	0.014	0.475 ***	0.014	0.473 ***	0.014	0.471 ***	0.014
In employment	0.182 ***	0.014	0.177 ***	0.014	0.170 ***	0.014	0.172 ***	0.014
Low education	-0.184 ***	0.013	-0.144 ***	0.014	-0.169 ***	0.014	-0.165 ***	0.014
Young (<45)	0.223 ***	0.014	0.225 ***	0.014	0.219 ***	0.014	0.219 ***	0.014
Russia	-0.561 ***	0.068	-0.353 ***	0.070	-0.354 ***	0.070	-0.747 ***	0.069
French			-0.209 ***	0.017	-0.264 ***	0.018	-0.264 ***	0.018
German			-0.220 ***	0.022	-0.218 ***	0.022	-0.218 ***	0.022
Scandin			-0.390 ***	0.028	-0.392 ***	0.028	-0.391 ***	0.028
Socialist			-0.400 ***	0.019	-0.393 ***	0.019		
Latvia							-0.332 ***	0.058
Poland							-0.388 ***	0.039
Hungary							-0.462 ***	0.029
Slovenia							-0.342 ***	0.028
Brazil					0.445 ***	0.040	0.443 ***	0.040
Constant	-1.936 ***	0.017	-1.786 ***	0.019	-1.762 ***	0.0194	-1.764 ***	0.019
Log likelihood	-21708		-21435		-21377		-21371	
Number of observations	87929		87929		87929		87929	
LR chi ²	5817 ***		6361 ***		6477 ***		6489 ***	
Pseudo R ²	0.118		0.129		0.132		0.132	

Tests for linear restrictions (based on specification (4)), rejecting Ho - Russia the same as:

	Chi ²		Chi ²	
Latvia	21.84 ***	French legal origin	48.00 ***	
Poland	21.48 ***	German legal origin	55.99 ***	
Hungary	15.19 ***	Scandin. legal origin	23.75 ***	
Slovenia	31.08 ***			
Brazil	223.85 ***			

Note: *** significant at 0.001; ** significant at 0.01; * significant at 0.05; † significant at 0.1.

Table 5. Probit regression results. Dependent variable: Start-up

	Russia 2001-2		Poland 2001-2		Brazil 2001	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Business owner	1.387474 ***	0.120324	0.084815	0.141075	-0.12915	0.138707
Male	0.2480449 *	0.099847	0.137701	0.088179	0.116791	0.092142
Young (<45)	0.1490918	0.114749	0.303244 **	0.097855	0.184389 +	0.10221
Low education	-0.3702584 *	0.169547	-0.25709 +	0.137019	0.027486	0.161244
Business angel	0.605582 ***	0.164882	0.954118 ***	0.201614	0.712165 *	0.338407
Knows entrepreneur(s)	0.882158 ***	0.112351	0.70103 ***	0.090829	0.486311 ***	0.083212
In employment	0.0843237	0.11526	-0.00332	0.094367	0.50725 ***	0.098655
Year 2001 dummy	0.3670117 ***	0.106423	0.17169 +	0.088928		
Constant	-3.090432 ***	0.168593	-2.57757 ***	0.123806	-2.09694 ***	0.171836
Log likelihood	-392.29494		-465.367		-581.928	
Number of observations	4096		3982		1999	
LR chi2	415.77 ***		146.1 ***		105.24 ***	
Pseudo R2	0.3464		0.1357		0.0829	

Note: *** significant at 0.001; ** significant at 0.01; * significant at 0.05; † significant at 0.1.

Table 6 Probit regression results. Dependent variable: Start-up

	Russia 2001		Poland 2001		Brazil 2001	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Business owner	1.203 ***	0.170	-0.011	0.200	-0.135	0.140
Male	0.236	0.151	0.194	0.124	0.109	0.093
Young (<45)	-0.084	0.170	0.131	0.138	0.147	0.104
Low education	-0.531 *	0.258	-0.088	0.166	0.016	0.162
Personally optimistic	0.462 **	0.168	0.522 ***	0.140	0.219 *	0.088
Optimistic about the economy	-0.114	0.156	-0.145	0.178	0.141	0.088
Business angel	0.728 **	0.239	0.957 ***	0.252	0.734 *	0.343
Knows entrepreneur(s)	0.800 ***	0.178	0.619 ***	0.131	0.482 ***	0.084
In employment	0.448 *	0.197	-0.061	0.132	0.508 ***	0.099
Constant	-2.951 ***	0.262	-2.380 ***	0.160	-2.231 ***	0.178
Log likelihood	-184.999		-245.153		-576.160	
Number of observations	1302.000		1701.000		1999.000	
LR chi ²	175.410 ***		87.130 ***		116.770 ***	
Pseudo R ²	0.322		0.151		0.092	

Note: *** significant at 0.001; ** significant at 0.01; * significant at 0.05; † significant at 0.1.

Table 7. Probit regression results. Dependent variable: Start-up

	Russia 2002		Poland 2002	
	Coef.	Std. Err.	Coef.	Std. Err.
Business owner	1.425 ***	0.269	0.275	0.223
Male	0.301	0.199	0.153	0.141
Young (<45)	0.327	0.235	0.564 ***	0.165
Business angel	1.270 ***	0.368	0.422	0.483
Knows entrepreneur(s)	0.977 ***	0.241	0.766 ***	0.144
In employment	-0.282	0.210	-0.003	0.148
Prev. shut down	0.316	0.495	1.271 **	0.424
Constant	-3.141 ***	0.316	-2.879 ***	0.194
Log likelihood	-95.947		-181.467	
Number of obs	1698		1980	
LR chi ²	117.74 ***		66.61 ***	
Pseudo R ²	0.380		0.155	

Note: Educational dummy for Russia eliminated during the estimation, as it completely determines the outcome for this particular model.

Table 8. Probit regression results. Dependent variable: Business owner

	Russia 2001-2		Poland 2001-2		Brazil 2001	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Male	0.221 **	0.082	0.177 **	0.069	0.072	0.101
Young (<45)	0.363 ***	0.097	-0.294 ***	0.071	-0.134	0.103
Low education	-0.359 **	0.131	-0.465 ***	0.114	0.043	0.172
Business angel	1.664 ***	0.146	1.286 ***	0.183	1.007 **	0.351
In employment	0.641 ***	0.114	1.244 ***	0.095	1.380 ***	0.161
Year 2001 dummy	0.565 ***	0.090	0.233 ***	0.069		
Constant	-3.023 ***	0.148	-2.348 ***	0.103	-2.476 ***	0.216
Log likelihood	-557.916		-834.443		-493.660	
Number of observations	4116		3989		1999	
LR chi ²	294.280 ***		394.610 ***		151.840 ***	
Pseudo R ²	0.209		0.191		0.133	

*Note: *** significant at 0.001; ** significant at 0.01; * significant at 0.05; † significant at 0.1.*