



Rapid Institutional Shifts and the Co-evolution of Entrepreneurial Firms in Transition Economies

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Economies in transition such as Russia's are among the world's fastest growing. Entrepreneurial firms in an environment like Russia's face rapid and dramatic shifts in the institutional environment. These shifts represent significant challenges to entrepreneurial firms as they seek not only to survive but also to prosper in that environment by rapidly co-evolving with institutional changes. Prior research has focused on institutional change and its impact in developed economies. But the rate of evolution of institutions in transition economies tends to be faster and less predictable. This article reports a longitudinal study of high technology entrepreneurial firms in Russia employing a grounded theory methodology to understand how entrepreneurial ventures co-evolve with rapid institutional changes and still manage to prosper.

Introduction

Transition economies make up an important part of the world's economy (Peng, 2000, 2009b). A transition economy is one that is changing from a centrally planned economy toward freer markets and increased entrepreneurship. Countries in transition, such as China and Russia, have experienced strong economic growth along with a number of vexing challenges in managing that growth (Huang, 2008; Letenko & Lvov, 2004; Volkov, 2002). These challenges arise in part because transition economies tend to have weak regulatory institutions, coupled with normative and cognitive institutions that are not necessarily supportive of the entrepreneurship (Busenitz, Gomez, & Spencer, 2000; Huang; Peng). In addition, the pace of institutional change in these settings is as brisk as the society, and its institutional structures adjust to the rapid economic growth. In this difficult institutional setting, entrepreneurial firms must not only be able to adjust to the rapid and dramatic changes in institutions, but also survive in the new market economy. A setting in which an industry and its firms change as the institutions change is referred to as co-evolution (Lewin & Koza, 2001; Lewin & Volberda, 1999).

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To date, scholars have a limited understanding of how firms successfully adapt to rapidly changing institutional environments. Prior research on co-evolution of firms and institutions has typically examined well-developed or heavily regulated economies (i.e., Rodrigues & Child, 2003). Employing a grounded theory approach, we endeavor to fill that void by conducting a longitudinal study of high technology entrepreneurial firms in a transition economy. Specifically, we will examine the research question first raised by Peng (2003): how do entrepreneurial firms adapt or co-evolve in rapidly changing institutional environments? This research question will guide this grounded theory investigation as we examine the rapid change in Russia's challenging institutional environment.

Brazil, Russia, India, and China (the BRIC countries) are on track to have a composite gross domestic product larger than the G6 countries (United States, United Kingdom, Japan, Italy, Germany, and France) by 2050. Scholars have widely recognized the importance of entrepreneurship in these transition economies (Peng, 2000, 2009a; Puffer & McCarthy, 2001). This research focuses on one of the BRICs: Russia. This transition economy initially took a particularly aggressive approach in its movement to a market economy in its economic reforms. However, in more recent times, Russia has partially retreated from this market orientation because of a stronger influence from the central and local governments in the economy. As a result, the Russian economy has generally become an unpredictable, volatile, and uncodified environment for entrepreneurs (Hitt, Ahlstrom, Dacin, Levitas, & Svobodina, 2004). This volatility is risky for new start-up firms. Such firms in transition economies share the liability of newness of all new firms (Stinchcombe, 1965), but face the added risk of being domiciled in unpredictable and volatile environments where property rights are uncertain and free markets for goods and capital are in a very nascent stage (Bruton & Ahlstrom, 2003; Le, Venkatesh, & Nguyen, 2006; Lockett & Wright, 2002).

Institutional theory typically assumes that institutions are relatively stable over time and are difficult to change (Brint & Karabel, 1991; DiMaggio, 1988). Some scholars have acknowledged the interplay between firms and institutions (Tipton, 2009). However, most of this work occurred in mature economies, such as studies done on financial institutions in Europe (i.e., Flier, Van Den Bosch, & Volberda, 2003), or on established industries, such as the motion picture industry in the United States (Jones, 2001). One of the only efforts to examine co-evolution in a transition economy involved a heavily regulated utility industry in which change was slow and steady (i.e., Rodrigues & Child, 2003). However, most settings in transition economies lack institutional stability, particularly for entrepreneurial firms that face a situation in which institutions and the firm's responses often change rapidly. For example, many transition economies fail to develop or enforce laws to support the fulfillment of contracts, so entrepreneurs must often pursue less formal mechanisms to ensure the fulfillment of contracts (Peng & Heath, 1996). Such settings often lead entrepreneurs to develop alternative mechanisms to govern economic activities (Boisot & Child, 1996; Peng, 2000). However, the rapid nature of change in such an environment means such alternative mechanisms must also change and adapt over time, just as entrepreneurial firms and institutions co-evolve.

Therefore, we conduct a longitudinal examination of high technology entrepreneurs in Russia using a grounded theory approach to data gathering and summary (Strauss & Corbin, 1990). Russia is particularly appropriate for this investigation since it faced abrupt institutional change after the fall of the Soviet system in the early 1990s. Specifically, the article explores how these entrepreneurs and their responses adapted over a 7-year period (1998–2004), as these entrepreneurial firms sought to ride out the economy's rough spots and continue their growth. Building on past studies of transition economies (Peng, 1997) and high technology firms in Russia (Bruton & Rubanik, 2002) we develop a foundation

for understanding how entrepreneurial firms successfully navigate this environment and contribute to its development. The article then concludes by highlighting some of the need for further research in this important domain.

Institutional Theory

Institutional theory not only acknowledges the importance of economic forces and technical imperatives in shaping social and organizational systems, but also seeks to examine the preferences and behaviors of organizations, individuals, and other outside forces (Carney, Gedajlovic, & Yang, 2009; Scott, 2001). This theoretical framework views organizations and individuals as embedded in institutional arrangements (Busenitz et al., 2000; Child, 2000), subject to institutional effects (Jepperson, 1991; Newman, 2000). These institutional arrangements impact the behavior of organizations and individuals in subtle but pervasive ways (Scott, 1995, 2002), which in turn affect firm decision-making (Hitt et al., 2004; Lau, Tse, & Zhou, 2002) and strategies (Peng, Wang, & Jiang, 2008).

Though there is some disagreement on how to organize various institutions (Hirsch & Lounsbury, 1997), Scott's (2001) formulation provides three types of institutions under the terms regulatory, normative, and cognitive.¹ The development of the categories of institutions typically drew on research conducted in mature, stable markets. We will first discuss the classic understanding of these institutional pillars and then how such pillars may appear and function in a transition economy like that of Russia.

The regulatory pillar of an institutional system gives incentive and sanction to organizations and individuals from a government or other authoritative body that regulates individual and organizational action (Scott, 2001). Regulatory structures include both laws and regulations generated by the government and are relatively rational, negotiated arrangements (North, 1990). In contrast, the normative and cognitive institutional pillars are socially constructed over time and come to be "perceived as objective and external to the actors: not as man-made but a natural and factual order" (Scott, 1995, p. xvii). Culture is one key means of transmitting normative and cognitive structures (DiMaggio & Powell, 1991; Jepperson, 1991).

While both normative and cognitive institutional pillars draw on culture, there are differences in the two. The normative pillar represents actions that organizations and individuals ought to take, irrespective of economic rationality. These behaviors can include how informal professional groups should behave, both in terms of their rights and obligations. The cognitive institutional pillar argues that organizations and individuals act because of ideational structures rather than consciously following rules or norms. People and organizations tend to take for granted such schemas, scripts, and routines, without thinking about them or questioning them (DiMaggio & Powell, 1991; Scott, 2001).

Organizations are embedded not only in the institutional arrangement in their industry, but also in country-specific institutional settings based on the legal regime and the local environment (Busenitz et al., 2000). Institutions are typically situation specific; therefore, researchers should evaluate institutional characteristics of a country with regard to a specific phenomenon rather than in terms of general arrangements (Busenitz et al.; Orru, Biggart, & Hamilton, 1997). Thus, the focus here on high technology firms in a single country, Russia, will allow for greater insight into institutions and entrepreneurs (Phan & Foo, 2004).

1. Scott's definitions of three institutional pillars are analogous to DiMaggio and Powell's (1983) concepts of normative, mimetic, coercive institutional forces.

Institutional theory typically assumes that institutions are relatively stable over time and, in fact, can be difficult to change (Brint & Karabel, 1991; DiMaggio, 1988). Thus, in much of the research, the time frame examined may include multiple decades. This bias to view institutions as stable explains, at least in part, why the prior examinations of evolution to focus on mature markets over long periods of time. For example, Jones (2001) examined the U.S. film industry over 25 years. But in transition economies, change can be more compressed. To illustrate, consider that in Russia as recently as two decades ago, few people could travel out of the country. The Russian government strictly controlled the press and only presented information it considered positive. Yet, by 2001, the number of Russians traveling abroad reached 20 million and is rising steadily. The press today often self-censors in terms of domestic politics and criticism of the government, but the Internet and foreign publications mean that there is no absence of information in Russia. The culture and perceptions of individuals have undergone a rapid transformation. Thus, the typical perception of institutions as static and unchanging is not appropriate in this transition economy (Peng & Heath, 1996). The rapid institutional setting is particularly true of entrepreneurial firms. As a result, in this article, we extend the understanding of evolution by examining entrepreneurial firms in transition economies.

Entrepreneurship in Russia

In general, there is a lack of entrepreneurship research on transition and emerging economies (Bruton, Ahlstrom, & Oblój, 2008). The research that does exist most often focuses on China (i.e., Lau & Busenitz, 2001; Tan & Tan, 2004). Also, the research on Russian entrepreneurship has often come from the field of economics, not from management or entrepreneurship. The definitions used in economics for entrepreneurship and entrepreneurial firms do not necessarily match those employed in management and entrepreneurship research (e.g., Batjargal, 2003; Baumol, 2002). For example, Batjargal examined what he defined as entrepreneurs, but his sample included large privatized firms (almost half of his sample), small businesses, and high-growth, high-potential businesses all grouped together. Based on that definition, he effectively classified nearly all private business in Russia as entrepreneurial ventures. While such ventures may have elements of entrepreneurship, entrepreneurship researchers would be much stricter in their classification of entrepreneurial firms to maintain validity (Yin, 2003).

This greater focus has led entrepreneurial and management researchers commonly to see entrepreneurial ventures as distinct from those of small businesses: an entrepreneurial venture has the potential to become a high-growth business while a small business lacks both size and potential for growth (Timmons & Spinelli, 2003). Thus, in the case of Russia and many similar transition economies, one would classify the small kiosks so visible in most cities as small businesses and not as entrepreneurial ventures as they rarely seek to become high-growth or high-yield business. Similarly, large corporations can have elements of entrepreneurship in their operation (Shane & Venkataraman, 2000); however, such activities are distinct from those necessary for success in a high-growth, high-potential business (Timmons & Spinelli). Such a distinction is important in the case of Russia since the large privatized corporations are often owned by the same managers who ran the firms under communism (Bruton & Rubanik, 1997). Those who own the privatized firms are in that position more because of their status in society than because of their entrepreneurial orientation (Letenko & Lvov, 2004). Indeed, Volkov (2002) has asserted that many who head larger privatized firms in Russia are racketeers, crooked officials, and mobsters. Therefore, uniformly including large privatized firms in a sample of

entrepreneurial firms in Russia would include groups of individuals that do not represent entrepreneurs or entrepreneurial ventures in the standard sense of that construct. This approach would mask the effects and patterns of entrepreneurship in that economy.

The Evolution of Institutions in Russia

The Russian approach to economic reform has been called the shock method as the government tried to quickly move to a market economy after the fall of the Soviet system (Benn, 2001). For example, Letenko and Lvov (2004) estimate that between 1992 and 1996, Russia privatized over 118,000 state-owned enterprises (SOEs) representing approximately 60% of its SOEs. These substantial changes made a considerable impact on the regulatory, normative, and cognitive institutional arrangements in Russia. The discussion of these changes includes how these institutional changes have affected the individual entrepreneurs and how they have responded to those changes over time. These issues will help guide the investigation.

Regulatory Institutions

One result of the shock approach was to radically change many regulatory institutions quickly. Central government control was very high during the Communist period—higher than in other communist states such as China or Vietnam. However, the collapse of the Soviet system brought about decentralized political control. Some central policies persisted, but a relative weakness in enforcing the rules ensued leading to sometimes chaotic conditions (Benn, 2001; Hitt et al., 2004). Since the rise of Vladimir Putin, the tax police and other regulatory authorities have asserted greater control and enforced greater order. There has also been a re-centralization of authority. To illustrate, regional governors who initially were quite strong in the post-Soviet period now are appointed by the President of Russia and are accountable to that office. This centralization trend continued under Putin's successor, Dmitry Medvedev.

The regulatory institutions, specifically those concerning entrepreneurship, have undergone a similar evolution. Initially, as market reforms began, Russians lacked regulations to indicate how individuals should establish such businesses (or even if they were legal). The legal system controlling entrepreneurial ventures ultimately grew to be quite complex. For example, Bykov (1999) cited 17 steps required for a new entrepreneurial firm to be registered to do business. Although the registration process for a new business typically took 3–5 weeks, in some cases it took up to 700 days to complete since the process was sequential (Bykov). The process was particularly slow for technology businesses since there was frequently concern in the Russian government that state secrets could be lost. Once registered, a business became subject to inspection by 30–40 different agencies that could shut it down (Bykov). One effect of this large number of regulators was extensive corruption as poorly paid civil servants used their positions to obtain bribes and extort money from firms.

On top of the corruption, the government charged firms a 28-percent value-added tax, based on the difference between the value of the inputs and what the firm charged for its outputs (Bykov, 1999). However, in inflationary times, the heavy taxation left the firms with inadequate working capital. Thus, the environment for entrepreneurial ventures through the end of the 20th century was difficult as they faced high levels of corruption and taxes, interference from the government and other powerful figures, while having difficulty raising legitimate capital.

New reforms in the first decade of the 21st century resulted in firms' needing to register with only four agencies (Zamulin, 2003). The government has dramatically reduced the time required for an agency approval of permits for entrepreneurial firms to about 10–14 days in each agency. In addition, while numerous agencies still regulate entrepreneurial firms, these regulatory agencies can now only have site visits twice every year unless there is a pressing rationale for more (Zamulin). Despite having fewer opportunities to inspect the firm, regulators still can seek payoffs during those visits. There are other forces at work in Russia, such as the tax police, who can visit as often as they like and tend to be aggressive. The tax police have the authority to close any business they believe is in violation of the law. Thus, while changes in the regulatory institutions are generally positive for entrepreneurial firms, large numbers of entrepreneurs feel they are improperly cited for violations such as fire codes (Zamulin). Entrepreneurs continue to struggle with the turbulent regulatory environment.

Normative Institutions

Regulatory institutions are the most easily changed and the most readily observed (Scott, 2002). However, other institutions in Russia have also undergone significant change. Normative institutions help shape the organization's activities so that they are viewed as consistent with influential groups and societal and professional norms (Suchman, 1995). While such institutions tend to be less formal, they nevertheless define the roles or actions expected of individuals. Normative institutions can manifest themselves through accepted authority systems, such as accounting or medical societies, or through practices of a profession or work function.

Russia, historically, is seen as a society with a collectivist orientation (Veiga, Yanouzas, & Buchholtz, 1995). That is, in Russia, working with a group and the relationships within that group are perhaps more important than in most countries; in some ways similar to East Asia (Hofstede & Hofstede, 2004). These strong relationships have created normative institutions that have impacted the founding of entrepreneurial firms in Russia. For example, Bruton and Rubanik (2002) have shown the importance of large founding teams in the early development of entrepreneurial high technology firms in Russia. The normative institutions created the standard that such entrepreneurs typically worked together in large groups. This large group not only provided a support network but also ensured access to the resources necessary to found a new business in the resource-strapped environment that typified Russia during its early transition period. The rapid change in the institutional environment has even brought changes in the cultural orientation of the society (Veiga et al.). Therefore, the nature of the founding teams may have also changed.

Other significant authority systems in collectivist societies include the team that founds a business and the broader network of individuals of which the founder or team is a part. Such networks can provide a vital source of support to an entrepreneurial firm in transition economies, where property rights remain uncertain, and markets for goods and capital are not fully developed (Bruton & Ahlstrom, 2003; Le et al., 2006; Lockett & Wright, 2002). The networks fill gaps in the formal institutional environment (Peng & Zhou, 2005). For example, the legal system in a transition economy may recognize contracts but not effectively enforce them. An organization's network may partially substitute for the rule of law because if a firm fails to fulfill a contract it can lose access to the entire network and suffer other sanctions from it. Therefore, changes in the normative institutions may have an impact on both the founding team and the networks to which the firm belongs.

Cognitive Institutions

Cognitive institutions play a key role in the perceived legitimacy of an activity. Legitimacy refers to the right to exist and perform an activity in a certain way (Suchman, 1995). Scholars have typically viewed the legitimacy of firms in an industry from a macro level where the industry seeks and is impacted by socio-political approval (Aldrich & Fiol, 1994). An organizational form is legitimate when the public recognizes the organization's right to exist and accepts its outputs (Ahlstrom, Bruton, & Yeh, 2008). If a business lacks legitimacy in an industry, it may lose much of its ability to pursue its goals and accumulate resources (Suchman).

In Russia, following the collapse of the Soviet Union, one could easily describe the perception of private business in Russia as less than legitimate. The initial effort to privatize businesses resulted in individuals who ran the business for the government typically ending up in control of the business (Bruton & Rubanik, 2002). The absence of institutions associated with a market system in turn led these managers to often strip the assets from the firm and seek to sell them since there was little or no corporate governance oversight or the discipline of stockholder class action lawsuits to remove weak or corrupt management (Intriligator, 1994). The result was that Russian society viewed entrepreneurship as a form of banditry rather than an activity that produced great value to the society (Peng, 2000). Today, the view of business as a useful part of society has increased. It is unclear how this increased legitimacy has impacted the entrepreneurial firms or how they have sought to work to further that legitimacy in the society.

Overview

High technology entrepreneurial firms in a transition economy such as Russia share the liability of newness that all new firms have (Stinchcombe, 1965), but they still have the added risk of being domiciled in environments that remain unpredictable and volatile, with uncertain property rights and underdeveloped markets for goods and capital (Bruton & Ahlstrom, 2003; Lockett & Wright, 2002). In Russia, this environment has stabilized to a degree since the initial market reforms in the early 1990s but remains turbulent. The brisk change and turbulent environment such firms face makes them particularly relevant for this examination of the evolution of entrepreneurial firms in a transition economy.

Methodology

In order to gain a rich understanding and to develop the foundation for future large scale research of entrepreneurs in a transition economy like Russia, this study will employ a grounded theory approach. Glaser and Strauss (1967) were the first to develop grounded theory while subsequent work by Strauss (1987) and Strauss and Corbin (1990) has further systematized and widened its application. In grounded theory, researchers purposely gather extensive cases and related data in order to establish empirical regularities in a new topic or research site.

Grounded theory is an applied methodology closely linked to qualitative data gathering to build and extend theory, particularly in new research and substantive areas (Creswell, 2002; Strauss & Corbin, 1990). Grounded theory is most effective when constructs or phenomena are not well understood and there is little established theory that explains the emerging relationships between constructs and the mechanism by which the relationships function (Christensen & Raynor, 2003). Because many Russian

entrepreneurial firms formed relatively recently, and because there is a high turnover in the sector, it is difficult to rely on a logico-deductive, hypothesis-testing approach since existing theoretical frameworks may not have accounted for the phenomenon in its entirety (Markman, Phan, Balkin, & Gianiodis, 2005).

Research Design

The research here seeks to understand the change in Russia's international regime and how these changes impact entrepreneurial ventures. The concepts investigated here are multidimensional and unfold over time. The case material derives from two main periods of evolution punctuated by a key event. The initial examination of cases occurred in 1999, the effective end of Boris Yeltsin's term in office. In 2000, Vladimir Putin was elected President of Russia. This transition of power was a key event in modern Russia as Putin reestablished the stability and power of the Russian state. Therefore, in 2004, we returned to the field to follow up with a second examination of these same cases. Guiding the selection of events, historical punctuations create periods within which evolutionary change takes place. Thus, to explore this issue, this study employed various data sources including multiple interviews with founding entrepreneurs and interviews with other knowledgeable individuals (Table 1). Other sources of information included archival material and published stories about such firms and the general environment. The research also involved multiple researchers, including one from Russia, to ensure varied perspectives (Eisenhardt, 1989). Our primary data collection device was the semi-structured long interview. This methodology, with its reliance on qualitative data and content analysis, is suitable to access entrepreneurship over time in Russia as the phenomenon under study is complex, exploratory in nature, and represents a confluence of factors (Lee, 1999).

Sample

Russia is appropriate for such research since it represents not only one of the world's major transition economies, but has also faced some of the greatest change. Though the

Table 1

Entrepreneurs Interviewed

Main product	Year formed– year failed	Still in business
Thick film heaters	1991	Yes
Semiconductor wafers for microelectronics and solar elements	1991	Yes
Thick film heaters	1991	Yes
Software	1994	Yes
Ecology sensors	1994–1998	No
Sensors for ophthalmology	1989–1995	No
Thick film	1991–1995	No
Computer information systems for laboratory and analysis of bio-medical information	1991–2001	No
Fiber optical gyroscopes	2001	Failed and then restarted under new name
High-end batteries	1998	Failed and then restarted under new name

change in Russia has occurred over a relatively short period, there is no reason to believe that many of the same changes and resulting behaviors will not occur in environments that have chosen slower reform patterns (Fang, 2010).

Bruton and Rubanik (2002) conducted one of the early examinations of high-growth entrepreneurial firms in Russia. The research focused specifically on start-up firms in the micro electronics industry. The source of the data was high technology firms in Zelenograd, Russia. Historically, the city was one of a number of ring cities around Moscow established by the Soviet government to cluster the headquarters of firms specializing in different technologies. Consistent with the planned economy nature of the Soviet Union, the Soviets located almost all key aspects related to a given technology in that city. This city would be the center of a given technology for the entire country and closed (until the collapse of the Soviet Union) to all foreigners to ensure the safety of state industrial secrets. In such cities, typically there would be the leading Soviet research institution on that technology, the major firms focused on that technology in the Soviet Union, and the educational institutions required to produce the workers, scientists, researchers, and engineers for that particular industry. Thus, the city of Mytishy-Podlipky was devoted to space exploration, while Chernogolovka focused on laser technology, and Pushkino focused on biotechnology. Another city, Zelenograd, was the center of the micro-electronic research and pilot production for the Soviet Union. The leading research and educational institution for microelectronic engineering, Moscow Institute of Electronic Technology (MIET), was in the city.²

The individuals interviewed in 1999 were in firms located in a business incubator housed in Zelenograd at the university (MIET). Resource constraints in Russia in 1999 resulted in almost all high technology start-up businesses locating in the incubator. There is no graduation policy *per se* in the incubator that would force a firm to leave (Bruton & Rubanik, 1997). Thus, as long as a firm is in operation and does not outgrow its office space, it would stay with the incubator. Thus, researchers had located the entire population of high technology firms in this niche in 1999.

As a result, researchers took the population of cases examined in 1999 and sought to follow up with them. The authors found that of the original 45 firms, only four were in business in 2004. These were still located in the incubator. Zelenograd is a city of approximately 250,000 people with a heavily interconnected technology community. Thus, the researchers began an active search for the other firms and their founders and located four additional founders of entrepreneurial ventures whose ventures had failed (and were willing to be interviewed). Two other entrepreneurs were next located whose businesses had failed, but which had later started new entrepreneurial technology-focused ventures. Thus, of the original 45 entrepreneurs, 10 were interviewed a second time. Ten more of the original entrepreneurs were subsequently located and interviewed. They were willing to answer all questions except about the failure of their original businesses, and the researchers excluded these interviews from the present sample. In addition, as discussed

2. MIET is located in the greater Moscow metropolitan area. The city of Zelenograd is 37 km (23 miles) from Moscow, or approximately an hour by bus or automobile. Interestingly, when former President Yeltsin was running for election in the first democratic election in Russia, he ran for the Parliament as a representative of Zelenograd. Today, the city continues to be the headquarters for several large technology firms such as Angstrom, Micron, and Kvant. The technology focus of the city has recently increased. The national government has passed a tax break for firms in the city, seeking to encourage more technology development. This tax break is specifically focused on Zelenograd. The mayor of the city, since it is part of the greater Moscow district, is not actually elected but instead appointed by the Moscow city mayor. There is a city tax on all businesses and since a very high percentage of firms in Russia are headquartered in Moscow, the city has done well economically. This has resulted in a number of new apartments and other construction.

in Step 4 of the analysis below, we also interviewed 10 other experts in high technology entrepreneurship for this research in Russia, yielding a total of 20 interviews. These individuals were knowledgeable about high technology entrepreneurship and included six venture capitalists. Our primary data collection device was the semi-structured long interview. We ensured that we always spoke to the firm founder as that person would best understand the firm's policies and institutional strategy (Peng, 2009a). To improve response rate, we assured participants anonymity. Interviews were conducted in person and averaged about 2 hours.

Data Collection and Analysis

To answer the research questions set out above about the co-evolution of firms and institutions in Russia, this article follows a case study research design with data collected through long semi-structured interviews, categorized and analyzed utilizing a grounded theory approach. We gathered and analyzed data in four stages. Stage 1 identified the principal categories of data of concern for the investigation. The *a priori* definition of certain baseline concepts in the study aids a grounded theory approach to data gathering and analysis (Strauss & Corbin, 1990). Next, we identified the sample. While this longitudinal study focuses on follow up to a specific set of entrepreneurs, locating those entrepreneurs proved a very difficult process. Thus, Stage 1 took a considerable amount of time to perform. In Stage 2, the researchers conducted the main interviews to gather data according to key categories while identifying new ones. In Stage 3, the researchers analyzed the findings by building or modifying the categories from stage two as well as identifying likely causes and effects within the data. At Stage 4, the researchers applied the results to examples and triangulated the results with available market and archival data, going through a replication with the initial experts to get their reaction to the data. This final stage is particularly important in reconciling or explaining any differences. In this stage, the results were reviewed with several industry experts outside of the original sample to critique and validate the findings. This stage is important for concept development and to establish cause and effect.

The questions asked of the top management team of each firm were semi-structured in that they provided some direction to the respondent but permitted additional open response beyond the basic question. The questions addressed the categories of concern identified in Stage 1 and included such topics as describing the founding of the business, the firm's strategy, greatest challenges, and future outlook. However, as the respondents raised issues that provided rich insights, the interviewers would then further discuss those issues in greater depth. Throughout the process, the researchers made use of new findings in subsequent interviews and put feedback loops in place to substantiate new insights with the interview sample. By the end of the interviews, no additional new concepts were emerging (though sometimes new stories and implementation ideas continued to emerge). Thus, the resulting explanation could account for most of the reported behavior in the sample.

The researchers tape recorded interviews and transcribed them by hand with notes and comments in the margins, verbally summarizing key points at the end of each interview. The semi-structured interviews were then transcribed and coded in a manner consistent with a grounded theory approach to data consolidation and analysis (Strauss & Corbin, 1990). Using this research design, researchers seek to examine a topic and build theories or variable relationships through an iterative process of comparing data with a limited baseline framework or with a completely new theory as it emerges from the data (Strauss & Corbin).

Specifically, after interview transcripts and key points were coded (Miles & Huberman, 1994; Strauss & Corbin, 1990, chapter 4), those codes were entered manually into an open-coded database. The inventory of open codes (Strauss & Corbin) was based on the lines of inquiry established through exploratory interviews and categories suggested by institutional and network theory. The authors reviewed the transcribed interviews to ensure that no major points had been overlooked.

The authors conducted subsequent interviews, e-mails, and phone calls with the majority of the interviewees to validate the resulting model; such follow-up interviews are common in a grounded theory approach. The follow-up interviews allowed the authors to reconcile conflicting evidence and confirm the understanding developed. Follow-up interviews also helped to establish that the categories of concern for entrepreneurial activity in Russia had reached saturation with no new concepts emerging through these discussions. Therefore, the resulting explanation could account for most of the reported behavior in the sample.

Results

We present the results of this research along the three dimensions of institutional theory discussed earlier: normative, cognitive, and regulatory.

Regulatory

It was somewhat surprising to find that two of the firms in the original sample had ceased to exist but the entrepreneurs had founded new businesses that appeared to be largely doing the same thing as the original businesses. In the discussions, the entrepreneurs highlighted the impact of regulatory institutions. Specifically, they cited the impact of the tax laws. The tax system remains oppressive in Russia for entrepreneurs if compared with the tax system of a mature market. Entrepreneurs used terms such as “merciless” and “unstable” to describe the tax system, and one of the most widely cited causes of problems for entrepreneurs was the flawed tax system. As one entrepreneur said:

We may learn that new rules will be put into effect after we are already deep in a financial year. We suddenly will discover that new rules regarding taxes have been approved in June, but had been in effect since January! What a wonderful opportunity for tax authorities to make a law-obeying company look as a tax evader so they could punish us and extract some resources or favors.

The entrepreneurs of the failed firms that re-registered as new companies cited the fact that once the firm went out of existence it could wipe out its tax liability and start again. Particularly, in inflationary times entrepreneurs believed they needed the flexibility to close one firm and reopen as another business in order to survive, and they stay prepared to do this.

The tax police also require that the tax filings of a new venture essentially be the same as those of the major corporation. It does not matter if a firm’s profit is small, it still has to report to the tax agency in the same manner and details as a large company. This requirement can be particularly difficult for a technology start-up since the tax and accounting legislation has been constantly changing; many of these changes are then

backdated and the firm would recalculate its tax bill from prior years.³ As a result, entrepreneurial technology ventures often rely on expensive accounting services that have connections with key officials or the tax policy.

In response to this institutional environment, many of the experts we interviewed believed that some of the firms that we could not find or were unwilling to be interviewed had failed and gone into the gray economy by simply placing their businesses under a large educational or research institution. This practice, commonly called concealment, usually involves closely associating with a well-legitimized organization such as a non-profit or a state-linked enterprise. The firm is not selling illegal goods, so it is not in the black market, but instead is in the gray market since the firm is not officially registered, does not have to pay tax, and conducts transactions in cash. It would pay some amount to the educational or research institution to house and hide its operation. As one American venture capitalist commented:

We have seen this phenomenon in both Russia and China. If the firm is having some financial or legal difficulty, the firm founder may have the option of associating the venture with a nonprofit or governmental organization that has a high degree of legitimacy in his region. Top officials from that organization will come on the board and some firm assets may be combined with those of the [nonprofit or government] organization. The firm may move its headquarters to that organization's location, such as a university campus or military base, albeit informally. Transactions may be made in cash and money kept offshore or hidden in different accounts. The tax authorities are not happy about this and have tried to discourage this concealment but the practice is widespread for entrepreneurial ventures having some difficulties.

Several years into its economic reforms, Russia started to introduce a simplified tax policy and enacted additional tax policing regulations seeking to limit some of the corruption associated with the tax police. Since that time, the tax regulations have again been increasing but they still are not as complex and difficult as during the initial reform period. But more importantly, the normative practice and cognitive acceptance of entrepreneurial firms is still yet to be clearly established in society. As a result, there remains a movement of firms into the gray markets as firms seek to avoid the heavy hand of the government and associated government taxes. However, this action places limits on the firm's growth. The firm cannot receive formal bank loans since no entity that could borrow money technically exists and cannot use its assets as collateral. In fact, being in the gray area limits potential customers (Siqueira & Bruton, 2010). There is a high risk that the firm in the gray market may not be there in the future. Therefore, the presence of high degrees of institutional regulatory instability discourage firms from formally registering as businesses. While this may be a rational choice by the entrepreneur in the short run, it limits the long-term growth of the firm. Therefore, it is proposed,

Proposition 1: Rapid change in the regulatory institutions in a transition economy discourages firms from formally registering with the government. While this response helps firms grow in the short run, it is likely to limit their long-term growth opportunities.

3. This is similar to the indiscriminate treatment of both large and small listed firms in the United States by Sarbanes-Oxley. The upshot is that the cost for compliance is especially heavy for small firms.

Normative

Normative institutions represent the values inside a given professional or industrial community. For entrepreneurs, such a professional community is understood through the background and training of the founding team. The initial study in 1999 found that larger founding teams were able to bring greater resources to the new entrepreneurial venture and aid its success. However, the longitudinal research found that among the surviving firms, none of the original founding teams survived intact. The principal founder was still at the venture; however, all of the other founding team members had typically left.

The original teams were large because of their ability to bring a lot of resources to the table. There were few formal supports for high potential businesses at this stage in Russian society. The entrepreneurs had to generate their own financing, so they built large management teams. Today, however, extensive government programs promote high technology ventures. Thus, the institutional environment has changed; with entrepreneurs seeking out those official sources of financing to a greater degree and requiring fewer internally generated financial resources. The new financing and government support have resulted in the entrepreneurs' building smaller teams that also have connection to the government.

The focus on government financing has brought about another change that impacts networking by the entrepreneur. To be successful in Russian business, entrepreneurs would be wise to build relationships with government and key big businesspeople such as Russia's oligarchs (Guriev & Rachinsky, 2005; Rehn & Taalas, 2004). Prior to market liberalization, the term for such relationships was *blat*, which referred to the ability to access consumer goods in the state-controlled economy through connections. Today, the word *svayzi* more broadly describes connections and links to others in business. The connotation of *svayzi* is of a network of mutual support and aid. Therefore, *svayzi* indicates a deep, long-term relationship somewhat similar to *guanxi* in China.

Interviewees characterized the ability to have *svayzi* as a key resource for high potential businesses. The ability to have *svayzi* impacts not only access to professional networks that can affect the innovation process, but also the financial support crucial to high technology firms. As noted, the funding for new technology ventures in Russia today principally comes from government funds, either the local government or the central government. The entrepreneurs described a widespread practice in Russia of giving research grant money received from the official tender process back to the decision-making officials in the form of an *otkat* of kickback. One should have a personal link (*svayzi*) in order to join the close circle of the trusted people participating in the corruption scheme. In this setting, large numbers of individuals would actually be a liability. Therefore, in response to the institutional environment change, high technology entrepreneurs turn to the government for financing and they seek to build a network with specific government officials. The smaller founding teams with a broad network of other contacts, including government officials, work better within the financing environment the entrepreneurs now face.

Typically, discussions of institutional theory present the three pillars as equal legs on a stool (Scott, 2001). Thus, one institution does not predominate. However, as the discussion above indicates, this balance may not be the case in transition economies where the government plays a significant role (Tan & Zeng, 2009). For example, one entrepreneur described the "legislative base as critical" to the firm in that the firm's principals must be in close contact with local lawmakers and officials in particular. Another discussed the relationship to different ministries and regulatory agencies (of which there is still a prodigious number) and how vital it was to their "survival." This recognition leads to the second proposition on growth:

Proposition 2: The role of the government remains strong even as a transition economy grows and evolves. Therefore, entrepreneurial firm growth in a transition economy is closely linked to the firm's relationship with the appropriate government entities.

Another normative value change that became clear in the investigation of entrepreneurs whose businesses had closed and not reopened under another name was a deep sense of loss of respect and value in the community now associated with business failure. One of the former entrepreneurs—a woman whose chemical engineering company failed—had long refused to acknowledge that the business had really failed. For her, the closure of the company was a harsh experience that she compared to the loss of a child. This reduced status as a result of the failure was a new outcome. In the early days of the transition economy, many people tried different types of businesses and failed. However, the fact that there were high levels of failure and individuals were just learning about market mechanisms resulted in no relative impact on a person's social status if the business failed. As the economy has stabilized and market reforms have moved forward, the situation has changed.

Some of the entrepreneurs who refused to participate in the follow-up research said their unwillingness to meet and talk resulted from their sense of lost of status in the community and among associates. Unlike in the United States, where business failure does not carry significant status loss, in Russia, this diminished the social status of those suffering the failure. Several experts interviewed said this diminished status was likely the main reason we could not even locate the other 25 entrepreneurs initially interviewed. They added it was not likely that the individuals left and reopened the businesses in other areas. Technology-focused businesses in Russia tend to be located in the large cities with significant research and education traditions (such as Moscow, St. Petersburg, Nizhny Novgorod, Sverdlovsk, Novosibirsk, and Tomsk). The size of the market, the nature of the supports available, the level of life in this region, and the ability to export make it very unlikely for this kind of people to leave the better-developed Moscow region in which the entrepreneurs originally were located.

Therefore, those experts interviewed did not believe that the entrepreneurial ventures would have closed and opened somewhere else. Instead, they felt that because of the loss of social status, the business failure had caused the entrepreneurs to fade into other businesses or industries and work for others. In 1999, we originally interviewed only entrepreneurs in active firms. However, the potential impact of failure on the various firms did not appear to carry heavy social implications. The economic setting was far more turbulent, and failing at a new venture was all too common. As one entrepreneur described it:

Russia has lived through a period of wild capitalism, when all people tried and wanted to seize opportunities without care for the long-term future of the business . . . Failure was not a major concern as you could quickly try again.

Thus, as the economy has improved, the negative social implications of failure have actually increased, much to the chagrin of authorities that would like to encourage risk-taking. Thus, it is proposed:

Proposition 3: As a transition economy stabilizes and laws develop, the social penalty for business failure increases, which in turn reduces the risk-taking propensities of entrepreneurs.

Cognitive

An important aspect of the cognitive institutional environment of a society is how entrepreneurial firms are viewed in terms of their legitimacy. Russian society has always placed great importance on technological advancement. For example, few know that Russia was a first mover in electronic calculators in the late 1960s. The Russian calculator was initially competitive with the products Americans and Japanese were developing around that time. The Soviet Union even tried to export the calculator with some initial success. With Sputnik, the Union of Soviet Socialist Republics also launched the first satellite in 1957. Russians have always placed great significance and honor on applied science, particularly with mathematical applications. Today, Russia continues to hope that applied science and technology will be a route to greater market success.

Building on the great respect in Russian society for high technology, many entrepreneurs moved initially into high technology entrepreneurship and then later moved into much more promising business areas such as natural resources excavation.⁴ Consider, for example, Michael Khodorkovsky, the former head of the oil company Yukos. Khodorkovsky became one of the richest businesspeople in Russia, although he was ultimately jailed for tax evasion. However, he began his career as the head of the Interbranch Center of Scientific and Technical Programs, which conducted research on computers and information technology for the government. The technical background allowed him to establish a reputation that served him in business.

Today, high technology expertise continues to be an extremely valued skill in the society. However, the impact of the brand name of research and educational institutions, plus the academic regalia of the leading members of the research teams has increased. In the original research, the pedigrees of institutions and individuals played a role. However, today, such pedigrees are particularly vital. In the past, networks developed among former students and professors from a given university or research facility. This network typically focused on the technological competence of the parties involved, not just the status of the individual. Similarly, the customers of high tech firms tended to be technically fluent and would focus on the technical aspects of a product, not just on the status of the individuals and institutions in the venture.

But today, the Russian government is an increasingly important source of funds for technology-focused firms. The prominence of the government means that individuals who may possess less technological knowledge are often responsible for granting funds for ideas they do not understand. As a result, they tend to base the judgment on whom to fund on the school from which the entrepreneur graduated since pedigree is something people can understand and accept. Therefore, over time, the importance of which schools an entrepreneur may have graduated from and whom they work with has grown. For example, one entrepreneur noted:

The essential part of our strategy is partnership with government agencies. This partnership helps to make us very competitive in Russia with customers. However, we find we increasingly need to justify our academic standing to the various parties. They do not understand the technology but do understand a credential.

Thus, it is proposed:

4. High technology firms may be valued in society but there is far greater profitability in drilling for oil, gas, and other minerals.

Proposition 4: Credentials of high technology entrepreneurs become more critical in creating growth opportunities as a transition economy matures; the credential helps to create legitimacy for the entrepreneur.

Discussion

The research has extended earlier work on entrepreneurship in Russia under conditions of brisk institutional change (Bruton & Rubanik, 2002). Such rapid change has been recognized by a wide variety of authors (Bruton & Rubanik; McCarthy & Puffer, 2008; Puffer & McCarthy, 2001). Despite such recognition, this study is the first to examine how institutions and firms are co-evolving. Using observations and interviews with high technology entrepreneurs in Russia taken at two separate times over a 5-year period, this research indicates that changes in Russian society have produced a variety of adjustments in institutions that have reinforced each other. Table 2 summarizes these changes.

As one can see, Russia has undergone relentless shifts in its institutional environment. The entrepreneurs in our study still in business in the later time period typically did not make simple, single changes to survive but instead have had to make a range of changes in order to match their new environments including working to modify their institutional environments. Thus, in analyzing transition economies, researchers would be wise to seek a broadened focus.

To illustrate this key point, consider the issue of legitimacy. The cognitive institutions strongly influence legitimacy, as do regulatory and normative institutions to a lesser extent. The stabilization of high technology businesses in Russia today, relative to 1999, indicates the increased legitimacy of technology-focused ventures. As one entrepreneur noted:

Forms and rules of accounting are changing all the time but it is better than in the past. Now they at least do not seem to want to put us out of business or take most of our assets if we start doing well.

Thus, there is greater acceptance of entrepreneurship and private property, and the environment for business is less hostile than it was in the past, though the entrepreneurs

Table 2

Entrepreneurial Activity in Russia

Institutions	Major finding	Implication
Regulatory	Increasing taxes and regulation as the regulatory institutions become more stable.	Firms increasingly seek informal status where they do not formally register with the government.
Normative	Role of government increases in society as greater institutional stability increases. The social penalties for business failure increase as society gains greater stability.	Social networks become even more critical than in past. Particularly the role of the government officials increases. The risk associated with entrepreneurship increases as business failure becomes more identified as personal failure.
Cognitive	Increasing legitimacy of entrepreneurial ventures in society. Role of government increasing in technological sector as a major funding source for such firms.	As the role of government increases, readily justifiable means to judge technological qualifications such as certifications becomes more important since these are what government relies upon.

reminded us that in Russia, significant interference from both the government and criminal elements was still possible and all too common.

Particularly important in this evolution of legitimacy of entrepreneurial ventures in Russia is that legal institutions, as represented by the laws and regulations passed by the government, have also evolved to become more supportive. In the past, the government was at best ineffective and at worst a hindrance as there were conflicting rules, oppressive officials, and a great deal of corruption and criminal activity. Today, the government has grudgingly accepted the legitimacy of new technology ventures and views them as vital to the future of Russia. The registration process for such ventures has become far more efficient than during the original research. Similarly, new programs have developed that help aid the funding of such businesses. We must note that entrepreneurs were not passive recipients of this increased legitimacy. Rather, the entrepreneurs tried to work with the local and central government officials to explain and justify their needs. For example, the city that is the focus of this investigation, Zelenograd, has now received special tax status in an effort to generate more technology-focused businesses. This special tax status is in part due to the actions of the entrepreneurs in the city.

Implications for Theory

This research also yields insights for institutional theory. Specifically, using an institutional perspective, it brings into question the assumption that underpins much of the prior research: institutions are slow to change. Much prior research applying institutional theory to various settings has argued that institutions will change very little (Brint & Karabel, 1991; DiMaggio, 1988) and any change will be slow (Jones, 2001). Thus, even as researchers considered co-evolution in entrepreneurial firms and institutions, they have typically focused on long time periods in mature economies. But transition economies are undergoing significant change as they move to market economies. Under these conditions, institutional entrepreneurs emerge to utilize and change their institutional environments. It may be difficult to change the less formal normative and cognitive elements of the institutional system as opposed to the regulatory system (Chizema & Buck, 2006; North, 1990). But the evidence here is that a better appreciation of institutional entrepreneurship needs to become incorporated into our view of transition economies (Peng, 2001).

The role of the government in a transition economy should not be underestimated (Peng, 2003). The greater acceptance by the government, and its associated changes in legal/regulatory institutions, has in turn impacted other institutional pillars. For example, the acceptance by the government strongly impacts the normative acceptance by society of entrepreneurs. The actions of the government also impacted the cognitive institutional pillars. Russian society has long valued high technology innovation. However, the government's approval has led to a broader approval and legitimacy in the society for entrepreneurs who are seeking to develop such firms. The broad involvement of society results in individuals who do not necessarily understand how to evaluate the quality of the technological innovation; in deciding whom to do business with, the broader society relies on the reputation of the school from which an entrepreneur graduated or on the reputation of the entrepreneur's colleagues. Thus, while the legitimacy of high technology entrepreneurial ventures is greater today, there is also a greater reliance on "pedigree" by individuals who deal with such firms.

Implications for Entrepreneurship

This research has helped to build our understanding of entrepreneurship in this setting. Too often entrepreneurship research has focused on mature markets (Bruton et al.,

2008). The contextualization of theory is critical (Zahra, 2007). This research helps to contextualize institutional theory in one of the largest but least examined transitional economies. As a result, the research shows that the changing institutional environment in a transition economy requires that entrepreneurs change their behavior and co-evolve a number of times in order to be successful. For example, one entrepreneur stated:

We regularly change both the strategy and the tactics, because at first some possibilities emerge and later on other ones are needed. Things change pretty fast around here because of the changes in regulations and enforcement.

Another entrepreneur described his firm's strategy as follows:

Our "survival" strategy is fast development, modification, and flexibility. We need to adapt quickly to new officials, new rules, and new enforcement of those rules . . . What worked yesterday downtown [with government] may not work today. If you have someone in your firm who understands this and can work with government officials and the oligarchs in these circumstances, you will have a better chance of prospering.

Firms in mature economies must also change as environments evolve, but in transition economies, the need for change and the speed of that change can be much greater, not only because of the fast economic growth in transition economies, but also because of the enactment of many new commercial regulations and their (new) enforcement—forces that may be brand new to a transition economy such as Russia's (Bruton & Rubanik, 2002; Soto, 2000).

The need for swift change implies that entrepreneurs must conduct experiments to see how the environment is changing and to see what may generate firm growth given the changing institutional regime. This experimentation requires that entrepreneurs maintain flexibility as customer needs emerge and evolve—something that some new ventures find difficult to do (Christensen & Raynor, 2003). Entrepreneurs stressed the importance of not only maintaining flexibility with product-markets but also of dealing with the regulatory and enforcement regime. One entrepreneur's comment was illustrative:

We used to simply listen to what the regulators and tax authorities told us we needed to do. That led to numerous and sometimes costly mistakes, such as installing unnecessary equipment or paying too much in taxes. Now we are careful to ask questions about what is really needed, and we have people we can call on who have knowledge and connections with the government to let us know how to handle the requests for money and purchases to see how they can be minimized.

To understand how deep these adaptations can be for new ventures in transition economies, consider the fact that shortages of resources characterize such economies. Shortages were clearly a key problem in Russia in the early stages of its transition to a market economy. As a result, firms overcame resource shortages when forming a new venture by having a large founding team that would commit significant resources to the venture. But today, the necessary resources are in greater supply and the top management teams have been narrowed to a single founder or small team of individuals. Thus, in a period of 7 years, the basis of new venture founding could shift dramatically.

This shift also has a greater importance for researchers than simply indicating new directions on founding team membership. The results indicate that entrepreneurs shift rapidly in a transition economy as they respond to their changing environment. For researchers, the finding on the changes in founding teams brings the key issue forward that many of their results may be time sensitive. The environment they are researching changes

rapidly and researchers cannot assume that they are reflecting reality if they are relying on dated data. The research cannot indicate what that critical time horizon is, but it can allow researchers to see that, after 7 years, their findings may no longer be relevant to a given setting. The research also helps to remind entrepreneurs of the changeable nature of their environment. Thus, ensuring that the data in an analysis are timely is important. It is also important as researchers build their rationale for hypotheses or interpretation of findings that they are not using a dated perspective of a transition economy as a foundation.

Future Research

Transition economies offer some of the greatest economic opportunities for business in the world today. At their current rate of growth, in less than 50 years, India, China, Russia, and Brazil will together have a larger economy than the wealthy G-6 economies. Thus, transition economies will likely increase in importance in the future and are a domain that merits significantly more investigation.

This research reminds us that researchers cannot rely completely on what they know from mature capitalist markets; firm growth, venture capital, and entrepreneurship in transition settings may be very different than in developed economies (Bruton & Ahlstrom, 2003; Bruton et al., 2008; Peng, 2000; Peng & Heath, 1996). One can characterize transition economies as having institutional environments in which some reform has occurred but in which less formal, weakly codified institutions prevail. This setting requires that researchers ensure that their theoretical foundation is relevant. The theoretical foundation employed here, institutional theory, proved resilient and provides insight into transition economies. However, as discussed above, there are also slight variations in the conceptualizations, such as the role of legal/regulatory institutions and the nature of change in institutions. Thus, future research should continue to build on the dominant research streams that exist from mature capitalist economies, but researchers must remain sensitive to adapt such theoretical foundations in order to understand entrepreneurship and firm growth.

The research also demonstrates the value of longitudinal research in transition economies. There has been significant change in the institutional setting of such businesses and how these businesses operate. A single snapshot at one point in time may not provide the rich insight needed to understand the nature of transition economies and the evolution to market economies they are undergoing. Thus, greater longitudinal research of firm growth is needed in the future.

Russia offers a useful setting for the study of entrepreneurship in transition economies. The shock approach to market liberalization foreshadows many of the changes that will likely come to countries such as China or India. Researchers have studied China far more than any other transition economy. However, the level of market liberalization in China remains lower than most individuals commonly assume as large state firms still dominate China's economic landscape (Huang, 2008). Many private enterprises in China retain high levels of government control if not outright ownership (Huang). There is a frequent reference to the large number of private businesses in China, but these businesses are all still quite small, which, using the definitions applied here, would make them small businesses rather than entrepreneurial ventures.⁵ China poses a particular puzzle in that institutional transition has occurred more slowly than in Russia, and has shifted the

5. The private firms are typically referred to as family businesses and are required to maintain low levels of employment in order to qualify for special tax and regulatory status.

direction of its reforms toward an emphasis on state enterprise reform and less on private entrepreneurship (Huang).

As a result, we can look at Russia's experience to provide insights for China and other transition economies. Some Chinese leaders recognize that they may need to return to an emphasis on greater private entrepreneurial efforts and are watching Russia's experience with high technology entrepreneurship (Huang, 2008). Future research should seek to build the understanding of such entrepreneurial efforts across multiple countries rather than focus on single national settings. One specific aspect of such integrative research that would be insightful concerns the ability of technology firms to pursue such growth and internationalization efforts. A comparison of Russian high technology entrepreneurs to those in China would serve this branch of research well.

However, as researchers seek to connect this research to the China setting, such work offers the opportunity to transition to where research occurs not in a single transition economy but in multiple transition economies. This article reported a longitudinal examination in a single country. However, the next step in the development of this line of research should be to conduct such research in multiple countries to increase the validity of the findings. Transition economies represent the fastest growing economies in the world as well as a major portion of the world's population. However, to date, our understanding of these economies and of firm growth in them is limited. We hope that this research will lay the foundation for future investigations not only in Russia but also in other transition economies.

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