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ENTREPRENEURS AND INVESTORS IN CHINA & RUSSIA

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COMPARATIVE SOCIAL CAPITAL: NETWORKS OF ENTREPRENEURS AND INVESTORS IN CHINA & RUSSIA

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Abstract: Most studies on entrepreneurs' networks incorporate social capital and networks as independent variables that affect entrepreneurs' actions and its outcomes. By contrast, this article examines social capital of the Chinese and Russian entrepreneurs and venture capitalists as dependent variables, and it examines entrepreneurs' social capital from the perspectives of institutional theory and cultural theory. The empirical data are composed of structured telephone interviews with 159 software entrepreneurs, and the data of 124 venture capital decisions in Beijing and Moscow. The study found that social networks of the Chinese entrepreneurs are smaller in size, denser in structure, and more homogeneous in composition compared to networks of the Russian entrepreneurs due to the institutional and cultural differences between the two countries. Furthermore, the study revealed that dyadic (two-person) ties are stronger and interpersonal trust is greater in China than in Russia. The research and practical implications are discussed.

Key words: Social capital, entrepreneurs, venture capitalists, China and Russia.

JEL Codes: M13, F23, and G24

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Social capital defined as networks of relationships and assets located in these networks (Bourdieu, 1986; Coleman, 1988) is an important explanatory variable of entrepreneurial performance, because it enables entrepreneurs to recognize opportunities, access diverse information and resources in a timely manner, reduces transaction and monitoring cost, enhances learning and interpersonal trust, and promotes cooperation in and among others. Scholars found that alliance networks of young firms affect their perceived legitimacy and revenue growth (Baum, Calabrese & Silverman, 2001; Stuart, Hoang & Hybels, 1999). Through a network of relationships, entrepreneurs access bank loans (Uzzi, 1999), private equity (Batjargal & Liu, 2004; Shane & Cable, 2002), and obtain product, marketing, and client-related information (Birley, 1985). In general, social networks of entrepreneurs facilitate venture birth and development (Batjargal, 2003), although under certain conditions it may hinder firm performance by constraining entrepreneurial activities (Uzzi, 1997).

Most studies on entrepreneurial networks incorporate social capital and social networks as independent variables that affect entrepreneurs' actions and its outcomes (Hoang & Antoncic, 2001). However, the structural and relational patterns of entrepreneurs' networks as dependent variables are important social phenomena that should be explained systematically. A purpose of this article is to explain the differences in structures and relational aspects of social networks of entrepreneurs and venture capitalists by employing the main postulates of institutional theory and cultural theory. The main theoretical argument that I am making is that institutions and cultures influence network structures and relations in interactive ways.

Social networks of actors are deeply embedded in local cultures, institutions, and traditions (Bhappu, 2000; Burt, Hogarth, & Michaud, 2000). However, little research has been conducted on this aspect of social capital. In this study, I compare and contrast social capital of entrepreneurs and venture capitalists in two largest transition economies – China and Russia. The second purpose of this study is, therefore, to show how different institutions and contrasting cultures in China and Russia influence the structure and relational patterns of social networks of entrepreneurs and venture capitalists.

In this study, institutions are defined as “the humanly devised constraints that shape human interaction” (North, 1990: 3), and institutional transformation is regarded as

changes in the formal rules, regulations, and constraints that influence actors' behaviors. This definition is consistent with the regulatory pillar of institutions proposed by Scott (2001). Thus, I will refer to institutions as formal rules, regulations, and structures for the purpose of this study, although I acknowledge that the normative and cognitive aspects of institutions are important (Scott, 2001).

China as a communist country, and Russia as a former communist state, are experiencing unprecedented institutional changes. This institutional transformation can be characterized as a dual process: On the one hand, it is a *deinstitutionalization* process that is reflected in the erosion or discontinuity of institutionalized organizational activities and practices (Oliver, 1992). This is an *institutionalization* process, on the other hand, that is reflected in the emergence of new rules, regulations, and structures that constrain and facilitate actors' activities.

Although the dual processes of institutionalization and deinstitutionalization are occurring in China and Russia simultaneously, the Chinese transformation may be described as a predominantly institutionalization process, whereas the Russian transition may be regarded as a predominantly deinstitutionalization process. In China, the emergence of brand new rules, regulations and organizations, e.g., capitalist market institutions, is happening in parallel with the existence and evolution of the old socialist institutions and organizations such as state economic planning, the Communist Party of China, or the Young Communist League. In contrast, the formation of democratic institutions and capitalist market rules in Russia is occurring after the complete destruction of the old communist institutions and organizations such as economic planning, the Soviet communist party, or the Soviet secret police.

The Russian and the Chinese leadership had embraced strikingly different paths of economic and institutional reforms in the early 1980s. Russia has chosen the so-called "Big-ban" or shock therapy approach, which introduced rapid political and economic liberalization, and massive privatization of state enterprises during a short period of time. Russia carried out political decentralization that shifted much of political power from the center-Moscow to regional and local governments, allowing local elites to "hijack" the newly found autonomy (Blanchard & Shleifer, 2001). Furthermore, the Russian central government introduced a series of rules and mechanisms that were designed to control

Russia's regions and provinces fiscally through the new systems of budget and taxation. While the Russian political reforms and fiscal federalism policies dismantled the old institutions, they did not create effective market institutions. This resulted in the institutional void or chaos that plagued the country during the 1990s.

In contrast, China has adopted the policy framework of gradualism that resulted in the staged economic liberalization, sequenced privatization and evolving institutional transformation (Bhaumik & Estrin, 2005). The Chinese leadership carried out successfully political centralization and fiscal decentralization (Blanchard & Shleifer, 2001). While the Communist Party of China further consolidated its absolute dominance of the political institutions, i.e., the legislature, ministries, local governments, judiciary, media, security forces, and military, it effectively transferred power in areas of economy, education, and culture to non-party bureaucracies. The end result of the institutional transformation in China is the strengthened party control over the government and public organizations, and the greater autonomy and fiscal independence of economic institutions and organizations. In this way, the dual processes of the emergence of new rules and organizations and the survival and transformation of the old institutions provided China with institutional stability.

The institutional void prevailing in Russia, and the institutional stability prevalent in China are likely to influence the structure and relations of social capital of entrepreneurs and venture capitalists in the two countries.

The second important factor that affects network structures and relations is culture defined as the collective programming of the mind, which distinguishes the members of one category of people from those of another (Hofstede, 1984).

Embedded in the Confucian philosophy, the national psyche of the Chinese sharply differs from the Russians' mindset. The postulates such as the universe and man's life are real, all forms of change are expressions of two forces, the *yin* and the *yang*, changes take place in the form of cycles or spirals rather than extremes are fundamental metaphysics of the Chinese thinking. The most Chinese are inclined to think concretely rather than abstractly, emphasize the particular rather than the universal, and concerned with reconciliation, harmony and balance (Redding, 1990). Understanding is based on appreciation and liking rather than analysis and calculations (Mei, 1967).

The Russians in contrast are keen abstract thinkers and transcendental considerations have great place in their psyche. The Russians have a tendency to alternate between extreme positions, and may occupy two or more mutually exclusive mental positions simultaneously. The Russians can be broad yet narrow, reckless yet cautious, tolerant yet censorious, and in this way, they will be found in all directions at some time or other (Hingley, 1977).

It is argued that the different mindsets and worldviews of the Chinese and Russians are likely to shape the structural and relational patterns of their social networks.

This article is structured as follows. In the next section, I propose the comparative hypotheses on the network structure and relational aspects of the Chinese and Russian entrepreneurs and venture capitalists. In the methods section, I describe the samples, the data collection and validation, and the measurements. In the results and discussion sections, I present the findings, and discuss them in the comparative perspective. In the conclusion, I highlight the contributions, the limitations, and the implications of this study.

HYPOTHESES

Network Structure

The indigenous social phenomenon called *guanxi* (connections) is the Chinese version of social networks. Although there is some debate about many nuances of *guanxi*, there is an agreement among scholars on its main meaning: *guanxi* is interpersonal relationships that facilitate social exchange. *Guanxi* has been interpreted as family relationships, utilitarian ties, and particularistic ties embedded in Confucian values (Tsui, Farh, and Xin, 2000; Yang, 1994). Researchers found that *guanxi* relationships promote interpersonal trust, facilitate job mobility, and enhance firm performance (Bian, 1997; Farh, Tsui, Xin, & Cheng, 1998; Park & Luo, 2001).

The Russian version of social capital is *svyazi* (connections) (Efremova, 2000). The concept of *blat* has been used widely to describe informal relationships in the Soviet and Russian contexts (Ledeneva, 1998). Although it is accurate to employ the term *blat* to capture the informal exchange practices in the Soviet context, it may be imprecise to denote social networks as a generic phenomenon by *blat* for several reasons. The original as well as contemporary meaning of *blat* is criminal and criminal underground world

(Efremova, 2000). The term therefore has an extreme negative connotation. Most Russians prefer a neutral word *svyazi* to refer to social networks. Previous research revealed that *svyazi* capital reduces uncertainties and risks in financial transactions, facilitates access to resources and loans, and enables Russian entrepreneurs to increase their sales (Batjargal, 2003; Guseva & Rona-Tas, 2001; Sedaitis, 1998).

It is proposed that network structures, i.e., size, density, structural holes, and composition, of the Chinese and Russian entrepreneurs differ due to the cultural and institutional differences between two countries. The networks of the Chinese entrepreneurs are smaller than that of the Russian entrepreneurs for several reasons. The Chinese have inherent inclinations to prefer fewer yet trusted particularistic ties (Farh et al, 1998). The Chinese networks are composed of more family members, schoolmates, and close friends due to the prevalent role of *guanxi* base – the propensity to form relationships based on common background, i.e., ancestral origin and classmate. Thus, *guanxi* base imposes clear boundaries on network membership, and limits the pool of potential members to those who meet criteria for being a member of a particular *guanxi* cluster (Tsui et al, 2000). The Chinese are strongly inclined to categorize people as belonging to in and out groups, and members of in-groups only are regarded as members of personal *guanxi*. The gradual institutionalization process in China enabled social actors, including entrepreneurs, to preserve their networks intact over time, and this reduces membership turnover in the Chinese networks (Dai, 2002). Further, the household registration system in China– *hukou* that constrains flows of people, restricts networking opportunities for the Chinese entrepreneurs.

The Chinese networks are denser and more homogeneous. Ethnographic evidence on networks of urban residents and entrepreneurs are consistent with this claim (Dai, 2002; Yang, 1994). *Guanxi* networks are more transitive - tendency that one's friends' friends are likely to become one's friends as well (Granovetter, 1973). Members of a particular *guanxi* cluster are expected to fulfill their role obligations and demonstrate group solidarity (Farh et al, 1998; Lin 2001). Knowledge and mindset homogeneity in *guanxi* networks is greater because many network members are classmates who studied the same subjects (Farh et al, 1998). In addition, homophily as a social selection

mechanism favors those who are similar in their worldviews since the social and geographic distances restrict contact search and tie formation (McPherson et al, 2001).

The Chinese make greater efforts to reduce uncertainties and inconsistencies in their immediate social worlds, and therefore, the networks of the Chinese entrepreneurs are likely to have fewer structural holes defined as the absence of a link between two contacts (Burt, 1992). Brokerage between two contacts are perceived as exploitative in China, and therefore, the Chinese entrepreneurs will not take deliberate actions to keep contacts apart. This is reflected in fewer structural holes. *Guanxi* networks contain greater numbers of internal ties, e.g., family members or colleagues. The Chinese have greater willingness to control and monitor personal relationships, and consequently, they prefer geographically and socially proximate contacts. Because of the cohesive character of Chinese *guanxi*, family members and close friends are likely to work in the same organization. These factors make the Chinese networks smaller, more integrated and homogeneous.

In contrast, the personal networks of the Russian entrepreneurs are larger in terms of size, because the Russians are less particularistic than the Chinese. In the Russian networks, social distances between members of in and out groups are not clear-cut, and therefore, the Russian entrepreneurs are likely to report greater numbers of ties than the Chinese. The Russian economic reforms resulted in the violent destruction of the existing institutions and networks. This forced the Russian entrepreneurs to create new networks and clusters that increased the absolute size of personal networks over time (Sedaitis, 1998). Arguably, Russian society is more mobile both horizontally and vertically because of the more liberalized labor market and the elimination of the household registration system – *propiska*. This has created greater opportunities for network expansion.

Russian *svyazi* networks are less dense, contain greater numbers of structural holes, and are composed of more heterogeneous members (Sedaitis, 1998). Relational base, e.g., same hometown and surname, as a networking rule is not as prevalent as it is in China and therefore, contact recruitment is less path-dependent in comparison to China, although the environmental factors such as corruption and distrust force the Russians to be vigilant in dealing with strangers. The internal hierarchy in the Russian networks is based on power and status, and this generates greater relational distance

among contacts (Kharkhordin & Gerber 1994). Social sanctions used to punish deviant behavior are less severe and effective in Russia, and therefore, the Russians have greater autonomies in their networking behavior (Ledeneva 1998). The Russian networks are less transitive because there is less trust embedded in relationships (Petrovskii 1991). Brokerage is more accepted, and therefore, the Russians are likely to keep contacts disconnected to maximize gains from their intermediate positions. There is no dominant networking principle that structures personal networks, and therefore, the *svyazi* networks are composed of members who differ in their ascribed and achieved attributes (Ledeneva, 1994). Because of the less in-group cognitive pressure to internalize and accept views of other contacts, the mindsets of Russian members are less homogenized over time. Based on these discussions, I propose that:

Hypothesis 1 (a): Network size of the Chinese entrepreneurs is smaller than that of the Russian entrepreneurs.

Hypothesis 1 (b): Network density of the Chinese entrepreneurs is greater than that of the Russian entrepreneurs.

Hypothesis 1 (c): Networks of the Chinese entrepreneurs have fewer structural holes than that of the Russian entrepreneurs.

Hypothesis 1 (d): Networks of the Chinese entrepreneurs are more homogeneous in terms of education than that of the Russian entrepreneurs.

Hypothesis 1 (e): Networks of the Chinese entrepreneurs have more internal ties than that of the Russian entrepreneurs.

Relational aspect

The Chinese *guanxi* networks and Russian *svyazi* networks differ in terms of tie age, tie strength, perceived homogeneity, and interpersonal trust. Dyadic (two person) relationships in China on average are older than in Russia because most contacts are

either family members, or schoolmates who know each other for many years. The Chinese networks are more stable over time both in terms of changes in structural properties and membership turnover compared to the Russian networks due to the gradual evolution of institutions and organizations. The Chinese are more conservative socially, have greater relational inertia defined as a tendency to stick to the same social ties over time, and are motivated to preserve existing relationships as long as ties generate acceptable net returns. The Chinese notion of *renching* (reciprocity) - a well-articulated set of expectations, exchange norms, and informal re-enforcing devices – facilitates relational longevity. For example, CEO of a software firm based in Beijing said in an interview:

Author: This sounds like you sacrificed your firm's interests.

CEO: No. There is this Chinese tradition called *renching*. ... You can screw up one or two persons but you can't screw up all. That is really bad in the long term. The Chinese take *renching* seriously (Author's interview, September 2001, Beijing).

Various social symbols and rituals make Chinese *guanxi* networks more coherent and enduring over time. Gaining, giving, saving and losing face are recognized symbolic interactions in Confucian cultures. Highly ritualistic interactions such as gift giving, social dining and tea sessions are prevalent routines in *guanxi* relationships (Yang, 1996). There are many indirect signals and “silent messages” in *guanxi* practice and communications that promote mutual understanding, respect and emotional bond between sides.

Skillful consensus-making and willingness to accommodate each other's opinions promotes greater perceived intellectual similarity in the Chinese *guanxi*. The strong in-group pressure and intense *guanxi* communication homogenizes mindsets of members of a particular *guanxi* clique over time (Lin, 2001). These factors generate greater perceived homogeneity in China.

Chinese dyadic ties require frequent interactions and intense efforts to maintain relationships. Dyads in the Chinese context can be multiplex, i.e., a single relationship fulfils various functions including access to information and resources, emotional support, and political protection. Chinese dyads are more costly to establish and maintain

in terms of time, resources and commitment. As a result, the two sides in Chinese relationships are more motivated to mobilize resources for each other making dyads stronger than in Russia.

Chinese and Russian triads (three-person) differ in terms of mutual expectations, social control mechanisms, and symbolic aspects of interactions. The central actor in the Chinese triangle is more powerful, and has many leverages to influence behaviors of triad members than the central player in the Russian triads. Social sanctions are more effective in the Chinese triads because face serves as a social currency that has a definite value. In addition, the Chinese are likely to have higher expectations and show more conformist behaviors in triple relationships for cultural reasons.

The institutional stability prevalent in China provides favorable conditions for relative trustworthy behavior of actors (Hitt et al, 2004). The Chinese are trustful of their family members and close friends but distrustful of those whom they do not know (Redding, 1990). The Chinese generally trust those who have been recommended to them by a trustworthy source- a family member or close friend - because information diffusion and re-enforcing mechanisms are more effective in *guanxi* clusters than in the Russian networks (Lin, 2001). For example, the following conversation with CEO of a Chinese Internet platform provider supports this assertion (Author's interview, April 2002, Beijing):

CEO: I met Wang at a private party hosted by a friend. My friend and Wang were classmates in the School of the Communist Party of China... It was a risky decision to sign such a large contract with him because his firm does not specialize in a type of digital image equipment, which we were looking for. I also was worried that they can't customize their products to our clients – Chinese firms.

Author: Why did you sign the contract?

CEO: Well, it is complicated... It was cheaper although there were issues on the quality side. And the guy appeared honest and trustworthy. I verified that with my friend who knows him well...

In this way, interpersonal trust is more “transferable” in China. In addition, the Chinese are more skillful in establishing well-defined exchange rules and punishing those who violate exchange norms.

By contrast, dyadic ties in Russia on average are younger, and they do not usually require frequent tie re-activation, once some kind of relationship has been established. Russian ties are less personalized, and there are personal and business segments within network clusters. In addition, the Russians tend to keep greater distances in interpersonal relationships than the Chinese. For example, the word *blat* might be used to refer to instrumental ties whereas terms such as "ours" are used to separate a close circle of friends from job related contacts. There are no such social concepts as face or *renching* to regulate the social behavior of individuals and groups.

The Russian concept of reciprocity is simpler, less universal and often ignored in relationships. Therefore, the Russians have to rely more on “mechanical” monitoring techniques, and this leads to higher cost in terms of re-enforcement of social obligations. The following assertion of the managing director of a large trading firm in Ekaterinburg confirms this conclusion:

Director: Of course, we try to develop trusted relationships with our clients and suppliers. However, we have an idiom in Russia that "trust but monitor" (Author's interview, April 1999, Ekaterinburg).

The Russians do trust their family members but clan-type relationships do not exist in Russia. Unlike the Chinese, the Russians are less trustful of third parties even if a trusted intermediary has recommended that person. A successful Russian banker said in an interview (Author's interview, May 1999, Moscow):

Banker: ... Now days it is difficult to trust people when everybody tries to out maneuver or screw up others...

Author: Even your friends?

Banker: Sometimes.

Author: How about friends of friends?

Banker: Oh, worse... I prefer to do business with those whom I know well.

The Russian practice of “I am from Alexandr Alexandrovich” thus applies to instrumental actions rather than intimate trust cultivation. The Russians prefer to establish direct personal relationships since triad ties are perceived risky in the chaotic and crisis-driven environment. Direct communications are more effective for trust-building in Russia. The Russians are less ritualistic but there are important symbolic routines such as gift giving, and vodka sessions. In contrast to the harmony-loving Chinese, the Russians are more expressive in relationships, and do not mind conflicts and fights, and therefore, there is a greater perception of opinion diversity in the Russian *svyazi* networks. Building on these assumptions, I propose that:

Hypothesis 2 (a): The average tie age in China is greater than in Russia.

Hypothesis 2 (b): Networks of the Chinese entrepreneurs are more homogeneous in terms of perception than that of the Russian entrepreneurs.

Hypothesis 2 (c): Referee-venture capitalist relationship in China is stronger than in Russia.

Hypothesis 2 (d): Referee-entrepreneur relationship is stronger in China than in Russia.

Hypothesis 2 (e): Inter-personal trust is greater in China than in Russia.

METHODS

Sample and Data of Software Entrepreneurs

The data are composed of structured telephone interviews with 159 software entrepreneurs in Beijing and Moscow. Some 82 Russian entrepreneurs were interviewed in June-August 2003, and 77 Chinese entrepreneurs were interviewed in September-

October 2003. In total, 118 respondents were CEOs, and 41 respondents were chief technology officers (CTO). The technical directors were interviewed only in those occasions when the CEO was unavailable and the firm has more than 50 full-time employees.

Using different information sources such as telephone directories and electronic data bases of high tech firms, my research assistants and I created a list of 111 new, dedicated and domestic software ventures based in Moscow. The positive response rate for the Russian sample is 74 percent. In Beijing, we created a list of 172 ventures. The positive response rate for the Chinese sample is 45 percent. I conducted the ANOVA tests on firm age and Zhongguancun location (the high tech district in Western Beijing) between the two samples, and found that younger firms were more likely to decline.

The questionnaire was designed in English. Teams of Chinese and Russian management professors translated the instrument into Chinese and Russian. The back translation and checking was performed by different Chinese and Russian management professors who earned doctorates from North American universities. Two research assistants and I conducted interviews in Moscow, and the team of six research assistants carried out interviews in Beijing. Each interview lasted approximately in 20-30 minutes.

Sample and Data of Venture Capitalists

In Moscow, we identified 23 domestic private equity firms. These firms invest in new as well as older firms in the form of management buy-out and buy-in. Therefore, they may be regarded as private equity firms and venture capital firms simultaneously. I conducted structured telephone interviews with CEOs and lead fund managers of 15 venture capital (VC) firms in July-August 2004. Six CEOs declined our request, and two were not reachable. In Beijing, we created a list of 117 domestic private equity firms. Like in Russia, these firms invest both in young and established firms. We interviewed 22 CEOs and lead fund managers in September-October 2004. Thirty-six CEOs refused to cooperate, and 58 were not reachable. In all, we interviewed 37 CEOs and lead fund managers in the two cities.

We asked each fund manager to select the last two positive investment decisions (firm decided to invest) based upon recommendation of third-parties (referees), and the last two negative investment decisions (firm decided not to investment) despite

recommendations of third-parties. Thus, we collected information on a maximum of four investment decisions from each respondent. In this way, investments were selected randomly within two groups. In total, we collected information on 122 investment decisions: 61 positive and 61 negative.

Measures

Independent variable. The predictor variable is China, and the reference group is Russia.

Dependent variables. Data on network structure were collected by the standard method of name generators and name interpreters (Burt, 1992; Marsden, 1990). The questionnaire contained one name generator and three name interpreters. The name generator is: “The next questions are about those with whom you often discuss issues related to software programming and design. Please name those persons with whom you have discussed software programming issues over the last six months”. This question generated maximum 8 names. The network content is the discussion network about software programming and design. Three name interpreters were relational duration (tie age) between ego and alters measured in years (how long do you know the contact), alter education (BA degree in engineering, science and arts/humanities), and whether alter is a full-time employee of the firm (yes and no). Ego is a focal actor who is connected to a set of people who are defined as alters. The question that captured network density and structural holes is as follows: “The next question is to describe the strength of relations between listed people. You do this by circling codes in the matrix below. This is a complex question, but it is essential to measuring of social networks – and answering the question is a simple task when taken one column at a time. Begin with the first person listed. Relations with the first person are listed in the third column. Indicate his or her relationship with the person in each row in one of three ways: Circle E if there is an especially close relation between the row person and the first person. Circle D if the row person and first person are distant in the sense that they are rarely work together, are total strangers as far as you know, or do not enjoy one another’s company. Leave E D blank to indicate that two people are neither distant nor especially close” (Burt 1992).

Network size is the number of contacts named. *Network density* is measured as the percentage of “especially close” relationships within the total number of possible relationships among alters (Marsden, 1990). *Structural holes* is measured as the number

of “distant” relationships among alters (Burt 1992). *Tie age* is the sum of years ego knows all alters divided by the number of alters. *Internal ties* captures the percentage of alters who are full-time employees of the firm. *Education homophily* is measured as the inverse of the Index of Qualitative Variation (IQV) (Agresti & Agresti, 1978). Since I measure the extent to which alters are similar in their education content, I used this measurement. This is consistent with the previous research on network structure of Russian entrepreneurs (Sedaitis, 1998). The IQV indicates the dispersion of the alters over three nominal categories of education, i.e., engineering, science and arts/humanities (Sedaitis, 1998). For example, if education heterophily is .45, education homophily is .55. This variable indicates the extent to which alters are similar in their education content. *Perceived homophily* (Cronbach alpha is 0.82) is the scale comprised of two questions: “My way of thinking about software programming and design is similar to ways of thinking of those with whom I discuss ideas about software development”; “I always come up with similar ideas about software programming with those with whom I discuss ideas about software development”. Distribution values of each question were five-point Likert scale items ranging from strongly agree (5) to strongly disagree (1). I computed the scale by adding up the values in each item and dividing them by two.

Referee-venture capitalist tie was measured by two items: “How close are you with the third-party (referee)”; “On average, how often do you talk to each third-party (referee)” (Cronbach’s alpha is 0.81). These measurements are standard measurements for tie strength (Marsden, 1990). Respondents responded to 4-point Likert scale items. First item was measured as especially close (4), close (3), less than close (2), and distant (1). Second item was measured as daily (4), weekly (3), monthly (2), and less often (1). The mean of two items was used as the scale score.

Referee-entrepreneur tie was measured as the mean of the following three questions: “I know that the third-party had a professional relationship with the entrepreneur prior the recommendation”; “I know that the third-party was engaged in informal social activities, e.g., dinners and other social activities, with the entrepreneur prior the recommendation”; “I know that the third-party and entrepreneur were personal friends prior the recommendation” (Cronbach’s alpha is 0.73). This variable and other independent variables were measured by 5-point Likert scale ranging from strongly disagree (1) to

strongly agree (5). I adapted these items from Shane and Cable (2002), although I had to reformulate them for investors rather than entrepreneurs.

Control variables. *Firm age (Software and VC)* is the number of years a firm had been in existence. *Firm size (Software and VC)* is measured by the number of full-time employees at the time of survey. *Venture capital (Software)* is a binary variable of one if private equity was raised and zero otherwise. *Ownership (Software)* is a binary variable of one if the major shareholder is the respondent and zero otherwise. *IT industry (VC)* is a binary variable of one if the equity receiver firm is in IT and zero otherwise. *State ownership (VC)* is a binary variable of one if state is a shareholder and zero otherwise.

Data and construct validity. Measurements for network size, density, structural holes, tie age, and internal ties are externally valid because the name generator method has been proved as valid and reliable (Burt 1992; Marsden, 1990).

I conducted a confirmatory factor analysis of the measurement model associated with Likert scale items to assess how well the interview questions load onto the constructs. I found that the comparative fit index is 0.79, the incremental fit index is 0.84, and the root mean squared error of approximation is 0.071. The findings suggest that the measurement is valid and reliable.

In order to check common methods bias, we carried out data cross-validation phone calls. During the interviews with software entrepreneurs, we asked for phone numbers of one of the contacts listed. In all, 41 Chinese respondents and 28 Russian respondents provided phone numbers. By selecting every second on the list of 41 Chinese contacts, and every second and third on the list of 28 Russian contacts, we contacted 20 Chinese and 20 Russian alters and asked several questions. We asked whether the contact's BA education was in engineering, science, and arts/humanities. The answers of 19 (95%) Chinese alters and the answers of 18 (90%) Russian contacts were consistent with our data collected from the respondents. Therefore, education homophily measurement is valid. We asked each contact to describe her/his relationship with the person next on the list in terms of "especially close", "distant" and "neither especially close nor distant". All 20 (100%) Chinese answers and 17 (85%) Russian answers matched up our findings. This indicates that the measurements for network density and structural holes are valid. To my knowledge, this study is the only study that validated

perceptions of the ego of relationships among alters by asking one alter to characterize her relationship with another alter. To cross-validate the perceptual homophily items, we asked two questions: “My way of thinking about software programming and design is similar to the way of thinking of (Ego)”; “We (Ego and I) always come up with similar ideas about software programming”. The answers of 17 (85%) Chinese contacts and the answers of 15 (75%) Russian alters were consistent with our findings. The homophily items are valid.

Measurements for referee-venture capitalist tie are externally valid, because these items have been proved as valid and reliable in previous research (Marsden, 1990). Measurements for referee-entrepreneur tie are externally valid, because previous research has shown that these items are valid and reliable (Shane and Cable 2002).

Reliability coefficients (Cronbach’s alpha) for these measurements were above 0.73. I conducted a confirmatory factor analysis of the measurement model associated with Likert-scale items to assess how well our interview questions load onto the constructs. I found that the comparative fit index is 0.81, the incremental fit index is 0.89, and the root mean-squared error of approximation is 0.079. In addition, I carried out a factor analysis that focused only on independent variables: Fit indexes were above 0.81 and the factor loading was acceptable (the average on-factor loading was 0.61). The findings suggest that our data are valid internally. Shane & Cable (2002) did the same analysis for same-question items and found even better results.

In order to check for social desirability bias, we conducted data cross-validation telephone calls. During the interviews with venture capitalists, we asked for phone numbers of one referee (third party) and one entrepreneur. In all, we obtained phone numbers of twelve Chinese referees, eight Russian referees, nine Chinese entrepreneurs, and five Russian entrepreneurs. We made phone calls to both referees and entrepreneurs.

In the case of referees, we asked several questions to verify perceptions of the venture capitalist. We asked the question: “How close are you with the venture capitalist”. The answers of twelve Chinese referees and six Russian referees were consistent with our findings. We proposed the statement “I was engaged in informal social activities, e.g., dinners and other social activities, with the entrepreneur prior the recommendation”. The answers of nine Chinese referees and eight Russian referees

matched our data. We asked the question: “What extent do you trust venture capitalists?”. We found that scales of eleven Chinese referees and seven Russian referees were congruent with the data that we collected from venture capitalists. Finally, we asked the question: “How strong was your recommendation?”. The answers of ten Chinese third-parties, and five Russian third-parties were consistent with our data.

In the case of entrepreneurs, we validated several measurements. We asked the question: “I was engaged in informal social activities, e.g., dinners and other social activities, with the third-party prior the recommendation”. The answers of eight Chinese entrepreneurs, and six Russian entrepreneurs matched up our findings. We proposed the following statement: “At least one member of the venture team had previous startup experience”. The answers of all Chinese and Russian entrepreneurs were consistent with our data. We come up with the following statement: “The technology employed or products offered by the venture would provide a significant competitive advantage”. Six Chinese entrepreneurs, and three Russian entrepreneurs confirmed our findings. We also verified the answers to the following item: “The venture is a potentially high-growth firm”. Only four Chinese and three Russian entrepreneurs’ answers were consistent with venture capitalists’ assessment of their ventures. As a whole, these findings suggest that our data on venture capitalists’ perceptions are valid, reliable, and less biased. To my knowledge, this study is the only study that cross-validated perceptions of triad members, i.e., venture capitalist, referee, and entrepreneur. Two research assistants who were not members of the interview teams conducted validation interviews in Beijing and Moscow.

RESULTS

Descriptive statistics

Table 1 reports the means, standard deviations, and Pearson’s correlations for all variables of the total sample of the Chinese and Russian software entrepreneurs (N=159). Table 2 presents the descriptive statistics and Pearson’s correlations for the total sample of the Chinese and Russian venture capitalists (Number of investment decisions is 124).

Table 1. Descriptive Statistics and Pearson's Correlations (Software Entrepreneurs)

Variables	N	M	S.D	1	2	3	4	5	6
1 Network size	158	4.29	1.34						
2 Tie age	157	4.92	3.53	.05					
3 Network density	157	.42	.38	-.18*	.14				
4 Structural holes	157	2.63	3.21	.56**	.14	-.42**			
5 Internal ties	158	.73	.29	-.18*	-.02	.40**	-.48**		
6 Education homophily	158	.67	.28	-.14	.07	.13	-.17*	.13	
7 Perceived homophily	158	3.18	.89	-.09	.09	.31**	-.25**	.32**	.14
8 Firm age (Software)	159	3.33	1.44	.12	.25**	-.13	.29**	-.10	.15
9 Firm size (Software)	159	47.67	52.37	.15*	-.06	-.15*	.07	.04	.17*
10 Ownership	159	.59	.49	-.08	.22**	.15	.06	-.17*	-.15
11 Venture capital	159	.13	.33	-.02	-.05	-.14	-.03	.01	-.06
12 China	159	.48	.50	-.26**	-.26**	.20*	-.40**	.26**	.24**

Table 1. Descriptive Statistics and Pearson's Correlations (Software Entrepreneurs) (Continued)

Variables	7	8	9	10	11
8 Firm age (Software)	-.15				
9 Firm size (Software)	-.17*	.31**			
10 Ownership	.15	-.09	-.28**		
11 Venture capital	.06	.00	.17*	-.09	
12 China	-.24**	-.29**	.14	-.18*	.18*

*p < 0.05

**p < 0.01

Table 2. Descriptive Statistics and Pearson's Correlations (Venture Capitalists)

	Variables	N	M	SD	1	2	3	4
1	Referee-venture capitalist tie	121	2.42	.66				
2	Referee-entrepreneur tie	121	2.89	.73	.29**			
3	Interpersonal trust	121	2.99	.95	.38**	.1		
4	Firm age (VC)	124	4	2.47	.26**	.15	-.09	
5	Firm size (VC)	124	20	13.5	.05	.02	.13	.52**
6	IT industry	124	.48	.5	.21*	.03	.21*	-.16
7	State ownership	124	.14	.35	-.04	.03	.2*	.36**
8	China	124	.51	50	.33**	-.07	.28**	-.38**

Table 2. Descriptive Statistics and Pearson's Correlations (Venture Capitalists)**(Con't)**

	Variables	5	6	7
6	IT Industry	-.08		
7	State ownership	-.09	.05	
8	China	-.07	.25**	.03

*p < 0.05 **p < 0.01

Table 3 reports the means, standard deviations, and the ANOVA results for the Chinese and Russian software entrepreneurs. It shows that two samples significantly differ in all variables except perceived homophily. The Chinese networks are smaller, denser, contain fewer structural holes, and composed of more internal ties and homogeneous alters. The Chinese ventures are younger, larger, and more likely to raise private equity. Few Chinese entrepreneurs own shares in their firms.

Table 3. Descriptive Statistics and ANOVA (Software Entrepreneurs)

	China			Russia			ANOVA model
	N	Means	S.D.	N	Means	S.D.	F
1 Network size	76	3.92	1.45	82	4.63	1.13	11.82***
2 Tie age	75	3.95	2.57	82	5.80	4.04	11.42***
3 Network density	75	.50	.45	82	.34	.29	6.76*
4 Structural holes	75	1.26	2.61	82	3.87	3.21	30.77***
5 Internal ties	76	.81	.30	82	.66	.26	11.34***
6 Education homophily	76	.74	.33	82	.60	.21	9.70**
8 Perceived homophily	76	3.28	1.02	82	3.09	.75	1.80
9 Firm age (Software)	77	2.89	1.32	82	3.74	1.43	15.29***
10 Firm size (Software)	77	55.48	54.67	82	40.34	49.33	3.36¶
11 Ownership	77	.50	.50	82	.68	.46	5.24*
12 Venture capital	77	.19	.39	82	.07	.26	5.22*

¶p < 0.1 *p < 0.05 **p < 0.01 ***p < 0.001

Table 4. Descriptive Statistics and ANOVA (Venture Capitalists)

	China			Russia			ANOVA model
	N	Means	S.D.	N	Means	S.D.	F
1 Referee-venture capitalist tie	61	2.63	.63	60	2.2	.62	14.57***
2 Referee-entrepreneur tie	61	2.84	.94	60	2.95	.44	.59
3 Interpersonal trust	61	3.26	1.11	60	2.71	.66	10.71***
4 Firm age (VC)	64	3.12	1.06	60	5	3.12	20.52***
5 Firm size (VC)	64	19	9	60	20	16	.6
6 IT industry	64	.6	.49	60	.35	.48	8.8**
7 State ownership	64	.15	.36	60	.13	.34	.12

*p < 0.05 **p < 0.01 ***p < 0.001

Table 4 reports the descriptive statistics and the ANOVA results for the Chinese as well as Russian venture capitalists. The two samples significantly differ in several variables. Referee-venture capitalist tie is stronger in China. The Chinese fund managers have greater trust in referees than the Russians. The private equity firms based in Moscow are older than the firms based in Beijing. Most Chinese entrepreneurial firms were in the IT industry.

Social capital of entrepreneurs and venture capitalists in China and Russia

In Table 5, I present the results of the linear regression analysis predicting social capital of the Chinese entrepreneurs. Model 1 reveals that networks of the Chinese entrepreneurs are smaller. The model is significant (F=4.09). *Hypothesis 1 (a)* that predicted smaller network size for the Chinese has been confirmed. Model 2 suggests that personal networks of the Chinese executives are denser. The model is significant (F=4.21). *Hypothesis 1(b)* that proposed more cohesive and integrated networks for the Chinese is supported. Model 3 reveals that *guanxi* networks contain fewer structural holes. The model is significant (F=7.82). *Hypothesis 1 (c)* is confirmed. Model 4 illustrates that *guanxi* networks are more homogeneous in terms of members' education than Russian *svyazi* networks. The model is significant (F=4.89). *Hypothesis 1(d)* on homophily is supported. Model 5 reveals that the Chinese establish and maintain relationships with their colleagues more often than the Russians. The model is significant (F=3). *Hypothesis 1 (e)* on internal ties is confirmed.

Table 5. Linear Regression Analysis Predicting Networks of the Chinese Entrepreneurs (N=159)

	Network size	Network density	Structural holes	Education homophily	Internal ties	Tie age	Perceived homophily
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Firm age (Software)	-.04	.01	.16	.22*	-.05	.25	.05
Firm size (Software)	.19*	-.13	.09	.06	-.01	-.06	.06
Ownership	-.09	.15	.03	-.07	-.14	.2*	.12
Venture	-.01	-.15	.01	-.13	-.05	.01	-.16*

capital China	-.32***	.28***	-.36***	.31***	.22**	-.13	.16
Model F	4.09**	4.21***	7.82***	4.89***	3*	5.45**	1.8
Adjusted R square	.09	.09	.18	.11	.06	.12	.02

*p < 0.05 **p < 0.01 ***p < 0.001

Model 6 shows that dyadic tie age in China is not greater than in Russia. The model is significant (F=5.45). *Hypothesis 2 (a)* is not supported. Model 7 reveals that *guanxi* networks are not more homogeneous in terms of perception than Russian *svyazi* networks. The model is not significant. *Hypothesis 2 (b)* on perceived homophily is not confirmatory.

Table 6. Linear Regression Analysis Predicting Networks of the Chinese Venture Capitalists (N=124)

	Referee- venture capitalist tie	Referee- entrepreneur tie	Interpersonal trust
	Model 1	Model 2	Model 3
Firm age (VC)	-.2	.25	-.37*
Firm size (VC)	.45***	-.11	.38*
IT industry	.14	.07	.12
State ownership China	.06	-.07	.37
	.23*	.01	.12**
Model F	8.17***	.85	6.78***
Adjusted R square	.23	.01	.19

*p < 0.05 **p < 0.01 ***p < 0.001

Model 1 in Table 6 proves that referee-venture capitalist tie is stronger in China. The model is significant (F=8.17). *Hypothesis 2 (c)* holds up. Model 2 demonstrates that referee-entrepreneur tie is not stronger in China. The model is not significant. *Hypothesis 2 (d)* is not supported. Finally, model 3 reveals that interpersonal trust is greater in China than in Russia. The model is significant (F=6.78). *Hypothesis 2 (e)* has been confirmed.

DISCUSSION

The findings suggest that networks of the Chinese entrepreneurs are smaller, denser, and more homogeneous compared to networks of the Russian entrepreneurs. The gradual institutionalization in China has conflicting effects on the network dynamics of the Chinese entrepreneurs. On the one hand, it promotes stability and reduces social uncertainties, which are reflected in smaller, more integrated, and homogeneous *guanxi* networks. On the other hand, it prevents the Chinese entrepreneurs to restructure their networks, and hinders network expansion, membership renewal and resource enrichment. The speedy deinstitutionalization occurred in Russia, on the contrary, disrupted the existing networks and forced the Russian entrepreneurs to establish new networks and clusters that are larger in size, less cohesive and dense, and more heterogeneous than networks of the Chinese executives.

Further, the Chinese entrepreneurs prefer smaller, coherent, and controllable personal networks due to the main cultural features of the Chinese such as more collectivistic and uncertainty avoiding than the Russians. The Chinese managers actively promote mutual dependence and interconnectedness in order to eliminate any gaps or holes in their networks. Transitivity is greater in the Chinese networks, and therefore, *guanxi* cliques have clearly defined boundaries for members and non-members. In this sense, members of a particular *guanxi* cluster have strong identities and high expectations as a part of a clan. The networks of the Chinese executives are more homogeneous in terms of knowledge, ideas, and worldviews. This feature promotes intellectual and social harmony among the network members. The high density and homogeneity makes *guanxi* networks less inclusive, and therefore, those who are perceived as outsiders and those who have different views and opinions are likely to be excluded from important *guanxi* deals. Being populated by more internal ties, networks of the Chinese entrepreneurs operate and function rather like a closed clan. This network closure offers certain advantages as well as disadvantages for its members (Coleman, 1988). For example, Batjargal (2004) found that dense and homogeneous networks of entrepreneurs have positive effects on product development and revenue growth of new firms at early stages because of trust, cooperation and solidarity benefits. However, tight and uniformed

networks may turn into liabilities by blocking information and resource flows at later stages of venture development.

In contrast, the Russian networks are composed of more weak ties, and members who differ in their mindsets and knowledge patterns. In this sense, the Russian *svyazi* networks are more open and absorptive than the Chinese *guanxi* networks. The Russians seem to benefit from the networks rich in structural holes that expose them to diverse information, knowledge, and resources (Burt, 1992). The downsides of such networks are greater membership turnover, unstable relationships, and high monitoring cost.

Interpersonal ties are stronger and interpersonal trust is greater in China. The gradual institutional changes enabled the Chinese entrepreneurs to keep their relationships with actors in the old organizations, e.g., the communist party, intact for years, and this is reflected in greater tie strength and trust. The cadres from the existing organizations were transferred to the new institutions and organizations on a very large scale, and therefore, dyadic ties were not disrupted. The institutional continuity generated a sense of certainty and confidence among the Chinese entrepreneurs that facilitated cooperative and trustworthy behavior of actors. In the stable environment, contacts provide useful information, connections and tangible resources on a regular basis, and this reduces entrepreneurs' motivations to restructure their networks.

The core elements in the Chinese thinking – the doctrine of the middle that avoids extremes, and the balance between the *yin* and the *yang* - encourage the Chinese not to take dramatic actions regarding established relationships. This results in greater interpersonal affection and mutual trust. The Confucian emphasis on social harmony facilitates trust building among members of a *guanxi* cluster over time. The group mindsets and a stronger sense of belonging of the Chinese lead to frequent and substantive communications. This leads to greater trust and lasting relationships. A Chinese person defines her/his identity through relationships with her/his family, friends, and acquaintances that are trusted and respected. Further, there are numerous *guanxi* methods and techniques that the entrepreneurs use effectively to nurture strong and trusted *guanxi* ties. Thus, frequent interactions, multi-content relationships, informal norms, and mutual expectations make *guanxi* ties stronger and trustworthy than Russian

svyazi relationships. Particularistic ties in Russia are weaker, informal norms are less effective, and there is less trust embedded in Russian dyads.

CONCLUSION

The gradual institutionalization in China, and the rapid deinstitutionalization in Russia influences social capital of the Chinese and Russian entrepreneurs and venture capitalists through changes in the formal rules, regulations, and organizations. The contrasting cultures of the Chinese and the Russians affect structural and relational patterns of social networks, because the mindsets and worldviews of the two peoples differ.

The evolutionary transformation in China, i.e., the parallel process of the emergence of the new rules, and survival of the old organizations, and the core cultural values of the Chinese provide greater stability, continuity, and harmony that are reflected in smaller, more cohesive, and homogeneous networks, and stronger and trusted dyadic relationships. The revolutionary nature of the Russian reforms, i.e., the simultaneous process of the violent elimination of the old institutions and the inhibited emergence of the new rules and regulations, and the core cultural characteristics of the Russians generated the institutional and cultural environments that are conducive to larger, less integrated, and heterogeneous networks, and weaker and less trusted ties.

I claim a number of contributions of this study to the management research literature. First, the finding that local institutions and cultures influence social capital in the interactive ways is a relatively new finding both in institutional theory and cultural theory. Second, I introduced the new concept “comparative social capital” in this article, and make a contribution to social network theory by presenting the comparative analysis of Chinese *guanxi* networks and Russian *svyazi* networks. Third, this study is one of first systematic and comparative studies that examined networks of entrepreneurs and venture capitalists as dependent variables, and therefore, the paper is a contribution to the growing literature on entrepreneurial networks. Finally, the main independent variable of the analysis is China, and therefore, this paper enriches the management literature on the Asia Pacific region.

This article has several limitations that should be discussed. I did not test directly effects of institutions and cultures on social capital, but I used the country dummy - China as the proxy for institutional and cultural differences. I acknowledge that this is a

rough measurement. This study examines social capital of software entrepreneurs and venture capitalists. Therefore, there is an issue of generalizability of the findings to the whole population of entrepreneurs in China and Russia. Samples are relatively small, and sampling of venture capitalists is neither complete nor random. There is an issue of the potential nonindependence of observations. I used social network measurements that were developed in the Western contexts for measuring indigenous phenomena deeply rooted in the Chinese and Russian cultures – *guanxi* and *svyazi*. In this way, I may have overlooked unique features of Chinese *guanxi* and Russian *svyazi*. The software and venture capital industries in China and Russia are young. These conditions may have affected the results, although I assume that all the respondents have been exposed to the same conditions to the same extent. The surveys of entrepreneurs and venture capitalists were carried out at certain time points and only once. Therefore, the results may be subject to temporal factors or embeddedness. I acknowledge that all these constitute the shortcomings of this study.

I suggest several implications for further research. The concept “comparative social capital” should be defined precisely and be operationalized so that valid measurements can be developed and used. Comparative analysis of *guanxi* and *svyazi* networks may be conducted at inter-organizational level. For example, one could examine how inter-firm alliances differ in the two countries, and what are the implications of these differences for firm performance. An interesting and important topic for further research is comparative analysis of social capital in different country contexts. For example, how Chinese *guanxi* differs from Japanese *kankei* or Korean *inmak*, and what implications it has for entrepreneurial performance.

The practical implication is that managers, entrepreneurs, and investors are advised to craft networking strategies and tactics that fit in the institutional and cultural environments of a given country.

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