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Venture capitalists' decision policies across three countries: an institutional theory perspective

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Abstract
This paper examines the influence of economic institutions upon venture capitalists' (VCs) decision policies. We conducted policy-capturing experiments on 119 VCs across three countries, representing distinct economic institutions (US, mature market economy; South Korea, emerging economy; and China, transitional economy). Results show that VCs in rules-based market economies (US) rely upon market information to a greater extent than VCs in emerging economies (Korea), and Chinese VCs (transitional economy) weight human capital factors more heavily than either US or Korean VCs. Findings suggest that, although professional institutions may dictate which information is included in VC decision policies, the extent to which that information is emphasized is determined partly by the economic institution in which the decision-maker operates.
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Introduction

The way that managers understand their environments and solve problems depends, in part, on the economic institutions in which they are embedded. Concerned with scarcity and hence competition for resources (North, 2005: 1), economic institutions represent the 'rules of the game' that provide incentives and reduce uncertainties in assessing the costs of transacting, such as the costs of protecting rights and policing and enforcing agreements (North, 1990). As economies become increasingly complex, the need for economic institutions to evolve from relationship-based systems that prefer personal exchanges to rules-based systems that favor impersonal arm's length transactions has become more acute. For example, as property rights are created and enforced, there is a shift in the costs of transacting that favors rules-based systems over relationship-based systems, owing to a comparative advantage of scale that accompanies the impersonal exchange of rules-based systems (World Bank, 2002). As a result, many transitional economies have abandoned the central planning of communism through shock therapies (e.g., Russia and Poland). Other states, typically referred to as emerging economies, have sought to develop their economies through a more gradual movement

toward increasingly market-based policies (e.g., South Korea and Thailand).

Because these various economic institutions structure the incentives of human exchange differently, one might expect their members to use different information when formulating their decisions. However, research on venture capital has found that venture capitalists (VCs) around the world use similar decision factors (Knight, 1994; Rah *et al*., 1994). At first, this appears to imply that economic institutions play a purely passive role in constraining the choices of economic actors. Further consideration, however, suggests that the use of similar decision factors does not necessarily imply that decision-makers in general, and VCs in particular, rely upon information in the same way. For example, American and Korean VCs may agree that information about the market and human capital should be considered, but Americans may emphasize market information whereas Koreans pay relatively more attention to information about the entrepreneur, or vice versa.

The purpose of this paper is to determine whether such differences in decision policies exist (i.e., differences in the use of, and/or emphasis on, certain decision factors in making an assessment or judgment) and, if so, whether they can be explained by differences in the political-economic institutions of different countries. We expect that investment decisions will be institutionally dependent, so that VCs from mature market economies will give more weight to market-oriented information whereas VCs from emerging or transitional economies will be more likely to favor human capital information that suggests the entrepreneur is trustworthy and capable. We reason that the weak enforcement of property rights, typifying many relationship-based economies, enhances the importance of transaction costs in VC evaluations of venture investment opportunities. As a result, aspects of human capital can be a first proxy of an entrepreneur's access to networks and his or her social influence, given that experience and reputation are indicative of the entrepreneur's capabilities and trustworthiness (McKnight *et al*., 1998; Gill *et al*., 2005) and firms seek to partner with such well-regarded individuals and organizations (Powell, 1990; Uzzi, 1997; Das and Teng, 1998). In contrast, in a society characterized by strong property rights enforcement, the importance of transaction costs may pale in comparison with concerns about transformation costs. Consequently, VCs in rules-based systems may be expected to emphasize market information relative to human capital information, viewing the latter as necessary but insufficient to the creation and realization of value.

To test our hypotheses, we conducted policy-capturing experiments on 119 VCs across three countries. Because Bruton *et al*. (1999) suggest that VC firms reflect local institutional forces, we sampled VCs from countries in three distinct economic institutions (US, mature market economy; South Korea, emerging economy; and China, transition economy). Specifically, we assume that VCs in the US operate within an economy that possesses rules-based institutions, as opposed to VCs in Korea and China, who operate within economies that are characterized by relatively more relationship-based institutions. In doing so, we make two important contributions.

First, venture capital represents an important source of funds for managers to grow their firms, and is a key driver of economic growth (Reynolds *et al*., 2004); understanding VCs' decision policies is a step towards explaining why some firms receive venture capital and why others do not and by extension the nature of an economy's growth. The VC literature implies that VCs from different countries use the same criteria to assess the value of potential portfolio companies (Knight, 1994; Rah *et al*., 1994). Although we acknowledge that VCs are relatively homogeneous in the criteria they use, they are likely to be heterogeneous in the way that they use these criteria as part of their decision policy. Based on our model derived from institutional theory, we expect that institutional influences of a country explain, in part, heterogeneity in VCs' decision policies.

Second, institutional theory offers an appealing explanation for differences in individuals' behaviors across countries, but remains a challenging theory to test empirically (Scott, 2001: 214). Although this study faces some of these challenges, many are mitigated by the use of an experiment that holds constant potentially confounding attributes of the environment, and captures the way that individuals make decisions. Capturing the way that people make decisions is important in a test of institutional theory, because North (1990: 107) suggests that '[w]e cannot see, feel, touch, or even measure institutions; they are constructs of the human mind.' Experiments, and particularly policy capturing, represent a promising step towards testing models derived from institutional theory.

This article proceeds as follows. First, we provide a brief overview of the VC industry in each of

the countries under study. Next, we examine how rules-based institutions in a mature economy may influence decisions differently from relationship-based institutions in an emerging country and in a transitional country. Then, we describe our research method and detail the results. Finally, we discuss the results and offer some concluding comments.

Venture capital by country

United States venture capital industry

The US venture capital industry is the largest and oldest. Emerging after World War II, the first modern-day venture capital company was American Research and Development Corporation (Bygrave and Timmons, 1992). The industry remained relatively small until the 1980s: in 1982 the industry had committed over $1 billion to portfolio companies (Bygrave and Timmons, 1992). The industry experienced rapid growth in the 1990s, culminating in the dot-com frenzy of 1998–2000, where VC investments 'topped out' at over $100 billion invested in over 5000 different portfolio companies in 2000 (Neck *et al*., 2003). Although the industry is currently a fraction of its peak ($20 billion in 2005), it is still an important driver of the entrepreneurial sector in the US (Neck *et al*., 2003).

South Korean venture capital industry

The South Korean venture capital industry can be characterized by two types of venture capital firm: new-tech business financing companies, and start-up financing companies (Rah *et al*., 1994). In 1984 there were only four venture capital firms in total (Rah *et al*., 1994), but by the end of 2000 there were four new-tech business financing companies and 148 start-up financing companies (KVCA, 2003). Generally similar in their basic functions, start-up financing companies focus on equity investment, whereas new-tech business financing companies focus primarily on loans. The total investment by VCs and their managing funds has grown by almost 1000% since 1990, to US$5.8 billion at the end of 2000 (KVCA, 2003). Combined with the funds pooled by financial institutions and conglomerates including VCs, the total capital available for venture investment exceeds US$8.5 billion (KVCA, 2003). Activity dropped in 2001 to US$4 billion (Reynolds *et al*., 2002), but hit US$5.3 billion in 2005 (KVCA, 2006). Ninety percent of all investments are equity-based (KVCA, 2003), and 80% of the portfolio companies are less than 3 years old (KVCA, 2003).

Chinese venture capital industry

Venture capital is a relatively new phenomenon in China (Folta, 1999). China's rapidly growing economy has led to an increasing need for, and use of, private equity. Owing to government regulations and policies, all but a few of the VCs are based offshore, primarily in Hong Kong, with support offices in the major Chinese cities (e.g., Shanghai, Beijing, Shenzhen; Folta, 1999). In 1992, new regulations created China Direct Investment Funds, which allow non-Chinese VCs to invest in Chinese portfolio companies (Bruton and Ahlstrom, 2003). As a result, foreign venture capital firms and corporate venture capital subsidiaries of large non-Chinese corporations are investing in China (Bruton and Ahlstrom, 2003). Most of the activity has been to investments in expansion and later stage opportunities within state-owned enterprises (Folta, 1999). Although the Chinese domestic-only venture capital industry is small, at $150 million (Reynolds *et al*., 2002), it reached US$1.5 billion in 2005 (Ernst & Young, Venture One, 2005). Over one-third of all private equity in Asia is invested in China (Bruton and Ahlstrom, 2003).

Relationship-based *vs* rules-based

Institutional theory encompasses many different theories of action (Powell and DiMaggio, 1991), ranging from sociological conceptions of symbolic action to economic conceptions based upon rational choice theory (Scott, 2003). Although many of these approaches have merit, examination of the VC venture-screening process seems to favor the economic perspective, which emphasizes intentionality and explicit decisions (Powell and DiMaggio, 1991). According to this view, institutions are 'humanly devised constraints that structure human interaction' (North, 1990: 3). These constraints are a combination of formal rules, informal constraints, and their enforcement characteristics. Formal institutional constraints include regulatory structures, agencies, laws, courts, professions, interest groups, and public opinion (Oliver, 1991), whereas informal institutional constraints are typically considered to be embedded in language, physical artifacts, and beliefs (North, 2005). Together these formal and informal constraints, which have evolved over time, provide the structure that people impose upon their lives (North, 2005). Thus, in their efforts to reduce uncertainty, people construct elaborate beliefs about the 'reality' of the political-economic system – 'beliefs that are both a positive model of

the way the system works and a normative model of how it should work' (North, 2005: 2).

The question then becomes: 'What institutions are at work in shaping how VCs process information and make investment decisions?' Given that VCs around the world share an industry that can be traced in relatively few steps to a common source in the US, the profession itself can provide an institutional source of convergence that encourages decision-makers to engage in actions that lead to isomorphism (cf. DiMaggio and Powell, 1983). In fact, research into VC investment decision factors supports this view. For example, Knight (1994), as well as Rah *et al*. (1994), found that VCs around the world use similar decision factors to predict which new venture investment opportunities will succeed. Such findings suggest that the VC profession exerts considerable pressure upon VCs to employ similar models of venture success, regardless of potentially contradicting institutional pressures presented by differences in country-specific institutions, such as culture or economy. Thus, as new VCs around the world attempt to reduce the uncertainty of a new task, employ best practices, and avoid costly errors in judgment, they choose to copy a 'proven' recipe by relying upon the types of information used by Americans to screen new venture investment opportunities.

Relying upon the same information, however, does not necessarily imply that this information means the same thing, or that it is relied upon to the same extent by VCs across countries. Institutions are typically thought to emerge from, and evolve through, transactions (North, 1990). Because each country has its own unique configuration of sociocultural, political, and economic institutions (Lasserre and Probert, 1994), the costs of transacting vary by country as a function of trust (Fukuyama, 1995). '[R]isk is at the heart of how people do and should think about trust but that risk varies distinctly as the form of the relationship varies' (Sheppard and Sherman, 1998: 422). Thus the costs of transacting reflect an assessment of the risk associated with trusting others within a society.

In deciding to invest, VCs must consider two relationships: their relationship with the entrepreneur; and that entrepreneur's various relationships with stakeholders. The VC relies upon the entrepreneur to generate a significant return, yet it is difficult for the VC to directly assess or monitor the entrepreneur's behavior. Owing to the entrepreneur's ability to withhold – consciously or unintentionally – information that is relevant to the VC investment decision (Barry, 1994; Gompers, 1995; Sapienza and Korsgaard, 1996), the VC is exposed to risk in the forms of indiscretion, unreliability, cheating, abuse, neglect, and self-esteem, but is authorized to remedy violations of trust owing to the clear hierarchy that emerges as the VC becomes a shareholder, a member of the board of directors (Baker and Gompers, 2003), and holder of supermajority voting rights. Therefore the exposure to risk that comes from this first relationship suggests that human capital issues are highly relevant to all VCs, and that VCs will look for attributes that suggest that the entrepreneur is deserving of the VC's trust.

In contrast, the importance of the second type of relationship that the VC must consider – that is, the entrepreneur's relationships with its stakeholders – would appear to be significantly dependent upon the relative strength of institutional protections against opportunistic (untrustworthy) behavior (Williamson, 1985). Peng (2003) delineates between transactions that are relationship-based and those that are rules-based. Relationship-based transactions are personalized exchanges between two parties who know of and trust each other (North, 1990). Although relationship-based transactions reduce exposure to opportunism (Williamson, 1985), they also constrain the number of transactions that a company can cost-effectively maintain. This can become inefficient when there is potential for new relationships that could better maximize revenue or minimize costs. In fact, Peng (2003) argues that, as third-party enforcement increases and transactions become less susceptible to opportunistic behavior, economies hit an inflection point and move towards market-based economies that favor rules-based transactions, defined as 'impersonal exchanges with third-party enforcement' (Peng, 2003: 280).

Any attempt to evaluate information in an effort to predict the likelihood of a venture's success would appear to depend significantly on whether rules-based or relationship-based transactions are the norm within the economy. For example, the US is characterized by a mature market economy that is built upon formal legal and regulatory regimes. Accordingly, it operates primarily through a rules-based logic of arm's length transactions. The primary objective of US VCs is to provide the highest return possible to their limited partners so that the VCs can raise subsequent funds (Wasserman and Robinson, 2000). Even though all decision factors that VCs consider will impact on

return, studies find that VCs place more weight on market factors in the investment-screening stage (Hall and Hofer, 1993; Knight, 1994; Zacharakis and Meyer, 1998). As markets become more efficient, profit potential diminishes at a faster rate owing to the increased threat of imitators (Schumpeter, 1934). Thus one must consider information that communicates how big and robust that profit potential is. Accordingly, market information, such as market size, market growth, proprietary technology, the number of competitors, and competitor strength (how they might react to new entrants), becomes relatively more important than concerns about opportunistic behavior. Thus, even if investors in rules-based economies don't necessarily ascribe market information greater absolute value in predicting success, US VC decision-makers can be expected to rely upon market factors more than their counterparts in countries that are less rules-based. Accordingly, we hypothesize:

> **Hypothesis 1**: When making investment decisions, VCs in strongly rules-based economies (US) will rely upon one or more market factors (market size, market growth, proprietary technology, number of competitors, and competitor strength) to a greater extent than VCs in less rules-based economies: (a) Korea and (b) China.

On the other end of the transactional spectrum are countries in emerging or transitional economies. Emerging and transitional economies[1] (e.g., those transitioning from centrally planned to market economies) tend to encourage a focus on the person – that is, entrepreneur (Peng, 2003). Trust in the entrepreneur is necessary to compensate for the lack of a strong rule of law (Chang and Hong, 2000; Peng and Luo, 2000). For example, China's weak rule of law increases the importance of partnering with those whom one knows to avoid issues of adverse selection and moral hazard (Bruton and Ahlstrom, 2003). Similarly, South Korea has strong *chaebol* groups, defined as 'gathering[s] of formally independent firms under the single common administrative and financial control of one family' (Chang and Hong, 2000: 429). These relationships play an important role in reducing opportunism, lowering transaction costs, and simply allowing a business to operate effectively. In other words, a strong network of relationships is necessary to reduce the entrepreneur's direct and the VC's indirect exposure to risks that are associated with the threat of untrustworthy behavior – which increases as institutions that protect against it weaken.

Although a strong form of relationship-based theory would suggest that VCs transact only with people they know directly, such a bounded potential population would greatly reduce deal flow and access to quality investments. Thus VCs in non-rules-based countries need to assess the trustworthiness of entrepreneurs, which may be gleaned from the entrepreneur's human capital, such as information about leadership, start-up experience, and market familiarity. As trust becomes an increasingly important element for entrepreneurial effectiveness, human capital information becomes increasingly communicative of the amount of risk to which VCs must expose themselves to accrue the desired return. Trust arises from beliefs about the other party's competence and predictability (McKnight *et al.*, 1998) – beliefs that are influenced by assessments of human capital. In other words, entrepreneurs with a stronger, documented track record are more likely to have been effective in managing their networks (working with those currently in their networks and expanding their networks to grow their businesses). Thus the stronger a person's human capital in management skills, the more likely it is that they possess strong social capital. This information is incorporated into the costs that are used in the VC's cost–benefit calculus when choosing whether and in whom to invest. However, human capital information does more than communicate to the VC that the management of the prospective venture investment opportunity has the necessary contacts to function in a relationship-based economy; it also conveys that management can be trusted. For example, a VC reported on one investment in a Chinese portfolio company in which the entrepreneur of the portfolio company took the money and ran, disappearing without a trace (Bruton and Ahlstrom, 2003). Batjargal and Liu (2004) studied 158 Chinese VC decisions and found that VCs focused strongly on human capital factors to mitigate transaction risks of opportunistic behavior as well as transformative risks of proven ability to execute on the opportunity. Chinese VCs also have little faith in the reliability of reported information about the company, because accounting and auditing practices deviate greatly from international norms (production *vs* asset valuation) (Bruton and Ahlstrom, 2003).

The Chinese government is liberalizing the economy quickly, but with trepidation (Bruton

and Ahlstrom, 2003). Although the government encourages venture capital as a means of sustaining growth, it is concerned about losing control over privatized and new entrepreneurial start-ups. Ahlstrom *et al*. (2000) note that Chinese VCs face hostility because government officials fear that private enterprise damages the foundation of Chinese ideals. Private enterprise is seen as a threat to the livelihood of government employees (Steinfeld, 1998). This hostility manifests itself in the form of taxes, regulations, and redistributions of wealth (Ahlstrom *et al*., 2000). Thus episodic influence (government officials are often on VC boards) may interfere with the screening process. Government officials may seek to have investments made into ventures that they favor. However, such influence may be unstable as increasing discipline in the form of anticorruption laws increases, moving China towards the inflection point of a rules-based economy (Peng, 2003). Before this inflection point is reached, we would expect Chinese VCs to make their decisions based more on human capital information.

Korean VCs face other institutional pressures that motivate them to focus on the entrepreneur more than on market factors. Specifically, *chaebols* address relationships among the companies. VCs may be inclined to invest in other related firms (cross-subsidization) owing to the institutional pressure of the *chaebol* (Chang and Hong, 2000). Again, this encourages Korean VCs to focus more on human capital factors.

In summary, decision-makers in less mature economies view human capital information as relevant not only to transformation costs (i.e., more experience equals a better-run company) but also to transaction costs (i.e., more experience means a better network and less exposure to opportunism). Thus we expect that the positive relationship between experience and success will be more important to VCs operating in emerging and transition economies than to VCs operating in rules-based economies, as reflected by the degree to which this information is relied upon in assessing the likelihood of success. Accordingly, we hypothesize:

Hypothesis 2: When making investment decisions, VCs in emerging economies ([a] Korea) and VCs in transition economies ([b] China) will rely upon one or more human capital factors (leadership, market familiarity, and start-up experience) to a greater extent than VCs in rules-based economies (US).

Transition *vs* emerging economies

In the last 20 years, several nations have completely abandoned or have begun gradual transitions away from centrally planned economies. As countries start to liberalize, they become more open to outside influences. For instance, Chinese VCs are influenced by their affiliation with offshore partners in Hong Kong (Folta, 1999) and the US. New regulations, such as the China Direct Investment Act, which allow non-Chinese VCs to invest directly into Chinese companies (Bruton and Ahlstrom, 2003), expose local VCs to the practice of outside VCs (e.g., US VCs).

Peng and Luo (2000) suggest that rapid economic growth may accelerate the institutional transition from relationship-based to rules-based by intensifying interaction with outside players who are indoctrinated in systems that are characterized by rules-based transactions. This, coupled with the fact that China started its liberalization in the last 20 years under a zeitgeist of globalization and capitalistic superiority, suggests that the Chinese VC industry has enjoyed conditions that have reinforced reliance upon decision-making more common to institutions that favor rules-based transactions. In contrast, South Korea's VC industry emerged in 1961 when Park Chung Hee staged a coup, promising to 'end starvation' (Economist, 1990). Pursuing an export-oriented growth policy in which the government combined protection and correction to keep domestic and international prices roughly in line, Korea blended rules-based and relationship-based institutions into a system that resembled mercantilism more than capitalism (Cumings, 1984). For instance, Korea pursued a reform package that was implemented in the early 1960s and which involved 'monopoly rights for certain firms, usually linked explicitly to export performance' (Cumings, 1984: 27). Concentrating production in *chaebols*, 'Korea, Inc.' emerged (Mason, 1980), and relationship-based transactions grew to characterize the functioning of the Korean economy. Thus we expect that, relative to Chinese VCs, Korean VCs are more likely to focus upon human capital and less likely to rely upon market information when making investment decisions. Accordingly, we hypothesize:

Hypothesis 3: Chinese VCs will rely (a) more heavily on one or more market factors and (b) less heavily on one or more human capital factors than Korean VCs.

Research method

Policy capturing

This study uses policy capturing, a technique that requires respondents to make a series of judgments based on a set of decision factors from which the underlying structure of their decisions can be decomposed by means of hierarchical linear modeling (HLM). This method allows the researcher to examine the respondents' decision policies (Hitt and Barr, 1989), without relying on the respondent's (generally inaccurate) introspection (Fischhoff, 1988). A VC's decision policy refers to the decision factors that are used in their assessments of potential portfolio companies and how these factors are used. Judgments that VCs make regarding 'how good,' 'how satisfactory' or 'how attractive' a particular potential portfolio company might be on a particular factor are its part-worth utilities or 'weights' for the levels of that factor.

Research instrument and experimental design

To identify the pertinent decision factors, we asked VCs outside the sample of the study (primarily VCs based in Chicago and New York) to provide actual investment decision scenarios, complete with business plans. From these plans the lead researcher extracted information factors of interest, providing the entire list, with a description of each factor, to a colleague unfamiliar with the business plans. Both judges then independently coded all appropriate decision factors. Value ranges given to each decision factor allowed it to be compared across profiles (Stewart, 1988). For decision factors of the new venture's management team (general leadership experience, market familiarity, and experience with start-ups), values are defined as averages for the whole management team. Where possible, we used concrete values (e.g., market size), but representative distributions are appropriate for subjective decision factors (Stewart, 1988). For the two subjective information factors (proprietary technology and competitor strength), we used a five-point scale from 1 (lowest) to 5 (highest). Overall inter-judge reliability was 87.5%. Based on Berelson's (1952) report that inter-judge reliability typically ranges from 66 to 95%, we deem our coding reliable.

We control for a number of factors in our directions to the participants, such as stage and fund focus, the VC's existing portfolio and investment location (see the Appendix). The instrument was presented in the VC's native language. For the Chinese and Korean samples, the instrument was translated into the native language and then back-translated into English to ensure accuracy.

Sampling plan, survey method, and sample

To test our hypotheses under the parameters established by institutional theory as it relates to relationship-based and rules-based economies, we needed to identify VCs from countries that represented different points along the continuum between relationship-based and rules-based economies. The US is characteristic of a highly mature economy, and falls towards the end point of rules-based economies. Furthermore, the US has the oldest and most established VC industry in the world, and is a benchmark by which other VC industries can be compared. China and Korea, on the other hand, represent to varying degrees relationship-based economies. They were chosen because of their relatively similar culture (Confucius-based traditions), yet differing governing systems. Moreover, the lead author had access to VCs in each country, allowing for a direct replication (aside from translation) of the decision policy experiment. The following paragraphs give further details of the samples within each country.

The US

The sample for this experiment was 31 practicing VCs from three entrepreneurial 'hotbeds':

- the Colorado Front Range (primarily the Denver/Boulder metro area);
- Silicon Valley in California; and
- Boston.

It is notoriously difficult to secure VC participation in academic research. We relied on a well-placed industry participant to write an introductory letter to secure participation. As we interviewed VCs, we would ask them to refer others. In total, 73 US VCs participated in a larger experimental study that had three separate treatments that differed by the amount of information viewed. The 31 reported in this research viewed eight decision factors, including human capital and market-based factors. VCs in the other treatments viewed fewer factors.

The Colorado and California data were collected in 1995, and the Boston data were collected in 1998 using the same instrument (the decision policies did not differ between regions or between time periods of data collection ($P<0.05$)). The typical VC in the sample was male (90%), 45 years old (s.d.=11.5), had a master's degree (most likely in business), and had been a VC for 9 years (s.d.=6.6).

The typical firm for which the VC worked had $232 million under management (range $2 million to $5 billion; s.d.=$393 million), employed 16 investment professionals (range 1 to 65; s.d.=28.4), focused primarily on early stage ventures, had been in business for 13.3 years (range 1 to 32; s.d.=7.8), and invested $3.5 million per venture (s.d.=3.7). This sample is relatively representative of the US VC community as a whole, although slightly biased towards the more successful, well-known firms. For example, seven of the 10 top VC firms that invest in early stage deals, as rated on ten metrics, are represented in the sample (Aragon, 2001), and the sample firms tend to be larger ($232 million *vs* $155 million for population; Thomson VentureXpert, 2000).

South Korea

The South Korean sample consisted of 49 practicing VCs, all from Seoul, which comprised representatives from 16 different firms (out of a total of 148 Korean VC firms). The sample was contacted by a Korean professor and another Korean expert, who was a member of the KVCA. Data were collected in 2001–2002. The typical VC in the sample was male (94%), 35 years old (s.d.=3.5), had a college degree (most often in engineering, but closely followed by business), and had been a VC for 5 years (s.d.=4.8). The typical firm for which the VC worked had $32 million under management (s.d.=$120 million), employed nine investment professionals (s.d=14.1), focused primarily on early stage ventures, had been in business for 2.7 years (s.d.=2.8), and invested $1.3 million per venture (s.d.=0.8). The sample is fairly representative of the population as a whole. The average fund size is a bit smaller ($32 million *vs* $39 million), which can be attributed primarily to some large outliers that aren't included in this sample. For example, the largest fund in Korea – the Korean Road Infrastructure Fund at over $527 million – is not in the sample.

China

The Chinese sample consisted of 39 practicing VCs: 21 from Beijing and 18 from Shenzhen, which represents two of the three centers for venture capital in China (Batjargal and Liu, 2004). The data were collected prior to seminars conducted by one of the authors in affiliation with Bright China in November 2000 (Beijing) and March 2001 (Shenzhen). These VCs represented 21 firms, which is 11% of the total of 180 active VC firms in 2001 and 31% of the firms in the two sampled cities (Batjargal and Liu, 2004). The typical VC in the sample was male (97%), and 36 years old (s.d.=5.6); half had a college degree, and half had an advanced graduate degree (most often in engineering, but closely followed by business) and had been a VC for 1 year (s.d.=1.2). The typical firm employed 33 investment professionals[2] (s.d=29.2). The average fund size was $55 million *vs* the country average of $30 million. However, if we remove the large firms employing more than 80 VC professionals, the average was $26 million suggesting our sample firms were somewhat smaller than the population as a whole.

As can be seen from descriptions of the sample, at the individual level there was disparity between individuals in their years of experience with venture capital. This experience difference could represent an alternative explanation to institutional influences. Therefore we controlled for VC experience in the analysis that follows.

Independent variables, levels, and dependent variable

The experimental design required each VC to assess 50 randomized ventures on eight decision factors (see Appendix for the directions provided to the respondents, and a sample profile). The eight decision factors were identified from the literature (e.g., Tyebjee and Bruno, 1984; MacMillan *et al*., 1985, 1987), resulting in a list of over 100 possible decision factors. To narrow the list down to a manageable number for conducting the experiment, we selected those variables that were deemed the most important in the prior research, eliminating those that were highly correlated with each other (which reduces problems of multicollinearity), and finally employing a consulting expert VC to verify that the selected factors were indeed important and representative of the actual decision process.

The eight decision factors were:

- leadership experience (average number of years of experience the management team has in leadership positions);
- proprietary technology (on a five-point scale ranging from no protection to extremely high proprietary protection);
- market familiarity (mean number of years of experience the team has in the market);
- start-up record (mean number of past start-up experiences for team members);
- market size (total revenues for most recent year);

- market growth (percentage growth in revenues over the last 5 years);
- number of competitors (number of direct competitors); and
- competitor strength (relative concentration of market on a five-point scale ranging from a few dominant competitors to an emerging market).

The instructions specified that all decision factors not included in the experiment were to be presumed constant across all venture profiles.

The dependent variable for this experiment is the VC's assessment of how likely the venture is to succeed, as measured on a seven-point Likert scale anchored by '10 × or more on investment' and 'complete loss of investment.' Rate of return has been deemed an appropriate dependent variable for VCs' decisions (Roure and Keeley, 1990).

The more assessments each participant completes, the higher the reliability and stability of the results; yet too many profiles may tire the judge and limit participation. A rule of thumb is to have a minimum of five profiles for every decision factor being tested (Executive Decision Services, 1991). Five cases times eight decision factors equals 40 cases. In addition, we had five repeated cases to assess response reliability. We rounded the number to 50 profiles. Fatigue is unlikely to be of concern in this experiment. First, the number of decision factors in each treatment was relatively low (Hitt *et al*., 2000, had 30 profiles with 14 decision factors), and the mean time taken to complete the experiment was less than 30 min. Second, the order of the profiles was randomized for each experiment, and the results were consistent across individuals. Third, individuals were relatively consistent in their responses (test–retest reliability of 72% is comparable with Shepherd's (1999) 69%).

Limitations

Policy capturing, as with all techniques, has limitations, although throughout the design and administration of this study attempts were made to minimize these limitations. Nonetheless, a few of the drawbacks should be addressed. As with any experiment, the issue of reductionism must be considered. Although the scenarios are based on actual firms that received venture backing, the subjects are exposed to a decision situation that does not perfectly mirror the 'real life' decision. Such 'paper tests' affect the external validity of many lens model experiments (Brehmer and Brehmer, 1988). But 'professional judgment may … involve some abstract coding of the [decision factors], similar to that provided by policy capturing tasks' (Brehmer and Brehmer 1988: 89). Moreover, because the VC screening decision has a large 'paper' component in the real world (i.e., much of the VC's information comes from business plans), correlation between the experimental task and the 'real world' decision should be even higher. Therefore, although the information within the decision exercise does not perfectly mirror the more complex 'real life' decision, policy-capturing experiments remain valid methods for deriving what information decision-makers actually use (Hitt and Middlemist, 1979; Hitt *et al*., 2000). Although these criticisms of policy capturing have merit, and do represent limitations of the technique, our approach is consistent with that of other policy-capturing studies (e.g., Hitt and Tyler, 1991).

Results

The experiment provides 50 decisions (level 1 data) per VC, and therefore 1550 observations for the US sample, 2450 for the Korean sample, and 1950 for the China sample. Although this means that there are a large number of degrees of freedom for the subsequent analyses, there may be autocorrelation, because the decisions on each set of 50 observations are nested within individuals. Because decisions within an individual may be more similar to decisions across an individual, assumptions of independence may be violated, rendering ordinary least squares regression an inappropriate technique for this analysis. HLM accounts for variance among individuals such that all observations are independent. Furthermore, HLM provides the opportunity to control (e.g., Tomlinson *et al*., 2004) and test for individual differences (e.g., Kristof-Brown *et al*., 2002). Specifically, we controlled for individual differences in venture capital experience while testing whether institution explained variance in decision policies.

First, we generated a model for each of the samples – one each for the US, China, and Korea. Then, we tested whether differences in decision policies across VCs could be explained by the institution in which they are embedded, controlling for venture capital experience. In other words, controlling for VC experience, does institution significantly explain variance in decision weights (the size and sign of coefficients for each decision factor)?

Presented in Table 1 are the models for each country – the US, China, and Korea. For each model

Table 1 VCs' assessment policies

	USA			*China*			*Korea*		
	Coefficient[a]	*Standard error*	*t-ratio*	*Coefficient*[b]	*Standard error*	*t-ratio*	*Coefficient*[c]	*Standard error*	*t-ratio*
Market size	0.201	0.059	3.413*	0.156	0.036	4.354*	0.195	0.027	7.257*
Market growth	0.232	0.043	5.392*	0.324	0.051	6.381*	0.173	0.035	4.997*
Proprietary technology	0.199	0.038	5.255*	0.197	0.043	4.535*	0.258	0.037	7.047*
Market familiarity	0.220	0.044	5.005*	0.347	0.033	10.647*	0.193	0.033	5.939*
Leadership experience	0.203	0.041	4.945*	0.420	0.048	8.723*	0.220	0.048	4.538*
Start-up experience	0.023	0.044	0.521	0.096	0.033	2.934*	−0.027	0.029	−0.911
Number of competitors	−0.337	0.039	−8.662*	−0.308	0.035	−8.911*	−0.270	0.025	−10.973*
Strength of competition	−0.291	0.064	−4.524*	−0.437	0.055	−7.950*	−0.327	0.034	−9.639*
Intercept	3.959	0.085	46.513*	4.149	0.080	52.044*	3.994	0.080	50.136*
Model									
Variance explained			0.490			0.499			0.528
Intraclass correlation			0.092			0.078			0.169
N			1550			1950			2450

[a]Standardized and group centered. n=1550.
[b]Standardized and group centered. n=1950.
[c]Standardized and group centered. n=1931.
*$P<0.01$.

we report the variance explained in VCs' assessments by the decision policies, intraclass correlation, and the decision policies as represented by coefficients (standardized) for each decision factor and their corresponding standard error, *t*-ratio, and levels of significance. The decision policies of VCs from each country consistently explained approximately 50% of the variance in return on investment assessments (49% for the sample of US VCs, 50% for the sample of Chinese VCs, and 53% for Korean VCs), which is consistent with other conjoint studies.[3] The intraclass correlation indicates the degree of dependence among decisions within individuals (Bryk and Raudenbush, 1992), which is 0.092 for the model of US VCs, 0.078 for the model of Chinese VCs, and 0.169 for the model of Korean VCs. The decision policy for Chinese VCs significantly used all eight decision factors, whereas the decision policies for US VCs and Korean VCs used seven decision factors (both decision policies did not significantly use start-up experience in their assessments of return on investment).

How do the decision policies of VCs from one country differ from the policies of VCs from the other countries? An indication of these differences can be inferred from Table 1; but are those differences significant? HLM allows us to investigate the interaction of an institution effect (level 2 data) on VCs' decision policies. A comparison between US, Chinese, and Korean VCs is displayed in Table 2. Column 1 of Table 2 indicates the decision factors and model statistics. The next three columns report distinctions between the samples of VCs from the US and Korea, and the next three between the samples of VCs from the US and China. The three columns for each distinction represent the intercept (which is the mean assessment controlling for the level 2 variables), venture capital experience (which is a level 2 variable used as a control), and country (which is the level 2 variable used to capture institutional influences). We now investigate each distinction.

The model for the sample of VCs from the *US and Korea* explains 50.7% of the variance in assessments (level 1 variance). The coefficients for the intercept indicate that this group of VCs significantly use seven of the eight factors (start-up experience is not significant). Whereas a positive intercept coefficient indicates that a higher level on the factor is considered to be desirable, a negative sign indicates that a higher level on the factor is considered to be less desirable by VCs. Of the five market information variables (market size, market growth, proprietary technology, number of competitors, and strength of competitors), three were relied upon more heavily by US VCs – market size (coefficient=0.215; $P<0.05$), market growth (coefficient=0.163; $P<0.05$), and number of competitors (coefficient=−0.160; $P<0.05$), one was relied upon more heavily by Korean

Table 2 Comparison of VCs' assessment policies[a]

	US (dummy coded 1)/ Korea (dummy coded 0)			*US (dummy coded 1)/ China (dummy coded 0)*			*China (dummy coded 1/ Korea (dummy coded 0)*		
	Intercept	*VC experience*	*Country*	*Intercept*	*VC experience*	*Country*	*Intercept*	*VC experience*	*Country*
Market size	0.224***	−0.009**	0.215**	0.178***	−0.003	0.088	0.177***	−0.004	−0.053
Market growth	0.211***	−0.005	0.163**	0.279***	−0.003	−0.050	0.242***	0.004	0.160**
Proprietary technology	0.235***	0.005**	−0.151**	0.198***	0.005*	−0.069	0.234***	−0.004	−0.081
Market familiarity	0.233***	0.009***	−0.051	0.284***	0.011***	−0.291***	0.266***	0.011	0.186***
Leadership experience	0.218***	0.006	−0.084	0.313***	0.005	−0.303***	0.306***	0.011	0.241***
Start-up experience	0.017	−0.003	0.150**	0.060**	0.003	−0.114	0.027	−0.001	0.119**
Number of competitors	−0.317***	0.004	−0.160**	−0.322***	−0.001	−0.018	−0.289***	0	−0.031
Strength of competition	−0.366***	−0.007*	0.023	−0.365***	−0.015***	0.388***	−0.379***	−0.002	−0.112*
Intercept	3.935***	0.005	−0.188	4.055***	−0.004	−0.133	4.055***	0.015	0.224*
Model									
Variance explained			0.507			0.447			0.510
Intraclass correlation			0.133			0.085			0.118
N			4000			3500			4400

[a]All variables were standardized and group centered.
***$P<0.01$; **$P<0.05$; *$P<0.10$.

VCs (proprietary technology: coefficient=−0.151; $P<0.05$), and one was insignificant (strength of competitors). Thus US VCs emphasize market-based factors to a greater extent than their Korean VC counterparts, providing support for Hypothesis 1a.

Although the sample of US VCs also placed greater importance on start-up experience (coefficient=0.150; $P<0.05$), the variable was not significantly used by VCs from either country. Therefore it is not relevant to our test. Moreover, there was no significant difference in human-capital-related variables such as market familiarity or leadership experience. Therefore we did not find support for the hypothesis that VCs in Korea rely more heavily on human capital factors than US VCs (H2a not supported).

Because we are interested in the moderating role of institution (the level 2 variable) rather than its direct effect, we are interested in the proportion of variation explained in the weights of each decision factor rather than the variance by the level two variables directly on the assessment of likely success. For those factors used significantly differently by the two samples, country (and venture capital experience) explains 11.1% of the variance in weights for market size, 5.7% for start-up experience, 4.4% for market growth, 4.0% for the number of competitors, and 3.7% for proprietary technology.

The model for the sample of VCs from the *US and China* explains 44.7% of the variance in assessments (level 1 variance). The coefficients for the intercept indicate that this group of VCs significantly uses all the decision factors in their overall decision policy. Controlling for VC experience and based on the country model (column six), VCs from the US place less weight (relative to VCs from China) on market familiarity (coefficient=−0.291; $P<0.01$), leadership experience (coefficient=−0.303; $P<0.01$), and strength of competition (coefficient=0.388; $P<0.01$). For those factors that were used significantly differently by the two samples, country explains 34.4% of the variance in weights for market familiarity, 23.6% for leadership experience, and 17.1% for strength of competitors. These findings do not support Hypothesis 1b that US VCs rely more heavily on market factors, but we do find that Chinese VCs rely more heavily on two of the human capital factors – market familiarity and leadership experience – providing support for Hypothesis 2b.[4]

The model for the sample of VCs from *China and Korea* explains 51% of the variance in assessments (level 1 variance). The coefficients for the intercept indicate that this group of VCs significantly uses seven of the eight criteria (excluding start-up experience). Controlling for VC experience and based on the country model (column nine), VCs from China place more weight (relative to VCs from Korea) on market growth (coefficient=0.160; $P<0.05$), market familiarity (coefficient=0.186; $P<0.01$), leadership experience (coefficient=0.241;

$P<0.01$), start-up experience (coefficient=0.119; $P<0.01$), and strength of competition (coefficient= −0.112; $P<0.10$). For those criteria used significantly differently by the two samples, country (and venture capital experience) explains 17.4% of the variance in weights for market familiarity, 13.8% for start-up experience, 10.3% for leadership experience, and 6.1% for market growth. The findings support Hypothesis 3a that Chinese VCs relied more heavily upon market growth than their Korean counterparts, and Chinese VCs rely more than Korean VCs on such human capital criteria as market familiarity, leadership experience, and start-up experience (H3b is not supported).

Discussion and conclusion

Through the lens of institutional theory, we examined whether economic institutions influence how VCs use information. Consistent with prior studies, we found that VCs from different countries use the same information factors in their screening decisions, but it appears that economic institutions influence the degree to which these VCs rely upon different types of information. Therefore, even though a shared profession may, through normative pressure, lead VCs across countries to use the same information, differences in economic institutions may introduce variation regarding which information is relied upon most heavily.

We expected that judgments of investment potential would be institutionally dependent, so that VCs from mature market economies would give more weight to market-oriented information whereas VCs from emerging or transitional economies would be more likely to favor human capital information. We reasoned that the weak enforcement of property rights, which typifies many relationship-based economies, would increase the risk of trusting other parties and thereby enhance the importance of transaction costs in the evaluation of VCs' new venture investment opportunities. As a result, VCs facing higher risks would focus on aspects of human capital, such as the networks and social influence that often accompany experience. In contrast, we argued that, in a society characterized by strong property rights enforcement, the importance of transaction costs would diminish in comparison with concerns about transformation costs. Consequently, VCs in rules-based systems were expected to emphasize market information relatively more than human capital information, viewing the latter as necessary but insufficient for the creation of value.

Consistent with this argument, we found that US VCs weighed market information more heavily than Korean VCs in the venture screening process (Hypothesis 1a), supporting the notion that the US is indeed more rules-based than Korea. We can depict each country's relative position on a Cartesian plane with rules-based on the *y*-axis and relationship-based on the *x*-axis (see Figure 1). Thus, because US VCs place greater emphasis on market factors than Korean VCs, and because both are relatively low on using relationship-based factors, we position the US in the upper left quadrant (high market, low human capital) and Korea in the lower left quadrant (low market and low human capital). We also found that Chinese VCs tend to focus more on human capital factors than US VCs (Hypothesis 2b). Thus China appears to be more relationship-based than the US, as depicted on the *x*-axis of the perceptual map shown in Figure 1. Finally, we found that Chinese VCs differed from Korean VCs by relying more upon both market information (Hypothesis 3a) and human capital (the opposite direction than proposed in Hypothesis 3b). Thus China appears to be both more relationship-based and more rules-based than Korea[5] (which places China in the upper right of the quadrant).

Figure 1 conveys a departure from the simpler conception represented in the hypotheses. Instead of a single dimension that is anchored on one end by the relationship-based transactions of emerging economies and on the other by the rules-based transactions of mature economies, our results suggest that both may coexist (e.g., China). This potential for coexistence suggests that people consider market information in addition to human capital as they augment, rather than replace, existing relationship-based systems with more rules-based concerns. For instance, theory suggested that Chinese VCs would give more weight to leadership experience than US VCs because of the importance of social capital for doing business in a relational economy. This implies an either/or logic in which VCs use leadership experience *either* for what it communicates about transaction costs *or* for what it conveys about transformation costs, but our findings suggest that Chinese VCs may be using it to contemplate *both* transformation costs *and* transaction costs. In other words, Chinese VCs are using human capital information not only to assess the entrepreneur's trustworthiness, but also to assess whether the entrepreneur has the skills necessary to succeed. Considering that China is

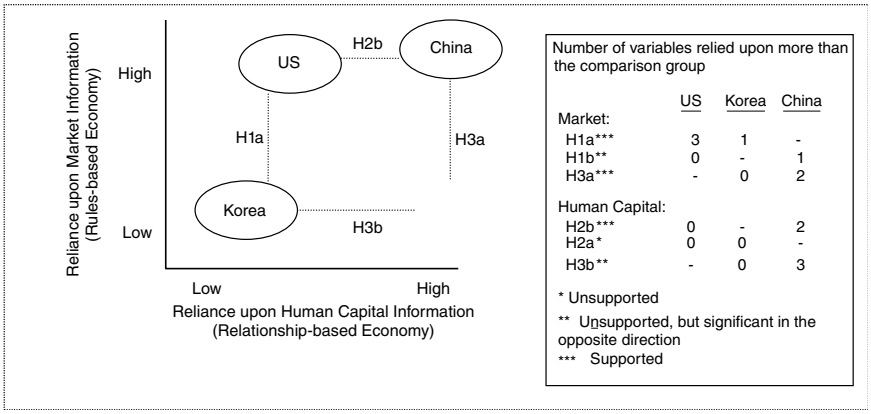

Figure 1 A perceptual map of VC decision policies across economic institutions.

undergoing a rapid transformation, there may be a dearth of talented managers and entrepreneurs to keep pace with the country's rapid growth.[6] To explore this possibility further, other forms of data collection, such as interviews, are necessary.

Our results are mixed. Although some results are consistent with theoretical predictions, other hypotheses are not, which introduces a few questions. Why isn't there a bigger difference between US and Korean VCs on human capital factors? Why isn't there a bigger difference between US and Chinese VCs on market information factors? And, finally, why do Korean and Chinese VCs differ along both dimensions? One explanation may be that the policy-capturing experiment is too coarse to capture all these differences adequately. For instance, theory suggests that Korean VCs would weigh human capital more heavily than US VCs, because Korean VCs operate in an economy that is characterized by relational contracting (i.e., *chaebols*) and an overall lack of support for the arm's length transactions that are more common in the West (Peng, 2003). As a result, backing the wrong entrepreneur because of a failure to consider human capital could be expected to expose a Korean VC to opportunism more than it would a US VC. However, the nature of the policy-capturing experiment precludes a natural human capital screen that Korean VCs are likely to use. In other words, it is possible that Korean VCs more often consider deals in which the entrepreneur is already somehow connected to their *chaebol* (Chang and Hong, 2000). This could explain why US and Korean VCs did not differ more in terms of their reliance upon human capital information. A comparative examination of initial ties (both direct, where the VC knows the entrepreneur *a priori*, and indirect, where a trusted person refers the entrepreneur to the VC) might shed some light on this non-finding (see Shane and Cable, 2002). For instance, do Korean VCs have more and stronger direct and indirect ties to the entrepreneurs they fund than do US VCs?

The hypothesized difference between US and Chinese VCs regarding reliance upon market information was not supported, but this is not entirely unexpected. Rapid liberalization and intense inflow of cash from Western investors may account for Chinese VCs' surprisingly high reliance upon market factors when deciding which ventures to back. Because of China's political legacy of central planning and long cultural tradition of developing and maintaining personal relationships (*guanxi*) (Xin and Pearce, 1996), Chinese VCs pay more attention to human capital information than US VCs, but this appears to be in addition to, rather than in lieu of, market information. As the perceptual map in Figure 1 reveals, the difference between US and Chinese VC decision policies is most accurately described as a comparison between market information (US) and market information plus human capital information (China). Whereas, in the US, transformations costs are much more salient than transaction costs, which are typically assumed to be low, Chinese VCs must consider both transformation costs and transaction costs when evaluating whether a business is capable not only of producing value but also of transferring that value to its customer. Thus it would seem that China may be in the process of augmenting a relationship-based economy with rules-based concerns rather than simply replacing one economic

institution with another. If so, these findings contrast with Peng's (2003) supposition that economies hit an inflection point and move from relationship-based to rules-based institutions. Our findings suggest that this transformation might be more complex.

New research is needed to test whether and why China might be facing both relationship-based and rules-based institutions. The current manuscript looks only at the screening stage of the decision process. Broadening research to include deal flow, due diligence and negotiations might help us understand how relationship-based and rules-based institutions are interacting. We may find that the Chinese VCs use different avenues to find entrepreneurs. Just as with Korean VCs, the number and type of ties might differ in China. For instance, Chinese VCs may do more deals with family members or through government referrals. Due diligence might also differ. If the VC needs to gauge trustworthiness and managerial skill, the due diligence process might be longer. The Chinese VC may spend more time getting to know the entrepreneur as a person than would the US VC. Digging into the other phases of VC decision process may help us better understand the findings here.

This leaves the question of why Chinese VCs rely more heavily than Korean VCs on both market and human capital factors. A synthesis of previous discussion points suggests that China's economy is more benevolent than Korea's, accounting for the difference in the use of market factors, and that China has political as well as cultural forces, contributing to the difference in the use of human capital factors. Thus Korean VCs may pay less attention than their VC counterparts in the US and China because of a natural pre-screening attributed to their participation in *chaebol* groups.

There are plausible and non-institutional explanations for why Chinese VCs rely more heavily upon human capital information than their counterparts in either the US or Korea. For instance, compared with the US or Korea, China is a relative newcomer to capitalism, and therefore it is possible that experienced and skilled human capital remains scarce. This scarcity, in turn, could cause human-capital-related information to become more salient in the decision-making process, providing an alternative explanation for Hypotheses 2b and 3b. Although we recognize the merit of such arguments, and believe that future research should examine this and other explanations that might arise from alternative theoretical approaches lying within and outside institutional theory, we believe that VC decision-making is nevertheless impacted by the institutions in which it transpires. For example, the scarce human capital argument presented above may still be attributed to variance in institutions. In other words, why does a shortage of human capital exist in China? Perhaps it is because the political economic institution of communism, which was enforced through government, believed that private enterprise threatened the livelihood of government employees (Steinfeld, 1998) and damaged the foundation of Chinese ideals (Ahlstrom *et al*., 2000), and that it should therefore be exterminated or at least discouraged through taxes, regulations, and redistributions of wealth (Ahlstrom *et al*., 2000). In such a scenario, scarcity does indeed explain why Chinese VCs would rely more heavily on this information than Americans or Koreans, but arguably institutions act as the underlying cause of the scarcity. Thus the institution in which one functions becomes an indirect, rather than direct, moderator influencing the information to which one attends when making decisions of whether and in whom to invest.

In summary, our investigation of VC decision-making policies across economic institutions suggests a slightly more complex picture than originally anticipated. We find that economic institutions may moderate the investment decisions of VC by influencing which information is most greatly attended to, but we also find that the single-dimension depiction of economies as either relationship-based or rules-based may neglect the dual importance of transaction costs and transformation costs in dictating which information must be considered for an effective decision. Thus the unique environmental conditions that these decision-makers face, such as weak property rights regimes or benevolent markets, appear to dictate to a certain extent which information will be contemplated.

A second contribution is that our study provides entrepreneurs with insight into VC decision policies and how they differ across countries. An entrepreneur launching a venture in the US needs to articulate the attractiveness of the market relatively more than the human capital of the team. Considering that VCs are active in helping entrepreneurs complete their teams, our findings make sense. In China, on the other hand, entrepreneurs must convince VCs that human capital is strong and in place, not only to convey the

trustworthiness of the team but also to persuade the VC that they possess management skills that are relatively scarce but essential to functioning in an economy that offers an incredible number of opportunities to those entrepreneurs who can navigate the lingering legacy of a relationship-based economy.

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Notes

[1]Emerging economies are 'low-income, rapid growth countries using economic liberalization as their primary engine of growth' (Hoskisson *et al*., 2000: 249). Transition economies are subsets of emerging economies, and comprise countries that are moving from socialist to capitalist economies (Hoskisson *et al*., 2000).

[2]The Chinese sample firm size is skewed because many of the subjects work within large Chinese banks. They also tended to view everyone who worked for the bank as a potential investment associate.

[3]In a study of Nigerians' decision policies towards the purchasing of foreign cars and foreign televisions (Okechuku and Onyemah, 1999), the models' mean explained variance was 0.31 and 42, respectively.

[4]Chinese VCs also relied more upon the market information variable of competitor strength, although this was not hypothesized.

[5]Because Chinese VCs relied more heavily upon market factors than US VCs, who relied upon market factors more than Korean VCs, transitivity would suggest that Chinese VCs should rely upon market factors more than Korean VCs. Our results are consistent with this expectation, but they are imperfectly intransitive, in that the distance between Chinese VCs and Korean VCs was not greater than the distance between US VCs and Korean VCs. However, given Tversky's (1977) observations regarding the multidimensional nature of features of similarity, and the difficulties that this multidimensionality presents for ever achieving transitivity among complex units, such as nations, our findings are remarkably consistent.

[6]We would like to thank the editor and reviewers for pointing out this possibility.

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Appendix

You will be asked to judge the potential of several venture proposals based upon a set of decision criteria.

For this exercise, please envision yourself as a venture capitalist in a position to make decisions about venture proposals that are delivered to you. You have just recently completed funding of a new investment fund and are looking for ventures in which to invest. The following ventures are in high-technology industries and geographical locations in which you normally invest. The presented ventures are primarily early start-up businesses.

After examining the various business plans and completing initial due diligence, a junior associate has summarized key factors and provided comparative information for each factor. The factors are as follows:

(1) *Start-up record* – number of past start-ups in which various team members have been involved.
(2) *Market familiarity* – average years of experience per team member that founding team has in market in which new venture is proposed; measures how knowledgeable team is about the market.
(3) *Leadership ability* – average number of years of management experience per team member.
(4) *Proprietary protection* – level of protection provided because product/service or process to deliver product/service is unique and difficult to imitate; presented as a scale ranging from 1 (not at all proprietary) to 5 (extremely high proprietary protection).
(5) *Market size* – total market sales revenues for most current year.
(6) *Market growth* – percentage growth (decline) of market sales revenues over last five years.
(7) *Competitors* – numbers of identified direct competitors new venture faces in targeted market.
(8) *Competitor strength* – measures likelihood of competitor retaliation on a scale from 1 (fragmented market or emerging market with no clear market leader) to 5 (concentrated market with clear market leaders).

Given the fact that you need to invest your fund's assets, you are asked to assess the potential of several venture proposals. Although other information factors might further assist your assessment, please make the decision as best as you can based upon the provided information. Choose how likely an investment in each venture is to succeed on the 7 point 'Probability of Success' scale listed below each venture. The scale is anchored by highest probability of success (10× or more return on investment) and the lowest probability of success (complete loss of investment).

Venture 1

Start-up record	1	Previous start-ups	
Market familiarity	0	Average years' experience for team (including lead entrepreneur)	
Leadership experience	9	Average years' experience for team (including lead entrepreneur)	
Proprietary protection	1	Low protection	
Market size	$1.1 billion		
Market growth	15	Percent	
Number of competitors	9	Direct competitors	
Competitor strength	1	Low strength	

Probability of success

	○	○	○	○	○	○	○	
Lowest	1	2	3	4	5	6	7	Highest

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