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Success in Global Venture Capital Investing: Do Institutional and Cultural Differences Matter?

Rajarishi Nahata, Sonali Hazarika, and Kishore Tandon*

Abstract

We analyze the impact of institutional and cultural differences on success in global venture capital (VC) investing. In both developed and emerging economies, superior legal rights (and enforcement) and better developed stock markets significantly enhance VC performance. Remarkably, cultural distance between countries of the portfolio company and its lead investor *positively* affects VC success. Further analysis reveals that cultural differences create incentives for rigorous *ex ante* screening, improving VC performance. Finally, local VC participation enhances success and mitigates foreign VCs' "liability of foreignness," albeit only in developed economies. Our findings follow from analyzing VC investments in nearly 10,000 companies across 30 countries.

I. Introduction

Venture capital (VC) investing has been increasing globally in terms of capital involved, number of deals, and geographic diversity. Global VC activity is now a phenomenon throughout the world, with non-U.S. VC investments surpassing \$25 billion in 2007 (source: Thomson Financial's Venture Economics), just prior to the financial crisis. Most research to date analyzes VC investment in North America, which primarily includes funding of U.S.-based companies.¹ We analyze

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¹Recent studies that analyze the success of VC investments in the United States include Gompers and Lerner (2000a), Hochberg, Ljungqvist, and Lu (2007), Sorensen (2007), (2008), Nahata (2008),

determinants of VC success in global investing, focusing on country-specific institutional and cultural factors.

Successful global investing can have several benefits for VC firms, via improved access to deal flow, increased diversification, and potentially higher growth. However, the observed success of VC investments varies substantially across countries, which suggests there are important country-specific factors that facilitate successful VC exits.

First, we relate country-specific legal indices that capture shareholder rights, enforcement rights, and accounting disclosure standards to the likelihood of VC success. Consistent with Cumming, Fleming, and Schwienbacher (2006), we find that legal protections are important to the success of private investments. Furthermore, both shareholder and enforcement rights are important and positively influence VC success in developed as well as emerging economies.

Second, consistent with the Black and Gilson (1998) conjecture, we find that a well-developed stock market is an important catalyst for VC success in both developed and emerging economies. Using a novel measure of stock market development, to our knowledge, we are the first to establish a significant link between stock market development and VC success.

Third, we show that cultural differences influence VC success. While attractive, international venture investing is accompanied by formidable challenges. VC investments in small, private companies with intangible assets and unproven technologies are always risky, and even more so when VC firms invest in foreign countries, particularly the emerging economies. An unfamiliar environment and lack of awareness of local cultural and social practices amplify the already substantial agency problems VCs face due to large information asymmetries with insider managers and entrepreneurs. Thus, cultural disparities can severely affect the level of trust, the nature of financial contracting, and company performance.

Remarkably, however, greater cultural distance between the lead VC investor and the portfolio company *increases* the likelihood of VC success, instead of reducing it.² One possible explanation for this is that VCs, expecting cultural differences, do a more careful job screening potential investments before investing in their portfolio companies. Several findings confirm this interpretation. When we interact cultural distance with an emerging economy indicator, we obtain a significantly positive coefficient on the interaction term. This suggests that VCs rationally anticipate challenges, originating in part from cultural differences, when investing in emerging economies, and rigorous screening and selection of these investments increases the likelihood of VC success. A related test also shows that the coefficient on cultural distance is significantly larger in predicting VC success in emerging economies relative to developed economies.

Gompers, Kovner, Lerner, and Scharfstein (2008), (2010), and Zarutskie (2010). For evidence on VC success in Canada, and comparison with U.S. VC activity, see Brander, Amit, and Antweiler (2002) and Cumming and MacIntosh (2003a), (2003b).

²This result is similar in spirit to the evidence in Chakrabarti, Gupta-Mukherjee, and Jayaraman (2009) in the context of cross-border acquisition performance, Cumming, Fleming, and Schwienbacher (2009b) who report superior private equity performance in response to drift in investment styles, and Chen, Gompers, Kovner, and Lerner (2010) who document better VC performance in nonlocal investments. To measure cultural differences between the countries, we use the Hofstede framework. See Section III for a detailed discussion.

Furthermore, we interact the cultural distance variable with an indicator denoting whether the lead VC first invested in the company at its seed or early stage of development. Although companies that attract VC investments at their seed or early stages are more likely to fail, the significant positive coefficient on the interaction term suggests that rigorous screening and due diligence associated with culturally distant transactions are valuable, even when companies are funded early in their life cycles. Overall, our evidence suggests that proper screening and better deal selection by VCs in culturally distant transactions lead to improved VC performance.

Finally, we test whether local investor participation affects VC success. In view of cultural and institutional differences, the presence of local VC investors in the syndicate might increase the likelihood of success, due to their easier access to local information, networks, and resources. In so doing, they may help reduce the “liability of foreignness” (LOF) problem faced by foreign investors (Kindleberger (1969), Hymer (1960), (1976), and Zaheer (1995)).

While analyzing the implications of local VC involvement, we control for VC syndication as it affects the likelihood of success (Lerner (1994a), Brander et al. (2002), Nahata (2008), and Tian (2012)). We measure the size of the VC syndicate in each company and control for whether the VC syndicates include a U.S.-headquartered VC firm. The U.S.-based VC firms dominate the organized VC industry, and U.S.-style VC contracts have been argued to be more efficient in terms of performance and their gradual adoption worldwide (Kaplan, Martel, and Strömberg (2007)).³ Our results indicate that larger VC syndicates are associated with a higher likelihood of VC success in both developed and emerging economies, although the presence of U.S.-headquartered VCs matters only in developed countries.

When we account for local investor participation, we find that VC syndicates that include *both* U.S.-based and local VCs exhibit a higher likelihood of success. While the presence of a U.S.-based VC firm brings the benefit of experience and contract design expertise, a local VC investor helps in mitigating the LOF problem. This result is unaffected when we control for a foreign VC having a local branch office in the country of the portfolio company. The importance of local VC participation is also in line with the extensive literature on “home bias,” which draws similar conclusions in terms of performance of investments made in more familiar local surroundings relative to those in distant geographic areas (see Coval and Moskowitz (2001)).

However, local investor participation does not affect VC success in emerging countries. Local VC investors from emerging economies are relatively inexperienced and, hence, may not have the expertise to exploit their local informational advantage and contribute significantly to portfolio company success.

A major departure from previous research on international VC is our comprehensive use of VC transactions (and their outcomes) from all over the world. We obtain global data on VC transactions from two sources: the Thomson

³Other studies by Cumming (2005b) and Cumming and Johan (2009) point out though that U.S.-style VC contracts are not universally prominent and that country-specific regulation is an important determinant of contract structures.

Financial's Securities Data Company (SDC) VentureXpert database and the *Asian Venture Capital Journal* (AVCJ). For accurate information on successful outcomes, we access the Thomson Financial's New Issues and mergers and acquisitions (M&A) databases as well as the Dealogic database. The Dealogic database augments our sample of successful outcomes by more than 26%, which is important given our focus on VC performance. Our final sample consists of VC investments in more than 9,800 portfolio companies based in 30 countries.

The major contributions of our research are as follows. We believe this study is the first of its kind to examine VC investments across several countries and to analyze the influence of country-specific factors on their success. We show that a country's institutional framework (both legal system and capital markets) is important for the success of privately held companies and, in turn, for promoting entrepreneurship and the VC industry. We also highlight the influence of cultural differences and local investor participation on VC success. In so doing, we emphasize the importance of both VC screening and monitoring for VC success. Moreover, we add to the LOF and home bias literature. Finally, since our data set is larger and more diverse than those in earlier studies, we provide evidence on the determinants of VC success in both developed and emerging economies.

This paper proceeds as follows. Section II discusses related literature and outlines testable hypotheses. Section III describes the data and provides summary statistics. Section IV reports, in detail, the performance of international venture investments. Finally, Section V concludes.

II. Literature Review, Hypotheses, and Analytical Framework

A. Legal Rights and Protection

There are two contrasting views on whether regulatory laws impact financial transactions. Under the Coasian view, contracts can be privately negotiated in the absence of an efficient level of investor protection such that law should not matter (Stigler (1964), Easterbrook and Fischel (1991)). Supporting evidence is provided by Bergman and Nicolaievsky (2007) who show that Mexican private firms often write detailed contracts to significantly enhance the protection offered by the law to their investors. Similarly, Allen, Qian, and Qian (2005) conclude that even though legal and financial systems are underdeveloped in China, that country has one of the fastest growing economies. In another study, Allen, Chakrabarti, De, Qian, and Qian (2012) show that many Indian firms conduct business outside the legal system and do not rely on formal financing channels from markets and banks for most of their financing needs.

Alternatively, country-specific legal systems are argued to have a widespread impact on business and economics. Appropriate laws and regulations and reliable enforcement of shareholder and creditor rights in the event of disputes are particularly helpful in strengthening investor confidence and creating an attractive investment climate (Glaeser, Johnson, and Shleifer (2001)). La Porta, Lopez-de-Silanes, Shleifer, and Vishny (LLSV) (1997), (1998) and several other studies show that law matters in financial decision-making, valuations, and economic growth.

In the VC context, a number of studies examine how legal systems influence VC behavior. Bottazzi, Da Rin, and Hellmann (2009a), Cumming, Schmidt, and Walz (2010), Lerner and Schoar (2005), and Kaplan et al. (2007) analyze how law affects financial contracts. While the first three studies are largely consistent with LLSV (1997), (1998), Kaplan et al. show that more experienced VCs implement U.S.-style sophisticated contracts regardless of legal regime.⁴

Also emphasizing the positive impact of law, Cumming and Walz (2010) show that less stringent accounting standards and weak legal systems facilitate aggressive performance reporting behavior by VC funds when they disclose valuations of their yet unharvested investments. Also, Cumming et al. (2006) highlight the positive impact of legal rights on VC success in their analysis of VC investments in the Asia-Pacific region.

Our analysis of the impact of law on VC success differs from prior work in three ways. First, we separately examine the impact of law on VC performance in emerging economies, since it is not entirely clear whether legal rights and protections matter in these countries. Some available evidence (e.g., Allen et al. (2005), (2012), Lerner and Schoar (2005)) suggests that a more complex system operates in emerging economies in place of the more conventional law-finance-growth nexus. Second, in addition to the overall impact of law on VC success, we analyze which legal rights and protections matter by measuring the relative contributions of shareholder and enforcement rights on VC success. While the common law tradition tends to protect shareholders considerably more than other legal traditions, German civil law and Scandinavian legal systems have better quality of law enforcement. Third, our data set is larger and more diverse relative to most other studies; therefore, our results are a more accurate and powerful representation of the impact of law on VC success.⁵

A significant impact of legal rights and protections on the performance of VC-backed companies would highlight the importance of law for private company investors who, unlike public company investors, do not have the protection of mandated information disclosure requirements, analyst monitoring, and reputational worries. On the other hand, it would be inconsistent with the Coasian view that privately negotiated contracts can address shortcomings in the legal framework such that regulatory oversight is not required. Our first hypothesis (null/alternate) is:

Hypothesis 1N. Better country-specific legal rights and protections positively influence the likelihood of VC success.

Hypothesis 1A. In line with the Coasian view, better country-specific legal rights and protections are not associated with VC success.

⁴See also Gilson and Schizer (2003) and Cumming (2005a), (2005b) who examine the impact of tax laws on VC contracts.

⁵A notable exception is Cumming and Walz (2010) who analyze the relation between legal environment and performance reporting behavior of VC funds in 39 countries. However, these authors do not distinguish between developed and emerging countries nor do they analyze shareholder and enforcement rights separately. Other cross-country studies on international VC, not restricted to law and finance analysis of VC, include Cumming and MacIntosh (2003a), (2003b), Hege, Palomino, and Schwiendbacher (2009), and Schwiendbacher (2008). These studies analyze the developed VC markets in the United States and Europe, and their foci of analysis differ from ours.

B. Stock Market Development

A vital factor in attracting investment is a well-developed capital market. By reducing information and transaction costs and allowing more entrepreneurs to obtain external financing, well-developed capital markets improve allocation of capital, reduce costs of external finance, and lead to faster economic growth (Levine and Zervos (1998), Rajan and Zingales (1998), (2003), Beck, Levine, and Loayza (2000), Wurgler (2000), and Morck, Wolfenzon, and Yeung (2005)).

A key feature of the VC industry is the harvesting of VC investments. Harvesting provides venture capitalists their only way of consistently earning profitable returns, through conversion of illiquid investments into cash. As we argue below, the two profitable exit avenues, initial public offerings (IPOs) and acquisitions, require well-functioning stock markets for their successful completion.

Black and Gilson (1998) note that one primary reason for the success and maturity of the VC industry in the United States is a thriving capital (stock) market conducive to IPO activity. Not only do VCs reap better returns through IPOs, but also a greater likelihood of IPO exit provides incentives to entrepreneurs to work harder, because they value control over their firms when firms go public rather than when their firms are acquired (see Cumming (2008) for the relation between control rights and VC exits). However, not all companies are able to go public. Some may not survive as stand-alone entities, and for others, the IPO window might be effectively closed because of adverse macroeconomic and liquidity conditions (Lerner (1994b), Cumming, Fleming, and Schwienbacher (2005)). In such situations, another opportunity for VCs and entrepreneurs to exit and reap gains is by selling their companies to larger acquirers. Better developed stock markets not only allow acquiring companies to raise cash for acquisitions, but also to issue liquid stock as a currency for acquisitions. An active and vibrant stock market thus acts as an important catalyst for profitable VC exits. Therefore, our second hypothesis is:

Hypothesis 2. Better developed stock markets facilitate successful VC exits.

C. Cultural Differences

While the importance of cultural issues has received prominent emphasis in other disciplines such as strategic management and international business, their impact on corporate and investment decisions is only now being explored. For instance, Chakrabarti et al. (2009) examine the impact of cultural differences on cross-border acquisitions, and Chui, Titman, and Wei (2010) show that cultural differences significantly influence the returns of momentum strategies. Relating trust and economic decision-making, Guiso, Sapienza, and Zingales (2009) examine the role of trust, originating at least in part from cultural differences between countries, as a determinant of trade and investment flows between countries. Employing microlevel data, Guiso, Sapienza, and Zingales (2008) show that trust affects stock market decisions of investors, while Bottazzi, Da Rin, and Hellmann (2009b) document that trust also plays a central role in VC investments.

However, the impact of cultural differences on the outcome of VC investments has not been analyzed in detail.⁶ Anecdotally, both VCs and entrepreneurs emphasize the importance of mutual trust for company well-being. In fact, the inability to build effective working relationships is often regarded as one of the primary causes of failed ventures, even in a relatively homogeneous investing environment such as the United States. In international VC investments, differences arising from cultural diversity can be a major source of conflict between company insiders and external investors, which could adversely affect VC performance.

On the other hand, awareness of challenges related to cultural differences is likely to lead to more rigorous ex ante screening and selection by the VCs, increasing the likelihood of VC success.⁷ Given their risk, all VC transactions are subject to an extensive due diligence process. However, a higher level of cultural disparity between the parties is likely to make investors extra cautious and create incentives for more careful screening of portfolio companies, especially in international transactions. Rosenbloom (2002), for instance, emphasizes the importance of due diligence in all transactions, particularly those involving parties across national borders. We examine the following null and alternative hypotheses to explore the role of cultural differences in VC investment outcomes:

Hypothesis 3N. Higher cultural disparity between VCs and their portfolio companies adversely affects the performance of VC investments.

Hypothesis 3A. Higher cultural disparity between VCs and their portfolio companies leads to more rigorous ex ante screening and better deal selection by VCs, thereby positively affecting the performance of VC investments.

D. LOF, Home Bias, and Local Investor Participation

Institutional, cultural, and social differences among countries further amplify the macroeconomic and company-specific business and technology risks that investors face when investing globally. While indigenous firms gain tangible advantages due to their easier access to local information, networks, resources, and knowledge, foreign firms incur higher information and transaction costs arising from their lack of familiarity with the host country, and therefore suffer from LOF. A number of studies, such as Zaheer (1995), Zaheer and Mosakowski (1997), Miller and Parkhe (2002), and Mezas (2002), establish the existence and persistence of LOF in different industrial and geographic contexts.

In a similar vein, a large body of research analyzes the “home bias” phenomenon, in which investors exhibit preference for local, more familiar investments (e.g., Coval and Moskowitz (1999), (2001), Hau (2001), Grinblatt and Keloharju (2001), and Choe, Kho, and Stulz (2005)). Local VC investors, by virtue of their familiarity with home-country companies and their access to resources and

⁶Other studies that examine the impact of cultural differences on the VC industry include Cumming, Fleming, Johan, and Takeuchi (2010) and Johan and Najjar (2010), although their focus is more on law and corruption.

⁷Chakrabarti et al. (2009) suggest that the higher acquirer announcement returns in cross-border acquisitions are because acquirers perform better deal screening and due diligence when they acquire culturally distant targets.

extended networks, may contribute positively toward screening and, in particular, monitoring of VC investments. Bottazzi et al. (2009b) show that the presence of local partners affects VC investment decisions and that having a local partner from the same country as the target company increases the likelihood of VC investment. We hypothesize that due to home advantage, local investor participation in the VC syndicate contributes positively to the success of portfolio companies. Our fourth hypothesis is:

Hypothesis 4. VC syndicates with local VC investors perform better than those without local VC investors.

We test these four hypotheses, capturing the possible impact of legal, institutional, and cultural differences on the likelihood of VC success using the data assembled on global VC investments. The next section describes data, their sources, and sample statistics.

III. Data and Variable Construction

A. Data

Our primary source of data is the SDC VentureXpert provided by Thomson Financial, which provides us with information on investments made in private companies worldwide. Our sample includes all VC investments (excluding those in North America) made between 1996 and 2002, in companies that received their first round of VC funding beginning in 1996.⁸ We augment the VentureXpert data with additional data from the AVCJ.⁹ This allows us to enlarge our sample, adding deals involving companies in emerging economies. For example, our sample of Asian transactions increases by 25%.

Since our focus is on analyzing the cross-sectional determinants of VC success in an international setting, we consider all VC investments in our sample of countries, irrespective of whether they are made by local or foreign VCs. Of course, the presence of local VCs is essential for analyzing the importance of local investor participation.

We track the performance of companies until the beginning of 2008 to determine whether they were successful; this methodology provides for a minimum of 5 years for a successful exit, consistent with Gompers and Lerner (2000a), Hochberg et al. (2007), and Nahata (2008). We code VC investments as successful if VCs exit from them via either IPOs or acquisitions. Hochberg et al., Nahata,

⁸More than 70% of global VC investments during our sample period (1996–2002) were concentrated in North America, and perhaps even more so prior to our sample period. Hence, not surprisingly, most existing knowledge about VC is based on the analysis of VC investments in the United States; for evidence on VC activity in Canada, and comparison with U.S. VC activity, see Brander et al. (2002), Cumming and MacIntosh (2003a), (2003b), and Cumming (2006).

⁹By doing so, we try to address the concern that the coverage in VentureXpert may not be sufficiently broad in countries outside North America and Europe, particularly in emerging economies. We also tried to obtain information from the Latin American Venture Capital Association (LAVCA) for additional deals in emerging economies of Latin America; however, LAVCA does not maintain a database of historical transactions. Our results, however, are qualitatively similar when we use transactions from the VentureXpert database alone.

Gompers et al. (2008), and Gompers, Kovner, and Lerner (2009) also adopt this methodology for coding VC success. Hochberg et al. show that this measure is a reasonable proxy for VC fund returns.¹⁰

Internationally, two additional types of acquisitions (apart from acquisitions by corporations) are not uncommon; these also provide exit opportunities for VCs: i) buyout of VC shares by other shareholders of the portfolio company including founders, management, or other equity investors, and ii) buyout of VC stake by another VC firm. Our sample of acquisition exits (and the reported results) includes these two exit types, which account for about 4% of all VC exits and less than 1% of all VC investments in our sample. More importantly, all our results hold upon reclassification of these two additional types of VC exits as unsuccessful VC investments.

Companies that do not exit successfully by the beginning of 2008 are classified as unsuccessful exits.¹¹ Since some of the companies that are private (and coded as unsuccessful) at the end of 2007 may eventually exit successfully, we employ the Cox hazard framework in our analysis to account for the right-censored feature of our sample.

The information on successful exits (IPOs and acquisitions) is available in the VentureXpert and AVCJ databases, and we carefully supplement it with data from the New Issues database (for IPOs) and M&A database (for company mergers and acquisitions), also from Thomson Financial. In addition, we use the Dealogic database to procure information on international IPOs and acquisitions to correctly ascertain successful VC exits. The Dealogic data allow us to augment our sample on successful exits by more than 26%. Further, to ensure the accuracy of our data, we perform extensive searches on Factiva, Lexis-Nexis, and Google to verify the correctness of exit transactions. This is important, as acquisitions of minority equity stakes by investors are also reported as M&A transactions in the databases.

From the VentureXpert and AVCJ databases, we extract other relevant information on the portfolio companies and the VCs, including the size of the VC syndicate, identities of the VC investors, identity of the lead VC firm based on total investment made by each VC firm in the portfolio company, VC age, countries in which VC firms and portfolio companies are headquartered, and company developmental stage and industry. We carefully collapse the industry classifications reported in the AVCJ database to map them onto the six VentureXpert industry classifications: biotechnology, communications and media, computer related, semiconductors/other electronics, medical/health/life science, and nonhigh-technology.

We also employ a diverse mix of other data sources. We extract country-specific law variables from Rafael La Porta's Web site (<https://faculty.tuck.dartmouth.edu/rafael-laporta/research-publications>) and data on corruption from

¹⁰Severe data limitations due to unavailability of deal values for a majority of acquisitions prevent us from analyzing their profitability in detail.

¹¹The average time to exit, measured as the difference between the company's exit date (IPO/acquisition date for successful and beginning of 2008 for unsuccessful exits) and the date of first VC investment in the company, is 27 quarters, which is comparable to the average time to exit of 24 quarters for VC investments in the United States, measured similarly in Hochberg et al. (2007). For successful exits only, the average time to exit is 15.4 quarters.

Transparency International. We obtain the updated meta-analytic Hofstede measures of culture from Taras, Steel, and Kirkman (2012) and use them to compute the cultural distance between the countries of the portfolio company and the lead VC investor. In all our analyses, we also control for the geographical distance between the nations of the company and its lead VC investor using the average latitude and longitude data for the two countries involved (Coval and Moskowitz (1999), (2001), Cumming and Dai (2010), Chemmanur, Hull, and Krishnan (2011)). Next, we extract information on the annual number of equity issues in a given country from the SDC New Issues database and country population from the World Bank World Development Indicators, both of which are used to measure the level of stock market development in the portfolio company's country. Data on per capita gross domestic product (GDP) are obtained from World Bank World Development Indicators. To measure stock market conditions in a given country, we use the country-specific Morgan Stanley Capital International (MSCI) indices. Finally, we tap the Penn World Tables for data to measure the degree of openness of a given country's economy to international trade. Per capita GDP, stock market conditions, and country openness allow us to control for country-specific macroeconomic conditions. The Appendix provides a list of variables.

We impose the following filters on our data. First, we exclude VC investments made after the portfolio company is involved in an IPO or an acquisition, since such investments are not pertinent to our analyses. Second, we exclude countries that did not receive VC investment in at least 15 companies over the 7-year period, to improve the signal-to-noise ratio and mitigate the adverse impact of outliers. Finally, we are limited to focusing on countries covered by all the data sources. Our final data sample consists of VC investments in 9,813 portfolio companies based in 30 countries.

Table 1 presents country-wise distribution of VC investments in developed and emerging economies (based on MSCI Barra classification) between 1996

TABLE 1
Country-Wise Distribution of VC-Backed Companies

Table 1 presents the country-wise distribution of VC investments between 1996 and 2002, in companies that received their first round of VC funding beginning in 1996 and for which relevant data are available. The data are from Thomson Financial's SDC VentureXpert and *Asian Venture Capital Journal* (AVCJ) databases. Companies that went public or were acquired between 1996 and 2007, inclusive, are classified as "Successful" exits; otherwise, they are denoted as "Unsuccessful" exits. Information on IPOs and acquisitions is from the Thomson Financial SDC, AVCJ, and Dealogic databases. Categorization into developed and emerging economies is based on the MSCI Barra classification.

Developed Economies			Emerging Economies		
Country	Successful	Unsuccessful	Country	Successful	Unsuccessful
Australia	179	423	Argentina	6	35
Austria	17	86	Brazil	29	159
Belgium	35	155	India	140	450
Denmark	29	120	Malaysia	25	51
Finland	57	240	Mexico	3	22
France	187	621	Philippines	7	21
Germany	226	906	South Africa	8	28
Greece	1	16	South Korea	172	975
Israel	52	224	Taiwan	74	130
Italy	38	153	Thailand	12	58
Japan	122	324			
Netherlands	53	226			
New Zealand	16	52			

(continued on next page)

TABLE 1 (continued)
Country-Wise Distribution of VC-Backed Companies

Developed Economies			Emerging Economies		
Country	Successful	Unsuccessful	Country	Successful	Unsuccessful
Norway	25	48			
Portugal	2	35			
Singapore	42	140			
Spain	53	199			
Sweden	104	264			
Switzerland	44	105			
United Kingdom	542	1,247			
Total	1,824	5,584	Total	476	1,929

and 2002, and their status at the beginning of 2008.¹² Three points are notable. First, about 25% of VC-backed portfolio companies are based in emerging economies. Second, no single country dominates the sample: the United Kingdom, the largest country in terms of number of VC-backed companies, accounts for less than 20% of the sample. Finally, 24.6% of VC-backed portfolio companies in developed economies are successful, compared to 19.8% in emerging economies. The overall successful exit rate, based on IPOs and acquisitions of portfolio companies, is slightly lower relative to U.S.-based portfolio companies, which have exit rates of approximately 25% (Hochberg et al. (2007), Nahata (2008)).

B. Variable Construction

1. Legal Rights and Protection

To examine the impact of law, we sum the country-specific legal rights and protections into a legal index by adding shareholder rights, enforcement rights, and accounting standards in each country. Shareholder rights are aggregated on six indicator variables: *one share–one vote*, *proxy by mail*, *cumulative voting*, *oppressed minorities mechanism*, *preemptive rights*, and *unblocked shares prior to meetings* (source: LLSV (1997), (1998)); then they are divided by their maximum possible value of 6. Enforcement rights are an amalgam of five law variables: efficiency of judicial system, rule of law, corruption, risk of expropriation, and repudiation of contracts, each assigned 10 points (source: LLSV (1997), (1998) and Transparency International). The cumulative enforcement rights thus created are divided by their maximum value of 50. We measure accounting standards on a scale of 0–100 (LLSV (1997), (1998)) and then normalize them by their maximum possible value of 100. Finally, we create a country-specific legal index by adding the normalized values of shareholder rights, enforcement rights, and accounting standards for each country. For example, the United Kingdom scores normalized values of 0.67 on shareholder rights, 0.93 on enforcement rights, and 0.78 on accounting standards. Thus, its legal index value is 2.38.

The advantage of aggregating these constituents into a single legal index is the reduced multicollinearity that would otherwise occur if these distinct variables

¹²The criteria to classify a country as developed or emerging are somewhat subjective (see fn. 4 in Lerner and Schoar (2005)). However, all our results continue to be robust when we use the criterion based on the classification by the Organization for Economic Cooperation and Development.

were introduced simultaneously in the analysis. For instance, the country-specific accounting standard is significantly correlated with both aggregate shareholder rights ($\rho = 0.43$) and cumulative enforcement rights ($\rho = 0.63$). Not surprisingly, we obtain better power in our tests when we use the legal index rather than the individual components constituting the index.

Given the nature of VC investments, we believe all of these legal components are important in their own right; hence, we club them together to develop our index. We also use this index because it has been used most frequently and widely in the extensive literature on law and finance. Finally, as reported in Section IV, our legal index is robust to the inclusion of several other indices capturing various aspects of law. Table 2 shows the average value of the legal index associated with successful and unsuccessful VC exits. The legal indices differ significantly

TABLE 2
Descriptive Statistics for VC-Backed Companies Funded between 1996 and 2002
That Exited by the Beginning of 2008

IPOs/Acquisitions are classified as "Successful" exits; companies that did not exit successfully are denoted as "Unsuccessful." Table 2 presents statistics on VC-backed portfolio companies initially funded between 1996 and 2002 and for which relevant data are available. The data are from Thomson Financial's SDC VentureXpert and AVCJ databases. Information on IPOs and acquisitions is from the Thomson Financial SDC, AVCJ, and Dealogic databases. Columns 6-8 show the statistics for developed economies, as classified in Table 1. Columns 9-11 show the statistics for emerging economies (Table 1). The p -values pertaining to a t -test for equality of means are reported in columns 5, 8, and 11. Variables are defined in the Appendix.

	Overall Sample					Developed Economies		Emerging Economies			
	Successful Exits		Unsuccessful Exits		Test of Equality (p-values)	Successful Exits	Unsuccessful Exits	Successful Exits	Unsuccessful Exits	Test of Equality (p-values)	
	N	Mean	N	Mean		Mean	Mean	Mean	Mean		
	1	2	3	4	5	6	7	8	9	10	11
<i>Legal Rights and Protections</i>											
Legal Index	2,300	1.98	7,513	1.90	0.00	2.05	1.97	0.00	1.72	1.68	0.00
Shareholder Rights	2,300	0.43	7,513	0.39	0.00	0.42	0.37	0.00	0.47	0.44	0.00
Enforcement Rights	2,300	0.85	7,513	0.83	0.00	0.91	0.90	0.00	0.64	0.63	0.00
<i>Country Stock Market Development</i>											
Stock Market Development	2,300	33.85	7,513	28.87	0.00	41.11	37.12	0.02	6.04	5.01	0.00
<i>Country Culture</i>											
Hofstede Cultural Distance	2,300	0.11	7,513	0.08	0.00	0.11	0.09	0.00	0.11	0.07	0.00
<i>VC Experience</i>											
Lead VC Age (years)	2,286	13.50	7,455	11.23	0.00	14.61	12.31	0.00	9.27	8.09	0.01
% of Companies Backed by a U.S. VC	2,300	25.70	7,513	17.45	0.00	25.49	18.12	0.00	26.47	15.50	0.00
<i>Local Investor Participation (LOF)</i>											
% of Companies Having a U.S. VC Firm and a Local VC in the VC Syndicate	2,300	13.22	7,513	7.55	0.00	14.58	8.85	0.00	7.98	3.78	0.00
<i>Other VC/Company Characteristics</i>											
VC Syndicate Size	2,300	4.25	7,513	3.18	0.00	4.71	3.60	0.00	2.50	1.97	0.00
% of Companies in Which First VC Investment Occurred at Seed or Early Stage	2,300	31.35	7,513	44.22	0.00	31.14	43.23	0.00	32.14	47.07	0.00
% of Companies in the High-Tech Industry	2,300	65.78	7,513	69.04	0.00	63.49	67.86	0.00	74.58	72.21	0.30

at the 1% level across successful and unsuccessful VC exits in both developed and emerging economies.

2. Stock Market Development

To assess country-specific stock market development, two commonly used measures are stock market capitalization and aggregate share turnover. However, these measures can be dominated by a few large companies and may not be sufficiently indicative of the level of a country's stock market development.¹³ Rajan and Zingales (2003) emphasize that financial systems in which capital availability is restricted to only a few select firms cannot be considered financially developed. Consistent with their argument, Cumming et al. (2006) find no significant impact from stock market capitalization on VC success.

We construct a novel measure of stock market development that has particular relevance for VCs. Our measure is based on equity issues (we obtain robust results when we use IPOs instead), the most profitable form of exit for VCs. We aggregate the number of equity issues that occurred in a country from 1993 until a given calendar year and normalize it by the population (in millions) of that country in the same calendar year. A higher number of equity issues means the country's stock markets are more receptive to new equity offerings, and aggregating equity issues over several years adjusts for fluctuating stock market conditions that may positively or adversely affect the number of stock offerings in certain years. Finally, normalizing the cumulative number of equity issues by population facilitates a more meaningful comparison across countries of different sizes (Rajan and Zingales (2003)). We measure a country's stock market development prior to the year of first VC investment in the portfolio company. Thus, for example, in the case of companies initially funded in 1996, stock market development is based on cumulative equity issues in the country between 1993 and 1995, and the population in 1995 (for robustness, we discuss other measures of stock market development in Section IV).

We apply our measures of stock market development in a manner such that reverse causality (increased VC exits may make the stock market more developed) is unlikely to explain the observed performance patterns. Since a substantial time gap is likely to exist between the first investment by the VC firm and its exit from the portfolio company, we relate stock market development (measured several years in advance) to future VC performance. Thus, by construction, our measures of stock market development are free of look-ahead bias.

We observe from Table 2 that stock market development significantly facilitates successful VC exits. Consistent with Black and Gilson (1998), the measure of stock market development associated with successful VC exits is significantly

¹³Buyschaert, Deloof, and Jegers (2004) report that in 1999, the 20 largest Belgian companies accounted for 78% of market capitalization on the Brussels Stock Exchange. Similarly, Hoyer and Lerner (2002) point out that immediately prior to the Mexican Peso Crisis, the four largest Argentinian companies accounted for 58% of the market capitalization in 1994. See also Leeds and Sunderland (2003) who, citing the International Finance Corporation (IFC)/Standard & Poor's (S&P) *Emerging Market Fact Book* (2000), report that in Latin America, 58% of the average daily trading volume on major stock exchanges is dominated by the 10 largest firms in each country; the percentage in Asia is 42.

higher than that associated with unsuccessful VC exits. This pattern holds in developed and emerging economies as well.

3. Cultural Differences

To test our third hypothesis, we use the updated meta-analytic Hofstede cultural indices (Taras et al. (2012)) to measure cultural differences between countries, although our results are very similar when we use the original Hofstede (1980) cultural indices. Hofstede, in his *Culture's Consequences: International Differences in Work-Related Values*, explains how cultures evolve under the influence of factors that include climate, economic development, and history. He classifies culture into four major dimensions: small versus large power distance, uncertainty avoidance, individualism versus collectivism, and masculinity versus femininity.

Researchers have used differences in Hofstede measures to capture the idea of “cultural distance” between countries. Several studies, including Chakrabarti et al. (2009), also report that the Hofstede measures are correlated with other measures of culture or trust. We compute the Hofstede cultural distance as follows:

$$\text{Hofstede cultural distance} = \frac{\left(\sum_{i=1}^4 (C_{PC,i} - C_{VC,i})^2 \right)^{\frac{1}{2}}}{4},$$

where $C_{PC,i}$ = portfolio company culture on measure i and $C_{VC,i}$ = lead VC culture on measure i . Cultural distance is measured at the time of the lead VC's first investment in the company; this is important because there is evidence from emerging countries that some companies, after receiving VC investment, relocate to more developed economies prior to their exit (Cumming, Fleming, and Schwienbacher (2009a)). The lead VC firm in the VC syndicate is defined as the VC firm that has invested the maximum amount in the portfolio company across all rounds of financing. In a few cases, when the VC investment is missing and the VC syndicate comprises more than one VC firm, the lead investor is defined as the oldest firm in the syndicate.

Taras et al. (2012) provide country-specific and time-varying meta-analytic scores for the 1980s, 1990s, and 2000s. In our analysis, if the VCs first invested in their deals in the 1996–1999 period, we use the cultural measures for the 1990s; if the VCs first invested in their deals in the 2000–2002 period, we use the measure for the 2000s. If the scores for a particular country are missing for the 1990s, we use the 2000s scores; if the scores are missing for both the 1990s and 2000s, we use the 1980s scores.

Table 2 reports measures of cultural distance between portfolio companies and their lead VC investors for successful and unsuccessful exits. The average cultural difference of 0.11 for successful exits is significantly higher than the 0.08 value for unsuccessful exits. This is consistent with the expectation that VCs are more careful in deal screening before investing in culturally distant countries. We obtain significant differences in cultural distance across the two categories of VC exits in both developed and emerging economies.

4. Local Investor Participation

Syndication is a common feature of the VC industry, with a majority of investments having coinvestors. Lerner (1994a), Brander et al. (2002), Nahata (2008), and Tian (2012) show that syndicated VC deals have higher success rates. We control for and determine the performance implications of syndication in multiple ways. First, we measure the size of the VC syndicate as the number of VC firms that invest in the company before its exit. The average VC syndicate comprises 4.25 (3.18) VCs for successful (unsuccessful) portfolio companies, with the difference being significant at the 1% level. Average syndicate size is lower than that reported in Nahata for U.S.-based portfolio companies, but higher than the average syndicate size reported by Brander et al. for Canadian VC investments.

Second, we control for the presence of a U.S.-based VC firm in the VC syndicate. Of the portfolio companies that exited successfully (unsuccessfully), 25.7% (17.5%) involved a U.S.-based VC firm in the syndicate; this difference is significant at the 1% level. When we analyze developed and emerging economies separately, we continue to find that larger VC syndicates and the presence of a U.S.-based VC firm are more likely to be associated with successful VC exits.

Another important element of VC syndication is local investor participation, which, as theory predicts, should mitigate the LOF problem. We interact the indicators for the U.S.-based VC firm and local VC investor in the syndicate to analyze the performance implications of local investor participation.¹⁴ Given the evidence above, a U.S.-based VC firm contributes positively by way of experience and expertise, while local VC investor participation is likely to mitigate the LOF problem. We find that VC syndicates containing both U.S.-headquartered VC firms and local VC investors are nearly twice as likely to lead their portfolio companies to successful exits. Of the portfolio companies that exit successfully (unsuccessfully), 13.2% (7.6%) involve both a U.S.-based VC firm and a local VC investor in their VC syndicates. We obtain similar significant differences in the subsamples of developed and emerging economies.

5. Other Control Variables

First, we control for VC experience using the age of the lead VC firm, in the year prior to its first investment in the portfolio company. The average age of the lead VCs whose portfolio companies exit successfully (unsuccessfully) is 13.50 (11.23) years, the difference being statistically significant at the 1% level. We obtain significant differences in VC experience across successful and unsuccessful exits individually in developed and emerging countries.

Companies in early stages of development are likely to be riskier and this may impact their performance. We create indicator variables denoting whether the first investment in the portfolio company occurred at the “seed,” “early,” “expansion,” or “later” stage of development. We observe that among successful

¹⁴The indicator denoting the presence of a local VC firm, by itself, is not significant in explaining performance. The VC industry has long been dominated by better experienced U.S. VC firms. Non-U.S.-based local investors are likely to be inexperienced and lack VC industry expertise, which can have a countervailing impact on their home advantage (access to resources, networks, and information), consistent with our findings.

(unsuccessful) exits, 31.4% (44.2%) of all VC investments were made first at the seed or early stage; the difference is statistically significant. This pattern holds strong in a significant way in both developed and emerging economies.

Approximately 68.3% of VC-backed companies in our sample are in the high-tech sector. Consistent with their above-average riskiness, the proportion of high-tech companies is significantly higher among unsuccessful exits. As another proxy for company risk, we include industry-fixed effects in all our analyses.

We control for country-specific macroeconomic conditions through three variables: local stock market conditions, the natural logarithm of GDP per capita, and the country's openness to trade. To account for the impact of market conditions on VC exits, we use the country-specific MSCI stock indices. First, we compute the country-specific 6-month MSCI stock index return prior to the successful exit of each portfolio company based in that country. This measure is lagged by one quarter to allow a typical company and its investors up to 3 months to prepare for an impending exit by way of an IPO or acquisition. Second, for unsuccessful exits, we use the average of the country-specific 6-month MSCI stock index returns, computed on a monthly rolling basis, over the entire time period from the portfolio company's initial funding year to 2007, when VC exits could occur.

The other two macroeconomic variables, the natural logarithm of country GDP per capita and country openness to trade (ratio of country trade (exports plus imports) to country GDP), are measured in the year prior to the first VC investment in the portfolio company.

Finally, we include the geographical distance between the nations of the portfolio company and its lead VC investor; this variable is based on Coval and Moskowitz's (1999), (2001) measure. Since cultural and geographical distances are highly correlated with their in-sample correlation at nearly 0.8, we use the orthogonalized distances in our analysis.

IV. Multivariate Analysis of VC Success in International VC Investing

A. Performance of VCs in International VC Investing

We analyze the determinants of global VC success in a Cox hazard framework (see also Cumming and Johan (2010)). The dependent variable, the hazard of VC exit, is based on the natural logarithm of time to exit, which is measured from the date of first VC investment in the portfolio company. The Cox Model is a semiparametric model in which the hazard function is not dependent on a specific distribution of survival time. Time to exit is censored for unsuccessful VC investments that have not exited by the beginning of 2008. In this model, a positive (negative) coefficient on the variable implies a higher (lower) hazard for that variable and, hence, a lower (higher) expected duration. Thus, given that the company is still private at time $t - 1$, the hazard at time t is the probability that the VC will successfully exit.

Table 3 reports the results. While models 1 and 2 are estimated without lead VC age, model 3 includes this measure of VC experience. We estimate these

TABLE 3
Hazard Analysis of Status of VC-Backed Companies at the Beginning of 2008

The sample in the regressions consists of VC-backed portfolio companies funded between 1996 and 2002 that received their first round of VC funding beginning in 1996 and for which relevant data are available. The data are from Thomson Financial's SDC VentureXpert and AVCJ databases. The Cox hazard model is estimated with log of time to exit as the dependent variable. The time to exit of a successful portfolio company that has either gone public or been acquired is the calendar time taken to exit from the date of its initial VC funding. Time to exit of portfolio companies yet to exit successfully by the beginning of 2008 is right-censored at the end of calendar year 2007. Information on IPOs and acquisitions comes from Thomson Financial SDC, AVCJ, and Dealogic databases. Positive (negative) coefficients indicate that the covariate increases (decreases) the hazard and shortens (lengthens) the expected duration. Explanatory variables are detailed in the Appendix. Intercepts and industry dummies are not reported. The *p*-values, adjusted for country-level clustering, are in parentheses below the coefficient estimates. (Our results are robust to clustering by country and year, as well as by industry and year.)

	Model		
	1	2	3
Legal Index	0.550 (0.00)	0.550 (0.00)	0.525 (0.00)
Stock Market Development	0.001 (0.00)	0.001 (0.00)	0.001 (0.00)
Hofstede Cultural Distance	0.572 (0.00)	0.635 (0.00)	0.575 (0.00)
Dummy = 1 if a U.S. VC Firm Invested in the Portfolio Company	0.078 (0.15)	-0.020 (0.82)	-0.014 (0.88)
Dummy = 1 if the VC Syndicate Contains a U.S. VC Firm and a Local VC Firm		0.203 (0.04)	0.199 (0.05)
Lead VC Age			0.003 (0.15)
ln(VC Syndicate Size)	0.139 (0.00)	0.118 (0.00)	0.114 (0.00)
Geographical Distance	0.032 (0.30)	0.037 (0.21)	0.032 (0.29)
Stock Market Conditions	0.339 (0.82)	0.322 (0.83)	0.266 (0.86)
ln(GDP per Capita)	-0.034 (0.30)	-0.035 (0.29)	-0.038 (0.25)
Country Openness	-0.070 (0.11)	-0.072 (0.10)	-0.068 (0.14)
Dummy = 1 if First VC Investment Occurred at Company's Seed Stage	-0.963 (0.00)	-0.970 (0.00)	-0.958 (0.00)
Dummy = 1 if First VC Investment Occurred at Company's Early stage	-0.700 (0.00)	-0.705 (0.00)	-0.707 (0.00)
Dummy = 1 if First VC Investment Occurred at Company's Expansion Stage	-0.306 (0.00)	-0.314 (0.00)	-0.316 (0.00)
Dummy = 1 if First VC Investment Occurred at Company's Later Stage	0.178 (0.06)	0.170 (0.07)	0.167 (0.07)
Industry-Fixed Effects	Present	Present	Present
Log Likelihood	-20,282.27	-20,279.86	-20,135.28
Pseudo R ²	4.45%	4.51%	4.55%
No. of Successful VC Exits	2,300	2,300	2,286
No. of Portfolio Companies	9,813	9,813	9,741

models sequentially because data limitations decrease sample size. Across models 1–3, we observe that a higher value for the legal index has a positive impact on the likelihood of VC success. In terms of economic significance, based on the estimates in models 1–3, a 1-standard-deviation increase in the legal index is associated with an 18%–19% increase in the hazard of a VC's successful exit. Although a direct comparison is not possible, the economic significance is qualitatively similar to that reported in Cumming et al. (2006) and Cumming and Walz (2010).

Consistent with the Black and Gilson (1998) theory, we find that developed stock markets have a strong positive impact on VC performance. A 1-standard-deviation increase in stock market development is associated with an approximate 5.7% increase in the hazard of a successful VC exit.

We find that in all specifications, cultural distance has a positive impact on VC performance, consistent with the hypothesis that VCs investing in culturally distant nations are aware of cultural disparities and take meaningful steps to carefully screen investment opportunities, which results in better performance. A 1-standard-deviation increase in Hofstede's cultural distance is associated with a 9.5%–10.5% increase in the hazard of a successful VC exit. The finding of a positive impact of cultural distance on VC performance is consistent with the evidence presented in Chakrabarti et al. (2009) in the context of cross-border acquisitions, Cumming et al. (2009b) with respect to style drift in private equity, and Chen et al. (2010) who report better VC performance in nonlocal investments.

Consistent with Brander et al. (2002), Cumming and Walz (2010), Nahata (2008), and Tian (2012), VC syndication has a beneficial impact on company performance. Based on the estimates in models 1–3 in Table 3, a 1-standard-deviation increase in syndicate size leads to a 10.3%–12.7% increase in the hazard of a successful VC exit. However, after controlling for syndicate size, the presence of a U.S. VC firm by itself does not have a significant impact on portfolio company performance.

However, in models 2 and 3, when we account for local investor participation by adding an indicator that denotes the presence of both a U.S.-based VC and a local VC investor in the syndicate, we obtain a significant positive coefficient on the dummy variable. This suggests that local investor presence matters for portfolio company performance and that local VC participation in conjunction with investment by a U.S.-based VC firm is really the primary channel (rather than simply the U.S. VC's presence) that positively affects VC and portfolio company performance. More importantly, the indicator capturing local investor participation is associated with an approximate 22% increase in the hazard of a successful VC exit, which is economically quite significant. In summary, our results support all four hypotheses.¹⁵

In another test, we interact cultural distance with the indicator for local investor participation and introduce it alongside the other variables. However, this interaction variable is not statistically significant. This has two implications. First, local investor oversight is not just valuable in culturally distant transactions; rather, both effective screening and local investor presence contribute independently to VC success. Second, foreign investors' LOF does not necessarily preclude them from being good screeners of their portfolio companies. However, beyond screening, VCs, particularly those based abroad, do need continuous

¹⁵We also run competing-risk hazard regressions (not reported), which account for the occurrence of one event type (IPOs) precluding the other event type (acquisitions). We find that in developed countries, our results hold for all four hypotheses, for both IPOs and acquisitions. However, in emerging economies, data limitations (e.g., only 6% and 14% of VC-backed companies exit via IPOs and acquisitions, respectively, in our sample) prevent us from engaging in a meaningful competing-risk hazard analysis.

oversight of their portfolio companies; local VC monitoring and advice are invaluable for this task.

We arrive at several other notable results. Geographical distance does not emerge as significant in any of the specifications. When introduced in model 3, lead VC age is not significant either. Country openness obtains a mildly significant negative coefficient in one of the three specifications, which is consistent with the argument that more open countries may increase competition among VCs and the resultant “money chasing deals” (Gompers and Lerner (2000b)) scenario depresses VC performance. The coefficients on stock market conditions and country GDP are insignificant across all specifications. Finally, VCs that make investments in earlier stages of a company’s life cycle are more likely to fail, reflecting the riskier nature of such investments (Cumming and Walz (2010)).

B. Cultural Distance, Due Diligence, and VC Success

VC success relies on two fundamental activities: good screening and excellent post-investment advice and monitoring. Using U.S. data, Sorensen (2007) shows that VC screening is twice as effective as monitoring and value-added activities for VC success. Arguably, in a global setting, a greater cultural disparity between the company and its lead investor is likely to involve much more careful screening and due diligence relative to ex post value-added activities.¹⁶ Our findings from two indirect tests are consistent with the interpretation that cultural differences lead to more rigorous screening and due diligence, which in turn enhances the likelihood of success.

First, in Table 4, we introduce an interaction term between the Hofstede culture distance and the indicator variable denoting whether the lead VC first invested in the company at its seed or early stage of development. Better screening and evaluation are particularly valuable when companies are funded early in their life cycles and in culturally distant countries. As observed in Table 4, while companies that attract VC investments at the seed or early stage are more likely to fail, the positive coefficient on the interaction term indicates that in the early stage, culturally distant transactions, VCs are able to enhance their likelihood of success by carefully screening and selecting their investments.

Second, in model 1 of Table 5, we interact cultural distance with an indicator variable that denotes whether the portfolio company belongs to an emerging economy. While the coefficient on the emerging economy dummy is not significant, the interaction term shows a significantly positive coefficient. This indicates that VCs rationally anticipate significant challenges due to cultural differences when investing in emerging countries; hence, they are likely to spend significant up-front effort in proper evaluation and screening of potential investments. Careful

¹⁶Once the investment is made, a VC’s post-investment activities, including but not limited to capital staging, syndication, active monitoring, and advising, are likely to deviate less from the norm than the decision to invest itself. The investment decision itself is a major deviation in terms of screening and evaluation when cultural disparity is high. Moreover, post-investment activities are likely to be anticipated and internalized at the screening and evaluation stage itself (see also Rosenbloom (2002)).

TABLE 4
**Cultural Distance, Due Diligence, and Hazard Analysis of Status of VC-Backed
 Companies at the Beginning of 2008**

The sample in the regressions consists of VC-backed portfolio companies funded between 1996 and 2002 that received their first round of VC funding beginning in 1996 and for which relevant data are available. The data are from Thomson Financial's SDC VentureXpert and AVCJ databases. The Cox hazard model is estimated with log of time to exit as the dependent variable. The time to exit of a successful portfolio company that has either gone public or been acquired is the calendar time taken to exit, from the date of its initial VC funding. Time to exit of portfolio companies yet to exit successfully by the beginning of 2008 is right-censored at the end of calendar year 2007. Information on IPOs and acquisitions comes from Thomson Financial SDC, AVCJ, and Dealogic databases. Positive (negative) coefficients indicate that the covariate increases (decreases) the hazard and shortens (lengthens) the expected duration. Explanatory variables are detailed in the Appendix. Intercepts and industry dummies are not reported. The p -values adjusted for country-level clustering are in parentheses below the coefficient estimates. (Our results are robust to clustering by country and year, as well as by industry and year.)

	Model	
	1	2
Legal Index	0.570 (0.00)	0.545 (0.00)
Stock Market Development	0.001 (0.00)	0.001 (0.00)
Hofstede Cultural Distance	0.365 (0.02)	0.310 (0.05)
Dummy = 1 if a U.S. VC Firm Invested in the Portfolio Company	-0.001 (0.99)	0.004 (0.97)
Dummy = 1 if the VC Syndicate Contains a U.S. VC Firm and a Local VC Firm	0.213 (0.04)	0.206 (0.05)
Lead VC Age		0.003 (0.14)
In(VC Syndicate Size)	0.195 (0.00)	0.193 (0.00)
Geographical Distance	0.038 (0.19)	0.033 (0.27)
Stock Market Conditions	0.293 (0.85)	0.239 (0.88)
In(GDP per Capita)	-0.030 (0.39)	-0.033 (0.34)
Country Openness	-0.080 (0.07)	-0.076 (0.09)
Dummy = 1 if Lead VC's Investment in the Company Occurred at Company's Seed or Early Stage	-0.620 (0.00)	-0.616 (0.00)
Hofstede Cultural Distance \times Dummy = 1 if Lead VC's Investment in the Company Occurred at Company's Seed or Early Stage	0.824 (0.01)	0.819 (0.02)
Industry-Fixed Effects	Present	Present
Log Likelihood	-20,294.93	-20,149.92
Pseudo R^2	4.22%	4.26%
No. of Successful VC Exits	2,300	2,286
No. of Portfolio Companies	9,813	9,741

selection of portfolio companies, in turn, contributes to better VC performance.¹⁷ Overall, our evidence indicates that greater cultural distance is associated with increased screening and due diligence, which leads to better VC performance.¹⁸

¹⁷Consistent with this result, we obtain a higher average cultural distance when the lead VC firm and the portfolio company come from different types of economies, particularly when portfolio companies belong to emerging economies. The average cultural distance is significantly lower when both the lead VC firm and portfolio company belong to the same type of economy. The significance of the interaction term thus suggests that VCs pay extra attention to deal screening and company selection when investing in emerging economies.

¹⁸A natural question that arises is whether the cultural distance-VC performance relation weakens when the cultural disparity increases. We test this conjecture by introducing the squared Hofstede cultural distance along with our other independent variables. We obtain a significantly negative coefficient

TABLE 5
 Hazard Analysis of Status of VC-Backed Companies at the Beginning of 2008
 (including interactions with Emerging Economies Indicator)

The sample in the regressions consists of VC-backed portfolio companies based in both developed and emerging economies, funded between 1996 and 2002, that received their first round of VC funding beginning in 1996 and for which relevant data are available. The data are from Thomson Financial's SDC VentureXpert and AVCJ databases. The Cox hazard model is estimated with log of time to exit as the dependent variable. The time to exit of a successful portfolio company that has either gone public or been acquired is the calendar time taken to exit from the date of its initial VC funding. Time to exit of portfolio companies yet to exit successfully by the beginning of 2008 is right-censored at the end of calendar year 2007. Information on IPOs and acquisitions is from Thomson Financial SDC, AVCJ, and Dealogic databases. Positive (negative) coefficients indicate that the covariate increases (decreases) the hazard and shortens (lengthens) the expected duration. Explanatory variables are detailed in the Appendix. Intercepts and industry dummies are not reported. The *p*-values, adjusted for country-level clustering, are in parentheses below the coefficient estimates. (Our results are robust to clustering by country and year, as well as by industry and year.)

	Model	
	1	2
Legal Index	0.564 (0.00)	0.469 (0.00)
Legal Index × Emerging Economy Indicator		1.592 (0.00)
Stock Market Development	0.001 (0.00)	0.001 (0.00)
Stock Market Development × Emerging Economy Indicator		0.011 (0.20)
Hofstede Cultural Distance	0.467 (0.00)	0.475 (0.00)
Hofstede Cultural Distance × Emerging Economy Indicator	0.749 (0.03)	0.703 (0.04)
Dummy = 1 if a U.S. VC Firm Invested in the Portfolio Company	-0.061 (0.52)	-0.053 (0.58)
Dummy = 1 if the VC Syndicate Contains a U.S. VC Firm and a Local VC Firm	0.234 (0.03)	0.218 (0.05)
Dummy = 1 if the VC Syndicate Contains a U.S. VC Firm and a Local VC Firm × Emerging Economy Indicator		0.109 (0.37)
Emerging Economy Indicator	0.067 (0.76)	-2.617 (0.00)
Lead VC Age	0.003 (0.13)	0.004 (0.09)
ln(VC Syndicate Size)	0.120 (0.00)	0.122 (0.00)
Geographical Distance	0.037 (0.19)	0.031 (0.24)
Stock Market Conditions	0.299 (0.84)	0.502 (0.73)
ln(GDP Per Capita)	0.003 (0.96)	0.073 (0.20)
Country Openness	-0.068 (0.07)	-0.131 (0.00)
Company Development Stage Indicators (Seed, Early, Expansion, Later)	Present	Present
Industry-Fixed Effects	Present	Present
Log Likelihood	-20,131.28	-20,115.61
Pseudo R ²	4.62%	4.94%
No. of Successful VC Exits	2,286	2,286
No. of Portfolio Companies	9,741	9,741

on the squared Hofstede cultural distance while retaining the significance of the cultural distance measure and other primary independent variables. (These results are not reported but are available from the authors.) This indicates that while VCs have incentives to carefully screen their companies in culturally distant transactions, VC due diligence alone cannot translate a VC investment into a winner. There are other countervailing factors (e.g., lack of trust) arising out of greater cultural disparity, which can affect VC performance.

C. Performance of VCs in Developed and Emerging Economies

Table 5 also highlights the incremental impact of other institutional differences on VC success in emerging countries (comprising 25% of our sample) relative to the more developed economies. In model 2 of Table 5, in addition to the interaction with cultural distance, we introduce interactions of the emerging economy dummy with i) legal index, ii) stock market development, and iii) local VC participation.

The significant interaction of the emerging economy indicator with the legal index suggests that the legal system is incrementally important for VC success in emerging economies. It also implies that VCs are not simply selecting promising investments in countries with weak institutions. If so, the success rate of VCs would be higher in countries with weaker legal regimes. Rather, our result indicates quite the opposite. In contrast, the interactions of the emerging economy dummy with stock market development and local investor participation are not significant.

The incremental significance of cultural distance in the face of local VC inability to contribute incrementally to VC success in emerging economies implies that, even though culturally distant VCs face the LOF problem, this does not appear to be a significant barrier in carrying out due diligence. On the contrary, VCs seem to be effective in screening even where local VC expertise is underdeveloped.

We also analyze the determinants of VC success separately in developed and emerging economies, but the results are not reported for brevity. We find that legal index, Hofstede culture distance, and stock market development emerge as significant predictors of VC success in both developed and emerging economies. Local investor participation also matters, albeit weakly (the statistical significance is at the 10% level), in developed economies, but it does not surface as significant in emerging countries.

D. Relative Significance of Shareholder Rights and Enforcement Rights for VC Success

Given the strong significance of law, we next examine whether both shareholder and enforcement rights matter, particularly in emerging economies. LLSV (1997), (1998) and others point out that both investor rights and the quality of law enforcement vary significantly around the world. While common law tradition tends to protect shareholders more than other legal traditions, German civil law and the Scandinavian countries have a better quality of law enforcement.

In an analysis similar to Table 3 (but not reported for brevity), instead of the legal index, we introduce its important constituents, shareholder and enforcement rights, separately to measure their relative contributions to VC success. We find both are strongly significant, and our other primary results also remain robust. We obtain the same qualitative result for the subsample of developed countries. However, in the subsample of emerging economies, we orthogonalize our primary variables of interest, because they are highly correlated with each other; we still find both shareholder and enforcement rights to be important. Thus, legal rights and protections matter in both developed and emerging economies.

For robustness, we include the two indices capturing public and private enforcement of securities laws (La Porta, Lopez-de-Silanes, and Shleifer (2006)), but none of these indices emerges as significant, while both shareholder and enforcement rights continue to matter. When our measures of shareholder and enforcement rights are excluded, the private enforcement index turns significant in explaining VC performance, but only in developed countries. Finally, we use two indices (Park-Ginarte and Rapp-Rozek) to capture country-specific patent protection laws in evaluating the robustness of our results. These indices show positive coefficients when included in VC performance regressions, but are not statistically important, while both shareholder and enforcement rights are significant.¹⁹

These findings hold two implications. First, the legal system is important to the enforceability of contracts. This is critical given that VCs often write detailed contracts but still need legal enforcement protection to protect their economic interests. Second, extra-contractual protection in the form of shareholder rights is important even for sophisticated investors such as VCs, since not all investors obtain equal or similar protection for their investments (e.g., only a fraction of VCs in syndicates have board representation, Gompers (1996)); furthermore, severe agency problems can arise among VC investors themselves (Bartlett (2006), Masulis and Nahata (2009), (2011)).

E. Round-Wise Analyses of Company Survival, Omitted Variables, and VC Success

Our unit of analysis thus far is the portfolio company itself; we collapse all the time-varying information (e.g., VC investors, funding rounds, and country-specific variables) about the company into a single observation. However, VC investment data are effectively a panel with multiple funding rounds and dates. The advantages of panel analysis include involving more company-specific information and controlling for omitted variables. The omitted variable problem can be especially worrisome in the VC setting given the private nature of companies and the resultant paucity of publicly available data.

In panel analysis, we track each company from its first funding round through all rounds until the date of exit or the beginning of 2008. In this framework, the dependent variable is an indicator equaling 1 in round N if the company receives funding in the next round $N+1$. If the company exited via an IPO or an acquisition transaction during the 1996–2007 period, the dependent variable equals unity in the company's last funding round, and 0 otherwise, if the company stayed private until the beginning of year 2008. Barring the legal index, all other explanatory variables are updated at each funding round. Lead VC age, geographical distance, and Hofstede cultural distance at each round are based on the most experienced

¹⁹Some industries may be more dependent on certain legal variables than others. For example, better patent laws and protection are critical in biotech and semiconductor industries. However, in none of the six industries constituting our data set do we obtain significant coefficients on the two indices capturing patent protection laws; on the other hand, our legal index is highly significant when we run industry-wise regressions of VC performance. Based on our findings, we feel composite legal indices better and more fully capture the disparate components of law, and this lends further credence to our choice of legal index as a suitable proxy for law.

VC firm participating in that funding round. Using a sample of 16,895 funding rounds received by 9,813 companies, we estimate the models in a panel probit framework with random company effects.

The results shown in Table 6 show that portfolio company survival is positively affected by legal index, stock market development, and Hofstede's cultural distance, all significant at the 1% level. Local investor participation matters for survival as well, although its statistical significance reduces to the 10% level in one of the two models. Overall, after controlling for company and VC firm

TABLE 6
Pooled Survival Analysis of VC-Backed Companies until the Beginning of 2008

The sample in the regressions consists of 16,895 funding rounds during 1996–2007 for the 9,813 VC-backed portfolio companies initially funded between 1996 and 2002 and for which relevant data are available. The data are from Thomson Financial's SDC VentureXpert and AVCJ databases. We track each company from its first funding round through all rounds until the date of its exit or the beginning of 2008. In this panel data framework, the dependent variable is an indicator equaling 1 in round N if the company received funding in the next round $N + 1$. If the company exited via an IPO or an M&A transaction during 1996–2007, the dependent variable equals unity in the company's last funding round; otherwise, it is 0 if the company stayed private by the beginning of 2008. All models are estimated using panel probit estimators with random company effects. Information on IPOs and acquisitions comes from Thomson Financial SDC, AVCJ, and Dealogic databases. Explanatory variables are described in the Appendix. Barring the legal index, all other variables are updated at each funding round. The lead VC age, geographical distance, and Hofstede cultural distance at each round are based on the most experienced VC firm participating in that funding round. Intercepts and industry dummies are not reported. The p -values are in parentheses below the coefficient estimates.

	Model		
	1	2	3
Legal Index	0.453 (0.00)	0.452 (0.00)	0.394 (0.00)
Stock Market Development	0.001 (0.00)	0.001 (0.00)	0.001 (0.00)
Hofstede Cultural Distance	0.531 (0.00)	0.546 (0.00)	0.433 (0.00)
Dummy = 1 if a U.S. VC Firm Invested in the Portfolio Company	0.165 (0.00)	0.142 (0.00)	0.146 (0.00)
Dummy = 1 if the VC Syndicate Contains a U.S. VC Firm and a Local VC Firm		0.122 (0.05)	0.102 (0.10)
Lead VC Age			0.006 (0.00)
ln(VC Syndicate Size)	0.247 (0.00)	0.238 (0.00)	0.215 (0.00)
Geographical Distance	0.024 (0.03)	0.025 (0.02)	0.016 (0.15)
Stock Market Conditions	-1.392 (0.00)	-1.392 (0.00)	-1.504 (0.00)
ln(GDP Per Capita)	0.006 (0.50)	0.006 (0.51)	0.008 (0.45)
Country Openness	-0.144 (0.00)	-0.144 (0.00)	-0.131 (0.00)
Dummy = 1 if VC Investment Occurred at Company's Seed Stage	0.242 (0.00)	0.239 (0.00)	0.238 (0.00)
Dummy = 1 if VC Investment Occurred at Company's Early Stage	0.288 (0.00)	0.286 (0.00)	0.283 (0.00)
Dummy = 1 if VC Investment Occurred at Company's Expansion Stage	0.161 (0.00)	0.158 (0.00)	0.145 (0.02)
Dummy = 1 if VC Investment Occurred at Company's Later Stage	0.140 (0.02)	0.136 (0.03)	0.145 (0.00)
Industry-Fixed Effects	Present	Present	Present
Log Likelihood	-10,754.07	-10,753.44	-10,210.33
Pseudo R^2	7.39%	7.41%	7.79%
No. of obs.	16,895	16,895	16,132

characteristics, including experience and syndication, our results indicate that unobserved effects are not a significant concern in our analysis.

F. Robustness Tests

To evaluate the robustness of our results, we conduct a battery of tests, although they are not reported to conserve space. First, we subject our analysis to the Spamann (2010) index of shareholder rights and obtain results quite similar to those based on LLSV (1997), (1998) indices. The original LLSV (1997), (1998) indices were constructed based on legal rights prevalent in the 1990s, whereas Spamann constructs his index based on the law in force in 2005. Thus, our results remain robust to any changes in legal conditions that may have occurred during the interim time frame; any such changes would be captured in Spamann's index.²⁰

Second, to determine the importance of individual cultural elements, power distance, uncertainty avoidance, individualism versus collectivism, and masculinity versus femininity, we replicate our analyses from Table 3 by introducing each of the four cultural aspects sequentially in place of the aggregate measure of culture distance. We use the absolute value of the difference between lead VC and portfolio company cultures, measured on each of the four dimensions.

We find that all four dimensions of cultural distance have a significant, positive impact on VC success. Depending on the cultural element, a 1-standard-deviation increase in cultural distance is associated with a 5.0%–9.7% increase in the hazard of a successful VC exit.

To add robustness, we consider the “Eurobarometer” measure of bilateral trust among nations used in Guiso et al. (2009) and Bottazzi et al. (2009b). Chakrabarti et al. (2009) find a negative correlation between the Hofstede culture distance and the Eurobarometer measure, which indicates that greater cultural distance between countries is associated with a lower level of mutual trust. We replace the Hofstede distance with the Eurobarometer measure in all our regression specifications, although we lose more than half the observations since many country pairs in our sample are not covered by the Eurobarometer surveys. Consistent with our earlier results, we obtain a significant negative coefficient on the bilateral trust measure, which suggests that a lower level of trust between the country of the lead VC investor and that of the portfolio company leads to a higher probability of a successful VC exit. (In univariate comparisons, the average level of bilateral trust associated with successful exits is 3.22, which is significantly different from the average of 3.27 associated with unsuccessful exits.) However, we do not claim that a higher level of trust, which has been shown to influence VC investment decisions, results in a lower level of success. Rather, a higher level of mutual distrust and awareness of cultural differences among the parties makes

²⁰Furthermore, we look at individual countries that experienced changes in regulation during our sample period (see also Cumming and Knill (2012)). We considered the following countries: South Korea (“Addendum to Securities Exchange Act,” 2004), Mexico (“Code of Best Corporate Practices,” 2005), Brazil (“Novo Mercado,” 2005), and India (“Clause 49,” 2005). We find that exit rates diminished in these countries post-regulatory change. This again lends support to the importance of law for VC performance. Finally, we consider the effect of the Sarbanes-Oxley (SOX) Act of 2002 on VC exits. We again find that in our sample of companies, the exit rates declined slightly post-SOX.

investors cautious and creates incentives for more rigorous screening and due diligence, so transactions involving high cultural disparity or distrust are likely to have substantial economic potential. Such careful investment in companies leads to better VC performance.

While we report all our results using the lead VC's aggregate experience, we also control for the lead VC experience in the country of the portfolio company. This variable is also measured at the time of the lead VC's initial investment in the portfolio company; it is not significant, however.²¹ We also interact the lead VC's local experience (in the portfolio company's country) with the cultural distance variable to analyze whether local experience contributes to better screening and enhances the likelihood of VC success. The positive coefficient on the interaction variable is consistent with our conjecture above but is not statistically significant.

Third, we evaluate the robustness of our results using three different measures of country-specific stock market development. Recall that our primary variable is based on the cumulative number of equity issues in a country, normalized by its population. Our first alternate variable is based on the cumulative number of IPOs in a country divided by the population of that country. We continue to find that better developed stock markets are important for VC success. Our second alternate measure of stock market development is based on the number of listed companies in a country. We divide the number of listed companies by country population and create an indicator variable equal to 1 when stock market development is greater than or equal to the median value in the sample, and 0 otherwise. Among successful (unsuccessful) portfolio companies, approximately 58% (49%) belong to countries with better developed stock markets, the difference being significant at the 1% level. When using this measure, most results remain qualitatively unchanged. One exception is, when simultaneously introduced with the legal index, this measure of stock market development is not significant, likely because of the very high collinearity ($\rho = 0.75$) between the two variables. Our third alternate variable is based on the cumulative number of equity issues in a country divided by the cumulative GDP of that country. We continue to find robust results across all but one specification. In emerging economies, when introduced simultaneously with the legal index, this measure of stock market development is not significant, which could be due to the high correlation of 0.62 between the two variables.

Fourth, to evaluate the robustness of the impact of local investor presence on VC success, we control for whether the lead VC firm has a local branch office in the country of the portfolio company. We include an indicator variable denoting the lead VC firm's local physical presence as an additional independent variable.

²¹In robustness tests, we also control for the lead VC fund's style drift (Cumming et al. (2009b)), for its size (Cumming and Dai (2011), Humphery-Jenner (2012)), and whether it is the lead VC firm's initial fund. While the indicator variable for style drift is not significant, the indicator variable denoting the VC firm's initial fund and the fund size variable obtain significantly negative and positive coefficients, respectively, suggesting that more seasoned and larger VC funds have better performance. We do not tabulate these results, because when constructing these variables, we lose a substantial number of observations due to missing data. More importantly, our primary results continue to be qualitatively similar after including these variables in our analyses.

While this indicator variable does not emerge as significant, our primary results, including the positive effect of local investor presence, continue to be robust.

Finally, to account for the endogeneity between VC syndication and VC performance, we use the Heckman correction procedure. In the first-step model, we estimate the likelihood of VC syndication using a probit regression framework. The dependent variable in the probit model is unity if a VC syndicate exists, and 0 if only a single VC firm invests in the company. The instrument used in the first-step selection equation is the number of VC firms operating in the country of the portfolio company prior to exit; other variables in the selection equation include lead VC age, legal index, and indicator variables denoting when the company was first funded by the VC: seed stage, early stage, expansion, or later stage. Barring the indicator for later stage VC funding, all other variables are significant in explaining the probability of VC syndication. A higher number of VC firms operating in the country of the portfolio company is associated with a higher likelihood of syndication. Better legal regimes and more experienced VCs also enhance the likelihood of syndication.

More importantly, the second-step regression estimates are statistically similar to those reported in Table 3 after including the inverse Mills ratio in our hazard model of VC success. The inverse Mills ratio is statistically significant, indicating that adjustment for selection bias is important. Our primary results in the subsamples of developed and emerging countries are also qualitatively similar on inclusion of the inverse Mills ratio. Finally, as another check, all our results are robust to exclusion of VC syndicate size altogether from our VC performance model.

V. Conclusion and Discussion

Global VC activity has increased substantially in recent years in terms of the amount of capital involved, number of deals, and geographic diversity. In this study, we analyze the cross-sectional determinants of success in international VC investing, using the largest-to-date data set, spanning both developed and emerging economies. We test hypotheses that relate institutional and cultural differences across countries to VC and portfolio company success.

We capture these differences by the variation in their legal rights and protection, the extent of stock market development, and the cultural differences between the countries of companies and their VC investors. We find that these factors strongly impact the likelihood of VC success in both developed and emerging economies. The importance of legal rights and protections is consistent with the view that law matters and suggests that private detailed contracting, while important, does not render law and regulation entirely unnecessary, contrary to the Coasian view. Along with legal protections, the importance of stock market development highlights the significance of the institutional framework for business and economic growth.

We also generate evidence that VCs are likely to engage in more intensive screening of potential investments when they invest in culturally distant nations, particularly in emerging economies, and that careful deal selection contributes significantly to VC success. In addition, we study the impact of local investor participation, which serves to mitigate the LOF problem arising from institutional

and cultural disparities among countries. While the presence of local investors in VC syndicates has a positive impact on company success in developed countries, it does not affect company success in emerging economies.

It is noteworthy that the institutional and cultural factors identified in this study have particular relevance for three of the four critical activities of VC firms. Apart from fund-raising, the other three key activities of any VC firm are sorting potential investments, providing monitoring and value added, and harvesting investments. Cultural distance has implications for VC sorting activity, local investor participation for screening and monitoring of portfolio companies, and institutional differences (law and capital markets) for sorting and harvesting of investments.

Looking to future research directions, it would be interesting to analyze the effect of institutional and cultural factors on the VC industry in times of adverse economic shocks, such as the recent financial crisis of 2008. Also, while our findings provide guidance for nations trying to develop VC industry, spur innovation, and promote entrepreneurship, other factors such as the role of angels, government, and tax policies are likely to be important in stimulating venture investing and entrepreneurship (e.g., Armour and Cumming (2006), Keuschnigg and Nielsen (2004a), (2004b), and Lerner (1999)). Cross-country analyses of such issues using larger, richer, and more recent data sets would be fruitful avenues for future research in the evolving fields of international VC and global entrepreneurship.

Appendix. Definitions of Variables

Legal Rights and Protections

Legal Index: Country-specific legal index constructed by adding country-specific shareholder rights, enforcement rights, and accounting standards, each normalized by their maximum possible value. Shareholder rights are aggregated on six indicator variables: one share-one vote, proxy by mail, cumulative voting, oppressed minorities mechanism, preemptive rights, and unblocked shares prior to meetings (source: LLSV (1997), (1998) database). Enforcement rights are an amalgam of five law variables: efficiency of judicial system, rule of law, corruption, risk of expropriation, and repudiation of contracts, each assigned 10 points (source: LLSV (1997), (1998) and Transparency International). Accounting standards are measured on a scale of 0–100 (source: LLSV (1997), (1998)).

Country Stock Market Development

Stock Market Development: Stock market development is measured by the cumulative number of equity issues in the country from 1993 until the year prior to the portfolio company's initial VC investment divided by country population (in millions) in the year prior to the initial VC investment (source: SDC New Issues Database and World Bank World Development Indicators).

Country Culture

Hofstede Cultural Distance: Cultural difference between the portfolio company's and lead VC's nations, as measured by the Cartesian distance between Hofstede's four cultural dimensions for the two nations based on time-varying meta-analytic scores (source: Taras et al. (2012)).

Power Distance: Absolute difference between the values assigned to the power distance of two nations (source: Taras et al. (2012)).

Individualism Distance: Absolute difference between the values assigned to the individualism of two nations (source: Taras et al. (2012)).

Uncertainty Avoidance Distance: Absolute difference between the values assigned to the uncertainty avoidance of two nations (source: Taras et al. (2012)).

Masculinity Distance: Absolute difference between the values assigned to the masculinity of two nations (source: Taras et al. (2012)).

VC Experience

Lead VC Age (years): Age of the lead VC firm measured prior to its first investment in the portfolio company (source: VentureXpert database).

Dummy = 1 if VC Syndicate has a U.S. VC Firm: Indicator variable denoting whether the VC syndicate includes a U.S.-based VC firm (source: VentureXpert and AVCJ).

Local Investor Participation

Dummy = 1 if the VC syndicate has a U.S. VC and a local VC: Indicator variable denoting whether the VC syndicate has both a U.S. VC firm and a local VC investor (source: VentureXpert and AVCJ).

VC Syndication

VC Syndicate Size: Size of the VC syndicate in the portfolio company (source: VentureXpert and AVCJ).

Other Variables

Stock Market Conditions (% Return on MSCI Country Index): 6-month return on country-specific MSCI stock index, 3 months prior to a successful VC exit. For unsuccessful VC exits, the average of country-specific 6-month MSCI stock index returns computed on a monthly rolling basis over the entire time period from the portfolio company's initial funding year until 2007, when VC exits could occur (source: MSCI country indices).

Per Capita GDP (\$ thousands): Country GDP divided by the country population (source: World Bank World Development Indicators).

Country Openness (%): Ratio of country's trade (exports plus imports) to country's GDP (source: Penn World Tables).

Geographical Distance: Geographical distance between the portfolio company's and lead VC's nations based on the measure in Coval and Moskowitz (1999), (2001).

Dummy = 1 if first VC investment occurred at company's seed or early stage: Dummy variable for whether the first VC investment was at the company's early or seed developmental stage (source: VentureXpert and AVCJ).

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