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Cross-border buyout performance

Siyang Tian and Anh Tran *

Using a novel dataset of 2,639 cross-border buyout investments during 1998-2007 in 38 countries, we find that the institutional quality of the portfolio company country, as measured by the ranking in the composite index of political, economic and financial risk, is an important determinant of cross-border buyout performance in terms of exit success. The higher the institutional quality of the portfolio company country, the higher the probability of a successful exit via IPO or M&A. PE firms' international experience, industrial experience, and reputation based on deal experience help to improve buyout exit success and their industrial experience could mitigate the adverse influence of institutional distance between the portfolio company and the PE firm countries.

Keywords: LBOs, private equity, cross-border, law and finance

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“[We] had poor performance in Spain, Italy, and Asian countries for three reasons: unfamiliarity with those markets, fierce local market competition, and investment discipline/regulation.” Simon Borrows, Chief Executive, 3i Plc.

1. Introduction

A leveraged buyout (LBO), an important part of private equity (PE) investments, is the acquisition of a company financed with a substantial portion of borrowed funds. During a typical buyout investment, PE firms (1) improve the portfolio company’s value by conducting financial, governance, and operational engineering (Kaplan and Strömberg, 2008), (2) exit portfolio companies as PE funds have a limited contractual lifetime, and (3) return capital to their investors. Cross-border PE investments have become a phenomenon since the late 1990s and eventual exit success has always been of highest importance not only for the portfolio companies but also for the PE firms investing in a foreign country. In this paper, we examine the determinants of cross-border buyout performance based on the framework of institution.

Uncertainty and information asymmetry could create transaction obstacles for PE investments. Formal institutions are a set of political, economics and contract rules which guide the human behavior and interaction (North, 1990). When making their investment in countries of higher institution quality, which offers stronger investor protection and contract enforcement and has less political, economic and financial uncertainty and lower transaction costs, PE firms could facilitate the divestment process and are more likely to exit the portfolio company successfully. Further, when PE firms invest abroad, such transaction problems could be more severe because of the significant intrinsic risks arising from the institutional, cultural and geographic distance of a foreign country which could jeopardize the exit success (Li, Vertinsky, and Li, 2014; Buchner, Espenlaub, Khurshed, and Mohamed, 2017). However, PE firms could accumulate local business, institutional and cultural knowledge and increase international practice in their ongoing activities. Also, PE firms tend to circumscribe investment activities by focusing on specific industries and develop their industry expertise, thereby reducing information asymmetry and uncertainty (Cressy, Munari, and Mallipiero, 2007; Gompers, Kovner, Lerner, and Scharfstein, 2008) and helping them to overcome the institutional barriers.

The previous literature on cross-border investment performance mainly either focuses on early-stage venture capital (VC)'s cross-border performance (Dai, Jo, and Kassicieh, 2012; Li et al., 2014; Nahata, Hazarika, and Tandon, 2014; Buchner et al., 2017) or compares PE's buyout performance in domestic markets within different countries (Strömberg, 2008; Hammer, Knauer, Pflücke, and Schwetzler, 2017). To our knowledge, no study has focused on country-specific factors predicting a PE cross-border buyout's eventual exit success. In this paper, we attempt to fill this gap by examining the determinants of cross-border buyout performance with a focus on the differences in institutional quality across countries and the role of PE firm's experience in these markets.

Our study is the first using a novel dataset of portfolio companies' details of PE firms around the world to offer important insights into the determinants of buyout success in both developed and developing countries. We adopt a sample of 2,639 cross-border buyout investments in 38 countries between 1998 and 2007. To proxy for the country's institution quality, we use the country risk index from the International Country Risk Guide (ICRG) database. ICRG has recorded the country composite risk index for more than 140 countries and regions since 1984 by taking the political, economic, and financial risks into account. A country is of low risk and of high institution quality if the country risk index is higher than 80 points. We measure the institutional distance between two countries based on the absolute country risk index differences between the portfolio company country and PE firm country. To proxy for cultural distance, we adopt the Hofstede's cultural dimensions which include power distance, uncertainty avoidance, individualism, and masculinity. We create four learning variables: country-specific, multinational, and industrial experience, and reputation based on deal experience.

Following Hochberg, Ljungqvist, and Lu (2007) and Nahata et al. (2014), we measure performance in terms of exit success. We define the PE's portfolio company exit to be successful if it is later brought to the market through an initial public offering (IPO) or acquired by another company. We first examine the relationship between exit success and institutional,

cultural, and learning factors at the portfolio company-PE firm country-pair level. We then examine the probability of a successful exit in a Cox Hazard model. In additional analyses, we study the impact of the above factors on the choice between IPO and mergers and acquisitions (M&A) as exit routes.

This paper demonstrates that the exit success increases when the quality of the portfolio company country's institutional environment is higher. The institutional differences between PE firm and portfolio company countries raise an obstacle to cross-border investment and are detrimental to the exit success. However, the cultural distance between the countries of PE firms and their portfolio companies has no significant impact on cross-border buyout performance. Further, PE firm's deal experience is positively related to the likelihood of the exit success. Our findings on PE's performance are consistent with those in Li et al. (2014) who report insignificant and marginally significant mitigating effects of country-specific and multinational experience on institutional distance for VC's cross-border performance. However, we find that PE firms' industrial experience helps them to reduce the institutional barriers. PE firms with more industrial experience learn more and gain deeper knowledge of companies in that industry. Cressey et al. (2007) and Gompers et al. (2008) show that VC firms with the most industrial experience are most responsive to public signals of investment opportunities. Consequently, being an industry expert could also alleviate the burden of being a foreigner for PE firms.

In terms of exit strategies, compared with choosing M&A as the exit route, PE firms are more likely to exit via IPO when PE firms are in an investment club and when the initial buyout value is larger. In contrast to unsuccessful exits, the probability of going IPO increases when PE firms have more experience and form an investment club and when the deal size is larger. Similarly, the probability of choosing M&A increases when the quality of the institutional environment is higher and when PE firms are more experienced.

The results are robust to the self-selection issue in which the performance of PE firms may be attributable to the quality of their portfolio companies rather than PE firms' experience.

We adopt a variation of Heckman's (1979) correction procedure. In the first stage, we estimate the experienced PE firms' likelihood of investing in a portfolio company. In the second stage, we include the inverse Mills ratio received from the first-step probit model as an additional control variable to estimate the buyout performance. The results are also robust when we adopt the multiple imputation method to compensate for the missing records of deal value.

This study contributes to the literature in several ways. Previous PE literature either focuses on the investments of cross-border VC firms or compares buyout performance in domestic markets with different countries. Nahata et al. (2014) examine the influence of institutional differences on global VC success. Both VC and buyout investments are alternative investments and illiquid. However, buyouts, as a new form of company structure (Jensen, 1989) and important part of M&A activities (financial bidders), acquire mature companies and are different from VC investments which enter start-ups and adopt stage-financing. How institutional differences affect cross-border buyout investments is not well answered yet. Holloway, Lee, and Shen (2016) shed lights on cross-border LBO activities by examining issues at the stage of entry. Our paper investigates the buyout performance at the stage of exit which completes the investment process. Consequently, it helps us to deepen the understanding and expands the literature of internationalization of PE.

Also, this paper complements a number of studies examining the role of institutions in cross-border M&A (Rossi and Volpin, 2004; Bris and Cabolis, 2008; Ferreira, Massa, and Matos, 2010; Erel, Liao, and Weisbach, 2012). They do not incorporate LBO in the sample and examine M&A performance measured by offer premium and deal announcement return. The acquirer's performance in LBO could not be easily examined because PE firms usually are in limited partnership and not listed in stock exchanges. Our findings offer direct evidence of the influence of institutional differences across countries and between portfolio company country and PE firm country on buyout performance.

Moreover, this paper is related to the literature on PE experience and reputation (Cressy et al., 2007; Gompers et al., 2008; Demiroglu and James, 2010; Ivashina and Kovner, 2011;

Meuleman and Wright, 2011) and investigates the importance of experience in the cross-border setting. Lastly, to alleviate common data limitations in previous deal-level studies, we construct a dataset by extracting portfolio companies' details of 1,008 PE firms around the world and shed light on the determinants of buyout success in both developed and developing markets.

The rest of the paper is structured as follows. Section 2 provides a review of the literature and the framework of institution and develops the hypotheses. Section 3 presents the data and the variables construction. Section 4 discusses the empirical analyses. Section 5 concludes.

2. Literature review and hypothesis development

2.1 Literature review

The literature on PE performance can be categorized into two groups: fund-level studies and deal-level studies. Metrick and Yasuda (2011) outline both advantages and limitations of these studies. The net of fund fees and carry could be calculated at the fund level. However, there is missing information about timing and exits of individual projects. Also, investment write-offs which incur losses are not observed at the fund level. In contrast, deal-level data could alleviate the selection bias problem as the outcome of unsuccessful investments could be tracked. Nevertheless, deal-level studies suffer from data incompleteness (Kaplan, Sensoy, and Strömberg, 2002) and a novel data set or a model which could overcome the data problem is thus required.

Fund-level studies track the stream of cash flow and can shed light on the risk and return of PE investment (Kaplan and Schoar, 2005; Driessen, Lin, and Phalippou, 2012). Several deal-level studies also consider the risk and returns (Groh and Gottschalg, 2008; Lopez-de-Silanes, Phalippou, and Gottschalg, 2015). Other deal level studies examine the real effects such as post-buyout production efficiency (Alperovych, Amess, and Wright, 2013). Deal-level studies also consider the determinants of buyout exit, including PE firm characteristics and strategies (Arcot, Fluck, Gaspar, and Hege, 2015; Hammer et al., 2017).

There is emerging literature focusing on the cross-border PE investment performance. Papers in the international VC field analyze the determinants of VC exit performance: legal system and economic/market activities across countries (Nahata et al., 2014), legal, institutional, cultural distance between the country of VC firm and that of entrepreneurial firm (Li et al., 2014; Nahata et al., 2014; Buchner et al., 2017), and syndication with local VC and joint venture (Dai et al., 2012). Few papers study cross-border buyout investment performance. In a contemporaneous study, Chemmanur, Hull, and Krishnan (2014) examines the exit performance of US buyout specialists and exploits the exogenous shock to the effective proximity of US PE investors to other countries.

2.2 Hypothesis development

Gompers and Lerner (2004) state that there is little theoretical attention being paid to the divestment aspect of PE and therefore established theories are limited in their ability to explain the sale of portfolio companies. In previous cross-border investment studies, the influence of law and institution (see e.g. Rossi and Volpin, 2004) and national distance (see e.g. Nahata et al., 2014) on investments are well documented. The framework of institution could also be adopted to develop the hypotheses in the cross-border buyout setting. North (1990) defines the institution as the “rule of the game in a society” and “humanly devised constraints that shape human interaction”. The institution emphasizes the role of information asymmetry and transaction cost in economic activities and the key function of the institution is to reduce the uncertainty by establishing a stable structure to facilitate interaction among people. Williamsons (2000) establishes four hierarchies of the institution and the first two levels are country-specific and vary across different countries. The first level is the informal institution which comes from socially transmitted information and is part of the culture (North, 1990). The second level is the formal constraints, including constitutions, contract laws and enforcement of property rights. Differences in formal and informal rules result in different levels of information asymmetry and transaction cost.

2.2.1 Formal institutions

Formal rules contain political and legal rules, economics rules, and contracts. The purpose of these rules is to facilitate political or economic exchange (North, 1990). There are two contrasting views on effects of law and institution on financial transactions. Under the “Coasian” view, institutional differences do not matter as sophisticated investors could privately negotiate and optimize the contract to mitigate the impediments (Bergman and Nicolaievsky, 2007). For instance, Allen, Qian, and Qian (2005) state that, in the emerging economy China, neither its legal or financial system is well developed. However, the institutional impediments do not prohibit China’s fast growth. Kaplan, Martel, and Strömberg (2007) show that legal regime does not matter, and more experienced VC investors adopt US style sophisticated contracts.

Under the “law matters” view, La Porta, Lopez-De-Silanes, Shleifer, and Vishny (1997, 1998) show that the legal system exerts a positive influence on investor protection and capital market development. Glaeser, Johnson, and Shleifer (2001) state that appropriate laws and regulations and high enforcement of shareholder and creditor rights are instrumental in building up the market confidence and attracting investments. The law and institution could affect the PE exit in two ways: institutional differences across countries and between the PE firm country and portfolio company country.

Firstly, all else being equal, in a country with a better-developed institutional system, the capital market will be more active and cross-border PE firms have more opportunities to divest their portfolios. Further, the exit decision will be influenced by the information asymmetry between the foreign PE investors and local markets and the transaction cost. In a country with high institution quality, information asymmetry and transaction cost could be reduced as there are stronger investor protection and contract enforcement, and less political, economic and financial uncertainty, facilitating the exit process. Secondly, when PE firms invest abroad and the local formal rules could be significantly different from their home countries, there will be limitations on the effective transfer and enforcement of the governance

structure and contract design they adopt in their home countries (Tykvová and Scherlter, 2014). Consequently, institutional differences between two countries could be the obstacle to cross-border investments.

Hypothesis 1a null: In line with the “Coasian” view, institutional quality of the portfolio company country is not associated with the likelihood of a successful exit.

Hypothesis 1a alternative: In line with the “law matters” view, higher institutional quality of the portfolio company country is associated with a higher likelihood of a successful exit.

Hypothesis 1b: Larger institutional differences are associated with a lower likelihood of a successful exit.

2.2.2 Informal institutions

The informal institution is referred to the culture. Culture could exert influences on economic activities as it shapes economic individuals' choices and perceptions (Hofstede and Bond, 1988). The influence of cultural differences on cross-border investments has been examined in recent studies but the results are mixed. Ahern, Daminelli, and Fracassi (2015) report that the cultural distance adversely affects the cross-border mergers volume and combined announced returns. They argue that different cultural values could lead to impediments such as mistrust, misunderstanding or mismatched goals in cooperation. Li et al. (2014) and Buchner et al. (2017) find similar results in studying cross-border VC performance. However, Nahata et al. (2014) find that cultural distance increases the VC success. They argue the cultural disparity between VC firms and their portfolio companies leads to more rigorous due diligence and deal selection, and hence improves the performance.

The influence of cultural distance on the outcome of buyout investments has not been seriously examined. Li et al. (2014) state that cultural distance between VC firms and their portfolio companies could adversely affect the VC performance in three ways: communication problems, value and beliefs conflicts, and liability of outsidership. In the buyout context, similarly, cultural diversity can lead to different approaches to deal negotiation, contract

negotiation, corporate policy design, and working relationship development and thus increase information and transaction costs, leading to conflicts and investment failures.

On the other hand, in an LBO, PE firms usually fully acquire the portfolio company and PE firms' targets are mature companies in the late development stage which could generate a stable cash flow to meet the debt repayment requirement (Jensen, 1989). Also, buyout investors are sophisticated. To add firm value, they restructure the portfolio company's capital structure, replace the management team with industrial experts, and guide the operational change. In comparison, VC firms invest in early-stage and start-up companies. Understanding of business ideas and know-how of founder team characteristics are essential to VC investments (Kaplan and Strömberg, 2004; Gompers, Gornall, Kaplan, and Strebulaev, 2016). Consequently, buyout investors might not suffer from the adverse influence of cultural differences because they rely more on the hard information while VC investors could be subject to cultural differences as they rely more on the soft information.

Hypothesis 2 null: Cultural differences will not influence the cross-border buyout performance.

Hypothesis 2 alternative: Cultural differences adversely influence the cross-border buyout performance.

2.2.3 Learning

North (1990) claims that games are shaped by formal and informal constraints, but the contrast comes from organizational learning in the repeated game. Under the "experience matters" view, Meuleman and Wright (2011) claim that PE firms can reduce institutional barriers through learning. Learning is the process in which firms accumulate local institutional and cultural knowledge about a certain market or develop insights into a certain industry through their ongoing activities. De Clercq and Dimov (2007) argue that PE firms obtain knowledge about local businesses and institutions through prior investments and acquire skill sets in the process of evaluation, selection, and management. Also, PE firms could establish their local networks through prior investments in the target country. As cross-border

investments can be considered as part of the internationalization process, multinational experience of a rich array of environments with a broad range of institutional and cultural characteristics also plays a vital role in the cross-border investment process (Li et al., 2014). In addition, PE firms with substantial industrial experience could identify better investment opportunities in a certain industry and obtain the know-how to manage and add value to these investments (Gompers et al., 2008). PE firms' learning could mitigate the information asymmetry created by intuitional barriers, lower the transaction cost, and hence facilitate the exit process. Further, as PE firms approach the buyout market repeatedly, building reputation is necessary because such a reputation can serve as certification and help to mitigate the information asymmetry between PE firms and potential buyers (Gompers, 1996).

Various empirical studies provide insights into PE learning and experience and confirm the positive role of experience in investment activities. Cressy et al. (2007) find that industrial specialized PE firms are more likely to have higher post-buyout profitability. Demiroglu and James (2010) argue that reputable PE firms have persistent performance, and this confirms PE firms' skills in selecting, monitoring, and restructuring. Reputation based on deal experience will help PE firms to deliver the impression of being less risky to investors and banks, resulting in better lending terms.

Hypothesis 3a: More experienced PE firms are more likely to perform better in the cross-border buyout.

Hypothesis 3b: PE firms' deal experience helps to mitigate the adverse influence of distance.

3. Data and variable construction

3.1 Data and sample

Our sample of global LBOs comes from Mergermarket, a data provider for M&A transactions. Mergermarket tracks investment records for 1,008 worldwide PE firms (as of 31st December 2015). Unlike other databases such as Capital IQ M&A and SDC Platinum M&A, which track investments at the transaction level, Mergermarket categorizes investments into

exit portfolios and holding portfolios at the PE firm level. It provides information on holding periods, buyout/exit types, transaction value, deal description, and financial characteristics.

We obtain the sample as follows. Firstly, we select the investment of which the deal type “buyout” is specified. We keep the investment with the leading PE in club deals where more than one PE firm participates in the transaction.¹ Since our aim is to study cross-border buyout performance, we select deals if the dominant country of the portfolio company is different from the country in which the PE firm is headquartered. In addition, we keep deals for which transaction dates and holding periods are non-missing. Although Mergermarket tracks the deal history back to 1997, it has provided more reliable information since 1998. Consequently, following Nahata et al. (2014), we include buyout transactions from 1st January 1998 and exclude all countries with less than ten observations to avoid the adverse effects of outliers. We also exclude the overseas territories such as the Channel Islands, Bermuda, and Puerto Rico to avoid “shell” operation. We stop the sample at the end of 2007 to be able to track the outcome of all buyout transactions during an eight-year window until the end of 2015.² The final sample has 2,639 deals from 38 countries from 1998 to 2007.

To supplement other deal characteristics such as deal value and management participation, we match the sample with two other buyout databases: SDC Platinum M&A and Zephyr. Zephyr has better coverage for European deals and smaller deals. We match these databases using the PE firm’s name, the portfolio company’s name, and the transaction date.³ Since some PE firms have changed their names (for example, HSBC PE is renamed as Montagu PE), we extensively check the company website, confirm the change, and carefully match

¹ The leading PE is defined as the one which invests the largest stake or the oldest firm in the club deals if stake information is missing (Nahata et al. 2014). To confirm the correctness of leading PE firms, we also go through the deal description and check if the PE firm is leading the consortium/group. As Mergermarket keeps records at the PE firm level, same transaction will be recorded several times for club deals. We check the deal ID and target name and delete duplicates. Only transactions with leading PE firms are kept.

² Strömberg (2008) investigates a sample of 21,000 LBO transactions 1970-2007 and documents that the median duration is 9 years. Kaplan and Strömberg (2008) document that percentage of exits within seven years is about 55% for deals after 2000. In line with their findings, this paper leaves a window which is at least 8 years for PE firms to exit their portfolios.

³ Deal is labelled as “Leveraged Buyout” in SDC and “Institutional Buyout” in Zephyr; deal status is “completed deals”; the time span is from 1st January 1998 to 31st December 2007. The geographical area is worldwide, and the dominant country is defined as the place where the portfolio company is located in. In Zephyr, the PE name is not always specified so that we go through each deal description to figure out the PE firms behind each deal.

different databases. In addition, we carefully check the industry based on the sub-industry description in Mergermarket and reclassify it into one of the 11 SIC industries, as defined by the US Securities and Exchange Commission (SEC) SIC Code List.

Finally, we obtain institutional data from the ICRG database and cultural distance data from Taras, Steel, and Kirkman (2011). The market development data comes from SDC Platinum M&A database. Other country and country-pair controls are from the Central Intelligence Agency (CIA) World Factbook, World Bank, the Foreign Law Guide database, and the CEPII website.

3.2 Variable construction

3.2.1 Dependent variables

Mergermarket identifies the following four exit types: IPO, secondary buyout, trade sale, and other exits. Other exits are exit routes excluding IPO, secondary buyout and trade sale as well as routes for which Mergermarket could not track details. We follow the previous literature (Hochberg et al., 2007; Nahata et al., 2014) and code exits as being successful if PE firms were able to exit portfolio companies either via IPO or M&A (trade sales and secondary buyout).

In the aggregate country pair level analysis, we calculate the successful exit ratio as the number of successful exits to the number of investments for each portfolio company-PE firm country pair. For the deal-level analysis, to take the time-to-successful exit and right-censored data characteristics into account, we adopt the survival analysis. The hazard rate is the conditional probability that the PE firm divests the portfolio company successfully. The time-to-successful exit is the number of months between the buyout date and the successful exit date. For portfolio companies with unsuccessful exits, the holding time is the number of months between the buyout date and 31st December 2015 or the last available tracking date.

3.2.2 Explanatory variables

The explanatory variables can be categorized into four sets of variables. The first set pertains to the institution. The second set consists of learning factors from different perspectives. We also control for deal characteristics including management participation, club size (the number of PE firms) and deal value. Country and country-pair controls include local LBO market development, common religion, common language, and geographic distance. Appendix 2 provides detailed description of all deal characteristics and country and country-pair control variables.

3.2.2.1 Factors related to institutions

Firstly, we obtain the country risk index from International Country Risk Guide database. This database has been intensively used in the law and intuition studies (La Porta et al., 1998; Rossi and Volpin, 2004; Lerner and Schoar, 2005; Bris and Cabolis, 2008; Ferreira et al., 2010; Nahata et al., 2014). The country risk index is a composite index: political risk components account for 50% and the rest consists of economic and financial risk components. Political risk components include government stability, socioeconomic conditions, investment profile, internal conflict, external conflict, corruption, military in politics, religious tensions, law and order, ethnic tensions, democratic accountability, and bureaucracy quality. Economic risk rating aims to provide a measure of a country's current economic strengths and weakness. It includes following components: GDP per head, real GDP growth, annual inflation rate, budget balance as a percentage of GDP, and current account as a percentage of GDP. Financial risk rating measures a country's ability to finance its official, commercial, and trade debt obligations. It includes the following components: foreign debt as a percentage of GDP, foreign debt services as a percentage of exports of goods and services, current age account as a percentage of exports of goods and services, net international liquidity as months of import cover, and exchange rate stability. The composite index calculation method is developed and used in several law and institution studies, for example, Nahata et al. (2014). The positive

aspect of using a single composite index is to alleviate the influence of multicollinearity when all individual variables are included.

Bhagwat, Brogaard, and Julio (2017) classify countries into three groups based the political risk components: medium risk country (political risk score is between 60 and 80), high risk country (political risk score is below 60), and the rest group (political risk score is higher than 80). In line with their measurement, to proxy institution quality of the portfolio company country, we create a dummy variable *Low_Risk_Country* which is defined as the one with composite rating score higher than 80 points in the ICRG database. Low risk countries have lower political, economic and financial risk and thus have higher institution quality. The variable *Institutional_Distance* is defined as the logarithm of the absolute differences between the country risk indices of PE firm country and portfolio company country.

To proxy for the cultural distance, we adopt the Hofstede measure. There are four dimensions in his cultural evaluation: power distance, uncertainty avoidance, individualism, and masculinity. We compute the multidimensional cultural distance between the country of the PE firms and the country of the portfolio company as follows:

$$\text{Cultural Distance} = \frac{(\sum_{i=1}^4 (C_{TC,i} - C_{PE,i})^2)^{1/2}}{4}$$

where $C_{TC,i}$ is the portfolio company's national culture measured on element i and $C_{PE,i}$ is the leading PE firm's national culture measured on element i . To capture changes in the cultural distance, we use culture scores from Teras et al. (2011). These data are country-specific and time-varying over three periods: 1980s, 1990s, and 2000s. If the buyout year is between 1998 and 1999, the 1990s data will be used; if the buyout year is between 2000 and 2007, the 2000s data will be used. Following Nahata et al. (2014), if the data are missing for the 1990s, we will use 2000s score as the proxy. If the data are missing for both 1990s and 2000s, the 1980s score will be used as the proxy.⁴

⁴ There are two countries where we could not obtain culture information from Teras et al. (2011): Iceland and Luxemburg. Luxemburg is the portfolio company country or PE firm country in 29 investments and Iceland is PE firm country in one investment, amounting to a total of 30 investments. We adopt the average of culture score of the bordered or surrounding

3.2.2.2 Factors related to learning

We construct four variables to measure different aspects of experience. Strömberg (2008) shows that the experience of PE firms consistently explains the global exit behavior and the variation in holding periods. The first learning variable is the *Country_Experience*. We construct this variable as the number of buyouts which the PE firm completed in the country of the portfolio company from 1990 to the year prior to the initial buyout. The second variable *Multinational_Experience* is constructed as the number of foreign countries in which the PE firm invested from 1990 to the year prior to the initial buyout (Barkema and Vermeulen, 1998). The next variable *Industrial_Experience* aims to capture the industrial specialization as each PE firm has its own industrial focus. For example, in Mergermarket records, the UK PE group 3i focuses more on service industries. Industry experience is calculated as the number of buyouts which the PE firm completed in the industry of the portfolio company from 1990 to the year prior to the initial buyout. Further, as argued by Demiroglu and James (2010), experience will accumulate over time, but this will not be able to distinguish between funds. Following Demiroglu and James (2010), we construct another variable *Reputation* based on recent experience, i.e. the total number of buyout transactions completed by the PE firm in the three years prior to the initial buyout. As there is a time gap between the initial buyout date and the final exit date, all measures link PE firms' experience to their future performance and thus avoid the reverse causality.

3.3 Summary statistics

Table 1 provides descriptive statistics for the sample of cross-border buyouts. Panel A reports the incidence of buyout based on the buyout year. We classify the exit outcome types based on the Mergermarket records as of 31st December 2015: successful exits and unsuccessful exits. Successful exits represent 65% of the sample and portfolio companies are

countries as the proxy, namely, the average of the Belgium, France, and Germany for Luxemburg and the average of other four Scandinavian countries for Iceland. We also re-run the main regressions after excluding these 30 observations and document similar results.

divested via IPO (4%) or M&A (60%).⁵ The sample suggests that PE firms prefer M&A as the way to divest their portfolios. Unsuccessful exits include other exits (7%) and non-exit ones (29%). Other exits are portfolio companies for which Mergermarket loses tracking information and non-exit portfolios are still privately held by PE firms. The sample is comparable to that used by Strömberg (2008) who reports one-third of portfolio companies are still private until 2008 and M&A earns its popularity as the divestment alternative to IPO. In terms of the distribution of the sample, most buyout portfolios taking place in early years are exited successfully. For the buyout portfolios that took place in 2007, 47% of them are still private until 2015. The holding time is thus right censored.

[Insert Table 1 about here]

In Panel B of Table 1, we show the incidence of buyout portfolios based on industry. Most portfolio companies operate in the manufacturing industry, amounting to 45% of the deals. Service industry and retail industry account for 24% and 7% of the buyouts, respectively. The successful exit ratios are higher in manufacturing (69%) and service (66%) industries. To control for the industry heterogeneity, we include industry fixed effects in our empirical tests.

Panel C of Table 1 shows the clustering of buyouts across countries of portfolio companies. Cross-border buyouts in Germany constitute 12% of the deals and the UK accounts for 10%. Our sample is comprehensive as we include deals in both developed and developing markets. Further, emerging Asian countries have attracted foreign investors' attention in recent years, especially China and India, as there are rapid macroeconomic growth, demographic change, and legal and financial reforms (Dai et al., 2012). India and China account for 5% and 4% of the deals, respectively. We find that in these countries, the successful exit ratios are lower than 50%. This result is consistent with Lerner, Sørensen, and Strömberg (2009) who find a low exit ratio in emerging Asian countries. We list the countries of PE firms in panel D of Table 1 the US and the UK markets are generally believed to be the most developed LBO

⁵ IPO: $110/2,639 = 4\%$; M&A: $1,596/2,639 = 60\%$; other exits: $176/2,639 = 7\%$; non-exit ones: $757/2,639=29\%$.

markets, and PE specialists from these two countries contribute to 67% of the buyouts. Table 2 reports the descriptive statistics for main explanatory variables.

[Insert Table 2 about here]

4. Empirical results

4.1 Aggregate cross-border buyout successful exit ratio

In this section, we test the relationship between cross-border buyout exit success and institutional and cultural factors at the country-pair level. Following Ferreira et al. (2010) and Erel et al. (2012), we perform both cross-sectional and panel tests. We construct the dependent variables as follows: (1) for cross-sectional tests, the outcome variable is the number of successful exits of all portfolio companies which the PE firms invested in over the entire period in country pair i over the total number of portfolio companies which the PE firms invested in over the entire period in country pair i ; (2) for panel tests, the outcome variable is the number of successful exits of all portfolio companies which the PE firms invested in in year t in country pair i over the total number of portfolio companies which the PE firms invested in in year t in country pair i . We cluster standard errors at the country pair level and include year fixed effects in the panel tests.

[Insert Table 3 about here]

The results in Table 3 show that the successful exit ratio is positively related to the institution quality of the portfolio company country and negatively related to the institutional distance between portfolio company country and PE firm country across all specifications. However, cultural distance has no significant influence on the exit success. The results are robust and qualitatively similar when we take the maturity of local LBO market and other country and country-pair characteristics into account in models 2 and 4. Overall, the results in Table 3 support hypotheses 1a the “law matters” view and 1b (La Porta et al., 1998; Nahata et al., 2014). In the country of well-developed institution system, information asymmetry and transaction cost could be lower and PE firms are more likely to bring their portfolio company

to IPO or M&A. However, if PE firms are unfamiliar with local institutional rules, information asymmetry and transaction cost are higher, and it is more difficult for them to successfully exit portfolio companies.

4.2 Likelihood of a successful exit – hazard rate of a successful exit

We apply the survival analysis to analyze the impact of the chosen explanatory variables on the time-to-successful exit. After the initial buyout, a portfolio company can be privately held, unidentified as tracking details are missing, or divested via IPO or M&A. The right-censored observations in the dataset are those portfolio companies that are either privately held as of the cut-off date 31st December 2015 or lost. We use a dichotomous variable describing the status of a portfolio company as either successful exits (IPO and M&A) or unsuccessful exits (other exits and non-exit ones). In survival models, we interpret the probability of a failure event for a buyout portfolio as the probability of its exit success. We adopt both non-parametric and semi-parametric approaches of survival analysis to assess the influence of chosen explanatory variables on the failure and hazard functions. The non-parametric analysis provides insights into the difference between groups. The semi-parametric approach could be used for the multivariate analysis.

4.2.1 Non-parametric analysis

In the non-parametric analysis, we categorize the sample based on institution quality, institutional distance, cultural distance, and reputation. We create three new dummy variables. The first one is *Familiar_Institution* which equals one if the institutional distance belongs to the lowest quartile, and zero otherwise. The second dummy variable is *Familiar_Culture* which equals one if the cultural distance belongs to the lowest quartile and zero otherwise. Further, the variable *Reputable_PE* is an indicator variable denoting whether the PE firm belongs to the top quartile of reputable PE firm group based on the reputation measurement in the year prior to the initial buyout. In Kaplan-Meier estimations, the failure function is the cumulative probability of a successful exit at any given time t .

[Insert Figure 1-4 about here]

In Figures 1-4, we plot the Kaplan-Meier failure functions based on the institutional quality, institutional distance, cultural distance, and reputation, respectively. As plotted in Figure 1, the probability of a successful exit at any given time is always higher for the low risk country group. In the unreported log-rank test, the difference between these two failure functions is significant at 1% level ($\chi^2 = 70.23$). The result suggests that in the low risk country (i.e. higher institutional environment quality), PE firms have higher likelihoods of bringing portfolio companies to successful exits. Figure 2 shows the plot of Kaplan-Meier functions based on institutional distance. The failure function of Familiar Institution group is always higher than that of the rest of the sample, suggesting a negative relationship between institutional distance and probability of a successful exit. The difference is significant at 1% level ($\chi^2 = 8.86$). In Figure 3, the curves of failure functions are parallel to each other to a large degree, and one could therefore expect that there is no significant difference between familiar culture group and the rest. The difference in their failure functions is not statistically significant ($\chi^2 = 1.56$), indicating that PE firms are not influenced by cultural distance. Finally, as shown in Figure 4, the Kaplan-Meier failure function plot of the reputable PE firm is consistently above that of the non-reputable PE firm. The difference of these failure functions is significant at the 1% level ($\chi^2 = 9.35$). This result suggests that reputable PE firms have better performance in cross-border buyout investments.

Overall, the results of the non-parametric analyses suggest the institutional environment quality and reputation are positively associated with the buyout performance and institutional distance is negatively related to the buyout performance, supporting hypotheses 1a the “law matters” view, 1b and 3a. In addition, we find insignificant influences of cultural differences on the buyout performance.

4.2.2 Semi-parametric analysis

In this section, we perform the Cox Proportional Hazard estimation. In the survival model, the hazard rate can be referred to as the probability of a successful exit during one unit of time, conditional on unsuccessful exit up to time t . A positive and significant coefficient would imply a higher hazard rate and a shorter expected holding duration. A negative and significant coefficient would imply a lower hazard rate and a longer expected holding duration.

[Insert Table 4 about here]

Across models 1-4 in Table 4, we relate institutional and cultural factors, deal characteristics and geographic distance between two countries to the likelihood of a successful exit. To avoid multicollinearity, we include measures of experience variables separately. As reported in models 1-4 of Table 4, the hazard rate of a successful exit increases when (1) PE firms invest in low risk countries, (2) PE firms are more experienced, and (3) management participates in the deal. The hazard rate of a successful exit decreases when the institutional distance is larger, when the club size is larger, and when the PE firm is geographically far away from the portfolio company.

Firstly, coefficients of the variable *Low_Risk_Country* are positive and statistically significant. In low risk countries, the likelihood of a successful exit is higher, and the expected holding time is shorter. In model 1, the coefficient of 0.237 on *Low_Risk_Country* indicates that the estimated hazard ratio of the group based on the dummy *Low_Risk_Country* is 1.267 ($e^{0.237}$). Therefore, the hazard of successful exit when PE firms invest in low risk countries is 1.267 times higher than that when PE firms invest in other countries. This evidence is in line with Nahata et al. (2014) who reports a positive role of legal institution in global VC success and provides support to the “law matters” view.

Secondly, the coefficients on *Institutional_Distance* is negative and statistically significant at least at the 5% level. If PE firms are unfamiliar with the institutional environment and institutional distance is larger, the probability of successful exit is lower, and it takes longer time for them to exit. The results suggest that institutional barriers are the investment obstacles

which is consistent with the previous cross-border studies (Li et al., 2014; Buchner et al., 2017). This finding supports hypothesis 1b.

The coefficients of the variable *Culture_Distance* are insignificant across all models and this paper fails to reject the null hypothesis that cultural differences will not influence the performance. This result implies that PE firms which are sophisticated investors suffer from minimal adverse influences of cultural differences. This is different from the findings on VC by Nahata et al. (2014) who show a positive influence of cultural differences on VC exit performance and Li et al. (2014) and Buchner et al., (2017) who document a negative relationship. Compared to VC firms, buyout firms conduct the LBO to acquire the late-stage and mature firms which could generate enough operating cash flow to repay the debt (Jensen, 1989). Consequently, the sophisticated buyout specialist relies on hard information and thus overcomes the barrier of cultural differences.

In line with Cressey et al. (2007), Gompers et al. (2008), PE firms' experience and reputation have positive impacts on investment performance. Specifically, country experience which offers local insights, multinational experience which brings in the knowledge of different institutions, industrial experience which offers deep industrial insights, and reputation based on deal experience which serves as the certification to resolve asymmetric information problems, all help PE firms achieve higher likelihoods of a successful exit in the cross-border buyout. The findings support hypothesis 3a.

We also show that management participation which reduces the information asymmetry between insiders and PE managers helps to improve the buyout performance. In terms of club size, we find the diseconomies of scale of the PE club as the larger PE club takes a longer time to successfully divest the portfolio company. In the later section 4.3, club size is positively associated with the likelihood of going IPO and negatively associated with the choice of M&A. PE firms frequently adopt M&A as the route to divest portfolio companies, but IPO is considered as the most successful way (Gompers, 1996). Combining these results, one could argue that although it takes more time for the large PE club to divest the portfolio company, a

large PE club improves the cross-border buyout performance in a modest way as it increases the probability of bringing the portfolio company to the market through an IPO. When the geographic distance is taken into consideration, we provide consistent evidence to support the geographic proximity argument (Chen, Gompers, Kovner, and Lerner, 2010). PE firms are less likely to exit successfully if they are far away from their portfolio companies. In model 5, we control for other country and country pair characteristics and the adopt the reputation as the learning measurement.⁶ The results are similar to those in models 1-4. In model 6, we include deal value to control for the size effect and we find that the larger the size, the higher the probability of successful divestment.

To examine the mitigation effects of a PE firms' deal experience on institutional distance, we construct interaction terms of institutional distance and four deal experience variables and include them in the models separately. The results are reported in Table 5.

[Insert Table 5 about here]

The coefficients of interaction terms institutional distance and country-specific experience, multinational experience, and reputation based on recent deal experience are statistically insignificant. The results suggest that only having the knowledge about the local institution, business and international practice might not be enough for PE firms to overcome the intuitional barriers. The findings are consistent with Li et al. (2014). However, the coefficient of the interaction term of institutional distance and industrial experience are positive and significant at the 5% level. In cross-border activities, PE firms could effectively transfer the governance structure and enforce the contract design if they have substantial experience in the portfolio company's industry. As PE firms tend to specialize in certain industries, compared to other experience, the industrial experience is more important in their investment activities. The findings are consistent with Cressy et al. (2007) and Gompers et al. (2008).

⁶ We also re-run the regressions with other learning variables and take maturity of local market, religion difference, language difference, and deal size into consideration and find similar results.

Overall, the results of the Cox Proportional Hazard analysis suggest that the hazard rate of a successful exit has a positive relationship with the quality of the institutional environment, PE firms' experience and management participation, and has a negative relationship with institutional distance and geographic distance, providing supporting evidence to hypotheses 1a "law matters" view, 1b and 3a. Moreover, this paper documents that PE firms' industrial experience could help to overcome the adverse influence of institutional distance, which supports hypothesis 3b.

4.3 Exit strategies: IPO versus M&A

4.3.1 Multinomial analysis on the status

To test whether the chosen factors have different impacts on the choice between IPO and M&A as exit strategies, we first perform the multinomial logit analysis and then relate the choice of IPO relative to M&A as exit strategy. The base category for the multinomial analysis is the group of portfolio companies with unsuccessful exits (other exits and non-exit ones).

[Insert Table 6 about here]

In models 1-4, we relate the learning variables separately as well as other explanatory variables to the choice of exit strategy. Compared to the group with unsuccessful exits, the likelihood of choosing IPO increases when private equity firms are more experienced, when the club size is larger, and when the initial buyout value is higher. M&A is the most frequently adopted exit route by buyout specialists. Compared to the unsuccessful exits group, the quality of institutional environment is positively associated with the likelihood of choosing a takeover. In addition, the PE firm's experience and reputation help to increase the likelihood of conducting M&A. These findings support the conjecture based on the "law matters" and "experience matters" views. Also, compared to the unsuccessful exits group, the PE firm is more likely to divest the portfolio company via M&A if management participates in the buyout. In terms of club size, a large PE club may aim for the most successful divestment way IPO (Gompers, 1996).

As shown in model 5 of Table 6, the choice of IPO as exit strategy over M&A mainly depends on deal characteristics. With management participation, the PE firm prefers the M&A over IPO as the exit strategy. The larger the PE club size, the higher the likelihood of PE firms bringing the portfolio company to the market through an IPO. The deal value matters for the exit strategy as there are certain threshold limits on the IPO requirement (Brau, Francis, and Kohers, 2003). The larger the deal value, the higher the probability of going IPO.

Overall, the results of the above tests show that the probability of bringing the portfolio company to the market through an IPO increases when PE firms are more experienced, the PE club size is larger and deal value is higher. The probability of divesting the portfolio company via M&A rises when the quality of the institutional environment is higher, when the PE firms are more experienced, and when the management participates in the buyout.

4.3.2 Holding time for IPO and M&A

We also perform the survival analysis on the choice between IPO and M&A as exit strategies and report the results in Table 7. The specifications used for this test are the same as those in Table 5.

[Insert Table 7 about here]

As shown in Table 7, the hazard rate of choosing IPO as the exit strategy is related to PE firm's experience and the deal characteristics: it increases when PE firms are more experienced, when the PE club size is larger, and when the initial buyout value is larger. Like the findings in Table 6, coefficients of all institutional variables are insignificant for the choice of going IPO but remain positive. In terms of the hazard rate of choosing M&A as the exit strategy, we find that it is positively related to the institutional environment quality and PE firms' experience. Also, management participation increases the hazard rate of choosing M&A. Finally, PE club size is positively related to the choice of IPO as the exit route and negatively related to the choice of M&A.

4.4 Robustness tests

4.4.1 Selection bias

The results of the analyses of successful exit can be biased if we ignore the fact that the performance is not due to the experience of PE firms, but to the selection of high quality portfolio companies. Sørensen (2007) argues that such endogeneity originates from two effects: selection effect and monitoring effect. Selection effect means that more experienced PE firms select companies of higher quality while monitoring effects mean that PE activities after the acquisition add value to the target company. To address concerns of endogeneity, we follow Bottazzi, Da Rin, and Hellmann (2008), and use the Heckman's (1979) correction procedure. The dependent variable *Experienced_PE* in the selection stage is an indicator variable denoting whether the PE firm belongs to the top quartile of experienced PE firm group based on the industrial experience measurement in the year prior to the initial buyout. We adopt the deal value which captures the company quality to a certain degree. Sørensen (2007) and Bottazzi et al. (2008) argue that aggregate market characteristics are good candidates for exogenous variables because the distribution of companies and investors in various markets is exogenous. As shown in Panel D of Table 1, the US and the UK PE firms are the most active cross-border buyout investors. These two markets are the most two developed markets for PE investments and buyout specialists from these two markets tend to accumulate more experience. We use two PE firms' country origins the US and the UK to create two dummy variables as exogenous variables. Intuitively, for example, a portfolio company in Australia is more likely to encounter foreign investors from the US and the UK. These investors are more likely to be experienced buyout specialists. However, conditioned on encountering an experienced investor, there is no more screening advantage and the quality of investment of an experienced US or UK investor is not necessarily better than that of an experienced France investor. We include these explanatory variables in the selection step plus other deal characteristics variables. The first stage model estimates the likelihood of the experienced PE firm investing in the portfolio

company. We then add the inverse Mills ratio from the first step into the second step regression to estimate the performance. The specifications thus are:

First step (selection):

$$\text{Experienced_PE}_i = \text{Probit}(K_i), \text{ where } K_i = \alpha_j + \beta_1 \text{Deal_Value}_i + \beta_2 \text{Management}_i + \beta_3 \text{Club_Size}_i + \beta_4 \text{US_PE}_i + \beta_5 \text{UK_PE}_i$$

Second step:

$$\text{(Cox Hazard): Hazard_Rate} = \lambda(t|X) = \lambda_0(t) * e^{x_i' \beta_i + \beta \text{Inverse_Mills_Ratio}}$$

$$\text{(Logit): IPO vs M\&A} = \text{Logit}(y_i), \text{ where } y_i = \alpha_i + x_i' \beta_i + \beta \text{Inverse_Mills_Ratio}$$

[Insert Table 8 about here]

As shown in Table 8, in the selection stage, the likelihood of the experienced PE firm investing in the portfolio company is higher when the initial buyout value is larger and when the PE firm is from the US or the UK. In the second step, we find that after controlling for the selection bias, the probability and the hazard rate of successful exits increase when the institutional environment quality is higher, when PE firms are more experienced, and when the management team participates in the deal. We also find consistent evidence of the mitigation effect of industrial experience on institutional distance. In terms of the choice between IPO and M&A as exit strategies, deal characteristics are important in the decision-making process.

4.4.2 Imputed deal value

Our sample includes 2,639 cross-border buyout deals but the sample size decreases to 1,975 if we require deal value to be available. The sample reduction through missing deal value might result in biased estimation. To alleviate the concern of missing value, we follow Strömberg (2008) and adopt the multiple imputation to create a complete case dataset.

[Insert Table 9 about here]

In Table 9, we present re-estimations of the main models with deal value imputed based on the multiple imputation. The main results remain consistent with previous tests. Institution quality and private equity firms' experience insert positive influence on buyout performance

while institutional distance has the opposite effect. Moreover, industrial experience could mitigate the adverse effects of institutional distance.

5. Conclusion

This study examines the determinants of the cross-border buyout performance based on the framework of institution. We use the Mergermarket database and obtain a sample of 2,639 cross-border buyout transactions in 38 countries from 1998 to 2007. Firstly, we test the relationship between successful exit ratio and the factors mentioned above at the country-pair level. To study the likelihood of a successful exit at the deal level, we use the survival analysis to examine the determinants of exit success.

We find that the institutional environment quality is positively related to the likelihood of successful exits while such likelihood decreases when the institutional differences between PE firm country and portfolio company country are larger. The result is in line with previous cross-border VC studies (Nahata et al., 2014) and consistent with the “law matters” view (Laporta et al., 1997, 1998). Further, cultural distance does not play a role in determining cross-border buyout performance. We measure PE firms’ learning from four aspects: country-specific experience, multinational experience, industry experience and reputation. Consistent with previous studies (Cressey et al. 2007; Gompers et al., 2008), we find that more experienced PE firms perform better and their industrial experience has a mitigation effect. In the additional analyses examining the choice of exit routes, PE experience, PE club size, and initial buyout value are positively associated with the likelihood of going IPO. As the most frequently used exit strategy, M&A is more likely to be adopted when the institutional environment quality is higher and when PE firms learn more from their past activities. This study is the first using a novel dataset of portfolio companies’ details of PE firms around the world to offer important insights into the determinants of buyout success in both developed and developing countries.

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Appendix 1: Variable definition

Variables	Definition and Source
Dependent variables	
<i>Successful_Exit_Ratio</i>	(1) For cross-sectional test, the outcome variable is the number of successful exits of all portfolio companies which the PE firms invested in over the entire period in country pair i over the total number of portfolio companies which the PE firms invested in over the entire period in country pair i ; (2) For the panel test, the outcome variable is the number of successful exits of all portfolio companies which the PE firms invested in in year t in country pair i over the total number of portfolio companies which the PE firms invested in in year t in country pair i .
<i>Hazard_Rate</i>	Conditional probability that the PE firm could exit the portfolio company successfully.
<i>Exit_Types</i>	Exit types include three categories: IPO, M&A (Secondary buyout and trade sales), and unsuccessful exits (other exits and non-exit ones). (Source: Mergermarket)
Institutions	
<i>Low_Risk_Country</i>	Dummy variable which equals one if the country risk index of the portfolio company's country is higher than 80. The country risk index consists of political risk components with 50% weight, economic risk components with 25% weight and financial risk components with 25% weight. (Source: International Country Risk Guide)
<i>Institutional_Distance</i>	Logarithm of one plus the absolute value of the country risk index differences between the country of portfolio company and the country of the PE firm. (Source: International Country Risk Guide)
<i>Cultural_Distance</i>	The cultural distance between the country of the leading PE firm and country of the portfolio company. It is measured as the distance between Hofstede's four-dimensional cultural factors on time-varying meta-analytic scores: power distance, uncertainty avoidance, individualism, and masculinity. (Source: Taras et al., 2011)
Learning	
<i>Country_Experience</i>	Logarithm of one plus the number of buyouts which the PE firm completed in the country of the portfolio company from 1990 to the year prior to the initial buyout. (Source: Mergermarket and SDC Platinum M&A)
<i>Multinational_Experience</i>	Logarithm of one plus the number of foreign countries in which the PE firm invested from 1990 to the year prior to the initial buyout. (Source: Mergermarket and SDC Platinum M&A)
<i>Industrial_Experience</i>	Logarithm of one plus as the number of buyouts which the PE firm completed in the industry of the portfolio company from 1990 to the year prior to the initial buyout. (Source: Mergermarket and SDC Platinum M&A)
<i>Reputation</i>	Logarithm of one plus the number of buyouts completed by the PE firm three years prior to the initial buyout. (Source: Mergermarket and SDC Platinum M&A)
Deal Characteristics	
<i>Management</i>	Dummy variable which equals one if the management participates in the initial buyout transaction and zero otherwise. (Source: Mergermarket, SDC Platinum M&A, and Zephyr)
<i>Club_Size</i>	The number of PE firms in the club deal. (Source: Mergermarket, SDC Platinum M&A, and Zephyr)
<i>Deal_Value</i>	Logarithm of buyout deal value. (Source: Mergermarket, SDC Platinum M&A, and Zephyr)
PE Characteristics	
<i>US_PE</i>	Dummy variable which equals one if the PE firm headquarters in the US and zero otherwise. (Source: Mergermarket)
<i>UK_PE</i>	Dummy variable which equals one if the PE firm headquarters in the UK and zero otherwise. (Source: Mergermarket)
Country and Country-pair Controls	
<i>LBO_Market_Development</i>	The number of buyouts in the country of the portfolio company from 1990 to the year prior to the initial buyout. The number is then normalized by the country's GDP in year $t-1$. (Source: SDC Platinum M&A and World Bank)
<i>Common_Religion</i>	Dummy variable which equals one if the country of the PE firm and the country of the portfolio company have the same primary religion and zero otherwise. (Source: CIA World Factbook)
<i>Common_Language</i>	Dummy variable which equals one if the country of the PE firm and the country of the portfolio company have the same first official language and zero otherwise. (Source: CIA World Factbook)
<i>Geographic_Distance</i>	Logarithm of geographic distance between the most populated city of the country of the PE firm and the country of the portfolio company. (Source: CEPII)

Appendix 2: Description of Variables

Factors related to deal characteristics

With the management team participating in the buyout transaction, the information asymmetry between PE firms and the portfolio company could be reduced and hence a better performance is anticipated. To account for the corporate governance characteristics, we adopt the dummy variable *Management* which equals one if the deal is defined as “management buyout” in Mergermarket, “acquirer including management” in SDC Platinum M&A database, or “management buyout” in Zephyr.

Further, to account for the syndication among PE firms, the variable *Club_Size* is included. Officer, Ozbas, and Sensoy (2010) demonstrate that the PE club pays less for the buyout transaction and such lower pricing might be an inadvertent by-product of an unobserved motivation for club deals. Meuleman and Wright (2011) find that institutional differences induce the UK PE firms to cooperate with a local PE firm when they invest in continental Europe. The variable *Club Size* is calculated as the number of PE firms in the deal.⁷ Mergermarket, SDC and Zephyr provide limited information on portfolio companies other than transaction details. We include the deal value to control for the size effect and measure the quality of the portfolio company. The larger the deal value, the larger the investment the PE firm makes. The deal value could capture the quality of the portfolio company to a certain degree. The deal value information is from the “buy value” in Mergermarket, “transaction value” in SDC Platinum M&A or “deal value” in Zephyr.

Factors related to country and country-pair characteristics

Meuleman and Wright (2011) state that the development of local LBO market is one of the key factors in the institutional context. A mature LBO market could facilitate the exit process because there are more buyout-related investment banks, law firms, and financial advisors and the transaction complexity could, therefore, be reduced. Also, PE firms could find more financial buyers and sell their portfolios via a secondary buyout. We construct the *LBO_Market_Development* variable as the aggregate number of LBOs in the country of the portfolio company from 1990 to the year prior to the initial buyout and normalize it by the country’s GDP in year $t-1$. We also consider other types variables measuring the link between the country of the PE firm and the country of the portfolio company. Guiso, Sapienza, and Zingales (2003) show that religion and language have an impact on the economic development. The religion and language information are extracted from Central Intelligence Agency (CIA) World Factbook. Variable *Common_Religion* is a dummy variable that equals one if the country of the PE firm and the country of the portfolio company have the same primary religion. Variable *Common_Language* is the dummy variable that equals one if they have the same first official language. Geographic proximity could favour the participation of PE firms in portfolio companies and improve the performance (Chen et al., 2010). We measure the geographic proximity by using the geographic distance between the most populated city of the country of the portfolio company and that of the PE firm country. The data is from CEPII database. Also, we track the law origin and commercial code of both portfolio companies’ nations and PE firms’ nations in Foreign Law Guide database. Following previous law and finance studies such as La Porta et al. (1998) and Lerner and Schoar (2005), the world legal systems are divided into six groups: English common law, French civil law, German civil law, Scandinavian civil law, Islamic law and Socialism background law. The legal origin information is incorporated in the multiple imputation estimation.

⁷ To find the club size in Mergermarket, we read through the details in buyer description, seller description, equity provider and deal description, and figure out the number of PE firms.

Table 1: Distribution of buyouts and exit types**Panel A: Temporal distribution**

Panel A illustrates the distribution of buyouts and exit types by the buyout year. The buyout sample includes 2,639 worldwide buyouts between 1998 and 2007. The sample is extracted from Mergermarket.

Year	Successful exits			Unsuccessful exits			Total
	IPO	M&A	Sub total	Other exits	Non-exit	Sub total	
1998	2	75	77	8	11	19	96
1999	10	106	116	7	15	22	138
2000	6	116	122	11	13	24	146
2001	5	86	91	6	20	26	117
2002	7	115	122	12	17	29	151
2003	11	137	148	12	24	36	184
2004	14	205	219	19	64	83	302
2005	17	253	270	24	119	143	413
2006	23	269	292	38	221	259	551
2007	15	234	249	39	253	292	541
Total	110	1,596	1,706	176	757	933	2,639

Panel B: Industrial distribution

Panel B illustrates the distribution of buyouts and exit types by industry. The sample includes 2,639 worldwide buyouts over 11 SIC industries. The sample is extracted from Mergermarket.

Industry	Successful exits			Unsuccessful exits			Total
	IPO	M&A	Sub total	Other exits	Non-exit	Sub total	
Agriculture	0	4	4	1	2	3	7
Mining	5	14	19	3	11	14	33
Construction	2	29	31	5	19	24	55
Manufacturing	45	776	821	85	277	362	1,183
Transportation	1	55	56	6	31	37	93
Communication	9	88	97	10	46	56	153
Energy	1	36	37	2	24	26	63
Whole Sales	4	42	46	4	18	22	68
Retails	10	112	122	13	60	73	195
Finance	6	66	72	10	71	81	153
Services	27	374	401	37	198	235	636
Total	110	1,596	1,706	176	757	933	2,639

Panel C: Countries of portfolio companies

Panel C illustrates the distribution of buyouts and exit types by countries of portfolio companies. The sample includes 2,639 worldwide buyouts across 38 countries and regions. The sample is extracted from Mergermarket. Panel C includes the top ten countries in terms of the number of buyouts and presents them in descending order.

Target Country	Successful exits			Unsuccessful exits			Total
	IPO	M&A	Sub total	Other exits	Non-exit	Sub total	
Germany	10	251	261	19	48	67	328
UK	12	160	172	16	88	104	276
France	4	183	187	17	56	73	260
US	7	103	110	17	54	71	181
India	4	47	51	15	73	88	139
Netherlands	7	81	88	11	36	47	135
Italy	3	88	91	7	32	39	130
Sweden	9	73	82	4	30	34	116
China	16	21	37	9	56	65	102
Canada	5	44	49	7	40	47	96

Panel D: Countries of PE firms

Panel D illustrates the distribution of buyouts and exit types by countries of PE firms. The PE firms are from 41 countries and regions. The sample is extracted from Mergermarket. Panel D includes top ten countries in terms of the number of buyouts and presents them in descending order.

PE Country	Successful exits			Unsuccessful exits			Total
	IPO	M&A	Sub total	Other exits	Non-exit	Sub total	
US	48	510	558	56	318	374	932
UK	40	590	630	51	148	199	829
France	5	68	73	12	21	33	106
Australia	1	43	44	9	43	52	96
Netherlands	1	59	60	4	16	20	80
Sweden	3	49	52	4	18	22	74
Hong Kong	2	29	31	5	29	34	65
Bahrain	1	44	45	7	9	16	61
Germany	0	30	30	6	9	15	45
Singapore	1	10	11	4	27	31	42

Table 2: Summary statistics

The table shows the summary statistics for key explanatory variables. The sample includes 2,639 worldwide buyouts between 1998 and 2007. The sample is extracted from Mergermarket.

Variable	N	Mean	Std.	Min	Max
Institutions					
<i>Low_Risk_Country</i>	2,639	0.634	0.482	0.000	1.000
<i>Institutional_Distance</i>	2,639	1.553	0.676	0.000	3.370
<i>Cultural_Distance</i>	2,639	0.291	0.136	0.000	0.980
Learning					
<i>Country_Experience</i>	2,639	0.792	0.872	0.000	3.780
<i>Multinationa_Experience</i>	2,639	1.313	0.931	0.000	3.220
<i>Industrial_Experience</i>	2,639	1.637	1.255	0.000	5.160
<i>Reputation</i>	2,639	2.220	1.117	0.000	4.440
Controls					
<i>Management</i>	2,639	0.373	0.484	0.000	1.000
<i>Club_Size</i>	2,639	1.409	0.891	1.000	11.000
<i>Deal_Value</i>	1,975	4.892	1.563	2.303	7.623
<i>LBO_Market_Development</i>	2,639	0.033	0.037	0.000	0.144
<i>Common_Religion</i>	2,639	0.211	0.408	0.000	1.000
<i>Common_Language</i>	2,639	0.216	0.411	0.000	1.000
<i>Geographic_Distance</i>	2,639	7.659	1.320	5.150	9.860

Table 3: Success ratio analysis

The table presents the aggregate level analysis at target-PE country-pair level. The sample is extracted from Mergermarket. The dependent variable in models 1-2 is successful exit ratio over the entire period for country pair i . The dependent variable in models 3-4 is the successful exit ratio at the country pair i and in investment year t . Robust standard errors are clustered at the country-pair level and are in parentheses *, **, *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Model	(1)	(2)	(3)	(4)
Institutions				
<i>Low_Risk_Country</i>	0.105** (0.046)	0.113** (0.053)	0.090*** (0.031)	0.102*** (0.033)
<i>Institutional_Distance</i>	-0.070* (0.037)	-0.068* (0.037)	-0.053*** (0.019)	-0.053*** (0.019)
<i>Cultural_Distance</i>	-0.038 (0.154)	0.002 (0.160)	0.048 (0.101)	0.018 (0.102)
Controls				
<i>Geographic_Distance</i>		-0.041** (0.017)		-0.022** (0.011)
<i>LBO_Market_Development</i>		-0.855 (0.740)		-0.765 (0.475)
<i>Common_Religion</i>		-0.012 (0.064)		-0.008 (0.035)
<i>Common_Language</i>		-0.036 (0.069)		-0.061 (0.042)
Observations	279	279	900	900
Year FE	No	No	Yes	Yes
R ²	0.041	0.065	0.136	0.147

Table 4: Cox proportional hazard estimation

The sample includes 2,639 worldwide buyouts between 1998 and 2007. The sample is extracted from Mergermarket. The hazard rate is the conditional probability that the PE firm exits the portfolio company successfully. The holding time of the successful portfolio company is the total months from the buyout date to the successful exit date. For portfolio companies with unsuccessful exits, the holding time is the number of months between the buyout date and 31st December 2015 or the last available tracking date. In Cox hazard model, the failure event is the case that the PE firm divests the portfolio company via IPO or M&A before the end of 2015. Robust standard errors clustered at the portfolio company country level are in parentheses. *, **, *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Model	(1)	(2)	(3)	(4)	(5)	(6)
Institutions						
<i>Low_Risk_Country</i>	0.237*** (0.092)	0.190** (0.080)	0.178** (0.079)	0.178** (0.081)	0.210** (0.084)	0.164** (0.071)
<i>Institutional_Distance</i>	-0.074** (0.037)	-0.098*** (0.034)	-0.088** (0.035)	-0.090*** (0.035)	-0.087*** (0.033)	-0.103*** (0.037)
<i>Cultural_Distance</i>	-0.012 (0.231)	-0.208 (0.224)	-0.098 (0.231)	-0.114 (0.231)	-0.221 (0.235)	-0.170 (0.250)
Learning						
<i>Country_Experience</i>	0.167*** (0.038)					
<i>Multinational_Experience</i>		0.241*** (0.027)				
<i>Industrial_Experience</i>			0.167*** (0.029)			
<i>Reputation</i>				0.191*** (0.023)	0.185*** (0.022)	0.181*** (0.025)
Controls						
<i>Management</i>	0.195*** (0.057)	0.203*** (0.064)	0.190*** (0.062)	0.187*** (0.061)	0.196*** (0.060)	0.251*** (0.067)
<i>Club_Size</i>	-0.094*** (0.032)	-0.094*** (0.034)	-0.088*** (0.034)	-0.086** (0.034)	-0.084** (0.034)	-0.108*** (0.035)
<i>Geographic_Distance</i>	-0.045** (0.017)	-0.079*** (0.013)	-0.060*** (0.013)	-0.066*** (0.013)	-0.062*** (0.014)	-0.067*** (0.017)
<i>LBO_Market_Development</i>					-0.418 (0.771)	-0.263 (0.645)
<i>Common_Religion</i>					0.004 (0.045)	0.043 (0.051)
<i>Common_Language</i>					-0.113* (0.068)	-0.144* (0.078)
<i>Deal_Value</i>						0.079*** (0.020)
Observations	2,639	2,639	2,639	2,639	2,639	1,975
Year FE & Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Log-Pseudolikelihood	-12,341	-12,321	-12,327	-12,322	-12,320	-8,666

Table 5: The role of PE firm's experience

The sample includes 2,639 worldwide buyouts between 1998 and 2007. The sample is extracted from Mergermarket. The hazard rate is the conditional probability that the PE firm exits the portfolio company successfully. The holding time of the successful portfolio company is the total months from the buyout date to the successful exit date. For portfolio companies with unsuccessful exits, the holding time is the number of months between the buyout date and 31st December 2015 or the last available tracking date. In Cox hazard model, the failure event is the case that the PE firm divests the portfolio company via IPO or M&A before the end of 2015. Robust standard errors clustered at the portfolio company country level are in parentheses. *, **, *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Model	(1)	(2)	(3)	(4)	(5)	(6)
Institutions						
<i>Low_Risk_Country</i>	0.239*** (0.091)	0.188** (0.080)	0.173** (0.079)	0.175** (0.082)	0.212*** (0.081)	0.167** (0.066)
<i>Institutional_Distance</i>	-0.092* (0.051)	-0.173*** (0.061)	-0.174*** (0.055)	-0.154* (0.081)	-0.171*** (0.052)	-0.193*** (0.053)
<i>Cultural_Distance</i>	-0.007 (0.230)	-0.210 (0.226)	-0.077 (0.236)	-0.108 (0.234)	-0.193 (0.236)	-0.168 (0.252)
Learning						
<i>Country_Experience</i>	0.129* (0.069)					
<i>Institutional_Distance*Country_Experience</i>	0.025 (0.038)					
<i>Multinational_Experience</i>		0.151** (0.070)				
<i>Institutional_Distance*Multinational_Experience</i>		0.059 (0.046)				
<i>Industrial_Experience</i>			0.088** (0.038)		0.081** (0.039)	0.079* (0.044)
<i>Institutional_Distance*Industrial_Experience</i>			0.054** (0.023)		0.055** (0.024)	0.058* (0.031)
<i>Reputation</i>				0.146*** (0.055)		
<i>Institutional_Distance*Reputation</i>				0.030 (0.035)		
Controls						
<i>Management</i>	0.194*** (0.057)	0.200*** (0.064)	0.183*** (0.061)	0.185*** (0.061)	0.192*** (0.061)	0.254*** (0.069)
<i>Club_Size</i>	-0.094*** (0.032)	-0.095*** (0.034)	-0.090*** (0.034)	-0.085** (0.034)	-0.087** (0.034)	-0.112*** (0.035)
<i>Geographic_Distance</i>	-0.046** (0.018)	-0.083*** (0.012)	-0.064*** (0.013)	-0.068*** (0.013)	-0.059*** (0.013)	-0.061*** (0.016)
<i>LBO_Market_Development</i>					-0.528 (0.784)	-0.357 (0.639)
<i>Common_Religion</i>					0.019 (0.046)	0.052 (0.053)
<i>Common_Language</i>					-0.128* (0.068)	-0.159** (0.080)
<i>Deal_Value</i>						0.079*** (0.020)
Observations	2,639	2,639	2,639	2,639	2,639	1,975
Year FE & Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Log-Pseudolikelihood	-12,341	-12,320	-12,326	-12,321	-12,323	-8,666

Table 6: Multinomial logit analysis for choice of exit routes

The sample includes 2,639 worldwide buyouts between 1998 and 2007. The sample is extracted from Mergermarket. In models 1-4, the multinomial logit estimation is used. The base group in the multinomial logit model is group of portfolio companies with unsuccessful exits (other exits and non-exit ones). The dependent variable in model 5 is the dummy variable which equals one if the portfolio firm has gone public and zero if it is acquired. Robust standard errors clustered at the portfolio company country level are in parentheses. *, **, *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Model	IPO vs.	M&A vs.	IPO vs.	M&A vs.	IPO vs.	M&A vs.	IPO vs.	M&A vs.	IPO vs.
	Unsuccessful	Unsuccessful	Unsuccessful	Unsuccessful	Unsuccessful	Unsuccessful	Unsuccessful	Unsuccessful	M&A
	(1)		(2)		(3)		(4)		(5)
Institutions									
<i>Low_Risk_Country</i>	0.251 (0.337)	0.338** (0.147)	0.159 (0.306)	0.242* (0.134)	0.141 (0.307)	0.222* (0.135)	0.130 (0.229)	0.221** (0.097)	-0.382 (0.320)
<i>Institutional_Distance</i>	0.055 (0.171)	-0.148** (0.061)	0.008 (0.166)	-0.201*** (0.055)	0.032 (0.165)	-0.181*** (0.058)	0.045 (0.164)	-0.174** (0.069)	0.191 (0.180)
<i>Cultural_Distance</i>	1.085 (0.828)	0.132 (0.430)	0.615 (0.839)	-0.187 (0.441)	0.926 (0.809)	0.035 (0.449)	0.900 (0.729)	-0.003 (0.338)	1.723 (1.115)
Learning									
<i>Country_Experience</i>	0.276* (0.151)	0.293*** (0.066)							
<i>Multinational_Experience</i>			0.578*** (0.133)	0.361*** (0.062)					
<i>Industrial_Experience</i>					0.366*** (0.093)	0.284*** (0.051)			
<i>Reputation</i>							0.381*** (0.098)	0.300*** (0.043)	0.033 (0.121)
Deal Characteristics									
<i>Management</i>	-0.037 (0.166)	0.402*** (0.084)	-0.086 (0.176)	0.399*** (0.086)	-0.088 (0.182)	0.372*** (0.085)	-0.091 (0.240)	0.379*** (0.100)	-0.932*** (0.227)
<i>Club_Size</i>	0.221*** (0.069)	-0.213*** (0.055)	0.212*** (0.074)	-0.217*** (0.058)	0.219*** (0.074)	-0.209*** (0.058)	0.228*** (0.077)	-0.203*** (0.053)	0.426*** (0.093)
<i>Geographic_Distance</i>	0.071 (0.114)	-0.088*** (0.031)	-0.023 (0.101)	-0.161*** (0.035)	0.037 (0.105)	-0.125*** (0.032)	0.014 (0.089)	-0.140*** (0.037)	0.069 (0.153)
<i>LBO_Market_Development</i>									-0.763 (3.081)
<i>Common_Religion</i>									-0.022 (0.315)
<i>Common_Language</i>									0.549 (0.349)
<i>Deal_Value</i>									0.304** (0.130)
Observations	2,639		2,639		2,639		2,639		1,253
Year FE & Industry FE	Yes		Yes		Yes		Yes		Yes
Pseudo R ²	0.100		0.107		0.105		0.106		0.122
Log-Pseudolikelihood	-1,910		-1,895		-1,900		-1,898		-301.9

Table 7: Hazard analysis for IPO and M&A

The sample includes 2,639 worldwide buyouts between 1998 and 2007. The sample is extracted from Mergermarket. The holding time of the successful portfolio company is the total months from the buyout date to the successful exit date. For portfolio companies with unsuccessful exits, the holding time is the number of months between the buyout date and 31st December 2015 or the last available tracking date. In models 1-5, the failure event is the case that the PE firm divests the portfolio company via IPO before the end of 2015. In models 6-10, the failure event is case that the PE firm divests the portfolio company via M&A before the end of 2015. Robust standard errors clustered at the portfolio company country level are in parentheses. *, **, *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	IPO					M&A				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Institutions										
<i>Low_Risk_Country</i>	0.129 (0.347)	0.101 (0.324)	0.092 (0.322)	0.081 (0.323)	-0.049 (0.310)	0.245** (0.101)	0.195** (0.091)	0.184** (0.090)	0.184** (0.092)	0.178** (0.080)
<i>Institutional_Distance</i>	0.114 (0.147)	0.100 (0.146)	0.116 (0.146)	0.124 (0.146)	0.109 (0.140)	-0.087** (0.039)	-0.112*** (0.036)	-0.102*** (0.037)	-0.104*** (0.037)	-0.120*** (0.037)
<i>Cultural_Distance</i>	1.008 (0.784)	0.713 (0.798)	0.884 (0.751)	0.892 (0.768)	1.366 (0.950)	-0.094 (0.237)	-0.277 (0.239)	-0.177 (0.248)	-0.193 (0.245)	-0.330 (0.269)
Learning										
<i>Country_Experience</i>	0.115 (0.141)					0.171*** (0.037)				
<i>Multinational_Experience</i>		0.419*** (0.108)					0.228*** (0.027)			
<i>Industrial_Experience</i>			0.221*** (0.069)					0.163*** (0.030)		
<i>Reputation</i>				0.244*** (0.074)	0.214** (0.098)				0.186*** (0.023)	0.177*** (0.027)
Controls										
<i>Management</i>	-0.222 (0.171)	-0.256 (0.182)	-0.244 (0.184)	-0.257 (0.184)	-0.593*** (0.188)	0.219*** (0.062)	0.230*** (0.069)	0.216*** (0.067)	0.214*** (0.066)	0.308*** (0.070)
<i>Club_Size</i>	0.254*** (0.057)	0.243*** (0.057)	0.250*** (0.060)	0.255*** (0.059)	0.185*** (0.048)	-0.149*** (0.035)	-0.149*** (0.037)	-0.144*** (0.038)	-0.141*** (0.036)	-0.163*** (0.039)
<i>Geographic_Distance</i>	0.111 (0.119)	0.066 (0.115)	0.106 (0.116)	0.093 (0.116)	0.039 (0.132)	-0.055*** (0.016)	-0.089*** (0.013)	-0.072*** (0.014)	-0.077*** (0.014)	-0.076*** (0.020)
<i>LBO_Market_Development</i>					-2.098 (2.585)					-0.156 (0.705)
<i>Common_Language</i>					-0.059 (0.321)					0.049 (0.051)
<i>Common_Law_Origin</i>					0.470 (0.319)					-0.195** (0.090)
<i>Deal_Value</i>					0.320*** (0.104)					0.060** (0.025)
Observations	2,639	2,639	2,639	2,639	1,975	2,639	2,639	2,639	2,639	1,975
Year FE & Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Log-Pseudolikelihood	-792.9	-786.3	-790.1	-789.5	-654.9	-11,516	-11,501	-11,505	-11,500	-7,969

Table 8: Robustness test for selection bias

The sample includes 2,639 worldwide buyouts between 1998 and 2007. The sample is extracted from Mergermarket. In the selection stage, the dependent variable is a dummy variable which equals one if the PE firm belongs to first quartile of experienced PE firm group based on the industrial experience. The model settings for the second stage analysis are similar to these settings in Tables 4, 5, and 6, respectively. Robust standard errors clustered at the portfolio company country level are in parentheses. *, **, *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Model	Selection	Cox Hazard	Selection	Cox Hazard	Selection	IPO vs. M&A
	(1)		(2)		(3)	
Institutions						
<i>Low_Risk_Country</i>		0.171** (0.067)		0.165** (0.065)		-0.354 (0.323)
<i>Institutional_Distance</i>		-0.101** (0.039)		-0.196*** (0.053)		0.187 (0.190)
<i>Cultural_Distance</i>		-0.081 (0.255)		-0.078 (0.255)		1.860* (1.085)
Learning						
<i>Industrial_Experience</i>		0.139*** (0.029)		0.050 (0.039)		0.008 (0.117)
<i>Institutional_Distance*Industrial_Experience</i>				0.059** (0.029)		
Controls						
<i>Management</i>	0.157* (0.086)	0.214*** (0.073)	0.157* (0.086)	0.212*** (0.072)	0.224*** (0.081)	-1.012*** (0.222)
<i>Club_Size</i>	-0.076 (0.053)	-0.092*** (0.035)	-0.076 (0.053)	-0.093*** (0.036)	-0.053 (0.054)	0.443*** (0.097)
<i>Geographic_Distance</i>		-0.048*** (0.014)		-0.052*** (0.015)		0.086 (0.161)
<i>LBO_Market_Development</i>		-0.114 (0.724)		-0.130 (0.723)		-0.652 (3.080)
<i>Common_Religion</i>		0.063 (0.043)		0.056 (0.041)		-0.012 (0.329)
<i>Common_Language</i>		-0.154* (0.082)		-0.158* (0.084)		0.550 (0.360)
<i>Deal_Value</i>	0.086*** (0.028)	0.056** (0.022)	0.086*** (0.028)	0.056** (0.022)	0.035 (0.048)	0.284** (0.134)
Private Equity Firms Origins						
<i>US_PE</i>	0.524*** (0.158)		0.524*** (0.158)		0.588*** (0.191)	
<i>UK_PE</i>	0.906*** (0.136)		0.906*** (0.136)		0.969*** (0.174)	
<i>Inverse_Mills_Ratio</i>		-0.295** (0.124)		-0.298** (0.121)		-0.481 (0.371)
Observations	1,975	1,975	1,975	1,975	1,253	1,253
Year FE & Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R ²	0.075	-	0.075	-	0.0742	0.124
Log-Pseudolikelihood	-1,026	-1,026	-1,026	-8,721	-687.1	-301.3

Table 9: Robustness test for imputed deal value

The sample is extracted from Mergermarket. In Table 9, following Strömberg (2008), we impute the deal value with Multiple Imputation. Robust standard errors clustered at the portfolio company country level are in parentheses. *, **, *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Model	Cox Hazard (1)	Cox Hazard (2)	IPO vs. M&A (3)
Institutions			
<i>Low_Risk_Country</i>	0.143* (0.076)	0.138* (0.076)	-0.397 (0.269)
<i>Institutional_Distance</i>	-0.085** (0.035)	-0.172*** (0.055)	0.195 (0.191)
<i>Cultural_Distance</i>	-0.096 (0.225)	-0.075 (0.230)	1.392 (0.975)
Learning			
<i>Industrial_Experience</i>	0.154** (0.029)	0.075** (0.038)	0.082 (0.089)
<i>Institutional_Distance*Industrial_Experience</i>		0.054** (0.024)	
Controls			
<i>Management</i>	0.187* (0.063)	0.180*** (0.062)	-0.562*** (0.201)
<i>Club_Size</i>	-0.101** (0.034)	-0.102*** (0.034)	0.444*** (0.098)
<i>Geographic_Distance</i>	-0.064** (0.013)	-0.067*** (0.013)	0.110 (0.137)
<i>LBO_Market_Development</i>			-1.769 (2.709)
<i>Common_Religion</i>			-0.132 (0.247)
<i>Common_Language</i>			0.589** (0.299)
<i>Deal_Value</i>	0.059** (0.020)	0.059*** (0.020)	0.243** (0.116)
Observations	2,639	2,639	2,639
Year FE & Industry FE	Yes	Yes	Yes

Figure 1-4: Plots of Kaplan-Meier failure functions

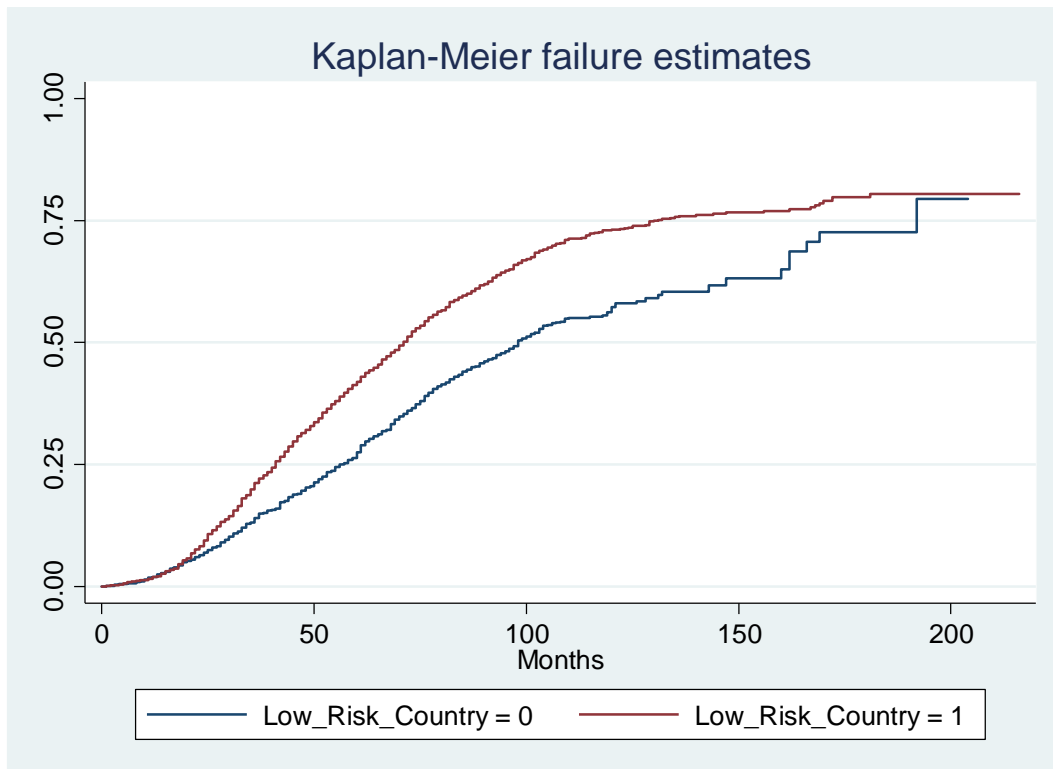


Figure 1: Groups based on Country Risk

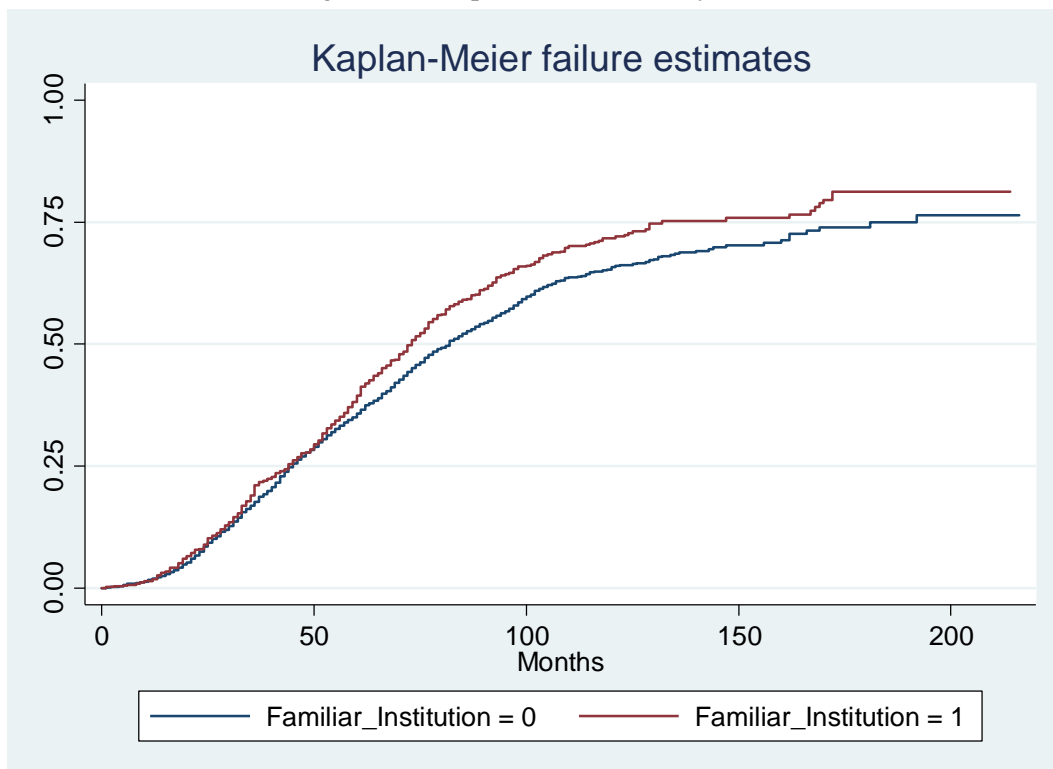


Figure 2: Groups based on Institutional Distance

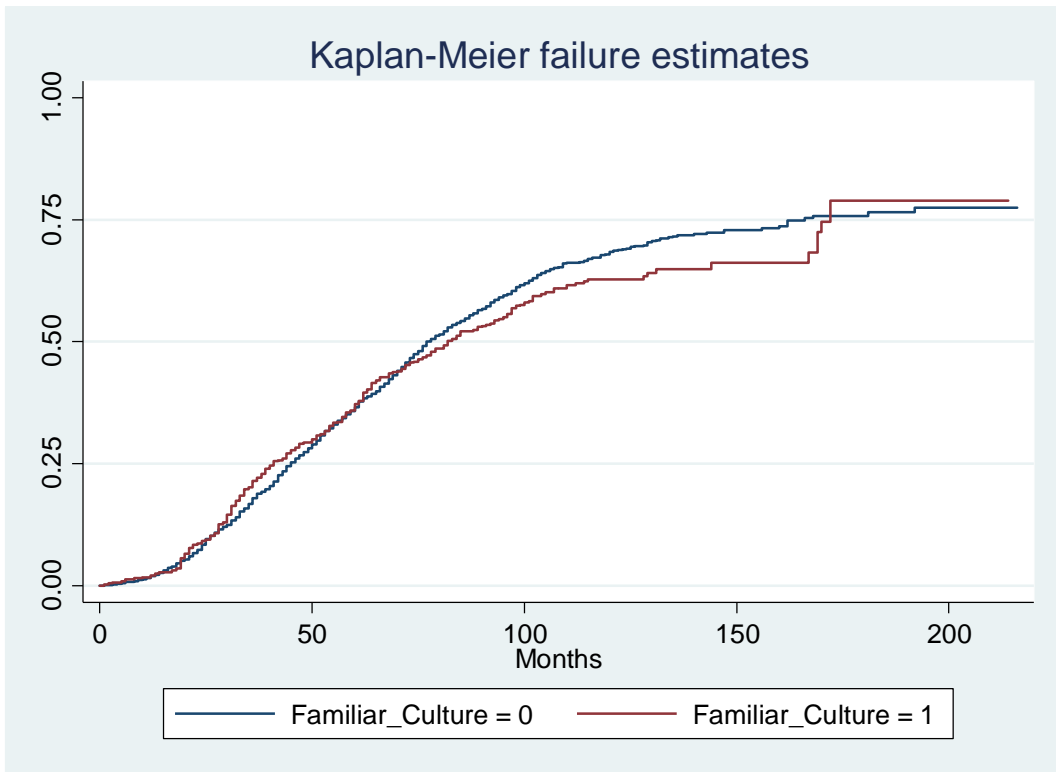


Figure 3: Groups based on Cultural Distance

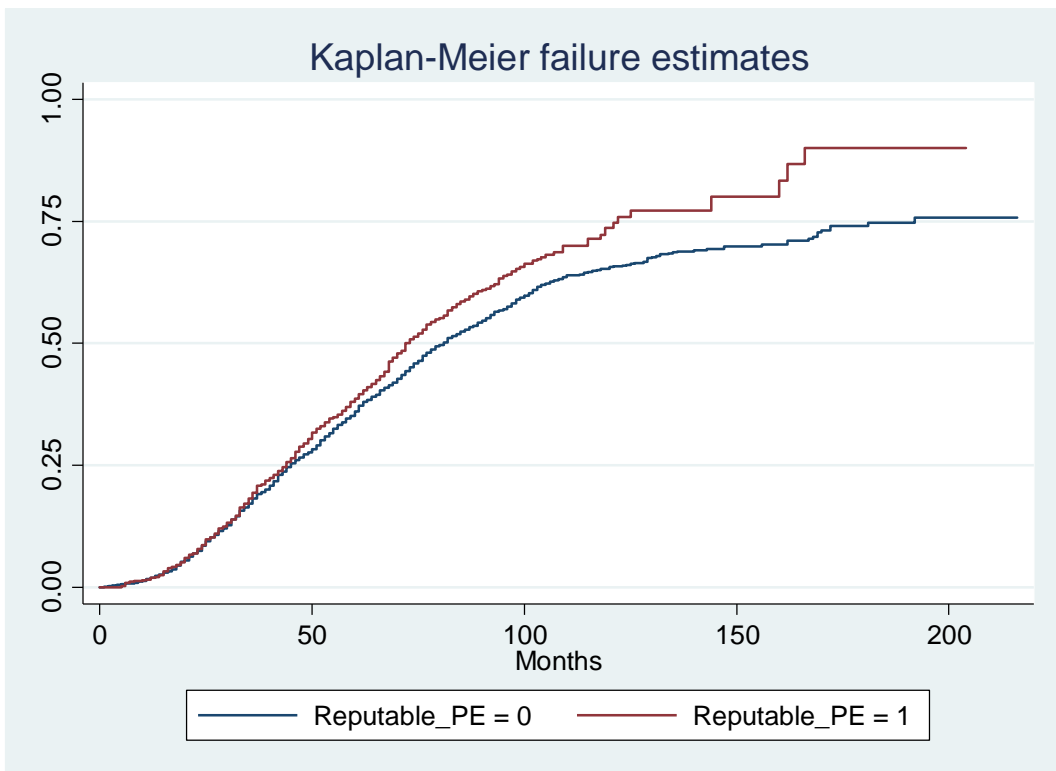


Figure 4: Groups based on Reputation