

Public vs. Private: Characteristics of the Companies Backed by Listed Private Equity

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Listed Private Equity (LPE) is growing as an alternative investment tool for those investors who would want exposure to private equity in their investment portfolios by purchasing public shares of LPEs that are invested in a group of private companies. We analyze the characteristics of the LPEs and the type of companies that LPEs tend to invest in. We show that the companies that LPE firms are investing in have different characteristics than the companies that receive funding from unlisted private equity firms. LPE firms tend to invest in these companies for a longer duration but there is no significant effect on the likelihood of taking these to public.

INTRODUCTION

Metrick and Yasuda (2010) report that private equity funds manage almost \$ 1 trillion of capital around the world. This number underlines the importance of private equity funds in today's global financial markets. Within this vast market, listed private equity (LPE) has a small share but it has been growing rapidly in the last decade. As of January 2009 the total market capitalization of the global LPE market amounted to US\$ 31 billion. This is a decline of around 70% from its peak of more US\$ 100 billion in June 2007. By market capitalization, 19% of the base universe is listed in the UK and 50% listed in other European countries, making Europe the major listed private equity market (Bergmann, Christophers, Huss, Zimmermann, 2009).

The common practice in the private equity industry has been investing through unlisted private equity (unquoted limited partnership funds, or LPs) in which large amount of capital that investors have to commit to LPs with long investment horizons and lock-up arrangements. The illiquidity aspect and the large sum of capital tied up in the unlisted private equity for a long investment horizon makes this investment type suitable for only large investors who are generally institutional investors (Cumming, Fleming, Johan, 2010).

Listed private equity (LPE) firms are publicly traded firms that invest in private companies at various stages, mostly through buyouts. The typical private equity characteristics such as investment styles, financing styles and other important characteristics are common between the unlisted and listed private equity (Bergmann, Christophers, Huss, Zimmermann, 2009).

The growing need for a larger pool of assets to be able to better diversify investments (Campbell, Lettau, Malkiel, Xu, 2001) force smaller investors to look for alternative asset classes such as private

equity. LPE fills in this gap by giving smaller investors the opportunity to invest in private equity by purchasing shares of LPEs that invest in private companies. For potential private equity investors, this means greater liquidity, accessibility, lower fees, a flexible investment policy, ease of monitoring and the opportunity to buy private companies at a discount without a large capital commitment (Brown, Kraeussl, 2010). They are able to receive most of the benefits of a publicly traded asset although it is an alternative investment in private equity.

This paper analyzes the characteristics of LPE firms and the companies they invest in. Since this is a relatively new topic in the private equity field within the US, there has not been much research done on the investments that LPEs typically take on and we aim to fill this gap with this research.

Our findings suggest that the LPE firms tend to be non-US firms that are older, that invest more capital into their portfolio companies and are more likely to be the lead investor. The companies they invest in are more likely to be non-US companies that are more likely to be buyouts, that are older, receive more capital, in which more firms are invested in and they receive more number of rounds. We also find evidence that LPEs tend to invest in their portfolio companies for a longer duration. However, the probability that the companies that LPE's invest make it to IPO is not significantly greater than those companies that unlisted private equity is invested in.

LITERATURE REVIEW

For investors, one of the greater challenges in investing in private companies is the lack of credible information. Private companies are highly opaque and there are high information gathering costs (Lerner and Schoar, 2004, Sahlman, 1990). Under these circumstances, financial intermediaries such as private equity firms usually step in and fill in this gap and invest in these companies in the form of buyouts, growth capital or venture capital. These firms provide capital as well as business and managerial expertise to these early-stage companies (Lerner, 1995) and at the same time provide credible information for investors and reduce information asymmetry between companies and investors (Amit, Brander and Zott, 1998). Through the monitoring and certification role these firms play, they increase the chances of the private companies' successful exit through initial public offerings (IPOs) or acquisitions (Megginson and Weiss, 1991, Barry, Muscarella, Peavy and Vetsuypens, 1990).

The second major problem in investing in private companies is the substantial, long term capital commitments that investors need to enter into. These are highly illiquid investments that are typically harvested in 8 to 10 years. As a result, institutional investor is typically the investor type that can afford to commit to such long term, illiquid assets and smaller investors usually cannot access this investment venue.

Listed private equity (LPE) firms ease these two important obstacles that private companies face to access capital. Listed private equity (LPE) firms are publicly traded firms that invest in private companies at various stages, mostly through buyouts. This organizational form gives smaller investors the opportunity to invest in private equity by purchasing shares of LPEs that are invested in private companies. For potential small private equity investors, this means greater liquidity, accessibility and ease of monitoring and the opportunity to buy private companies at a discount without a large capital commitment (Brown, Kraeussl, 2010).

Most unlisted private equity firms function as Limited Partnerships (LPs) whereas the organization of listed private equity investments can be categorized into three main categories as listed indirect private equity investment firms (funds of funds), listed direct private capital investment firms and listed private equity fund managers. Just like unlisted private equity firms, they invest in the form of buyouts, venture capital or growth capital. In our data 80% of the LPE investments are in the form of Buyouts. Bergmann, Christophers, Huss, and Zimmermann (2009) provide a detailed explanation of the organizational form and the function of these different LPE structures and conclude that features such as investment styles, financing styles and other important characteristics are shared between the unlisted and the listed private equity universe.

Although prior research examined the characteristics of LPEs versus unlisted private equity firms, to our knowledge, no one has examined the companies backed by these LPE firms and that is the main contribution of this paper.

DATA AND SAMPLE SELECTION

We identify listed private equity firms in our SDC data set by matching firm names from the LPX-group website that lists 113 listed private equity firms. More information about the index can be found at Bergmann, Christophers, Huss, and Zimmermann, 2009. After we identify the LPE firms and the year they become listed in the markets, we then identify the companies in which these LPE firms have invested.

We gather information on an initial sample of 70,876 private companies from the period 1980-2009 from the Securities Data Company (SDC) database. Out of the 70,876 companies, we identify 4,362 companies that had at least one listed private equity (LPE) invested in it. Company specific variables IPO, US company and buyout dummy variables are identified using SDC as well as total known amount invested in company, number of rounds company received, and number of firms invested in company. We define total days company received investment as the number of days from the date company receives first investment to the date company receives last investment.

Firm specific variables are defined as in the following. Firm age at first round is calculated as the first year firm invested in the company minus the founding year of the VC firm identified in SDC data. Firm's total known amount invested in company is from SDC data as well. We identify the lead investment firm as the firm in the syndicate that typically undertakes the main task of monitoring and consulting (Gompers, 1996). The co-investors in the syndicate are involved with the business of the financed firm to a considerably lesser degree and so their involvement with the company is, arguably, not as important (Wright and Lockett, 2003). We identify the lead investor following Lee and Wahal (2004) and choose the VC firm with the largest investment in the syndicate as the lead investor. Round level variables are: round amount disclosed, total number of rounds company had, number of investors in each round and disclosed post round valuation are from SDC data.

Finally, we control for the time and industry varying characteristics by using dummy variables representing the year and industry dummy variables represented by two digit SIC codes, respectively. (We note that this does not create a perfect collinearity with the internet company dummy because these classifications are defined with finer granularity, i.e., at the 3- and 4-digit SIC code level.)

EMPIRICAL ANALYSIS

Descriptive Statistics

This sub-section discusses figure and descriptive statistics and the following sub-section discusses our further empirical tests. First, Panel A of Figure 1 displays the distribution of companies that receive either partial or full investment from Listed Private Equity Firms (LPEs). Panel A shows the percentage of LPE backed companies among all companies that received investment from private equity firms over the 30 year period between 1980 and 2009. Note that Panel A is based on first investment year of companies. On average, LPE backed companies represent 6.2% of all companies. It goes over 10% in mid-1990s but later the percentage goes down. The recent financial crisis may have some role in the decrease occurring after 2007.

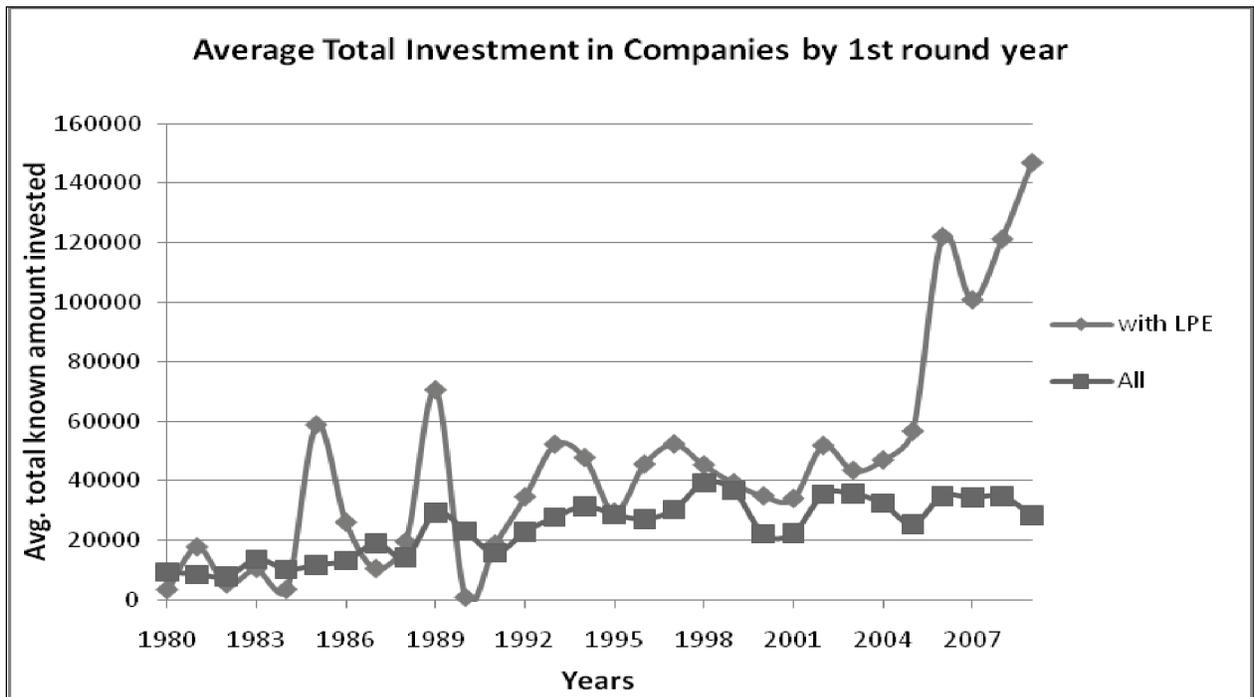
Figure 1 shows the distribution of companies that received investment from Listed Private Equity Firms throughout time for the years between 1980 and 2009. Panel A shows the percentage of companies that received investment from Listed Private Equity Firms (LPE) across years by first round information. Panel B shows the average total known investment companies received in first round for all companies that received investment from Private Equity Firms, and the ones that received investment from Listed Private Equity Firms (LPE).

FIGURE 1
DISTRIBUTION OF COMPANIES THAT RECEIVED INVESTMENT
FROM LISTED PRIVATE EQUITY FIRMS

PANEL A



PANEL B



Next, we look at the amount of investment in LPE backed companies. Panel B of Figure 1 shows average total investment that companies received from all private equity firms versus the amount received only from LPEs. Panel B is also based on first investment year of companies. For the entire 30 year period, the average total investment that LPE backed companies received is higher than the average total investment in all companies. This implies that LPEs, on average, invest higher amounts in companies

than other private equity firms do. Another point in Panel B worth noting is the change in average total investment amounts throughout the time. After 1990, the average total investment amount does not increase significantly for the entire sample of companies. However, it starts to go up for LPE backed companies after 1990 and it even goes up at a higher pace after 2004. Furthermore, it has an increasing trend for the entire sample period for those companies. Overall, average total investment in LPE backed companies is higher than other companies' average and it has an increasing trend. This highlights the point that investments of LPEs are increasing throughout the years and LPE investments are becoming economically more important.

Next, we look at the industry distribution of companies. Table I shows industry distribution of companies that received investment from private equity firms across major industry groups. 45.6% of all companies are in non-high technology sectors (which is the biggest group of companies in the sample). Second biggest, 26.7% of companies are computer related sectors. The other companies are in communication & media, medical/health/life science, semiconductor/ other electronics, and biotechnology sectors. When we look at the difference between LPE backed companies and other companies, Table I does not indicate any major difference in industry distribution of companies. A minor difference can be seen in percentage of companies in non-high technology sectors. LPE backed companies that have investment from LPEs have higher percentage in that sector compared to companies received investment from unlisted private equity firms.

Table I shows the distribution of companies that received from Private Equity Firms across industry major groups. It also shows distribution of companies that received from Listed Private Equity Firms (LPE) across industry major groups.

TABLE I
INDUSTRY DISTRIBUTION OF COMPANIES THAT RECEIVED INVESTMENT FROM PRIVATE EQUITY FIRMS

Industry Major Group	Without LPE		With LPE		All companies	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
Biotechnology	2,722	3.98%	142	4.57%	2,864	4%
Communications and Media	7,232	10.57%	293	9.43%	7,525	10.52%
Computer Related	18,436	26.95%	631	20.32%	19,067	26.66%
Medical/Health/Life Science	5,295	7.74%	253	8.15%	5,548	7.76%
Non-High-Technology	30,990	45.3%	1,644	52.93%	32,634	45.63%
Semiconductors/Other Elect	3,731	5.45%	143	4.6%	3,874	5.42%
Total	68,406	100%	3,106	100%	71,512	100%

Table II reports mean, median, standard deviation, 5th and 95th percentile, and number of observations of the variables. Table II displays comparative summary statistics for companies that received investment from listed private equity firms versus unlisted private equity firms. The difference is based on whether companies received investment from LPEs or not. Moreover, Table II shows p-value for difference of means test for each variable. LPE backed companies have almost the same mean value of IPO dummy as non-LPE backed companies have. Difference of means test shows that the difference is not statistically significant. Univariate statistics suggest that LPE backed companies do not go for an IPO at a statistically different rate compared to non-LPE backed companies. Company age at first investment round shows that LPE backed companies are older. Total known amount investment is higher for LPE backed companies as well. Net sales of the LPE-backed companies are greater than net sales of non-LPE

backed companies and the difference is statistically significant. LPE backed companies are bigger in terms of total assets. LPE backed companies receive greater amounts of total investment and firms' total known amount of investment in LPE backed companies is greater. In addition, LPE backed companies receive higher number of investment rounds and more number of firms invests in LPE backed companies. LPE backed companies have significantly higher mean value of buyout dummy suggesting that buyouts are more common with LPEs.

Companies that have investments from LPEs are more likely to be non-US companies. Total number of days company received investment is higher for companies with LPEs suggesting that LPEs invest for longer durations. Note that all these differences are statistically significant. Briefly, univariate results suggest that LPE backed companies are older, and they receive more investment rounds and greater amounts of investments from a larger group of firms and attracts higher investment amounts.

Table II reports summary statistics for companies that received investment from private equity firms. The sample of this paper consists of winsorized variables at 1% and 99% levels in order to eliminate the outlier effect and any potential data errors. Table II shows mean, median, standard deviation, 5th and 95th percentile, and number of observations for sample and sub-samples for each variable. Sub-samples are based on the investment type companies received. If a company received investment from a listed private equity firm (LPE) then it is under LPE category in Table II. All other companies are under Not LPE category. Table II shows p-value for difference in private equity investment type for each variable in parentheses (* significant at 10%; ** significant at 5%; *** significant at 1%).

Table III shows summary statistics of firm level variables. It displays mean, median, standard deviation, 5th and 95th percentile, and number of observations of the variables for private equity firms. Comparative statistics are based on the difference whether private equity firms are LPEs or unlisted private equity firms. P-values for difference of means tests indicate that all the differences in Table III are statistically significant. LPEs are significantly older than unlisted private equity firms. LPEs are also more likely to be lead investor in private equity investments, and they are also less likely to be US firms which may show that LPEs are a relatively newer trend in the US private equity market. Overall, these results may indicate that LPEs are more established or older firms which make higher amounts of investments. Taken together, these univariate statistics point out some characteristic differences between LPEs and unlisted private equity firms.

Table III shows summary statistics for private equity firms. The sample of this paper consists of winsorized variables at 1% and 99% levels in order to eliminate the outlier effect and any potential data errors. Table III reports mean, median, standard deviation, 5th and 95th percentile, and number of observations for sample and sub-samples for each variable. Sub-samples are based on the criterion listed versus not listed private equity firm. If a firm is a listed private equity firm (LPE) then it is under LPE category in Table III. All other firms are under Not LPE category. Table III shows p-value for difference in listed vs. not listed criterion for each variable in parentheses (* significant at 10%; ** significant at 5%; *** significant at 1%).

TABLE II
SUMMARY STATISTICS FOR COMPANIES THAT RECEIVED INVESTMENT FROM PRIVATE EQUITY FIRMS

Variable	Private Equity(PE) Investment Type	mean	median	p5	p95	std dev	N
IPO dummy	Not LPE	0.119	0	0	1	0.324	68,406
	LPE	0.116	0	0	1	0.320	3,106
	All	0.119	0	0	1	0.323	71,512
Age at 1st round	p-value for difference	(0.578)					
	Not LPE	7.101	3	0	30	9.474	45,796
	LPE	10.009	5	0	30	10.965	2,210
Net income one year prior to the most recent year end	All	7.235	3	0	30	9.567	48,006
	p-value for difference	(0.000)***					
	Not LPE	-1,366.4	-474	-75234	60,500	29,902.6	6,899
Net sales one year prior to the most recent year end	LPE	1,252.9	34	-79955	60,500	32,896.5	293
	All	-1,259.7	-442.5	-75330	60,500	30,032.4	7,192
	p-value for difference	(0.143)					
Total assets one year prior to the most recent year end	Not LPE	200,213.6	40942.5	539	1,160,619	338,873.1	8,496
	LPE	293,876.3	78707	1180	1,160,619	400,887.7	405
	All	204,475.3	41957.07	565	1,160,619	342,469.8	8,901
Total known amount invested in company	p-value for difference	(0.000)***					
	Not LPE	449,456.7	85981	2621	2,614,101	768,663.6	5,558
	LPE	582,910.0	143836	3527	2,614,101	863,692.9	276
Firm's total known amount invested in company(mil)	All	455,770.2	87861.5	2640	2,614,101	773,859.5	5,834
	p-value for difference	(0.005)***					
	Not LPE	18,721.44	6004	329	92,127.9	30,262.27	49,545
Net income one year prior to the most recent year end	LPE	30,165.68	13029.95	329	136,000	39,157.47	2,214
	All	19,210.97	6267	329	96,000	30,782.34	51,759
	p-value for difference	(0.000)***					
Total known amount invested in company	Not LPE	4,140.12	1665	100	20,000	5,663.53	26,786
	LPE	6,000.36	2500	100	20,000	7,079.61	691
	All	4,186.90	1676	100	20,000	5,710.72	27,477
	p-value for difference	(0.000)***					

Table II cont.

Variable	Private Equity(PE) Investment Type	mean	median	p5	p95	std dev	N
Number of rounds company received	Not LPE	2.24	1	1	7	2.12	68,406
	LPE	2.51	2	1	7	2.18	3,106
	All	2.25	1	1	7	2.12	71,512
	p-value for difference	(0.000)***					
Number of firms invested in company	Not LPE	2.73	2	1	8	2.91	68,406
	LPE	3.42	2	1	10	3.47	3,106
	All	2.76	2	1	9	2.94	71,512
	p-value for difference	(0.000)***					
Buyout dummy	Not LPE	0.446	0	0	1	0.497	68,406
	LPE	0.799	1	0	1	0.400	3,106
	All	0.461	0	0	1	0.499	71,512
	p-value for difference	(0.000)***					
US Company dummy	Not LPE	0.531	1	0	1	0.499	68,406
	LPE	0.358	0	0	1	0.479	3,106
	All	0.523	1	0	1	0.499	71,512
	p-value for difference	(0.000)***					
Total days company received investment	Not LPE	599.926	0	0	2797	1148.819	68,406
	LPE	819.861	239	0	3095	1183.738	3,106
	All	609.479	0	0	2817	1151.223	71,512
	p-value for difference	(0.000)***					

TABLE III
SUMMARY STATISTICS FOR PRIVATE EQUITY FIRMS

Variable	Private Equity(PE) Type	mean	median	p5	p95	std dev	N
Firm age at 1st round	Not LPE	9.965	7	0	31	9.518	155,757
	LPE	25.991	34	4	35	10.779	3,167
	All	10.284	7	0	33	9.804	158,924
	p-value for difference	(0.000)***					
Firm's total known amount invested in company(mil)	Not LPE	3,987.560	1,860	100	20,000	5,266.393	51,003
	LPE	6,118.864	2,800	100	20,000	7,030.679	651
	All	4,014.421	1,875	100	20,000	5,297.537	51,654
	p-value for difference	(0.000)***					
Lead Investor dummy	Not LPE	0.736	1	0	1	0.441	155,774
	LPE	0.853	1	0	1	0.354	3,167
	All	0.738	1	0	1	0.439	158,941
US firm dummy	p-value for difference	(0.000)***					
	Not LPE	0.682	1	0	1	0.466	155,774
	LPE	0.310	0	0	1	0.463	3,167
	All	0.675	1	0	1	0.468	158,941
	p-value for difference	(0.000)***					

Analysis of round level variables may reveal important information about private equity investment characteristics. Table IV reports summary statistics for round level information of companies that received investment from private equity firms. This table also highlights the significant differences in terms of characteristics between LPE backed companies and other companies. Overall, LPE backed companies have higher round disclosed investment amount, higher number of investment rounds, more days between rounds, higher duration of investment, higher number of investors in each round and higher disclosed post round valuations. P-values for difference of means tests indicate that all the differences in Table IV are statistically significant.

Table IV reports summary statistics for round level information of companies that received investment from private equity firms. The sample of this paper consists of winsorized variables at 1% and 99% levels in order to eliminate the outlier effect and any potential data errors. Table IV shows mean, median, standard deviation, 5th and 95th percentile, and number of observations for sample and sub-samples for each variable. Sub-samples are based on the investment type companies received. If a company received investment from a listed private equity firm (LPE) then it is under LPE category in Table IV. All other companies are under Not LPE category. Table IV illustrates p-value for difference in private equity investment type for each variable in parentheses (* significant at 10%; ** significant at 5%; *** significant at 1%).

TABLE IV
SUMMARY STATISTICS FOR ROUND LEVEL INFORMATION OF COMPANIES THAT RECEIVED INVESTMENT FROM PRIVATE EQUITY FIRMS

Variable	Private Equity(PE)					
	Type	mean	median	p5	p95	std dev
Round amount disclosed	Not LPE	6,656.36	2,956.5	102	32,251	8,856.85
	LPE	9,469.73	5,000	166	32,251	10,509.64
	All	6,773.83	3,000	105	32,251	8,949.62
	p-value for difference	(0.000)***				
Numbers of rounds company had	Not LPE	3.80	3	1	10	3.06
	LPE	3.92	3	1	10	2.90
	All	3.81	3	1	10	3.05
	p-value for difference	(0.000)***				
Days between rounds	Not LPE	586.15	365	61	1,826	854.05
	LPE	643.52	404	62	2,013	759.32
	All	589.36	365	61	1,839	849.13
	p-value for difference	(0.001)***				
Duration of investment	Not LPE	1,064.61	549	0	3,773	1,456.79
	LPE	1,188.70	754	0	3,732	1,466.15
	All	1,070.71	563	0	3,773	1,457.50
	p-value for difference	(0.000)***				
Number of investors in each round	Not LPE	2.23	1	1	6	1.95
	LPE	2.44	2	1	7	2.27
	All	2.24	1	1	6	1.97
	p-value for difference	(0.000)***				
Disclosed post round valuation	Not LPE	65,096.31	26,185	3,000	230,000	177,428.7
	LPE	120,505.30	34,916	3,800	215,697	1,172,857
	All	66,729.31	26,500	3,000	229,500	266,623.6
	p-value for difference	(0.000)***				

Empirical Tests

Table V shows the results for our multivariate analysis. We first run a probit regression where dependent variable is equal to one if company receives some or all of its investment from LPE, zero otherwise. Results show that being a buyout company, having higher number investor firms, having larger amount of total investment, and being an older company is associated with higher likelihood of being an LPE backed company. The regression also includes year and industry dummy variables. Similarly, in Table VI we present probit regression results where dependent variable is equal to one if private equity firm is LPE, zero otherwise. Being a non-US firm, making higher amounts of investments to a given company, being an older firm increases the likelihood of being a listed private equity firm (LPE). The regression also includes year dummy variables. These results are mostly consistent with our univariate results.

Table V shows probit regression for private investment type that companies receive. The sample of this paper consists of winsorized variables at 1% and 99% levels in order to eliminate the outlier effect and any potential data errors. Table V reports the probit regression results where dependent variable is equal to 1 if company receives investment from listed private equity firm (LPE). Table VI shows p-value of each coefficient in parentheses (* significant at 10%; ** significant at 5%; *** significant at 1%). P-values are based on White's (1980) heteroskedasticity consistent standard errors. This table does not report all of the year and industry dummies in the table for the brevity.

TABLE V
PROBIT REGRESSION IDENTIFYING LPE BACKED PRIVATE COMPANIES

Probit Regression	
Dependent Variable:	Company received investment from LPE
IPO dummy	-0.061 (0.367)
US company dummy	-0.067 (0.222)
Buyout dummy	0.487 (0.000)***
Number of rounds company received	-0.002 (0.882)
Number of firms invested in company	0.070 (0.000)***
Log (total known amount invested in company)	0.064 (0.001)***
Log (company age at 1st round)	0.045 (0.076)*
Constant	-2.527 (0.000)***
Year & Industry dummies	Yes
Observations	14,301
Pseudo R-square	0.0989
p-values are in parentheses: * significant at 10%; ** significant at 5%; *** significant at 1%	
**** : includes statistically significant dummies	

Table VI shows probit regression for private equity firm type. The sample of this paper consists of winsorized variables at 1% and 99% levels in order to eliminate the outlier effect and any potential data errors. Table VI reports the probit regression results where dependent variable is equal to 1 if private equity firm is listed private equity firm (LPE). Table VI shows p-value of each coefficient in parentheses (* significant at 10%; ** significant at 5%; *** significant at 1%). P-values are based on White's (1980) heteroskedasticity consistent standard errors. This table does not report all of the year dummies in the table for the brevity.

TABLE VI
PROBIT REGRESSION IDENTIFYING LPE FIRMS

Probit Regression	
Dependent Variable:	Being Listed Private Equity (LPE) Firm
US firm dummy	-0.361 (0.000)***
Log (total known amount invested in company)	0.116 (0.000)***
Lead investor dummy	0.017 (0.635)
Log (firm age at 1st round)	0.546 (0.000)***
Constant	-3.527 (0.000)***
Year dummies	Yes
Observations	43,142
Pseudo R-square	0.1463
p-values are in parentheses: * significant at 10%; ** significant at 5%; *** significant at 1%	
**** : includes statistically significant dummies	

Investment duration is another important factor in private equity investment. In the following table, we look at the determinants of duration of private equity investment for a company. Table VII displays the results of an OLS regression where the dependent variable is the investment duration which is the logarithm of the number of days from first investment to the last investment date. All the independent variables used in the regression are statistically significant. The regression also includes year and industry dummy variables. According to the results, IPO dummy, being an LPE backed company, having higher number of investment rounds, having higher number of investor firms, being an older company and being non-US company are positively related with higher duration of investment in a given company. Hence, receiving investment from an LPE helps a company to have longer investment relation its private equity firms.

Table VII shows OLS regression of duration of investment. The sample of this paper consists of winsorized variables at 1% and 99% levels in order to eliminate the outlier effect and any potential data errors. Table VII reports the OLS regression results where dependent variable is logarithm of duration of investment made in company. Table VII shows p-value of each coefficient in parentheses (* significant at 10%; ** significant at 5%; *** significant at 1%). P-values are based on White's (1980) heteroskedasticity consistent standard errors. This table does not report all of the year and industry dummies in the table for the brevity.

TABLE VII
OLS REGRESSION FOR THE DURATION OF INVESTMENT

Dependent Variable:	OLS Log (duration of investment made in company)
IPO dummy	0.115 (0.000)***
US company dummy	-0.072 (0.002)***
Received investment from LPE dummy	0.064 (0.068)*
Number of rounds company received	0.044 (0.000)***
Number of firms invested in company	0.071 (0.000)***
Total known amount invested in company	0.000 (0.000)***
Log (company age at 1st round)	0.082 (0.000)***
Constant	6.964 (0.000)***
Year & Industry dummies	Yes
Observations	11,148
R-square	0.2644
p-values are in parentheses: * significant at 10%; ** significant at 5%; *** significant at 1%	
**** : includes statistically significant dummies	

The next table examines the probability of going for an IPO through a probit regression where dependent variable is an IPO dummy which takes value of one if company goes for an IPO and zero otherwise. According to our results in Table VIII, if a company has higher number of investor firms, larger total investment amount and if it is an older company then this company is more likely to go for an IPO. However, company receiving investment from LPE dummy is not statistically significant. This result suggests that LPE firms are not significantly better at taking its companies to IPO.

Table VIII shows probit regression for going IPO. The sample of this paper consists of winsorized variables at 1% and 99% levels in order to eliminate the outlier effect and any potential data errors. Table VIII reports the probit regression results where dependent variable is IPO dummy, which is equal to 1 if company goes to IPO. Table VIII shows p-value of each coefficient in parentheses (* significant at 10%; ** significant at 5%; *** significant at 1%). P-values are based on White's (1980) heteroskedasticity consistent standard errors. This table does not report all of the year and industry dummies in the table for the brevity.

TABLE VIII
PROBIT REGRESSION MODELING THE LIKELIHOOD OF GOING FOR AN IPO

Probit Regression	
Dependent Variable:	IPO dummy
Inexperienced Lead VC dummy	4.56 (0.000)***
Received investment from LPE dummy	0.180 (0.180)
Buyout dummy	-0.029 (0.512)
Number of rounds company received	-0.084 (0.000)***
Number of firms invested in company	-0.119 (0.000)***
Log (total known amount invested in company)	0.088 (0.000)***
Log (company age at 1st round)	0.180 (0.000)***
Constant	-0.689 (0.000)***
Year & Industry dummies	Yes
Observations	14,412
Pseudo R-square	0.5194
p-values are in parentheses: * significant at 10%; ** significant at 5%; *** significant at 1%	
**** : includes statistically significant dummies	

CONCLUSION

Listed Private Equity (LPE) is growing as an alternative investment tool for those investors who would want exposure to private equity in their investment portfolios by purchasing public shares of LPEs that are invested in a group of private companies. We examine LPE firms and the type and duration of companies that LPEs choose to invest in and the performance of these LPE backed companies at the IPO stage. We find that LPE backed companies are older companies, receiving larger amount of total investments, are more likely to be non-US companies invested through buyouts, having higher number of investor firms. We find that LPE firms are older, more likely to be a non-US firms, making higher amounts of investments to a given company and are more likely to be lead investors and their duration of investment is longer than non listed private firms. However, the effect of lead LPEs on taking companies to IPO is not significantly higher.

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