

Do Private Equity-Backed Companies Perform Similarly Throughout Europe?

GIUSY CHESINI

University of Verona, Italy
Email: giusy.chesini@univr.it
Tel: +390444393938

ELISA GIARETTA

University of Verona, Italy
Email: elisa.giaretta@univr.it
Tel: +390444393938

Abstract

This study analyzes the performance of private equity-backed European companies. The purpose of this research is to explore the impact of private equity investments on the variables of profitability and dimensional growth for the target companies. We studied the performance of private equity-backed companies located in the top eight European countries in terms of number of investments – the Czech Republic, France, Germany, Italy, Spain, Sweden, Netherlands and the UK. We created a database of 2,429 unlisted companies that received private equity investments in the period from 2003 to 2009, and we compared them with a sample of 2,506 non-private equity-backed companies with similar characteristics in terms of their size and industry. Secondly, we compared the performance of private equity-backed companies within countries, taking the performance of private equity-backed companies in Italy as a benchmark. The analyses were conducted through the use of a statistical probit model, Ordinary Least Squares (OLS) regression models and Student's T-test. The results of the analyses suggest that on average, private equity investments have a positive effect on target companies in terms of dimensional growth compared to non-invested companies. In the first post investment years, private equity operators act to improve the growth of private equity-backed companies, even decreasing profitability, therefore preferring long-term results. We prove that private equity-backed companies show similar performance throughout Europe, while non-private, equity-backed companies do not. In most cases, we found similar performance in the different countries. There are homogeneous results in all countries because internationalization has induced common practices over time.

Key Words: *Private equity, Performance, International comparison, Profitability, Venture capital.*

Introduction

Private equity (PE) is a short-medium time investment that provides equity capital to enterprises that are not quoted on a stock market. PE investment is typically carried out through a limited partnership structure that involves three different parties – the target company, the limited partner (LP) and the general partner (GP). The target companies – also called portfolio companies – are PE-backed companies that receive capital from the investments. The LPs consist largely of institutional investors that provide a certain amount of capital to the fund for deals. The GPs are fund managers that invest their clients' pooled savings into securities that match their declared financial objectives.

The entire investment process from GPs to the target companies is geographically biased. In fact, GPs focus on a particular region or just a single country as they allocate capital through chains of agents and networks in specific countries. GPs prefer spatial proximity in their investments to facilitate the transaction

process, monitoring and involvement. Hence, the geographical source of PE is generally not very distant from the demand (Groh et al., 2008). Moreover, if a country has a large amount of PE inflows over time, it is a sign of the positive performance of PE investments. The idea is based on the following reasoning: if a GP is successful in its investments, he will be able to raise additional funds. In the aggregate, a country in which the initial inflow of PE performs positively is more likely to attract additional investments as a positive track record is created for the market (Charvel, 2009). Moreover, particular regions become attractive to institutional investors only when the expected number of transactions is large and their volumes and payoff exceed a certain amount to cover the management fees. Investors in PE funds can benefit from an awareness of the heterogeneity of the PE community across different countries.

The industry of private equity (PE) is of growing importance in Europe, with 1,696 active investors, 709 of which specialize in Venture Capital, 505 in buyouts, 74 in growth financing, and the residual 408 are generalists.¹ There are also more than 47 institutional investors with offices outside Europe that invest in European enterprises (EVCA, 2011). The funds raised in Europe in the period between 2003 and 2009 from PE investors amounted to 416 billion euro. Investments in the same period were 334 billion euro, with no lack of supply of funds in comparison to the need for investments. Divestments between 2003 and 2009 amounted to only 150 billion euro.

Although in 2009 the European Union (EU) proposed an innovation in the regulations for the creation of a uniform market for PE, at present, there are differences in the legal and regulatory requirements between EU countries that result in obstacles to investing in PE. In addition, differences related to language and culture tend to restrict PE to domestic national markets rather than extending across the larger EU markets. Nevertheless, target companies need to be aware of the factors that influence the decisions of investors so that they can anticipate their needs and be better prepared for investment negotiations (Manigart et al., 2002).

The objective of this paper is to understand how the differences between countries can influence the success of these deals and company growth. We aim to examine whether a fund's positive performance – defined as a positive track record of investments exhibited by a country – is linked to the growth of the target companies and whether there are cross-country determinants of growth. This research analyzes PE investments in medium- and large-sized enterprises in the top eight European countries in terms of the amount of investments – the Czech Republic, France, Germany, Italy, Spain, Sweden, Netherlands and the UK – and analyzes the performance of the target companies.

The structure of the paper is as follows: in the first section, we discuss the specific literature about the phenomena to be studied. In the second section, we develop the hypotheses we aim to test in this work. Then, we describe the data collection and the research methods. In the fourth section, we report the results of our analyses. Finally, we restate the major conclusions and discuss the implications for entrepreneurs and for further research.

Literature Review

¹ In this paper, we define private equity as a short-medium time investment that provides equity capital to enterprises that are not quoted on a stock market. Venture capital is traditionally defined as seed, start-up, early stage and expansion investing. Private equity includes venture capital investments as well as later-stage buyout and turnaround investments and investments in mezzanine firms that might soon be suitable for listing on a stock exchange. In this paper, we study both venture capital and private equity investments. However, we use the term private equity as a generic term that encompasses all investments in private firms as mentioned above. A buyout is a PE investment that leads to the purchase of a controlling interest in one target company. The transaction is financed by a mix of debt and equity.

LBO is a buyout in which the target company's capital structure incorporates a particularly high level of debt, much of which is normally secured against the company's assets. Reverse LBOs are PE investments in companies that had been taken private in the past either in a full LBO or in a divisional buyout and have gone public again. Venture capital is an investment in a new business that is perceived to have excellent growth prospects but does not have access to capital markets. Venture capital finances companies in early stage (seed and start-up) or expansion ventures. See the EVCA Glossary for a more detailed description of the types of PE investments.

The internalization of PE is ongoing. Prior to the 1990s, PE was primarily restricted to the US. The globalization of IT activities induced the US venture capital industry to mature and begin exporting its unique skills as PE managers. The US is now a dominant net exporter of deals, although most cross-border deals are still either to or from the US. The globalization of PE is clearly well underway and has the potential to be an important source of funds for funding innovation and financial reengineering around the world (Aizenman and Kendall, 2008).

The growing market for PE since 1990 has been accompanied by an increasingly wide body of literature studying the phenomenon. In the 1990s, most studies focused either on aggregate trends in PE or on the relation between institutional investors and entrepreneurs. The first paper to make an international comparison of PE was the study by Gompers and Lerner (1999), who focused exclusively on venture capital funds and explored the cross-sectional and time-series variation in fund terms. Litvak (2004) addressed similar issues from a legal perspective and extended the Gompers and Lerner analysis to consider several additional terms from partnership agreements.

Currently, there is a wide body of literature about the cross-country differences in PE investments. Most of the studies focus on a particular aspect of the phenomenon and investigate only a few countries. Much attention has been devoted in the recent literature to the claim that a country's "legal origin" may make a difference in its pattern of financial development and more generally to the path of its economic growth. The most important studies on this subject are those by Bottazzi et al. (2005), Cumming and Walz (2009) and Lerner and Schoar (2005).

Bottazzi et al. (2005) presented evidence that across Europe better legal systems – measured by legal origin or rule of law – are associated with more investor involvement, more downside protection for investors, and the increased involvement of investors in corporate governance. Cumming and Walz (2009) showed that the legal frameworks in various countries significantly contribute to the performance of an investment: the more sound the legal conditions, the higher the IRRs. Their analyses on both realized and unrealized investments in PE in 39 countries demonstrate that the characteristics of funds, entrepreneurs and investments as well as the economic environment all significantly contribute to the success of investments. They showed that cross-country differences in accounting standards, legality, and information asymmetry between PE managers and their institutional investors are conducive to systematic biases in the reporting of unrealized IRRs.

A similar result is presented by Lerner and Schoar (2005) based on a PE dataset of 210 investments in developing countries. They found that transactions vary with nations' legal enforcement. Investments in high-enforcement and common-law nations often use convertible preferred stock with covenants. In low-enforcement and civil-law nations, PE groups use common stock and debt and rely on equity and board control. They also found that transactions in high-enforcement countries have higher valuations and returns. There is also a wide body of literature about the international allocation of PE investments and the features of countries that attract capital. The most important studies are Groh et al. (2005), Cumming and Johan (2007) and Groh and Liechtenstein (2011). Groh et al. (2005) calculated composite indices to compare the attractiveness of PE investments for 27 European countries by using 42 different parameters. Their analyses reveal that the UK leads this ranking because of its investor protection and corporate governance rules and the size and liquidity of its capital market. In fact, the state of the capital market is a proxy for the professionalism of the financial community in terms of deal flows and exit opportunities.

Cumming and Johan (2007) studied 100 Dutch institutional investors' domestic and international allocations in PE. They found that the harmonization of European regulations – the introduction of the International Financial Reporting Standards (IFRS) in 2005 and the Basel II regulations – affects institutional investors' asset allocation decisions in PE, the geographic region in which institutional investors invest, and the mode of PE investment – direct private companies, direct funds, and fund-of-fund investments. While regulations are harmonized across countries, institutional investors from different countries are better able to act as institutional investors for the same PE-limited partnership.

Groh and Liechtenstein (2011) examined the determinants of international capital allocation through PE. They found that in the allocation process, the protection of property rights is the dominant concern, followed by the need to find quality local GPs and the quality of the management and skills of local entrepreneurs. Additionally, the expected deal flow plays an important role, while IPO activity and the size of local public equity markets are not as relevant as proposed by other researchers, and public funding and subsidies are not important.

There are other studies related to other aspects of international comparisons of PE. Aizenman and Kendall (2008) investigated the internationalization of PE investments. Their analysis indicates that distance, common language, and colonial ties are significant factors in directing international PE flows. Additionally, the presence of high-end human capital, a better business environment, high levels of military expenditures, and deeper financial markets are important local factors that attract international investments.

Kaplan et al. (2003) analyzed venture capital investments in 23 non-US countries and compared them to venture capital investments in the US. They studied how the contracts allocate cash flow, board, liquidation, and other control rights and found that contracts differ across legal regimes. However, more experienced VCs implement US-style contracts regardless of the legal regime.

Baughn and Neupert (2003) argued that national cultures shape both individual orientation and environmental conditions, which lead to different levels of entrepreneurial activity in particular countries. Schwienbacher (2005) studied the exits by venture capitalists in Europe and in the US. Although there are numerous similarities between the US and Europe, they found important differences with respect to the duration of the exit stage, the use of convertible securities, the replacement of management and deal syndication. These differences come from three facts: European markets exhibit fewer exit opportunities; liquidity for human resources is lower; and European venture capitalists use convertible securities less often.

TABLE 1. Summary of the literature (listed by year)

Author(s), year	Outcomes
Moerland, 1995	Economic returns may vary by country
Manigart et al., 1997	Differences in the evaluation of projects
Gompers and Lerner, 1999	Cross-sectional and time-series variations in the fund terms
Manigart et al., 2002	Heterogeneity of PE between countries
Manigart et al., 2002	Corporate governance, national culture, institutional environment and individual characteristics of managers influence return rates
Baughn and Neupert, 2003	National culture leads to various entrepreneurial activities
Kaplan et al., 2003	Different contracts across legal regimes and the US style
Litvak, 2004	Cross-sectional and time-series variations in terms of partnership agreements
Bottazzi et al., 2005	Different legal systems are conducive to different types of investor involvement
Groh et al., 2005	Attractiveness index of PE for 27 European countries
Lerner and Schoar, 2005	Different legal systems are conducive to different IRR
Schwiebacher, 2005	Various durations of exits, the use of convertibles, management replacement, and deal syndication for the US/Europe
Da Rin et al., 2006	Impact of capital gains taxation
Cumming and Johan, 2007	Harmonization across countries is conducive to higher international PE flow
Aizenman and Kendall, 2008	Distance, common language, and colonial ties influence international PE flows
Groh et al., 2008	The source of PE is generally not distant from the demand
Cumming and Walz, 2009	Different legal frameworks are conducive to different IRR
Popov and Roosenboom, 2009	Cross-country effect of investment by PE firms on innovation
Groh and Liechtenstein, 2011	The protection of property rights, quality of local GPs, quality of management, and skills of local entrepreneurs influence international PE flows

Source: Our elaboration.

Da Rin et al. (2006) studied the evolution of PE investments in 14 European countries as a function of policy measures and find a significant impact of the creation of stock markets geared toward

entrepreneurial firms and capital gains taxations. Popov and Roosenboom (2009) studied the cross-country effects of investment by PE firms on innovation, focusing on a sample of 18 European countries covering the period from 1991 to 2004. They studied how PE finance affects patent applications and patent grants. We summarize the literature about international comparisons of PE in Table 1.

There are important between-country differences with respect to the valuation approaches to PE investments and the relative importance of accounting and financial information in this process. The numerous contributions emphasize the difficulty in identifying the appropriate criteria that are conducive to differences in PE around the world. We aim to investigate whether the differences between countries lead to different performance by portfolio companies. We seek to measure the profitability of portfolio companies in different countries and test whether there are countries that exhibit a higher performance, controlling with a sample of non-PE-backed companies.

Our work is related to the literature on international and comparative studies; this international setting allows us to examine the breadth of the applicability of results with regard to the performance of portfolio companies and to examine the differences between countries, an issue of increasing importance for the development of this activity. It is recognized that the issues that we aim to consider are only a subset of the whole operation of a PE market, but an analysis of all aspects would be beyond the scope of a single paper; our focus is on specific aspects, which have hitherto not been detailed.

Research Questions

In this research, we investigate whether the positive performance of private equity investments in a country, expressed by a large amount of capital invested in that country, corresponds to a growth in private equity-backed companies. In particular, we measure the effects of investment on private equity-backed companies both in terms of profitability and dimensional growth. First, we compare the performance of private equity-backed companies to a control sample of non-private equity-backed companies. We assume that private equity-backed companies exhibit superior performance compared to companies that are not subject to investment:

H₁: Private equity-backed companies show higher performance compared to companies that are not backed by investments.

Next, we study whether there are differences related to the country of origin for private equity-backed companies. As a result of globalization and the increasing regulatory harmonization by the EU, we assume that there are no differences related to the country of origin of the companies. In other words, the research hypothesis we test is the following:

H₂: The performance of private equity-backed companies is similar throughout European countries.

However, we control the results by repeating the analyses on the control sample. We hypothesize that this result is not present by analyzing the sample of non-private equity-backed companies:

H_{2B}: The performance of non-private equity-backed companies in European countries is not similar.

Analysis

Data on the performance of PE investments can be gathered either at the company level or at the fund level. While fund-level data have the advantage of being net of fund fees and carry, aggregation at the fund level also implies a loss of leveraged recapitalization. In contrast, company-level data allow researchers to more explicitly control for selection bias arising from lack of observations for the final outcomes of unsuccessful investments. Our data sources and sample selection scheme are detailed in this section.²

In this research, we analyze the countries that show the highest amount of PE investments in local target companies between 2003 and 2009. These countries include the Czech Republic, France, Germany, Italy,

² Data collection and analyses were conducted at the Bangor Business School (Bangor University).

Spain, Sweden, Netherlands and the UK, which together accounted for 70% of the total investments in Europe in 2009, 80% of the amount invested by local GPs and 74% of the investments by local investors.

TABLE 2. Investments in 2009 in Europe (mil. € - number of deals).

Country	Investments in local target companies	Local investments	No. of local investments
United Kingdom	4,736	9,052	825
France	3,140	3,444	799
Germany	2,784	2,411	1,277
Italy	1,931	1,414	119
Czech Republic	1,386	61	10
Spain	1,093	913	163
Sweden	1,079	1,261	379
Netherlands	863	764	307
Total	14,186	19,320	3,879
Belgium	1,157	1,048	242
Norway	693	622	163
Finland	629	338	235
Switzerland	595	718	177
Ireland	514	59	71
Denmark	476	492	120
Luxemburg	408	78	32
Portugal	303	299	94
Poland	267	480	29
Romania	220	82	18
Hungary	213	191	10
Austria	185	137	90
Bulgaria	185	6	3
Greece	155	41	6
Other CEE	129	30	7
Ukraine	37	12	4
Baltics	6	6	17
Total	20,358	23,959	5,197

Source: EVCA Yearbook 2011.

We only analyze investments in medium, large and very large PE-backed unlisted companies.³ Only the initial rounds of investments undertaken by non state-related PE investors are considered. Moreover, we only consider investments in companies that are in a post-start-up phase. Hence, our study excludes the following types of deals:

- Seed and start-up deals;
- Second-round financing deals.

To analyze investments, we constitute a sample of PE-backed companies invested in the period from 2003 to 2009, comprising 2,429 enterprises in total. We bring data from the Thomson Reuters Thomson ONE database⁴ and we cross data from the Bureau van Dijk AMADEUS database of medium, large, and very large companies.⁵

³ We define medium, large and very large companies as those with operating revenue greater than €1 million, total assets greater than €2 million and more than 10 employees.

⁴ Thomson ONE provides market news and quotes in addition to comprehensive reference data. Designed for private equity and venture capital practitioners, lawyers and consultants within the deal-making community, it is an ideal database with which to obtain an overview of a company, its peers or the market as a whole.

⁵ AMADEUS is a comprehensive database of 14 million companies across Europe. It combines data from over 35 sources with software for search and analysis. The financial information is in a standardized format, so cross-border searching and analysis is possible.

The final sample consisted of 2,429 firms as follows:

TABLE 3: Distribution of companies during the years of analysis.

	2003	2005	2004	2006	2007	2008	2009	Total
UK	89	116	117	128	148	124	45	767
France	104	102	105	94	57	42	29	533
Germany	26	54	36	66	71	56	35	344
Italy	16	47	35	51	43	67	15	274
Sweden	26	35	22	40	35	27	23	208
Spain	25	28	21	23	24	26	15	162
Netherlands	21	18	19	16	20	18	8	120
Czech Republic	0	1	1	3	8	3	5	21
Total	307	401	356	421	406	363	175	2,429

Source: Thomson Reuters Thomson ONE and AMADEUS Bureau van Dijk.

The impact of PE on the performance of target firms was directly analyzed by comparing firms with and without PE shareholders. For each country-industry combination in the PE sample from the Bureau Van Dijk AMADEUS database, we generated 50 draws of firms and we computed the mean of the variables in each year. The sample of the country-industry combination consists of 358 combinations, for a total of 2,506 country-industry-year observations as follows:

TABLE 4: Country-industry observations during the years of analysis.

	2003	2004	2005	2006	2007	2008	2009	Total
UK	58	58	58	58	58	58	58	406
France	57	57	57	57	57	57	57	399
Germany	51	51	51	51	51	51	51	357
Italy	45	45	45	45	45	45	45	315
Sweden	40	40	40	40	40	40	40	280
Spain	42	42	42	42	42	42	42	294
Netherlands	44	44	44	44	44	44	44	308
Czech Republic	21	21	21	21	21	21	21	147
Total	358	2,506						

Source: AMADEUS Bureau van Dijk.

We direct our budget analysis to understand the key characteristics of PE investments. We analyze the following indexes: ROA, ROE, operating margin, solvency ratio, profit margin, current ratio and P/L before taxes. Through the budget analysis, we aim to answer the main research question: to measure the positive effect of investment both in terms of size growth and performance.

Tables 5 and 6 summarize the descriptive statistics for the two samples broken down by country of origin, indicating the average and median for each variable analyzed. Descriptive statistics of the variables analyzed. The sample includes 2,429 private equity-backed companies in the period 2003-2009.

The definitions of the variables and data sources are located in the Appendix (Table A). Mean and median values are shown (median values in brackets).

TABLE 5: Descriptive statistics of private equity-backed companies.

	<i>P/L Taxes</i>	<i>Before Ratio</i>	<i>Current Ratio</i>	<i>Profit Margin</i>	<i>Solvency Ratio</i>	<i>EBIT Margin</i>	<i>ROE</i>	<i>ROA</i>
ITA	-525,391 (392,147)	1.64 (1.13)	0.577 (1.80)	28.36 (24.93)	4.20 (4.16)	-9.34 (0.73)	0.89 (0.12)	
FRA	9,305,513 (1,362,698)	2.16 (1.30)	6.14 (5.74)	37.42 (35.48)	3.32 (5.42)	7.60 (13.59)	4.00 (4.97)	
SPA	158,609 (516,285)	1.82 (1.20)	2.32 (2.09)	33.13 (29.86)	5.93 (3.82)	3.01 (3.53)	1.39 (0.79)	
UK	5,485,841 (1,202,443)	2.06 (1.28)	2.73 (3.64)	26.94 (26.03)	5.44 (4.75)	14.19 (18.31)	1.90 (3.01)	
GER	794,654 (920,226)	3.06 (1.69)	1.05 (2.66)	26.37 (23.42)	3.43 (3.91)	-21.16 (0.00)	-1.03 (0.00)	
SWE	305,012 (788,911)	1.51 (1.30)	2.54 (4.43)	35.15 (33.32)	3.92 (4.81)	2.74 (14.09)	2.38 (3.53)	
CZE	709,981 (768,658)	1.28 (1.26)	4.89 (3.35)	30.07 (33.76)	5.47 (3.90)	19.89 (12.68)	0.20 (3.08)	
NET	3,157,822 (1,802,500)	1.94 (1.24)	2.77 (2.51)	31.26 (27.19)	5.69 (6.04)	15.80 (12.17)	4.05 (2.36)	

Source: Our elaboration of data from AMADEUS Bureau Van Dijk.

Descriptive statistics of the variables analyzed. The sample includes 2,506 non-private equity-backed companies in the period 2003-2009. Definitions of the variables and data sources are located in the Appendix (Table A). Mean and median values are shown (median values in brackets).

TABLE 6: Descriptive statistics of non-private equity-backed companies.

	<i>P/L Taxes</i>	<i>Before Ratio</i>	<i>Current Ratio</i>	<i>Profit Margin</i>	<i>Solvency Ratio</i>	<i>EBIT Margin</i>	<i>ROE</i>	<i>ROA</i>
ITA	20,060,153 (1,097,959)	1.76 (1.50)	2.55 (2.98)	27.54 (27.03)	3.86 (3.94)	0.3267 (4.34)	1.35 (1.68)	
FRA	12,517,391 (2,273,449)	1.86 (1.53)	4.05 (3.62)	32.34 (32.28)	4.37 (3.86)	11.98 (13.90)	3.42 (3.69)	
SPA	4,857,736 (1,729,295)	1.98 (1.63)	3.69 (3.66)	33.85 (34.23)	5.13 (5.09)	11.03 (12.13)	3.58 (3.58)	
UK	11,883,241 (2,327,242)	2.33 (1.83)	4.65 (3.96)	33.65 (34.61)	5.51 (4.16)	24.24 (19.55)	4.11 (4.33)	
GER	23,473,097 (2,655,871)	4.33 (3.03)	3.66 (3.43)	31.83 (30.36)	3.95 (3.73)	20.42 (15.26)	3.65 (3.91)	
SWE	8,593,302 (1,859,130)	2.02 (1.86)	4.66 (4.49)	37.19 (37.86)	5.21 (4.98)	14.48 (15.43)	5.50 (5.54)	
CZE	6,938,854 (1,169,064)	2.30 (2.07)	5.26 (4.61)	45.04 (44.31)	5.85 (5.17)	13.75 (14.43)	5.80 (5.84)	
NET	24,537,607 (4,255,373)	2.26 (1.86)	4.87 (3.74)	35.03 (35.14)	6.30 (4.716)	18.34 (16.19)	4.86 (4.87)	

Source: Our elaboration of data from AMADEUS Bureau Van Dijk.

After data analyses, we describe the methodology applied and discuss the variables chosen to analyze the companies.

We decided to use a financial statement analysis to explain the key characteristics of PE investments. This is due to the willingness to adopt the data available for all companies and not to investigate the investments using surveys.

First, we sought to analyze whether private equity-backed companies in Europe have a higher performance compared to non-private equity-backed companies through a probit model. We use the following probit model:

$$PROB_{PE} = \beta_0 + \beta_1 ROE + \beta_2 ROA + \beta_3 TAS + \beta_4 PRE \quad (1)$$

where:⁶

- $PROB_{PE}$ = dummy variable which explains the membership of the PE sample (1 for PE-backed companies, 0 otherwise)
- ROE = value of ROE in the second year after the investment;
- ROA = value of ROA in the second year after the investment;
- TAS = value of total assets in the second year after the investment;
- PRE = value of profits/losses before taxes in the second year after the investment.

The model includes ROE, ROA, total assets and profits/losses before taxes in the second year after the investment as independent variables. The variables used in this study are selected to reflect the size of the traditional performance evaluation within the limits of data availability. The specific constructs are listed in the Appendix (Table A).

Subsequently, we check whether the performance of private equity-backed companies is similar between European countries. Because we conduct the analyses taking the performance of private equity-backed companies located in Italy as a benchmark, we compare the performance of these companies with the performance of private equity-backed companies located in the other European countries analyzed. Therefore, considering only the sample of private equity-backed companies, we use the following OLS regression model to analyze the performance of companies in different countries:

$$Y = \beta_0 + \beta_1 t + \beta_2 FRA + \beta_3 SPA + \beta_4 UK + \beta_5 GER + \beta_6 SWE + \beta_7 CZE + \beta_8 NET \quad (2)$$

where:⁷

- T = deal year
- FRA = the company is located in France;
- SPA = the company is located in Spain;
- UK = the company is located in the United Kingdom;
- GER = the company is located in Germany;
- SWE = the company is located in Sweden;
- CZE = the company is located in the Czech Republic;
- NET = the company is located in the Netherlands.

In the regression model, we used seven indexes as follows as dependent variables: ROA, ROE, the operating margin, solvency ratio, profit margin, current ratio and P/L before taxes.⁸ The variables used in this study were selected to reflect the size of the traditional performance evaluation within the limits of data availability. The specific constructs are shown in the Appendix (Table A).

⁶ Definitions can be found in the Appendix (Table A).

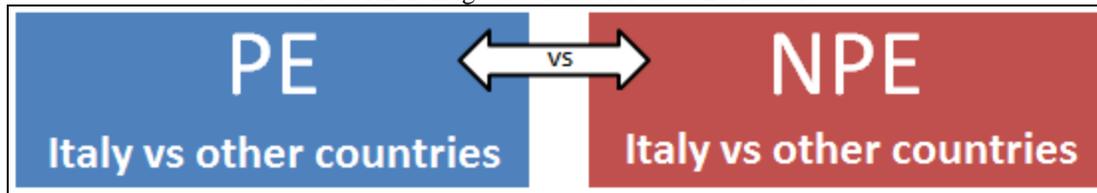
⁷ Definitions can be found in the Appendix (Table A).

⁸ We have chosen to study the effects of private equity in a certain period after the operation. Note that by using a time period longer than two years, the data on investments in 2009 would not be available.

The independent variables are dummy variables that explain the country of origin of the companies (FRA, SPA, UK, GER, SWE, CZE and NET). The reference dummy variable excluded from the regression relates to companies located in Italy. Therefore, we analyze the difference between the performance of the Italian companies and the performance of companies located in other European countries.

In this regression, we also include the variable t, which indicates the year of analysis and serves as a control variable to check for any effects related to the period of analysis. The analysis is repeated using the control sample. In this way, we check whether the results found in the analyses of private equity-backed companies is the same while also analyzing the sample of non-private equity-backed companies, as shown in Figure 1.

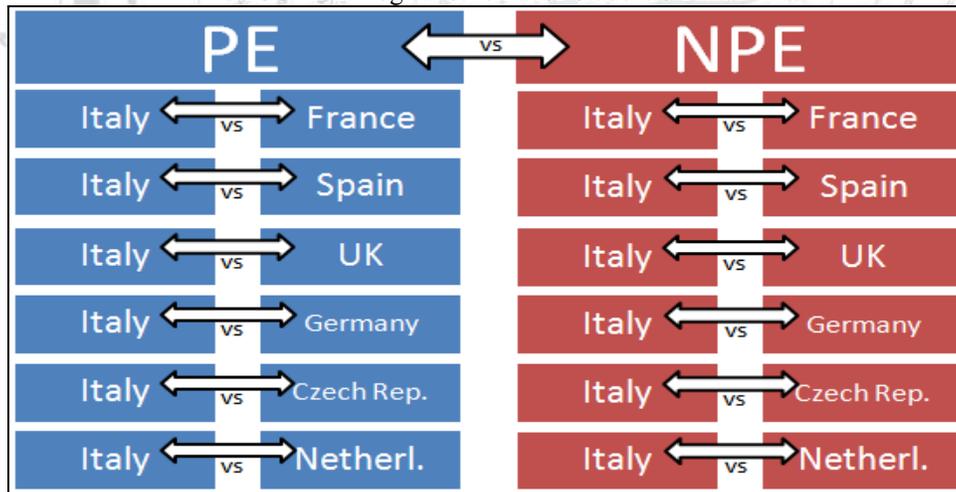
FIGURE 1: Logical scheme for the OLS model.



Source: Our elaboration.

We continue the analysis using Student's T-test. We seek to examine whether there are statistically significant differences in private equity-backed companies between European countries. We divide the sample of private equity-backed companies by country and conduct a T-test to see whether there are statistically significant differences between Italian firms and firms located in other countries. Subsequently, we run an additional T-test to see if the same results are achieved by analyzing the firms in the control sample. In conclusion, we investigate whether the performance of the private equity-backed companies is different between Italy and other European countries and whether these differences are also present for companies that are not backed by investments. The logical scheme adopted in the analysis is explained in Figure 2.

FIGURE 2: Logical scheme for Student's T-test.



Source: Our elaboration.

Discussion

In the study we compared 2,429 private equity-backed companies with a sample of 2,506 non-private equity-backed companies. Data were taken from the Thompson Reuters Thomson One database and AMADEUS Bureau Van Dijk database. The methodology used to investigate the phenomenon includes the use of a probit model, OLS regression model and Student's T-test.

The probit model analyzes whether private equity-backed European companies show better performance compared to non-private equity-backed companies, using ROE, ROA, total assets and profit before taxes in the second year after the investment as independent variables. The results of the probit model are reported in Table 7.

The samples include 2,429 private equity-backed companies and 2,506 non-private equity-backed companies. The dependent variable is a dummy variable that explains the membership of the PE sample (1 for PE backed companies, 0 otherwise). The independent variables are ROE, ROA, total assets and P/L before taxes in the second year after the acquisition. Definitions of the variables and data sources are defined in the Appendix (Table A). P-values in brackets. * Significant at the 10% confidence level. ** Significant at 5% confidence level. *** Significant at 1% confidence level.

TABLE 7: Probit model (1).

Variable	Coefficient
ROE	-0.0023 (0.0000)***
ROA	0.0113 (0.0004)***
Total assets	6.95E-11 (<0.00001)***
P/L before taxes	-5.67E-09 (<0.00001)***
Constant	-0.5931 (<0.00001)***

Source: Our elaboration of data from AMADEUS Bureau Van Dijk.

The probit model revealed that all of the variables analyzed are statistically significant. In particular, the relationship between the probability of being subject to private equity investments and the P/L before taxes is negative: two years after the deal, private equity investments lead to a profit before taxes lower than that of comparable companies. In fact, the profit produced by private equity-backed companies is usually affected by some accounting effects related to the merger transactions made by investors. It follows that because of the depreciation and amortization related to the higher post-merger revaluation of items, invested companies show lower performance in terms of earnings before taxes.

In addition, the relationship between the probability of being subject to private equity investments and ROE is negative. In fact, as already seen, there are many aspects that can negatively affect the post-investment value of profit and consequently of the ROE. Moreover, private equity investments are usually accompanied by an increase in shareholders' equity, which also induces a decrease in ROE. The effect of private equity investments on total assets is positive. The positive relationship between total assets and private equity investments is because the growth of a company is a stated objective of institutional investors. We should also note that this variable can also be influenced by the budgetary policies related to accounting post-merger revaluations, but in any case, it shows growth in terms of size.

The relationship between the probability of being subject to private equity and ROA is positive. It follows that private equity-backed companies show higher performance measured in terms of ROA. The study continues with an analysis of private equity-backed companies through an OLS regression model. The regressions show the following dependent variables calculated in the second year after the investment: ROA, ROE, the operating margin, solvency ratio, profit margin, current ratio and P/L before taxes. The independent variables are dummy variables related to the country of origin of the companies (FRA, SPA, UK, GER, SWE, CZE and NET), and the reference dummy variable is relative to the location in Italy. We also include a control variable relative to the investment year. The results of the regressions are summarized in Tables 8 (the first five dependent variables) and 9 (last six dependent variables).

The sample consists of 2,429 private equity-backed companies. The dependent variables are ROA, ROE, the operating margin and solvency ratio. The independent variables are the investment year and dummy variables related to the home country of the companies. P-values in brackets. * Significant at the 10% confidence level. ** Significant at the 5% confidence level. *** Significant at the 1% confidence level.

TABLE 8: OLS regression model.

	ROA	ROE	Operating Margin	Solvency Ratio
t			0.4342 (0.0734)*	
FRA	305,257 (0.0300)**	169,989 (0.0198)**		894,322 (0.0001)***
SPA				
UK		235,006 (0.0007)***		
GER				
SWE				677,109 (0.0192)**
CZE				
NET		253,419 (0.0255)**		
Constant	132,724	-220,889	-866,799 (0.0748)*	359,393

Source: Our elaboration of data from AMADEUS Bureau van Dijk.

The sample consists of 2,429 private equity-backed companies. The dependent variables are the profit margin, current ratio and P/L before taxes. The independent variables are the investment year and dummy variables related to the home country of the companies. P-values in brackets. * Significant at the 10% confidence level. ** Significant at the 5% confidence level. *** Significant at the 1% confidence level.

TABLE 9: OLS regression model.

	Profit Margin	Current Ratio	P/L Before Taxes
t			
FRA	549,628 (0.0008)***		
SPA			
UK			
GER		142,421 (0.0011)***	
SWE			
CZE			
NET			
Constant	133,413	844,791	6.63E+13

Source: Our elaboration of data from AMADEUS Bureau van Dijk.

We repeated the analysis using the same OLS model, the same variables, and the control sample. The regression results are summarized in Tables 10 (dependent variables: ROA, ROE, the operating margin and solvency ratio) and 11 (dependent variables: the profit margin, current ratio and P/L before taxes).

The sample consists of 2,506 non-private equity-backed companies. The dependent variables are ROA, ROE, the operating margin and solvency ratio. The independent variables are the deal year and dummy

variables related to the home country of the companies. P-values in brackets. * Significant at the 10% confidence level. ** Significant at the 5% confidence level. *** Significant at the 1% confidence level.

TABLE 10: OLS regression model.

	ROA	ROE	Operating Margin	Solvency Ratio
t		-0.6757 (0.00589)***		0.2250 (0.0064)***
FRA	206,631 (<0.00001)***	116,565 (<0.00001)***		479,711 (<0.00001)***
SPA	222,275 (<0.00001)***	106,945 (<0.00001)***	126,666 (0.0032)***	631,446 (<0.00001)***
UK	276,044 (<0.00001)***	239,165 (<0.00001)***	164,757 (0.0000)***	611,339 (<0.00001)***
GER	229,889 (<0.00001)***	200,931 (<0.00001)***		42,924 (<0.00001)***
SWE	414,087 (<0.00001)***	14,144 (<0.00001)***	13,437 (0.0020)***	964,654 (<0.00001)***
CZE	444,606 (<0.00001)***	134,075 (<0.00001)***	199,223 (0.0000)***	174,984 (<0.00001)***
NET	350,886 (<0.00001)***	180,047 (<0.00001)***	243,831 (<0.00001)***	748,852 (<0.00001)***
Constant	-477,254	1,356 (0.0058)***	-347,011	-423,966 (0.0105)**

Source: Our elaboration of data from AMADEUS Bureau van Dijk.

The sample consists of 2,506 non-private equity-backed companies. The dependent variables are the profit margin, current ratio and P/L before taxes. The independent variables are the deal year and dummy variables related to the home country of the companies. P-values in brackets. * Significant at the 10% confidence level. ** Significant at the 5% confidence level. *** Significant at the 1% confidence level.

TABLE 11: OLS regression model.

	Profit Margin	Current Ratio	P/L Before Taxes
t		-0.0336 (0.0382)**	
FRA	149,753 (0.0001)***		
SPA	113,573 (0.0063)***		-1.52E+12 (0.0025)***
UK	210,546 (<0.00001)***	0.5758 (0.0000)***	-8.18E+11 (0.0793)*
GER	111,132 (0.0051)***	257,317 (<0.00001)***	
SWE	211,311 (<0.00001)***	0.2613 (0.0892)*	-1.15E+12 (0.0244)**
CZE	271,415 (<0.00001)***	0.5391 (0.0021)***	-1.31E+11 (0.0239)**
NET	231,618 (<0.00001)***	0.5067 (0.0007)***	
Constant	597,767	693,700 (0.0335)**	-1.31E+12

Source: Our elaboration of data from AMADEUS Bureau van Dijk.

In the analysis of the private equity-backed companies, the regression with ROA as the dependent variable, the only statistically significant variable is related to firms located in France, with a positive sign. In the regression with ROE as the dependent variable, the variables related to firms with headquarters in France, the UK and the Netherlands are significant, with positive signs. In the regression with the operating margin as the dependent variable, the variables related to the country of origin are not significant. The solvency ratio has significant values, with positive coefficients for firms located in France and Sweden. The profit margin has significant and positive values for companies with headquarters in France, while the current ratio has positive and significant values for German companies. The regression with the P/L before taxes as the dependent variable does not show significance for any variable analyzed.

In the analysis of the control sample, all of independent variables were statistically significant, with positive coefficients in the regression with ROA, ROE, the solvency ratio and the profit margin as dependent variables. In the regression with the operating margin as the dependent variable the variables related being located in Spain, the UK, Sweden, the Czech Republic and the Netherlands are significant with positive signs. The regression with the current ratio as the dependent variable has significant values for the variables related to firms with headquarters in the UK, Germany, Sweden, the Czech Republic and the Netherlands (with positive signs). The P/L before taxes has significant values with negative signs for the variables related to being located in Spain, the UK, Sweden, the Czech Republic and the Netherlands.

The analysis continued with Student's T-test. We divided the sample of private equity-backed companies by country of origin, and we conducted a T-test to check for statistically significant differences between Italian companies and companies located in other countries. We further conducted a T-test to check whether the same results are achieved in the control sample. In conclusion, we checked whether the performance is different between private equity-backed companies in Italy and those in other European countries, and whether these differences are also present in companies that are not backed by investments. The results for private equity-backed companies are summarized in Table 12, and those for non-private equity-backed companies are summarized in Table 13.

Student's T-test for equality in means (unpaired, two-tailed. P-values. * Significant at the 10% confidence level. ** Significant at the 5% confidence level. *** Significant at the 1% confidence level.

TABLE 12: Student's T-test (private equity-backed companies).

	ROE	ROA	Operating Margin	Solvency Ratio	Profit Margin	Current Ratio	P/L Before Taxes
FRA	0.0017***	0.0143**	0.5352	<0.0001***	0.0007***	0.1687	0.1422
SPA	0.0411**	0.6482	0.3757	0.0383**	0.3201	0.7192	0.8084
UK	0.0013***	0.4629	0.3952	0.5713	0.1606	0.2915	0.3555
GER	0.2257	0.1690	0.5621	0.3509	0.7594	0.0028***	0.5138
SWE	0.1000*	0.3173	0.8606	0.0043***	0.1765	0.7302	0.7414
CZE	0.0851*	0.8171	0.7311	0.7665	0.2563	0.7863	0.8448
NET	0.0016***	0.0259**	0.4033	0.3192	0.2198	0.6016	0.229

Source: Our elaboration of data from AMADEUS Bureau van Dijk.

Student's T-test for equality in means (unpaired, two-tailed. P-values. * Significant at the 10% confidence level. ** Significant at the 5% confidence level. *** Significant at the 1% confidence level.

TABLE 13: Student's T-test (non-private equity-backed companies).

	ROE	ROA	Operating Margin	Solvency Ratio	Profit Margin	Current Ratio	P/L Before Taxes
FRA	<0.0001***	<0.0001***	0.1649	<0.0001***	0.0001***	0.1373	0.2729
SPA	<0.0001***	<0.0001***	<0.0001***	<0.0001***	0.0002***	0.0030***	0.0454**
UK	<0.0001***	<0.0001***	<0.0001***	<0.0001***	0.0001***	<0.0001***	0.2261
GER	<0.0001***	<0.0001***	0.8185	<0.0001***	0.0046***	<0.0001***	0.6803
SWE	<0.0001***	<0.0001***	.00001***	<0.0001***	<0.0001***	0.0001***	0.1462
CZE	<0.0001***	<0.0001***	<0.0001***	<0.0001***	<0.0001***	<0.0001***	0.1790
NET	<0.0001***	<0.0001***	<0.0001***	<0.0001***	<0.0001***	<0.0001***	0.5677

Source: Our elaboration of data from AMADEUS Bureau van Dijk.

As we can see in Table 12, for the sample of private equity-backed companies, only the following combinations are statistically significant: ROA is significant for France and the Netherlands, ROE is significant for all countries except Germany, the operating margin is not significant, the solvency ratio is significant for France, Spain, and Sweden, the profit margin is significant only for France, the current ratio is significant for Germany, while the value of P/L before taxes is significant for Spain.

In the analysis of the control sample, there are significant values in all of the countries analyzed for ROA, ROE, the solvency ratio and profit margin. The operating margin is significant for Spain, the UK, Sweden, the Czech Republic and the Netherlands, and the current ratio is significant for all countries with the exception of France, while the P/L before taxes is significant for Spain.

Conclusion

We analyzed the performance of private equity-backed companies in Europe. In particular, we investigated whether private equity-backed Italian companies show better performance compared to other European target companies, considering the overall performance of non-private equity-backed companies. The analyses were conducted on a sample of 2,429 medium and large private equity-backed companies in the period from 2003 to 2009 and a control sample of 2,506 observations of non-private equity-backed companies operating in the same industries and located in the same countries.

The results of the probit model show that private equity-backed companies in Europe are characterized by higher profitability in terms of ROA and higher growth measured in terms of total assets compared to non-private equity-backed companies. However, measuring profitability in terms of ROE and P/L before taxes, better performance for non-private equity-backed companies was shown. These results partially confirm hypothesis H_1 . The private equity-backed companies showed superior performance when only employing the ROA indicator, which is more sensitive to revenue growth using fewer intermediate results. The positive value of the coefficient of total assets shows that private equity-backed companies tend to grow more.

The subsequent analysis aimed to verify whether there are differences between private equity-backed Italian companies and other target companies in Europe (H_2) and whether these results can also be achieved in the control sample (H_{2B}).

The regression with ROA as the dependent variable has statistically significant values in the analysis of private equity-backed companies for the variable for firms located in France. However, the same variable was also significant in the analysis of non-private equity-backed companies, which also showed significant values for variables related to other countries. It follows that French firms have higher ROA than Italian companies overall, including private equity-backed companies and other types of companies.

In the regression with ROE as the dependent variable, the variables related to being located in France, the United Kingdom and the Netherlands are significant with positive signs. Similar to what was observed for ROA, all of the variables are significant in the regression using the control sample. Again, the higher profitability of some European companies compared to Italian firms is a phenomenon that is not solely characteristic of private equity-backed companies. Similarly, the solvency ratio has significant values for firms located in France and Sweden in the analysis of the sample of private equity-backed firms, and all values are significant for the analysis of the control sample.

A similar result is also present in the analysis of profit margins: the variable related to firms with headquarters in France is significant in the first sample, while in the second sample, all variables in the model country are significant. Even in that case, it follows that firms backed by French private equity have a higher profit margin than Italian firms, but the greater profitability of French firms also includes businesses that are not backed by investments.

The regression with the operating margin as the dependent variable has no significant variables in the analysis of the sample of private equity-backed companies. As a result, there are no differences between Italy and other European countries in terms of the operating margins of private equity-backed companies. On the contrary, there are five country variables that are significant in the sample of non-private equity-backed companies.

The regressions with the current ratio of private equity-backed companies as the dependent variable show statistically significant values for the variable related to Germany, while the values for firms in the control sample are significant not only for the variable related to Germany but also for the variables related to the United Kingdom, Sweden, the Czech Republic and the Netherlands.

The regressions with the P/L before taxes as a dependent variable do not show significant values for any of the variables analyzed in the first sample, while they show significant negative values for Spain, the UK, Sweden and the Czech Republic in the second sample. There is no difference in the ratio between private equity-backed Italian companies and those located in other European countries, despite the different performance of firms that are not backed by private equity between Italy and some other countries.

The results of Student's T-test confirm the findings obtained from the OLS regression model. The values of ROA are significantly different between the Italian and French companies subject to private equity and between private equity-backed Italian and Dutch companies. There were no statistically significant differences between the values of the operating margin of private equity-backed Italian companies and those located in the other countries analyzed, but differences emerged when analyzing non-private equity-backed companies.

Comparing the performance of Italian firms with the solvency ratio, significant differences emerge between private equity-backed companies located in France, Spain and Sweden. It should be noted that in the study of the control sample, the differences are significant for all of the countries analyzed. The profit margin shows significant differences between the firms in the sample of private equity-backed companies with registered offices in Italy and France. Even so, the differences are significant for all of the countries analyzed in the control sample.

The Student's T-test shows significant values in comparing the current ratios of private equity-backed companies in Germany and the same index of the private equity-backed companies located in Italy. In the analysis of the control sample, the difference is also significant for firms located in Spain, the UK, Sweden, the Czech Republic and the Netherlands. There are no statistically significant differences between the pre-tax income of private equity-backed Italian companies and private equity-backed companies located in the other countries analyzed, but there are differences between non-private equity-backed Italian and Spanish companies.

An important result of this analysis is that private equity-backed companies have a greater homogeneity in performance in different countries compared to non-private equity-backed companies. Only in a few cases did the analysis of private equity-backed companies show significant differences in the performance between firms located in Italy and in other European countries.

In addition, the variables related to the country of origin that were significant in the analysis of private equity-backed companies were also significant when analyzing non-private equity-backed companies. In addition, there were more significant variables in the last analysis. The characteristics of different countries that have various impacts on the variables analyzed were therefore revealed. This result is important for investors and entrepreneurs who need to know the influence of variables in different countries to monitor them.

It can be said that Italian private equity-backed companies performed in line with the profitability of private equity-backed companies in Europe. It follows that investment in Italy or in the other countries analyzed leads to the same profitability. This result can be explained by the use of common tools and practices in private equity investments in Europe.

This results implies that general partners can choose to locate investments in different countries to obtain consistent performance. Similarly, limited partners may apply to local or international general partners. We conclude the analysis by examining the limitations of the study and suggest some possible directions for further research.

A first limit of this analysis concerns the statistical significance of the constant in the regression model. This means that some factors that influence the profitability of the companies analyzed are not included in the model. A further limitation of the analysis is that the sample of private equity-backed companies is not the same size as the control sample. This may lead to a slight bias in the comparison between the two samples. Another limitation of this work is the use of medium and large companies. Consequently, it is not possible to generalize the results to small private equity-backed companies. Moreover, it may be interesting to further analyze this phenomenon through the use of different methodologies and additional performance variables.

Finally, it may be useful to study the research question considering other European countries or broadening the analysis beyond Europe.

References

- AFIC, Association Française des Investisseurs en Capital Risque, www.afic.asso.fr
- Agarwal S., Chomsisengphet S. and Driscoll J.C. "Loan Commitments and Private Firms", Discussion paper 2004-27, Board of Governors of the Federal Reserve System, 2004
- AIFI, Associazione Italiana del Private Equity e Venture Capital, www.aifi.it
- Ang A. and Sorensen M., "Risks, Returns and Optimal Holdings of Private Equity: A Survey of Existing Approaches", NETSAR Panel Paper no. 30, 2012.
- Audretsch D.B. and Lehmann E.E., "The Effects of Experience, Ownership, and Knowledge on IPO Survival: Empirical Evidence from Germany" Papers on Entrepreneurship, Growth and Public Policy 2004-20, Max Planck Institute of Economics, Entrepreneurship, Growth and Public Policy Group, 2004.
- Badertscher B., Katz S.P. and Olhoft Rego S., "The Impact of Private Equity Ownership on Corporate Tax Avoidance", Harvard business school working paper 10-004, 2010.
- Baldi F. and Zazzara C., "Who uses Equity Capital among SMEs? Evidence from Survey Data", working paper, 2006.
- Bargeron L.L., Schlingemann F.P., Stulz R.M. and Zutter C.J., "Why do private acquirers pay so little compared to public acquirers?", Journal of Financial Economics, Volume 89, Issue 3, pp. 375-390,

2008.

- Baughn C.C. and Neupert K.E., "Culture and National Conditions Facilitating Entrepreneurial Start-ups", *Journal of International Entrepreneurship*, no. 1, pp. 313-330, 2003.
- Berger A.N. and Udell G.F., "Relationship Lending and Lines of Credit in Small", *Journal of Business Finance*, no. 68, pp. 351-381, 1995.
- Berger A.N. et al., "The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle", *Journal of Banking and Finance*, no. 22, 1998.
- Bloom N. and Van Reenen J., "Why Do Management Practices Differ across Firms and Countries?", *The Journal of Economic Perspectives*, vol. 24, no. 1, pp. 203-224, 2010.
- Bottazzi L., Da Rin M. and Hellmann T., "What is the Role of Legal Systems in Financial Intermediation? Theory and Evidence", *Journal of Financial Intermediation*, vol. 18, no. 4, pp. 559-598, 2009.
- Bruton G.D., Filatotchev I., Hahine S.C. and Wright M., "Governance, ownership structure and performance of IPO firms: the impact of different types of private equity investors and institutional environments", *Strategic Management Journal*, Volume 31, Issue 5, pp. 463-574, 2010.
- Buttignon F., Vedovato M. and Bortoluzzi P., "Family business investor buyouts: the Italian case", No. 0004, Dipartimento di Scienze Economiche "Marco Vedovato", 2005.
- Diller C. and Kaserer C., "What Drives Private Equity Returns? – Fund Inflows, Skilled GPs, and/or Risk?", *European Financial Management*, vol. 15, no. 3, pp. 643-675, 2009!!
- Dyer D.G., "The Family: The Missing Variable in Organizational Research", *Entrepreneurship: Theory and Practice*, no. 27(4), pp. 401-416, 2003.
- Eisenhardt K.M., "Agency theory: an assessment and review", *Academy of Management review*, 1989.
- European Union, "Commission Recommendation concerning the definition of micro, small and medium-sized enterprises", no. 2003/361/CE, 2003
- EVCA Yearbook, 2011.
- Fenn G.W. and Liang N., "New resources and new ideas: Private equity for small businesses", *Journal of Banking & Finance*, Volume 22, pp. 1077-1084, 1998.
- Groh A.P., von Liechtenstein H., Lieser K., "The European Venture Capital and Private equity country attractiveness indices", *Journal of Corporate Finance*, vol. 16, no. 2, pp. 205-224, 2010.
- Hovakimian A., Opler T., Titman S., "The Debt-Equity Choice", *The Journal of Financial and Quantitative Analysis*, Vol. 36, No. 1, pp. 1-24, 2001.
- Jensen M.J., "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers", *American Economic Review (Papers & Proceedings)*, Volume 76, pp. 323-329, 1986.
- Kaplan S.N. and Schoar A., "Private Equity Performance: Returns, Persistence and Capital Flows", *The Journal of Finance*, vol. LX, no. 4, 2005.
- Kaplan S.N. and Stromberg P., "Characteristics, contracts, and actions: evidence from Venture Capitalist analyses", *The Journal of Finance*, vol. LIX, no. 5, 2004.
- Kaplan S.N. and Weisbach M.S., "The success of acquisitions: evidence from divestitures", *The Journal of Finance*, vol LXVII, no. 1, march 1992.
- Kaplan S.N. et al., "Should investors bet on the jockey or on the horse? Evidence from the evolution of firms from early business plans to public companies", *The Journal of Finance*, vol. LXIV, no. 1, 2009.
- Katz S.P., "Earnings Quality and Ownership Structure: The Role of Private Equity Sponsors", *The Accounting Review*, Volume 84 Issue 3, pp.623-658, 2009.
- Klapper L.F., Sarria-Allende V. and Sulla V., "Small and Medium-Size Enterprise Financing in Eastern Europe", *World Bank Policy Research Working Paper* no. 2933, 2002.
- Lerner J., "The Syndication of Venture Capital Investments", *Financial Management*, no. 23, pp. 16-27, 1994.
- Lerner J. and Schoar, "Does legal enforcement affect financial transactions? The contractual channel in private equity", *The Quarterly Journal of Economics*, vol. 120, no.1, pp. 223-246, 2005.
- Manigart S., Wright M., Robbie K., Desbrières P., De Waele K., "Venture Capitalists' Appraisal of Investment Projects: An Empirical European Study", *Entrepreneurship: Theory and Practice*, vol. 21, 1997.
- Manigart S. et al. "Venture capitalists, investment appraisal and accounting information: a comparative study of the USA, UK, France, Belgium and Netherlands", *European Financial Management*, vol. 6, ISSN: 2306-9007 Chesini & Giaretta (2014) 1525

no. 3, 2000.

- Manigart S., De Waele K., Wright M., Robbie K., Desbrières P., Sapienza H.J. and Beekman A., "Determinants of required return in venture capital investments: a five-country study", *Journal of Business Venturing*, vol. 17, no. 4, pp. 291–312, 2002.
- Metrick A. and Yasuda A., "Venture capital and other private equity: a survey", Working Paper no. 16652, 2010.
- Moerland P.W., "Alternative Disciplinary Mechanisms in different corporate systems", *Journal of Economic Behavior and Organization*, vol. 26, pp. 17-34, 1995.
- Nielsen R.P., "The Private equity-leveraged buyout form of finance capitalism: ethical and social issues, and potential reforms", *Society for Business Ethics Conference Dialogue: Part I*, 2008.
- Nielsen K.M., "Institutional Investors and Private Equity", *Review of Finance*, Vol. 12, Issue 1, pp. 185-219, 2008.
- Peel M. and Wilson N., "Working Capital and Financial Management Practices in the Small Form Sector", *International Small Business Journal*, vol. 14, pp. 52-68, 1996.
- Phalippou L. and Gottschalg O., "The Performance of Private Equity Funds", *Review of Financial Study*, vol. 22, no. 4, pp. 1747-1776, 2009.
- Rajan R.G. and Zingales L., "Financial dependence and growth", *American Economic Review*, Vol. 88, no. 3, pp. 559-586, 1998.
- Ram M. and Holliday R., "Relative Merits: Family Culture and Kinship in Small Firms" *Sociology*, vol. 27, no.4, pp. 629-648, 1993.
- Renneboog L., Simons T. and Wright M., "Why do public firms go private in the UK?", *Journal of Corporate Finance*, vol. 13, no. 4, pp. 591–628, 2007.
- Sahlman W., "The Structure and Governance of Venture Capital Organizations", *Journal of Financial Economics*, 27, pp. 473-524, 1990.
- Sapienza H., Manigart S., and Vermeir W., "Venture capitalist governance and value added in four countries", *Journal of Business Venturing*, vol. 11, no. 6, pp. 439-469, 1996.
- Schmid F., "Equity financing of the entrepreneurial firm", *Federal Reserve Bank of St. Louis Review*, no. 83(6), pp. 15-28, 2001.
- Scholes L., Wright M. et al., "Strategic changes in family firms post-management buyout: ownership and governance issues", NUBS research paper series no. 2008-05.
- Sirmon D.G. and Hitt M.A., "Managing Resources: Linking Unique Resources, Management, and Wealth Creation in Family Firms", *Entrepreneurship Theory and Practice*, no. 27(4), pp. 339-358, 2003.
- Wright M. et al., "Venture Capital Investors, Capital Markets, Valuation and Information: US, Europe and Asia", *Journal of International Entrepreneurship*, no. 2, 2004.
- Zahra S.A., Hayton J.C. and Salvato C., "Entrepreneurship in Family vs. Non-Family Firms: A Resource-Based Analysis of the Effect of Organizational Culture", *Entrepreneurship Theory and Practice*, vol. 28, no. 4, pp. 363–381, 2004.

Appendix

TABLE A: Variables.

Definitions of the variables and data sources.

Variable	Definition	Data Source
PROB_PE	Dummy variable that explains the membership of the PE sample (1 for PE-backed companies, 0 otherwise)	Thomson Reuters Thomson ONE
Return on Assets (ROA)	Net income / Total assets * 100	AMADEUS Bureau Van Dijk
Return on Equity (ROE)	Net income / Shareholders' funds * 100	AMADEUS Bureau Van Dijk
Operating margin		AMADEUS Bureau Van Dijk
Total assets (TA)	Total assets - Total receivables due from shareholders	AMADEUS Bureau Van Dijk
P/L before taxes		AMADEUS Bureau Van Dijk
Solvency ratio (SR)	Shareholders' funds / Total assets * 100	AMADEUS Bureau Van Dijk
Profit margin		AMADEUS Bureau Van Dijk
Current ratio (CR)	Current assets / Current liabilities * 100	AMADEUS Bureau Van Dijk
Liquidity ratio (LR)	(Current assets - Stocks) / Current liabilities * 100	AMADEUS Bureau Van Dijk
Year (t)	Deal year (t)	Thomson Reuters Thomson ONE
France (FRA)	Dummy variable that indicates that the company is located in France (1 France, 0 otherwise)	Thomson Reuters Thomson ONE
Spain (SPA)	Dummy variable that indicates that the company is located in Spain (1 Spain, 0 otherwise)	Thomson Reuters Thomson ONE
Germany (GER)	Dummy variable that indicates that the company is located in Germany (1 Germany, 0 otherwise)	Thomson Reuters Thomson ONE
United Kingdom (UK)	Dummy variable that indicates that the company is located in the UK (1 UK, 0 otherwise)	Thomson Reuters Thomson ONE
Sweden (SWE)	Dummy variable that indicates that the company is located in Sweden (1 Sweden, 0 otherwise)	Thomson Reuters Thomson ONE
Czech Republic (CZE)	Dummy variable that indicates that the company is located in the Czech Republic (1 Czech Republic, 0 otherwise)	Thomson Reuters Thomson ONE
Netherlands (NET)	Dummy variable that indicates that the company is located in the Netherlands (1Netherlands, 0 otherwise)	Thomson Reuters Thomson ONE