# Is Private Equity Investor Good or Evil?*

Oleg Badunenko†
DIW−Berlin

Nataliya Barasinska‡
DIW−Berlin

Dorothea Schäfer§
DIW−Berlin

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†German Institute for Economic Research (DIW−Berlin), 10108, Berlin, Germany. Phone: +49.30.89789.203. Fax: +49.30.89789.104, E-mail: obadunenko@diw.de.

‡German Institute for Economic Research (DIW−Berlin), 10108, Berlin, Germany. Phone: +49.30.89789.691. Fax: +49.30.89789.104, E-mail: nbarasinska@diw.de.

§German Institute for Economic Research (DIW−Berlin), 10108, Berlin, Germany. Phone: +49.30.89789.162. Fax: +49.30.89789.104, E-mail: dschaefer@diw.de.

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**Abstract**

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The paper investigates the motives of activity (entry and exit) of Private Equity (PE) investors in European companies. Investment of a PE firm is not viewed unambiguously. First, it is claimed that PE investment is made for the sake of seeking short-term gains by taking control and utilizing the company's resources. Second, PE firm invests because of prior identification of chances to add value to the company. We attempt to resolve these two conflicting conjectures. We use the Bureau van Dijk's Amadeus database of very large, large and medium sized European companies. Our major results can be summarized as follows. First, PE firms are less willing to enter the firm if it already has blocking majority and try to leave the firm if control cannot be overtaken. Second, less mature firms have lower chances to lure a PE firm to invest, but PE exit is unaffected by firms maturity. Third, PE investor does not seem to care much about the management of the company, but when it leaves labor productivity better be bigger. Finally, on both entry and exit PE wishes large shareholder funds, yet it initiates exit once firm's cash melts.

***Keywords***: Private equity financing, leverage, corporate finance

***JEL Classification***: M14, G24, G34

# 1 Introduction

In many European countries the importance of private equity (PE thereafter) activity has risen in recent years. At the same time, domestic private equity/buy-out providers have come under increased scrutiny of policy makers. For example in spring 2008 Germany has enacted the Risk Limitation Act in hope to prevent objectionable macro economic activities of financial investors without simultaneously impairing efficient financial and corporate transactions. Similar activities have been initiated in other European countries. Despite the fact that the German law concedes a trade-off between the benefits and the costs of PE investment, the fear of the public that PE investors behave as "locusts" once they have entered a firm is still at the center of the public debate. PE investors are often blamed for the opportunistic behavior and PE investors are seen as seeking short-term gains by taking control and utilizing the firm's resources. Furthermore, the fear has it that PE focus primarily on wealth redistribution that is detrimental for the rest of the firm's stake holders. The holders of the opposite view, however, see PE as a mechanism that facilitates the development of a firm which would otherwise be constrained from exploiting opportunities for growth, that is support the 'welfare-improving' argument. The empirical evidence for these competing views of the phenomenon of private equity is however merely missing. Investigation of the motives of PE engagement in a firm and its influence on firm's performance is lacking (EEAG, 2006). The present paper is the first attempt to study the determinants of private equity activity (investment and exit) in Europe. By analyzing the determinants of PE activity at a micro-level, we intend to address two conflicting conjectures about the motives of PE investors: (i) investing for the sake of pure rent-seeking and (ii) investing because of prior identification of chances to add value to the company.

Because the comprehensive ownership and financial data are largely missing, particularly across countries, previous studies on the determinants of PE investment have focused on mere qualitative analysis (e.g. Thompson and Wright, 1995) or have looked only at particular aspects of the investment decision (e.g. Opler and Titman, 1993). Moreover, the analyses of activity of PE firms have been limited to the US market and listed firms as target companies. In the latter case the significant drivers for the investment are often indirectly redesigned by means of an event study (e.g. Achleitner et al., 2008).

In this paper, we examine whether PE investment is motivated by the benefits of relaxing financial constraints and incentive realignment and whether PE firm is attracted by possibilities of wealth redistribution. We do so by comparing the previous year characteristics of firms that have received a PE shareholder with those that have not. Evidence that PE shareholding is more common in firms with characteristics that indicate severe financial restrictions and/or a high potential for incentive realignment would support the hypothesis that the investment has been motivated by possibility to create rather than redistribute wealth. In addition, evidence that firms with a relatively high potential for redistribution are not the dominant targets of PE investors would suggest that concerns about rent-seeking activities are overstated.

We are interested in a cross-country comparison because different features characterize the financial systems and the capital markets of the countries within EU. UK usually sets an example of an extensively market-based financial system, while German economy has a reputation of being mainly bank-based. Other EU members fall somewhere in between these two extremes. Thus, in 2005 the ratio of the stock market capitalization to GDP is 1.26 for the UK and 0.43 for Germany, while for other countries such as France and Hungary (the new EU member state) the ratio is equal 0.83 and 0.24, respectively. The picture is less pronounced if we consider ratio of private credit by deposit money banks to GDP. The indicator ranges from 1.6 for the UK and 1.23 for Germany to 0.96 for France and 0.47 for Hungary. The reason for paying attention to differences in the financial architecture is twofold. First, the financial system may significantly influence the investment activity of the PE industry (Black and Gilson, 1998a). Second, in our econometric setting the financial environment is most likely to be an important control variable for unobserved cross-country heterogeneity.

We use the data from two sources. We build our firm-level data-set from the 2008 (November) edition of the Amadeus data base provided by Bureau Van Dijk. The data base includes ownership history beginning in 2000. From this base, we retrieve financial ratios, ownership information and other firm-specific variables for companies in all European countries for the years 2000 to 2008. The country-level data on the nature and evolution of the financial system is adopted from the World Bank Financial Structure Database (Beck et al., 2000).[1]

[1]The financial structure data were accessed at the http://siteresources.worldbank.org/INTRES/Resources/469232-1107449512766/FinStructure_2007.xls.

Our findings suggest that the more financially constrained and risky the company the smaller is the probability of receiving PE investment. Additionally, we find that growth of the firm does not influence the decision of PE firm to invest. We show that PE firm is more likely to invest if the company has more shareholder funds. Finally, our results suggest that larger cash flows decrease the likelihood of attracting a PE investor.

The paper unfolds as follows. In Section 2 we briefly review the literature and sketch the evolution of the PE industry in Europe in last years and develop behavioral hypotheses based on previous theoretical models and literature. Section 3 presents the empirical model and describes the data. The empirical results and their discussion are provided in Section 4, while Section 5 concludes.

# 2 PE investments in Europe in recent years: the general perspective and behavioral hypotheses

According to the commonly used broad definition in Europe, the activities of PE investors range from complete buy-outs over minority stakes and expansion capital to start-up and seed investments. Traditionally, the most active PE market in Europe in terms of both fundraising and investing is the United Kingdom, followed by France and Germany (EVCA, 2008). Within few years, buy-outs have become the most important segment in the PE sector in Europe. The buy-out segment dominates in various countries, including the countries in Central and Eastern Europe such as the Czech Republic, Hungary, and Poland. Since 2003 more than three quarters of the fundraising of European PE-firms were going to the European buy-out segment. The investment of these firms into buy-outs increased from more than 60 in 2003 to nearly 80 percent in 2007 (EVCA, 2008). In 2007(first half of 2008), international financial investors completed 1479(637) European buy-out deals worth 174(38) billion EUR (CMBOR, 2008).

Buying-out, a PE firm takes control of a company, turns it around, and is willing to sell it or to float its shares after several years. A considerable share of a buy-out price is traditionally debt financed. The debt share in the total acquisition price generally fluctuates between 60 and 80 percent (Axelson et al., 2008). The equity capital for these acquisitions is provided not only by the buy-out funds, but also by the future management of the acquired companies, although to a substantially lesser extent. In the past the debt cap-

ital for European buy-outs generally came from banks and from institutional investors. Upon completion of the acquisition, the different risk-bearing loan tranches are passed on to the participating investors and, in some cases, also to the market. In 2008, due to the financial crisis and the downturn in the market for syndicated and securitized loans there is a clear tendency towards downsizing of a deal, more specifically, the average deal shrank to around 70 million EUR in 2008 compared to 118 million EUR during 2007, accompanied by decrease in leverage ratios (CMBOR, 2008). Anecdotal evidence suggests also that increasing number of PE firms invest in minority stakes either to use the stake as a platform for acquiring majority stake in the future or to gain a seat on the board for the purpose of increasing and exerting the influence on the target company's business strategy. So called acquisitions by buy-out companies amount to 106 transactions in the UK and Central Europe (CMBOR, 2008). Because the median age of targeted companies in out sample is 16 years we are set to scrutinize exactly the buy-out segment (whose targets are typically mature firms) as this segment receives ever increased attention.

The reasons for PE investors to acquire stakes in companies extend from the demand of family owners or individuals for decreasing their cluster risk to realizing increased earning opportunities by removing a poorly working corporate governance regime. In this paper, we consider five hypotheses with regard to activity of private equity firms in European countries.

**Hypothesis 1** *Ownership and Control in a Target Firm*

Berle and Means brought up the issue of a separation of ownership from control already in 1932. They emphasized that dispersion of shareholding creates for each single shareholder an incentive to free ride on the control intensity of company's shareholders. As a result no control occurs, and the management would pursue all kinds of personal goals to the detriment of the shareholders (Manne, 1965; Williamson, 1967). In the line of this argument active investors buying a share big enough to cover their control costs and combine this deal with a considerable participation of the management in the ownership of the company would reinstate the unity of ownership and control. Dispersed ownership signals the possibility for PE investors to gain high returns (Jensen, 1986). If, however, there is already a powerful shareholder present, this signals to PE investors that the potential for value adding is low. Moreover, presence of non-PE financial investor (probably bank) might imply good performance and low risk but also lack of opportunities.

**Hypothesis 2** *Equity or Debt Capacity of a Target Firm*

The ability of PE funds to raise a great deal of debt capital for the acquisition of a target company, in addition to equity capital, has had a strong influence on promoting the negative image of financial investors in many European countries. However, the debt ratio plays a significant part in corporate management. Jensen (1986) describes high debt ratio as a carrot and stick strategy. On the one hand, it permits a high concentration of the share holding and a fairly high participation by the management, which guarantees high performance incentives. On the other hand, the high debt and the inherent threat of rapidly losing their position because of the narrow distance to default is like a hard sanction mechanism. In this sense companies that are highly capitalized indicate slack and a low level of automatically working management control. In addition, highly capitalized companies leave room for savings on corporate taxes. In years with a sufficient low risk premia on loan financing , the leverage effect would guarantee an immediate increase of the shareholder return by reorganization of the capital structure (see e.g. The Economist, 2006). The debt can serve as a controlling device and a mean or realizing higher tax savings and shareholder returns.

**Hypothesis 3** *Maturity of a Target Firm*

Risky and financially constraint firms have advantages and disadvantages in attracting PE investors. Small companies, companies that are owned privately and/or by families, are often regarded as being opaque and nontransparent for a potential lender or shareholder. Asymmetric information between companies and investors and moral hazard lead to rationing by lenders (e.g. Bester, 1985) or by the capital market, if the company is listed in an illiquid stock market segment (see Wright et al., 2006). Off-the capital market equity capital may ease the level of financial constraints. Additional equity injection may improve the capital structure of these firms. The observed close relationship of PE firms, in particular buy-out specialists, with the banking sector may enable PE investors to activate additional debt capital. Almeida et al. (2004) argue that constrained firms save high cash out of cash flows to be insured against shortage of liquidity if positive net present values have to be funded. They find that US-firms that are located in the lower quartile of the size distribution indeed accumulate liquidity while larger firms refrain from doing so. Baum et al. (2008) show that European firms in the lower quantiles of the size distri-

bution also stockpile cash out of cash flow. In addition, they find that the magnitude of the stockpiling depends on the country's financial structure and the development.

The risky companies are quite unlikely to raise debt capital from the capital market (The Economist, 2009a). We measure the risk by company's probability of default (PD) and since bank is not going to grant a credit to a company once it crosses certain PD threshold, the only way this risky company can obtain capital is from institutional investor(s). We believe that PE firms could just be such type of investor. PE investors have also gained a reputation of being specialists to turn around a company (e.g. Thompson and Wright, 1995).

**Hypothesis 4** *Management in a Target Firm*

PE investors are known to bring fresh managerial skills to a target company. They do invest when they see a possibility to improve the management and efficiency of a target firm. Since they usually come for relatively short period of time, they are balancing between making long– and short-term improvements. For example, Williamson (1967) and Jensen (1986) consider excess cash flow (free cash flow) as complementary to high capitalization, and as a further indication of a company's weak corporate governance. Given little debt service, the management enjoys large discretion in spending money on unprofitable projects (see also Opler et al. (1999) and Lehn and Poulsen, 1989). PE investor targeting such company may recognize the potential of stopping such practice of wasting company's resources by restructuring the companies financing and by initiating a business model that generates more profitable growth.

However, the common public perception of PE investments in mature firms is different. The targeting of "cash cows" is ascribed to the fact that the generated liquidity can be used either to buy back shares on the market or pay dividends to shareholders. Both would allow a quick amortization and a high return to the PE investment.

Short-tern barometers of firm's management such as current labor productivity or return may indicate possibilities to PE investor to transfer wealth from employees to shareholders or ripping the profit benefits (Betzer, 2006). Fast growing companies are becoming a powerful magnet for PE investment due to potential to satisfy PE's financial interest. However such target companies are not always fond of being bought-out because apparently the control over company will be diluted and the prospects for the future might get grim when high growth disappears.

**Hypothesis 5** *Financial Development of Country in which a Target Firm Operates*

Black and Gilson (1998b) suggest that a bank-centered financial system is unable to develop an effective PE industry since its underdeveloped stock markets fail to deliver an efficient exit channel. However, this supply side-driven conclusion may not hold from the point of view of the demand side. Equity capital enables companies to insure themselves against liquidity and income risks. This financing mode is also a "door-opener" for debt capital. With low significance of capital markets in a country's financial system, off-market investment financing is becoming more and more important since possibly existing equity capital gap could be closed using such type of financing. PE funds are one of the few available sources for off-market equity capital and PE capital outside of the stock-market could in theory at least partly compensate for a lack of public equity capital.

Addressing these behavioral hypotheses would indicate which on two conflicting views is correct: PE having welfare-improving characteristics, or PE as a mechanism to redistribute the company's resources and hinder its long-term goals.

# 3 Methodology and data

***Shareholder history*** The data comes from Amadeus Database (Bureau van Dijk.) The Amadeus base contains a historical data of shareholders, which runs back to 2000. The base enables to identify the type of the shareholder, though the classification of the PE investment is tricky. We made sure that we really deal with the PE, by inquiring and choosing the appropriate NACE code of the investor and by comparing the names to the established list of the PE firms.[2] We have generated a dummy variable 'd_P' equal to 1 if at least one PE investor is among the shareholder in a particular year. Variable 'd_P_d' is then the difference of 'd_P' in two subsequent years. Accordingly, that 'd_P_d' is equal to one, implies that the PE investor entered in this year. Among total of 151,243 cases, the data reveals 3,335 PE entries (2.21 percent). The way the dependent variable is constructed precludes a secondary buy-out (Strömberg, 2007).[3] We only look at the cases when underlying variables suited for the analysis are available. Thus, of approximately

[2] A subscription was acquired at `http://www.privateequityinfo.com`.

[3] A secondary buy-out implies that one PE firm acquires the company from another PE firm. Our 'd_P_d' variable indicates that in period $t$ a company has at least one PE investor and that in period $t-1$ PE firm(s) was(were) not among company's shareholders.

Table 1: Frequency of PE Entry by years

| Year | $N_{\text{total}}$ | $N_{\text{PE Entry}}$ | PE Entry, % |
|---|---|---|---|
| 2001 | 1,219 | 4 | 0.33 |
| 2002 | 2,200 | 37 | 1.68 |
| 2003 | 13,659 | 221 | 1.62 |
| 2004 | 13,717 | 295 | 2.15 |
| 2005 | 22,490 | 428 | 1.90 |
| 2006 | 29,601 | 824 | 2.78 |
| 2007 | 42,532 | 1,332 | 3.13 |
| 2008 | 25,825 | 194 | 0.75 |
| Total | 151,243 | 3,335 | 2.21 |

250,000 cases available in the data base, the sample reduces to 151,243 observations fit for the regression analysis. Table 1 presents the frequency of the variable 'd_P_d' by years. We observe increasing tendency in PE investment up to year 2007 and an abrupt plummet in 2008. Table 1 seems to mirror the aggregate market development in the recent months. The sharp devaluation of mortgage backed securities and collateralized debt obligation beginning in the midst of 2007 immediately infected other markets for asset backed securities. Banks are now stockpiling syndicated loans given to PE firms in earlier deals since the securitization and distribution to the capital market is not feasible. Leveraged financing of PE deals has dried up as inventories of PE loans for earlier deals have grown in the banks' books and risk aversion of credit institutions reached new heights. A deepening financial crisis resulted in a sharp decline of PE investments (e.g. The Economist, 2009b).

PE in the form of venture capital is said to enter young firms while buy-out investors primarily target older firms. Figure 1 shows the distribution of the age[4] of firm at the moment of PE entrance. The mean and the median are 28 and 16 years respectively. These numbers indicate quite a large share of mature firms.

Table 2 gives frequencies of the PE entries by countries. United Kingdom, France, and Spain received the most of the PE investments, although Ireland and Switzerland have the largest portions of PE entries. Other significant recipients of PE investments are Germany, Italy, Belgium, Sweden. Norway has the largest number of observations but lags in terms of attracting PE investors: the share is only 0.4 percent.

[4]The age of a company is defined as a difference between year of the observed PE entry and year of company's incorporation.

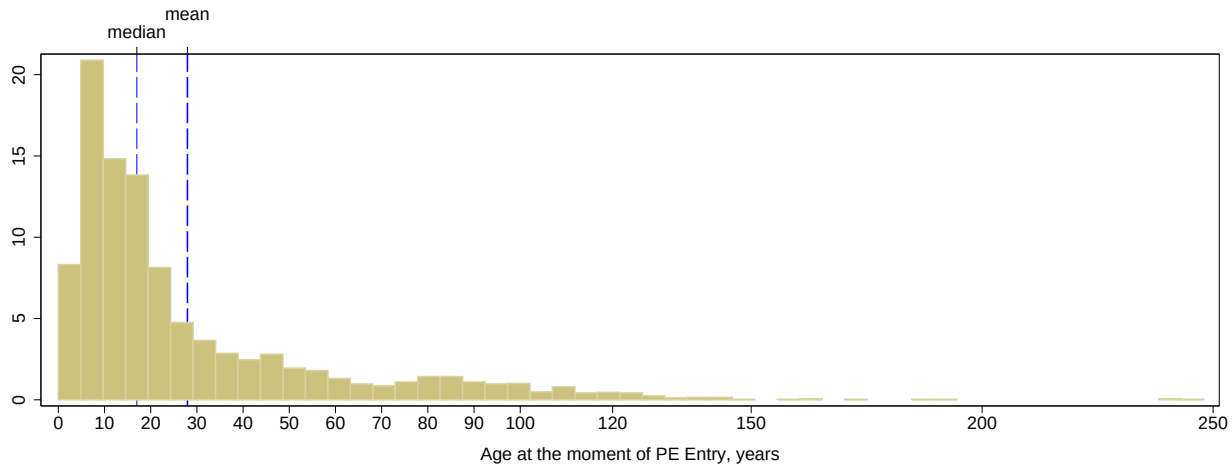


Figure 1: Distribution of age of firms that received PE investment

***Specification*** The aim of the study is to investigate which micro characteristics of the firm in previous period attract PE investment in the current period. We thus make use of the basic binary choice model, the *logistic* regression.[5] As in many empirical applications, we write logit as

$$\text{Prob}(Y = 1|X) = \frac{\exp(\alpha + \beta X)}{1 + \exp(\alpha + \beta X)}, \tag{1}$$

where $X$ is a vector of explanatory variables for firm $i$ and $\alpha$ and $\beta$'s are parameters to be estimated. We are primarily interested in regression coefficients. Before presenting our results, let us turn briefly to description of the vector of explanatory covariates, $X$.

***Explanatory variables*** To test our hypotheses we generate the following variables. 'Ownership' is equal to one if one of the shareholders has either majority of ultimate ownership, and zero otherwise.[6] 'Financial investor' is a dummy variable indicating that non-PE financial investor was among shareholders. 'Manufacturing' variable is one if

[5]We have chosen logistic over probit model. Greene (2003) claims that "...it is difficult to justify the choice of one distribution or another on theoretical grounds."

[6]Since we want to test the hypothesis about dispersed ownership, we also conducted the analysis with variable 'Dispersed Ownership' which is equal to one if any other type of shareholder has at least 40 percent stake, and zero otherwise. This variable shows the same effect as variable 'Ownership' but considerably reduces the sample because position 'Direct Ownership, %' in the Amadeus data base has many missing values. That is why we prefer to use variable 'Ownership' rather than 'Dispersed Ownership.'

Table 2: Frequency of PE Entry by countries

| # | Country | $N_{\text{total}}$ | $N_{\text{PE Entry}}$ | PE Entry, % |
|---|---|---|---|---|
| 1 | Ireland | 38 | 14 | 36.84 |
| 2 | Switzerland | 812 | 84 | 10.34 |
| 3 | Luxembourg | 13 | 1 | 7.69 |
| 4 | United Kingdom | 21,025 | 1,065 | 5.07 |
| 5 | Austria | 197 | 9 | 4.57 |
| 6 | Germany | 5,747 | 254 | 4.42 |
| 7 | Netherlands | 2,238 | 85 | 3.80 |
| 8 | France | 25,231 | 652 | 2.58 |
| 9 | Finland | 2,785 | 52 | 1.87 |
| 10 | Spain | 21,890 | 395 | 1.80 |
| 11 | Greece | 2,969 | 52 | 1.75 |
| 12 | Sweden | 9,081 | 140 | 1.54 |
| 13 | Italy | 14,259 | 199 | 1.40 |
| 14 | Portugal | 1,523 | 20 | 1.31 |
| 15 | Belgium | 11,540 | 143 | 1.24 |
| 16 | Poland | 2,406 | 27 | 1.12 |
| 17 | Denmark | 1,860 | 20 | 1.08 |
| 18 | Czech Republic | 855 | 9 | 1.05 |
| 19 | Romania | 2,307 | 24 | 1.04 |
| 20 | Hungary | 121 | 1 | 0.83 |
| 21 | Estonia | 408 | 3 | 0.74 |
| 22 | Slovakia | 211 | 1 | 0.47 |
| 23 | Norway | 20,382 | 81 | 0.40 |
| 24 | Ukraine | 1,819 | 3 | 0.16 |
| 25 | Bulgaria | 1,503 | 1 | 0.07 |
| 26 | Latvia | 23 | 0 | 0 |
| | Total | 151,243 | 3,335 | 2.21 |

a primary or secondary NACE code implies that target firm engages in manufacturing sector of the economy.[7] 'Financial constraint' variable is constructed along the lines of Almeida et al. (2004). More specifically, 'Financial Constraint' is equal to one if firm's total assets are below the value of the $30^{th}$ percentile of distribution of the total asset, and zero otherwise. 'Risk' reflects relative probability of default, that is the default probability of the firm divided by probability of default of peer group. To calculate the probability of de-

[7]Unfortunately, Amadeus data base gives industry affiliation only the last year, 2008. But we think it is not plausible that manufacturing firm dramatically changes its operation and quits being manufacturing either primarily or secondary.

Table 3: Descriptive Statistics

| Variable | Mean | Sd | Min | Q1 | Median | Q3 | Max |
|---|---|---|---|---|---|---|---|
| Ownership | 0.076 | 0.26 | 0 | 0 | 0 | 0 | 1 |
| Financial investor | 0.38 | 0.49 | 0 | 0 | 0 | 1 | 1 |
| Manufacturing | 0.31 | 0.46 | 0 | 0 | 0 | 1 | 1 |
| Financial Constraint | 0.27 | 0.44 | 0 | 0 | 0 | 1 | 1 |
| Risk | 2.19 | 4.57 | 0.03 | 0.18 | 0.49 | 1.61 | 31.30 |
| Market Capitalization | 0.84 | 0.37 | 0.026 | 0.56 | 0.84 | 1.02 | 3.03 |
| Labor Productivity | 462 | 728 | 0 | 118 | 219 | 444 | 3831 |
| Cash Flow Growth | 1.10 | 4.32 | -28.0 | 0.58 | 1.01 | 1.44 | 33.40 |
| Return on Capital | 22.8 | 41.3 | -72.7 | 3.77 | 14.3 | 34.2 | 165 |
| Cash Flow | 0.087 | 0.13 | -0.52 | 0.028 | 0.075 | 0.14 | 0.59 |
| Equity | 0.34 | 0.25 | -0.53 | 0.15 | 0.30 | 0.50 | 0.96 |

fault, Bureau van Dijk uses the MORE rating,[8] which is calculated using a unique model that references the company's financial data to create an indication of the company's financial risk level. Furthermore, Bureau van Dijk claims that the ratings are comparable across countries−two companies from different countries with the same rating have the same creditworthiness. We also include a macro variable 'Market Capitalization' variable normalized by real GDP, which was accessed from World Bank web-cite dedicated to financial structure of contries.[9] 'Labor Productivity' is a operating revenues per employee. 'Return on Capital' is return on capital employed. 'Equity' is a continuous variable representing shareholder funds. We normalize 'Equity,' 'Cash Flow' and 'Labor Productivity' by total assets to prevent size effects. 'Cash Flow Growth' is merely a ratio of current to previous value of the Cash Flow.

Table 3 presents the descriptive statistics of variables for observations without missing values. It is clear that 'Ownership' is one only in 7.6 percent of cases, while 27 percent of firms are financially constraint. In treating outliers we have winsorized variables 'Equity', 'Cash Flow', 'Cash Flow Growth', 'Risk' 0.5 percent and variables 'Labor Productivity' and 'Return on Capital' 2.5 percent. Although probability of default ranges form 0 to 1, it

[8] See http://www.modefinance.com for details.

[9] The latest version can be downloaded at http://siteresources.worldbank.org/INTRES/Resources/469232-1107449512766/FinStructure_2007.xls. The values for year 2008 are not derived yet so we assume they are equal to those in 2007. It may seem quite a strong assumption given events of 2008, but since we conduct a cross-country study, we believe it is reasonable to do so because indices would not change relatively to each other.

ranges up to 31 when adjusted for peer probability of default. Such relative relationship enables to control for risk heterogeneity of the group in which firm is operating. 'Equity' is quite dispersed, but distributed symmetrically as mean and median values are almost the same.

In our analysis, we lag (one year) all the explanatory variables, since we are interested in investigating how last year firm-level characteristics influence receiving investment from a PE firm in the current year.

# 4 Empirical results

## 4.1 Private Equity Entry

In this section, we provide empirical evidence for our five hypotheses by means of regression analysis. We consider three models. The first uses all available observations. It is reasonable to believe that some observations are influential and might drive all the results. Additionally, quite different financial and economical system might prevent some factors to reveal their true effect. Indeed quick look at the Table 2 suggests that the sample of all less original EU−15 countries comprises mostly economies unable to attract PE investment. That is why we also consider regression with original EU−15 countries. Finally, we consider group of EU−27. Table 5 provides marginal effects after logit estimation. The descriptive statistics in three sample of variables employed in the regression are shown in Table 4. It turns out however that the differences are not pronounced as one might think.

First, it is clearly seen that if in previous year a firm had been ultimately owned or owned by the majority, the PE investor is less likely to invest in such a firm. Additionally, the presence of non-PE financial investor seems to repel PE investor. Therefore, within Hypothesis 1 we conclude that PE firm is reluctant to invest in a firm, in which it cannot take over the control.

Second, positive and significant coefficient at 'Equity' variable implies that PE investment is likelier the larger the equity of the firm. It is a long-standing policy debate wether or nor PE investors come to a firm in order to extract something valuable for own good. Our analysis seems to provide empirical evidence that PE firms seem to target firms with

Table 4: Descriptive Statistics

| Variable | Mean | Sd | Min | Q1 | Median | Q3 | Max |
|---|---|---|---|---|---|---|---|
| | | | | Entire Sample | | | |
| Ownership | 0.076 | 0.26 | 0 | 0 | 0 | 0 | 1 |
| Financial investor | 0.38 | 0.49 | 0 | 0 | 0 | 1 | 1 |
| Manufacturing | 0.31 | 0.46 | 0 | 0 | 0 | 1 | 1 |
| Financial Constraint | 0.27 | 0.44 | 0 | 0 | 0 | 1 | 1 |
| Risk | 2.19 | 4.57 | 0.03 | 0.18 | 0.49 | 1.61 | 31.30 |
| Market Capitalization | 0.84 | 0.37 | 0.026 | 0.56 | 0.84 | 1.02 | 3.03 |
| Labor Productivity | 462 | 728 | 0 | 118 | 219 | 444 | 3831 |
| Cash Flow Growth | 1.10 | 4.32 | -28.0 | 0.58 | 1.01 | 1.44 | 33.40 |
| Return on Capital | 22.8 | 41.3 | -72.7 | 3.77 | 14.3 | 34.2 | 165 |
| Cash Flow | 0.087 | 0.13 | -0.52 | 0.028 | 0.075 | 0.14 | 0.59 |
| Equity | 0.34 | 0.25 | -0.53 | 0.15 | 0.30 | 0.50 | 0.96 |
| | | | | EU−15 | | | |
| Ownership | 0.089 | 0.29 | 0 | 0 | 0 | 0 | 1 |
| Financial investor | 0.35 | 0.48 | 0 | 0 | 0 | 1 | 1 |
| Manufacturing | 0.31 | 0.46 | 0 | 0 | 0 | 1 | 1 |
| Financial Constraint | 0.29 | 0.45 | 0 | 0 | 0 | 1 | 1 |
| Risk | 2.34 | 4.79 | 0.03 | 0.18 | 0.56 | 1.74 | 31.30 |
| Market Capitalization | 0.91 | 0.32 | 0.240 | 0.66 | 0.88 | 1.20 | 2.69 |
| Labor Productivity | 491 | 747 | 0 | 129 | 236 | 475 | 3831 |
| Cash Flow Growth | 1.07 | 4.31 | -28.0 | 0.58 | 1.00 | 1.39 | 33.40 |
| Return on Capital | 19.9 | 37.7 | -72.7 | 3.61 | 13.6 | 31.3 | 165 |
| Cash Flow | 0.080 | 0.12 | -0.52 | 0.026 | 0.070 | 0.13 | 0.59 |
| Equity | 0.34 | 0.25 | -0.53 | 0.16 | 0.31 | 0.50 | 0.96 |
| | | | | EU−27 | | | |
| Ownership | 0.088 | 0.28 | 0 | 0 | 0 | 0 | 1 |
| Financial investor | 0.34 | 0.47 | 0 | 0 | 0 | 1 | 1 |
| Manufacturing | 0.32 | 0.47 | 0 | 0 | 0 | 1 | 1 |
| Financial Constraint | 0.29 | 0.45 | 0 | 0 | 0 | 1 | 1 |
| Risk | 2.34 | 4.81 | 0.03 | 0.18 | 0.55 | 1.73 | 31.30 |
| Market Capitalization | 0.87 | 0.36 | 0.026 | 0.58 | 0.85 | 1.14 | 2.69 |
| Labor Productivity | 473 | 737 | 0 | 120 | 225 | 459 | 3831 |
| Cash Flow Growth | 1.07 | 4.34 | -28.0 | 0.57 | 1.00 | 1.41 | 33.40 |
| Return on Capital | 19.7 | 37.6 | -72.7 | 3.48 | 13.4 | 31.1 | 165 |
| Cash Flow | 0.081 | 0.12 | -0.52 | 0.026 | 0.070 | 0.13 | 0.59 |
| Equity | 0.34 | 0.25 | -0.53 | 0.16 | 0.32 | 0.51 | 0.96 |

Table 5: Marginal effects after logit estimation of PE investment determinants in European Companies. The associated $t$-statistics are reported in parentheses.

| Variable | ALL | EU−15 | EU−27 |
|---|---|---|---|
| Ownership | −.0102884*** | −.0139768*** | −.0131894*** |
| | (−13.13) | (−14.84) | (−14.82) |
| Financial investor | −.0135132*** | −.0146839*** | −.0138068*** |
| | (−21.07) | (−18.76) | (−18.78) |
| Manufacturing | .0034802*** | .0033496*** | .0028519*** |
| | (−5.03) | (−3.82) | (−3.47) |
| Financial Constraint | −.005809*** | −.0077625*** | −.0072262*** |
| | (−9.06) | (−9.53) | (−9.38) |
| Risk | −.0008154*** | −.0010961*** | −.001055*** |
| | (−7.59) | (−8.09) | (−8.25) |
| Market Capitalization | .0159352*** | .0150157*** | .0170296*** |
| | (−23.98) | (−12.8) | (−16.84) |
| Year | .0011275*** | .0016561*** | .0016025*** |
| | (−5.76) | (−6.58) | (−6.74) |
| Labor Productivity | 2.82E−08 | −9.82E−07 | −6.27E−07 |
| | (−0.06) | (−1.64) | (−1.12) |
| Cash Flow Growth | 0.0001133 | 0.0001676 | 0.0001466 |
| | (−1.6) | (−1.87) | (−1.74) |
| Return on Capital | −.0001462*** | −.0001891*** | −.0001755*** |
| | (−10.54) | (−10.35) | (−10.23) |
| Cash Flow | −0.0063271 | −0.0069146 | −0.0050691 |
| | (−1.89) | (−1.63) | (−1.26) |
| Equity | .0070495*** | .0066156*** | .0052178** |
| | (−4.88) | (−3.53) | (−2.97) |
| $N_{\text{total}}$ | 151,243 | 120,396 | 128,230 |

*, **, and *** indicate statistical significance at the 5%, 1%, and 0.1% test levels, respectively;

low debt to profit from an increase in leverage. This may add value by disciplining managers, but also redistributes profits towards shareholders.

Third, We have seen that the age of target firm indicates that PE firm prefers relatively mature target firm. The regression analysis confirms this conjecture as the coefficient in front of variables 'Financial Constraint' and 'Risk' are negative and significant. The way we constructed the 'Financial Constraint' variable, implies that PE is cautious about

smaller firms since they could be relatively young and less well known, which makes them more susceptible of capital market fluctuations. In the light of Hypothesis 3 thus, private equity firm seems to prefer a safe path.

Fourth, in addressing the Hypothesis 4, we looked at short– and long term indicators of management performance. Although it is reasonable to expect that the high growth firm in terms of cash flow is capital hungry and thus would attract a PE investor, our analysis does not support this hypothesis. The regression implies that PE firm makes its decision to invest in a company irrespective of this company's growth of cash flow. Additionally, our regression analysis implies that PE firm rather comes to a firm with large cash flow. This seems to contradict the wide-spread view that PE firms enter to nourish themselves from cash-cows. Nor PE firm is interested in labor productivity of the firm.

Finally, PE investors seek to invest in countries whose relative capitalization is bigger. Although this macro variable is used mostly as a control for unobserved heterogeneity of countries, larger capitalization implies better conditions and/or availability of financing for a PE firm. With regard to the Hypothesis 5, PE seems to be a complement rather than a substitute to public equity, consistent with the supply-side argument of Black and Gilson (1998a).

Discarding the slight changes in magnitudes of the coefficients, but taking only significance into account, the results suggest that major conclusions on tested hypotheses found for the entire sample hold for $EU-15$ and $EU-27$ groups of countries. This is expected given minor differences in descriptive statistics presented in Table 4.

We have also controlled for the year in which PE entry ensued to test the influence of a change in the financial environment over time. It seems that time has positive effect, implying that every year there more PE entries. We also confirm a view that PE firm is more likely to invest in manufacturing firm, although they comprise only third of our sample. Another concern is the Norway's very large number of observations, but very small number of PE entries. We have reran the regression without Norway (The table with results appears in appendix), but this does not change our major conclusions.

Table 6: Frequency of PE Exits by years

| Year | $N_{\text{total}}$ | $N_{\text{PE Entry}}$ | PE Entry, % |
|---|---|---|---|
| 2001 | 1,269 | 4 | 0.32 |
| 2002 | 2,297 | 13 | 0.57 |
| 2003 | 13,911 | 115 | 0.83 |
| 2004 | 14,049 | 141 | 1.00 |
| 2005 | 22,978 | 256 | 1.11 |
| 2006 | 30,125 | 325 | 1.08 |
| 2007 | 43,240 | 861 | 1.99 |
| 2008 | 27,304 | 584 | 2.14 |
| Total | 155,173 | 2,299 | 1.48 |

## 4.2 Private Equity Exit

We have created the variable 'PE Exit' is the same fashion we constructed variable 'PE Entry.' More specifically, 'PE Exit' is a binary variable which is equal to one if there is none PE investor among shareholder in year $t$ and there is at least one PE investor in year $t-1$. In this section we would like to investigate the exits of private equity firms within same five behavioral hypotheses. In other words, what do PE investors leave behind when they quit a firm. The frequencies of 'PE Exits' by years and countries are presented in Tables 6 and 7, respectively. Figure 2 shows the age of the firm at the moment of exit of PE.

Table 6 suggests much smaller activity of PE investors in terms of quitting firms during 2001−2008. Figure 2 implies that PE firms have been exiting both young and mature firms with mean and median being almost the same at those for PE Entries. Furthermore, PE turnover is again mostly take place in United Kingdom, France, and Spain. These three facts suggest PE firms act consistently and gradually: they exit about the same firms and in about the same countries as they enter.[10]

We employ the same set of variables to investigate what drives exit of PE investor. The results of marginal effects after logit estimation of private equity exits appear in Table 8.

Several observations from Table 8 are worth mentioning. PE investor is likely to leave if it was not able to get majority ownership in the firm. It is however, less likely to leave

[10]We do not have enough data to prove PE firms enter and exit in cycles, but we feel it might be the case.

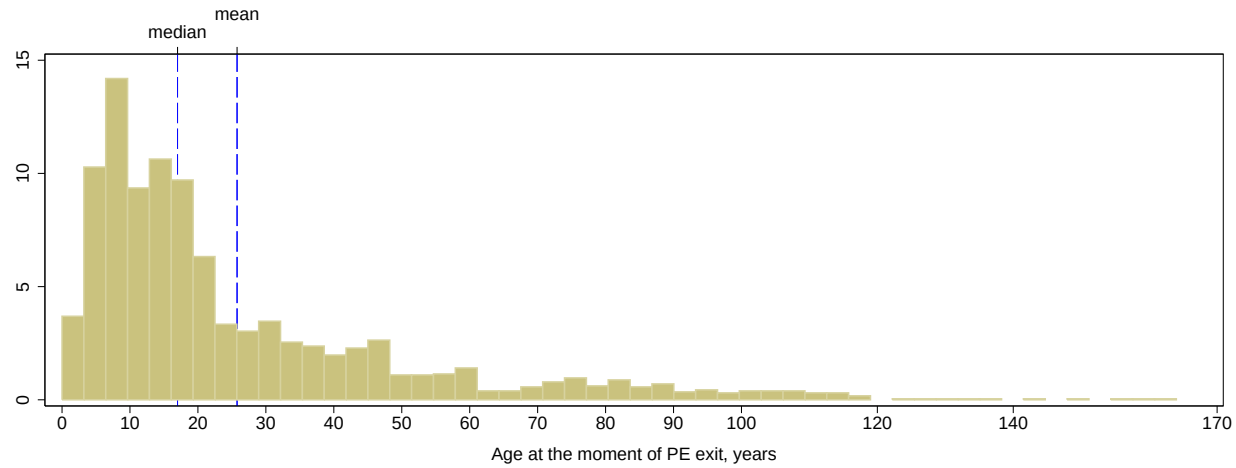


Figure 2: Distribution of age of firms that PE investor exited

if non-PE financial investor remains. The latter fact can be explained by access to funds, which might be provided by such non-PE financial investor.

The regression analysis suggests that PE stops caring about firm's being risky or financially constraint when it leaves. (Although marginally significant for $EU-15$ and $EU-27$ group of countries.) It implies that exposure of the firm to market fluctuations does not influence the decision of PE investors to leave, while it does a lot in case of PE Entry.

PE firm completely sells shares of a firm in a good macro environment, which speaks for public capital substitution argument. And more exits happen as time passes by, giving some support of cycle conjecture.

When leaving PE firm care that operating revenue per employee is positive, which would show off that firm is expanding. Other management indicators has either only marginally significant effect (return on capital), or not significant at all, which suggests PE's exit is not influenced by the state of management of firm that it is going to leave in the next year.

Finally, and most interesting, PE investor is very interested (effect if significant at any conventional level) in strong shareholders's position with an aim to sell its shares as expensive as possible. PE investor has however managed to milk the cash-cow: that cash flow get scarce, the probability that PE leave increases. Combining findings of Tables 5

Table 7: Frequency of PE Exits by countries

| # | Country | $N_{\text{total}}$ | $N_{\text{PE Entry}}$ | PE Entry, % |
|---|---|---|---|---|
| 1 | Germany | 6,109 | 153 | 2.50 |
| 2 | United Kingdom | 22,876 | 534 | 2.33 |
| 3 | Netherlands | 2,332 | 48 | 2.06 |
| 4 | Czech Republic | 791 | 15 | 1.90 |
| 5 | France | 25,962 | 467 | 1.80 |
| 6 | Switzerland | 1,024 | 18 | 1.76 |
| 7 | Poland | 2,355 | 41 | 1.74 |
| 8 | Ireland | 58 | 1 | 1.72 |
| 9 | Sweden | 9,139 | 142 | 1.55 |
| 10 | Finland | 2,884 | 44 | 1.53 |
| 11 | Austria | 198 | 3 | 1.52 |
| 12 | Belgium | 11,467 | 163 | 1.42 |
| 13 | Spain | 22,299 | 312 | 1.40 |
| 14 | Greece | 3,042 | 40 | 1.31 |
| 15 | Italy | 14,335 | 186 | 1.30 |
| 16 | Estonia | 410 | 5 | 1.22 |
| 17 | Denmark | 1,881 | 17 | 0.90 |
| 18 | Portugal | 1,550 | 13 | 0.84 |
| 19 | Romania | 2,322 | 16 | 0.69 |
| 20 | Slovakia | 204 | 1 | 0.49 |
| 21 | Norway | 20,462 | 76 | 0.37 |
| 22 | Bulgaria | 1,497 | 4 | 0.27 |
| 23 | Hungary | 121 | 0 | 0 |
| 24 | Latvia | 23 | 0 | 0 |
| 25 | Luxembourg | 11 | 0 | 0 |
| 26 | Ukraine | 1,821 | 0 | 0 |
| | Total | 155,173 | 2,299 | 1.48 |

and 8 we claim that PE investor enters firm with big equity and leaves it with such, but while it seems not to be attracted by available cash, it strives to leave the firm, when cash flow reduces.

Table 8: Marginal effects after logit estimation of PE exit determinants in European Companies. The associated $t$-statistics are reported in parentheses.

| Variable | ALL | EU−15 | EU−27 |
|---|---|---|---|
| Ownership | .0078799*** | .0061153*** | .0062746*** |
| | (7.38) | (5.21) | (5.55) |
| Financial investor | −.0118325*** | −.0122243*** | −.011955*** |
| | (−22.97) | (−19.86) | (−20.51) |
| Manufacturing | .0029846*** | .003621*** | .0033*** |
| | (5.35) | (5.09) | (4.92) |
| Financial Constraint | −.000431 | −.0008987 | −.0007965 |
| | (−0.80) | (−1.33) | (−1.24) |
| Risk | −.0001223 | −.0001722* | −.0001781* |
| | (−1.80) | (−2.02) | (−2.19) |
| Market Capitalization | .0049819*** | .0046496*** | .0051684*** |
| | (8.64) | (4.91) | (6.21) |
| Year | .0026625*** | .0033938*** | .0033533*** |
| | (15.26) | (15.53) | (16.10) |
| Labor Productivity | 1.74e−06*** | 1.71e−06*** | 1.73e−06*** |
| | (5.82) | (4.39) | (4.67) |
| Cash Flow Growth | −.0000721 | −.0001152 | −.0001052 |
| | (−1.28) | (−1.61) | (−1.55) |
| Return on Capital | −.0000243* | −.000027* | −.0000237* |
| | (−2.50) | (−2.14) | (−1.97) |
| Cash Flow | −.0097426*** | −.0126697*** | −.0117913*** |
| | (−3.78) | (−3.88) | (−3.79) |
| Equity | .004901*** | .0053861*** | .0047217*** |
| | (4.26) | (3.63) | (3.37) |
| $N_{\text{total}}$ | 155,173 | 124,143 | 131,866 |

*, **, and *** indicate statistical significance at the 5%, 1%, and 0.1% test levels, respectively;

# 5 Concluding remarks

In the recent years the policy makers have become increasingly concerned with reconciling two contradicting views on the role of PE for the economy in general and companies in which they invest in particular. First, it is conjectured that engagement of a PE investor may and does provide the financing needed for development of the company, and thus such engagement constitutes positive effect. Second, some share a view that PE investor enters the company, that has good perspectives, in order to squeeze company's cash resources and exploit company's good standing, therefore implying negative effect. However, to the best of our knowledge, testing these conceptually opposite hypotheses with good quality data is broadly missing. This paper provides empirical evidence for better understanding what makes PE firm invest using comprehensive micro-data for 28 European countries.

Our results suggest that before investing PE investors seem to care and are less willing to invest if majority or whole shareholder is present. The try however to leave the firm if they cannot take over the control of this firm. Additionally we find that a financially constrained and risky company is less successful in attracting investment from a PE firm. But this two factors do not influence decision of PE to leave. Further, when investing PE firm does not show more interest in firms with better management, but they do exit the firm when it exhibits positive labor productivity. Most remarkably, while PE both invests and leaves the firm that has big shareholder funds, it seems not to care about presence of strong cash-flow, but tries to exit the firm when cash gets scarce.

The proposed analysis provides little support for the hypothesis that private equity investments are motivated by the aim to add value. We would like to emphasize though, that one has to be cautious when evaluating the results. First, the purpose of our analysis was a cross-country comparison and therefore we concluded for an 'average' European company. Nevertheless, including the macro control variable into regression has shows that countries are statistically significantly heterogeneous and possibly separate conclusions have to be drawn for each country. This is however possible only for a handful of countries due to data availability. Second, although we believe that our conclusions are robust, we would like to acknowledge that some countries are really badly represented and broad conclusions for such countries are separate regions might not necessarily hold.

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# 6 Appendix

Table 9: Marginal effects after logit estimation of PE investment determinants in European Companies. The associated *t*-statistics are reported in parentheses. Norway is excluded.

| Variable | ALL | EU−15 | EU−27 |
|---|---|---|---|
| Ownership | −.0130595*** | −.0139835*** | −.0131885*** |
| | (−14.66) | (−14.82) | (−14.79) |
| Financial investor | −.013061*** | −.0146926*** | −.0138087*** |
| | (−17.91) | (−18.75) | (−18.77) |
| Manufacturing | .004021*** | .0033867*** | .0028826*** |
| | (−4.89) | (−3.86) | (−3.51) |
| Financial Constraint | −.0079295*** | −.0077646*** | −.0072254*** |
| | (−10.46) | (−9.52) | (−9.37) |
| Risk | −.0010799*** | −.0011323*** | −.0010922*** |
| | (−8.37) | (−8.28) | (−8.46) |
| Market Capitalization | .0165938*** | .0150021*** | .0170174*** |
| | (−20.93) | (−12.77) | (−16.81) |
| Year | .0016521*** | .0016654*** | .0016115*** |
| | (−7.04) | (−6.6) | (−6.77) |
| Labor Productivity | −6.40E−07 | −9.63E−07 | −6.05E−07 |
| | (−1.15) | (−1.61) | (−1.08) |
| Cash Flow Growth | 0.0001452 | 0.0001665 | 0.0001457 |
| | (−1.73) | (−1.88) | (−1.74) |
| Return on Capital | −.0001778*** | −.0001998*** | −.0001867*** |
| | (−10.08) | (−10.59) | (−10.51) |
| Cash Flow | −0.0039256 | −0.005677 | −0.0037925 |
| | (−0.99) | (−1.34) | (−0.95) |
| Equity | .0044613** | .0064563*** | .0050428** |
| | (−2.58) | (−3.46) | (−2.88) |
| $N_{\text{total}}$ | 130,861 | 120,396 | 128,230 |

*, **, and *** indicate statistical significance at the 5%, 1%, and 0.1% test levels, respectively;