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Master Thesis

Foreign versus domestic buy-outs: Evidence from Returns of Private Equity

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Evidence from Returns of Private Equity

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By

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Abstract

This study investigates the differences between foreign- and domestic private equity investments and identifies that factors explain these differences. We used a unique dataset acquired from Bloomberg, analyzing 700 deals from the timeframe 1981-2019. Further, we analyzed which factors influence the return and which only impacts the choice of country to invest. We found evidence that foreign investments yield higher returns than domestic investments because of the inclusion of a risk premium and that bilateral trust, taxes and specialized investors are the main drivers. Furthermore, we did not find any statistical significance for geographical or cultural distance, which was believed to be some of the most important drivers of return for foreign investments after conducting literature review. Lastly, we find evidence that during recessions holding period and strong governments are key factors for higher returns.

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Introduction

The private equity market has flourished and after the last thirty years, it has been one of the fastest growing markets. In 2010, private equity funds managed approximately one trillion dollars, worldwide (Metrick & Yasuda, 2010). Today, there is approximate $3 trillion under assets, and private equity funds are set to surpass hedge funds in size (Fortado & Espinoza, 2018). Consequently, competition among private equity firms has increased, and PE firms are forced to take a broader view and invest internationally.

As a financing source, both foreign- and domestic private equity firms play an essential role. As an example: in Norway, we have seen some significant deals with some of the world's largest PE firms. KKR was selling a 28% stake of a target company named Visma, which is a Norwegian IT company. (Breivik, 2017). KKR improved Visma by helping to diversify their product line and building an effective M&A department that would acquire other software companies (Lynn, 2018). Not only did the transaction benefit KKR's return on investment; it also potentially made long-lasting improvements to the local business itself. Moreover, it enhanced the local economy in Norway by helping to create more jobs and create additional tax revenue for the public sector.

The concept of dry powder can explain the essence of cross-border investment. When private equity firms have cash on hand, without any instant investment opportunities, it is called dry powder. Active fundraising pared with a challenging investment environment has raised the amount of dry powder to an all-time high and are now approximately $1 trillion (Preqin, 2018). The PE firms earn their revenue from fees that are charged for monitoring, performance fees, and management fees. These fees will further incentivize the management to spend the dry powder, which may force them to invest abroad. The increased competition and maturity of the industry makes it harder to generate the same returns as in previous years (Braun, Jenkinson, & Stoff, 2017). Henceforth, selecting profitable investments in different informational environments requires PE firms to choose the appropriate country and target firms that is within their investment portfolio risk-level to beat their benchmark and justify its fees.

The question, remains that, due to all the extra screening and monitoring we might expect to follow a cross-border investment, why not invest in a local software company? For instance, differences across informational environments could increase the risk due to geographical distance. Other risks include variations in cultural differences and varying taxation regulations. All of these will have a profound impact on the decision to invest and naturally depends on whether the private equity firm sees an exit possibility in the near future. With this thesis, we employ a thorough analysis of the aspects that could explain what differentiates foreign deals from domestic deals in terms of success or failure. Moreover, we provide PE firms and investors signals from the past so it can apply these lessons to their future screenings and deal assessments.

Many papers focus on the short-term wealth effects due to private equity parties in the form of announcement returns through an analysis of stock-price reactions, Other dissertations focus on longer-term wealth effects in a diversified, country- and industry wise, through measures such as IRR. However, there is currently a literature gap regarding the different wealth effects created by foreign private equity investors and whether the knowledge and expertise they bring to create more overall welfare than domestic private equity parties. This paper will delve into valuation through private equity firm variables, macro-economic variables, and cultural factors. Therefore, the research question is stated as follows:

How do foreign or domestic acquisitions by private equity parties affect target company return on investments differently across target countries over the sample period 1980-2019?

Although dissertations have been written regarding market booms and recessions, there has not been a project this extensive within this time-frame, while also not only regarding deals in the past but also expands on more recent realised private equity deals. The period was because it covers the M&A boom of the 1980s till the market boom in 2019.

The thesis also considers the locations of the firms to see if the geographical distances influence the returns. Target countries were selected with diligence based on the markets with the highest private equity activity according to a PWC report (Roberts & Naydenova, 2018). To answer this research question, a dataset was obtained from Bloomberg and Zephyr that includes deals made in Nordics, US,

Benelux, France, Germany, UK & Ireland, Italy, Spain, Portugal, and Switzerland. As previous literature only covers on a diversified portfolio fund performance; this paper differentiates itself by looking at individual private equity deals and what factors attributed to its success. Why would an American private equity firm make such a considerable investment in Norway as we have seen in the Visma case? This thesis does not only focus on questions like these but also what explains the differences in domestic and cross-border deals through different regression specifications.

The rest of the thesis is structured with a literature review; relevant findings are shown and discussed from previous research on the topic. Then, the methodology and research method used are described. Subsequently, the analysis can be found in the results chapter. Lastly, conclusions are inferred, and weaknesses were pointed out in the discussion and limitations section.

This paper show that foreign private equity deals outperform domestic deals and earn a higher return. Investors should be specialized in industries and invest in countries with high trust. This will decrease their monitoring costs and therefore increase their returns. One of the main drivers of PE returns is the market return. So, when the market is performing well, so are the PE investments. This is especially true when controlling for firm size; the bigger the investment, the more it is influenced by the market. Furthermore, we show that in times of recession the size of the government in which the targer company is located, matters. A government with higher tax income per GDP is more equipped to mitigate the recession and therefore contribute to a smaller investment loss.

Literature review

Private equity markets, fund performance and diversification

Private equity is often defined as equity investments in non-listed firms where the private equity firms raise capital through "closed-end" funds with a fixed investment period, usually ten years (Kaplan & Strömberg, 2009). These transactions include early stage Venture Capital, Leveraged Buyouts, and various forms of Management Buyouts (Cendrowski, Petro, Martin, & Wadecki, 2012). The growth of the PE industry can be attributed by two factors: high leverage and restructuring activity (Holmstrom & Kaplan, 2001). Andrade, Mitchell, and Stafford (2001) also attribute deregulation as another factor as financing became more accessible. As a result, LBO financing was used as a tool by private equity parties to buy up the shares of a target firm (Holmstrom & Kaplan, 2001).

During the last thirty years, the private equity market had been one of the fastest growing markets to become a significant asset class. In 2010, private equity funds managed approximately one trillion dollars worldwide (Metrick & Yasuda, 2010). The estimated market value of the worldwide PE market has almost tripled, and PE-managers have $2.9 trillion under management (McKinsey & Company, 2018). The private equity market provides a vital financing platform for start-up and medium-sized companies; where the PE firm often take an active ownership role through the board of directors and contractual obligations on the behavior of the management (Wood & Wright, 2009). Bloom, Sadun, and Van Reenen (2015) showed companies PE-owned businesses had superior management to similar firms without PE-ownership because the new management often improved monitoring and operational practices. This finding is also supported by Levis (2011), where companies backed by PE firms outperformed in size, profitability and post-performance in the following three years post-IPO than the market. Furthermore, a study by Lerner & Cao (2009) indicates that reverse LBOs, which is LBOs returning to public markets, outperformed other recent IPOs.

As the financial and economic markets have become more and more integrated, it is expected that the private equity markets have gone in the same direction. One reason for more integrated markets is because foreign direct investments (FDI) reduces risk by diversification for investors (Levy & Sar, 1970) (Hitt, Hoskisson, & Kim, 1997) As the risk associated with private equity investments are higher than

for regular stocks, and due to the illiquidity of these investments, investors are expecting higher returns (Leeds & Sunderland, 2003). No relationship was found between the rate of return and diversification across countries. The only positive relationship is between the rate of return and diversification across industries (Lossen, 2007). It is important to note that it implicates that diversified PE firms, with the increased costs of diversification, would not enjoy exceeding incremental benefits from it. It matters for whether the additional costs should return a premium to investors for the extra hurdles (Lossen, 2007). Since the total return is correlated with higher total risk, this includes the combination of both idiosyncratic and systematic risk. Idiosyncratic risk comes along with the principal-agent problems and can be monitored; this should result in higher abnormal returns for investors (Ewens, Jones, & Rhodes-Kropf, 2013). Therefore, PE firms that are diversified are more induced to invest in firms with higher idiosyncratic risk. In return, higher realized fund returns are expected. However, an implication comes to that downside risk increases along with industry diversification (Buchner, Mohamed, & Schwienbacher, 2017). Findings by Lossen (2007) contrast the diversification benefits introduced by Levy & Sar (1970) and by expanding on his timeframe we investigate if the increase in cross country deals since the early 2000s have had an impact on the results. Furthermore, despite the benefits of diversification across industries found in these papers, we would expect this relationship to be negative since PE investors, as change agents, often have great insight into a limited amount of industries. Therefore, we are hoping to shed a new light into the diversification issue by challenging the past literature on these areas.

Because interim cash flows in PE deals are often unknown, it can be hard to evaluate the returns on these investments correctly. Therefore, the returns of PE funds and the fund managers performance persistence have been debated with researchers not finding superior returns of private equity investments (Moskowitz & Vissing-Jørgensen, 2002) (Phalippou & Gottschalg, 2008). However, a research article by Harris, Jenkinson & Kaplan (2014) showed that historically PE funds had outperformed the S&P500 on average by 20% to 27%. Compared to mutual funds, private equity investors seem more persistent in generating abnormal returns (Marquez & Nanda, 2015). Although Harris, Jenkinson & Kaplan (2014) prove PE funds outperform the S&P we are interested in how much the market is driving the PE returns. Therefore, we include a market variable which should give a beta of

approximately 1,2, showing the high dependency of the PE-market to the state of the economy. Furthermore, this research will expand on their timeframe and include the 2008 financial crisis which will give a more robust conclusion of the performance of private equity deals regarding the S&P index.

When it is time to exit an investment and get the investors their return, there are several ways a PE fund can do this, e.g., exit by IPO, sale to another PE-fund (secondary sale) or another company. Secondary sale has increased in popularity and become the most common way to exit an investment. A study by Jenkinson and Sousa (2015) found that 43% of all exits are secondary sales, which could be explained by the increase in PE-funds.

Cross border investments

As mentioned, the diversification benefits are one of the reasons for PE funds to make cross-border deals. Another reason for foreign direct investments has to do with the opportunity of multinational arbitrage, although markets are not perfectly integrated. Foreign direct investment increases sharply with the stock market valuation of the host-market (Baker, Foley, & Wrugler, 2009). The PE-fund performance varies positively, along with both state of the economy and security market cycles (Phalippou & Zollo, 2005).

In the early 2000s, there has been an increase in foreign venture capital investments (Mäkelä & Maula, 2006) and PE-deals with more significant transactions that involve more investment syndication (Aizenman & Kendall, 2008). Home bias by PE firms, which is the preference to invest in domestic firms, is still present (Mishra, 2015) (Strong & Xu, 2003). Variation in regulation and taxes, asymmetric information, culture (e.g., common language, law, and colonial ties), and exchange rate risk are some of the factors explaining this home bias by private equity firms (Coval & Moskowitz, 1999). A paper by Harris and Ravenscraft (1991) amplifies the differences between foreign and domestic acquisitions by providing findings that indicate cross-country takeovers create more wealth than domestic takeovers. The only factor that could explain the difference in wealth effects for the bidder is currency fluctuations, which benefits the foreign bidder when the domestic currency is weak. However, as fluctuating exchange rates can be hedged, this should not be a hindrance for investing abroad. Furthermore, Aizenman and Kendall (2008) also find the geographical distance between countries to be a significant explanatory factor. Institutional cross-country differences encourage

private equity firms to seek local support in the form of cross-border syndication. Domestic- and multinational participation minimizes the dependence on domestic partners (Meuleman & Wright, 2011). This finding also applies when a PE-firm has a controlling interest in a foreign entity, and that entity was engaged in previous entries and within similar cultures (Barkema, Bell, & Pennings, 1996). For investors to overcome the home bias, the mentioned factors need to be considered as some of the drivers for the private equity returns. Therefore, when regressing the foreign returns, these are some of the most important factors to include. This paper combines these factors to see whether they actually matter in the bigger picture. Furthermore, the authors don't expect geographical distance to be statistically significant and therefore contradicting Aizenman & Kendall (2008). There are mainly two reasons for this view: First, the sample size used in this paper includes, amongst others, domestic deals in the US with higher geographical distance then foreign deals in Europe. Second, the travel access around the world is highly developed and so the geographical distance should not matter, but rather other factors such as cultural differences and trust should be more important.

With higher transaction costs in cross-border deals, generated from the increased due diligence and monitoring as a result of asymmetric information and agency problems, PE-firms that have performed well with previous investments are absorbing those costs more effectively and have a lower entry barrier into new countries. Furthermore, the firms that can reduce transaction costs have a competitive advantage in international markets (Holloway, Lee, & Shen, 2016). Private equity often serves as quality signalling for cross-border takeovers, thereby the expectancy of increased operating firm performance. As a result, PE backing causes positive market response based on the PE firm's experience and network in the country of interest (Humphery-Jenner, Sautner, & Suchard, 2017). This finding is also in line with Froot, O'Connell and Seasholes (2000) that indicates that returns obtained in the past are a form of positive market feedback that influences the flows of investment to a country. Increased due diligence and asymmetric information are important factors that may explain any discrepancies between foreign and domestic investments. However, we will not test these assumptions, but rather use existing literature as way to explain any results not captured by the regression.

Cultural distance, asymmetric information and country factors

Cultural, financial, and country factors are likely perceived as important decision factors for PE firms when investing in another country. Around 40% of Europe's private equity financing comes from outside investors. Some European companies are often reluctant to get funding from private equity parties as management in these companies seek to maintain family control. The lack of an equity financing in the form of a Pan-European public market is holding back private equity parties to invest in these countries; it also makes it more harder for private equity firms to exit investments (Nixon, 2017). High legal rights and a well-developed stock market enhance venture capital performance, and cultural distance positively affects the performance of VC in developed economies. This is due to the increased screening of the acquisition in an unfamiliar country (Nahata, Hazarika, & Tandon, 2014). Research by Watson & George (2010) illustrate that country characteristics affect the rate of return of the investment and that aspects that influence this return are: level of business freedom, degree of protectionism, and the size of the government. Because Germany is one of the biggest developed economies worldwide, we would expect that there is a developed PE market and that this would affect our sample size in a bigger way. However, there is a strong governance culture in Germany, and they have a high percentage of family-controlled firm which limits the PE funds and activity in the country.

When looking at the cultural aspect, the probability of investing abroad will increase when two countries have similar language, laws, and cultures (Portes & Rey, 2005). This can be viewed in the same context as the home bias, as Guiso et al. (2009) showed that investment funds investing in local, well-known businesses, earn higher returns. This conclusion shows that PE firms invest in familiar, well known, companies and that countries with the same type of laws and culture can help break down the barriers of investing abroad (Osborne, Katselas, & Chapple, 2012). In a study of private equity investments in emerging markets, Leeds and Sunderland (2003) found that the PE models that worked well in Europe, and the US did not function well in emerging markets. The key concerns were the differences in corporate governance culture, accounting practices and exit possibilities. This study by Leeds and Sunderland (2003), supports earlier findings showing how cultural differences and laws can make investing in other countries more difficult and therefore be a significant hindrance for making, possibly, profitable investments. Private equity also plays an essential role in information

signaling in poor information environments. As the market considers signaling as a quality investment due to the experience and network of the private equity firm from prior deals (Humphery-Jenner, Sautner, & Suchard, 2017). Domestic investors often exhibit better information about the true value of an asset since geographical distance can be viewed as a proxy for asymmetric information (Portes & Rey, 2005). Therefore, foreign investors buy assets when the gains are strong and sell when the gains are weak (Brennan & Cao, 1997).

A paper by Barbopoulos et al. (2014) examined the performance of 306 FDI made by UK firms. Their findings illustrate that returns are highly significant for investments in emerging markets. Specifically, the most substantial shareholder wealth was generated in investments in physical assets and countries qualified as 'high political risk and corruption ratings. Furthermore, Bottazi et. all (2016) finds that the lack of trust between the two countries is a hurdle for making FDI. Trust is perhaps the most vital factor when considering investing in other countries, so investors tend to seek investments in more trustworthy countries. However, low trust investments receive a superior return in case of success. This finding is also supported by Guiso, Sapienza, and Zingales (2009); lower mutual trust leads to less investment and trade between those countries. Highly generalized trust is an essential factor for attracting private equity bids; this is especially true for financing in early-stage business cycles. Though it is positively affected, it has a negative relationship with success and exits. When entering into low-trust environments, syndication is a tool whereas, in high trust environments, the use of contingency contracts is (Bottazzi, Da Rin, & Hellman, 2016).

This research adds to current literature in the following two aspects; increasing the timeframe while also separating between market recessions and booms and exploring the simultaneous effects of numerous variables identified by previous literature, but not regressed together. With this timeframe we capture the vast growth the PE industry experienced in the early 2000s and hope to contribute with new insights as of how the factors affect each other.

Methodology

The goal of this dissertation is to investigate deals made by both foreign- and domestic private equity investors to see if there are any differences, what these differences are, and the primary drivers of the differences. The thesis is mostly quantitative as the goal is to investigate correlation and causality between the factors investigated. Furthermore, the study will be empirical as data observe is observed and conclusions inferred from this dataset to see what the differences between foreign and domestic buyer are. This was done by running OLS regressions, which examined how the returns of PE firms responded to different variables based on historical data. We have used MATLAB and Eviews to run the regressions.

Data Collection process

In helping to answer the research question, a dataset was acquired from the databases Zephyr and Bloomberg within the time-frame 1980-2019. The scope of the research will include Nordics, US, Benelux, France, Germany and the UK & Ireland, Spain, Italy, Portugal and Switzerland. The selection criterion is based on the premises that it needs to be a developed market with a track record of private equity investments. All target companies and PE firms needed to be located in one of the countries selected. The representation of upcoming markets such as the Asia Pacific and the Middle East & Africa has been considered; but since the scope within the time-frame of 1980-2019, we felt that the upcoming markets were underrepresented since there were almost no deals in Bloomberg for these regions before the 2000s. Future research with a smaller time-frame might be able to give a better comprehension of the macro-economic and cultural effects of cross-border deals, but for this dissertation, we have decided to only include the scope to countries in Europe and North America.

Search criteria were applied as follows: deals had to be obtained from investment portfolios of PE firms reported in Bloomberg. To determine which PE firms were selected, a list with the largest PE funds in the target countries was used and was obtained from the internet. From the portfolio of these PE firms, we identified each deal and all related transactions. All the deals had to be directly obtained from the 'Portfolio Exposure' function in Bloomberg.

We then exclude every deal involving mezzanine debt, real estate or venture capital has been excluded since we only measure the returns of buyout funds. Each deal has been assessed whether there was a reported investment(s) and exit transaction(s), several additional investments and exit transactions have been accumulated to get an accurate deal value. Zephyr served a complementary function where it was only used when transactions were not fully disclosed in Bloomberg. For example, there might have been a divestment reported in Bloomberg and an investment has not been disclosed. By using the search algorithm of Zephyr, it sometimes matches the missing information. However, if investments or divestments were missing in both Bloomberg and Zephyr, then the deal was not included in the sample. Also, there must have been a clear 100% divested stake, if companies still had 2% of a target company's shares, then the deal has not been integrated into the sample. When multiple exits have occurred, all transactions have been accumulated and the last or most significant exit divestment has been acknowledged as the method of exit. For example, when a company would sell 90% of its stake via an IPO and Additional offerings and sell its last 10% stake via a secondary sale, then we identify IPO as the method of exit.

Databases such as the ones from SDC Thompson and Eikon did not fulfil search criteria that would make it eligible for the sample. For example, Eikon did not have enough PE deals and most deals that were reported lacked the financial details by leaving out investments or divestments. SDC Thompson reported more M&A transactions by non-PE-firms. For example, M&A deals that did not involve a PE firm and most PE deals were done by investment departments of multinational companies; takeovers by these branches can be classified as a private equity deal. Furthermore, it did not specify whether the PE firm has entirely divested its entire stake from the target company. we wanted a sample that only consisted of these traditional private equity firms such as KKR. It was also found that SDC Thompson lacked private equity deals that were made in the period 2015-2019. Therefore, we decided not to continue using this database.

Hypothesises

The following hypotheses had been developed to help to answer the research question:

H1a: *Foreign private equity investments create higher returns than domestic firms.*

This hypothesis is the foundation of our research and will give us the necessary evidence overall to answer our research question. Coval & Moskowitz (1999) explained that variation in regulation and taxes, asymmetric information, culture (e.g., common language, law, and colonial ties), and exchange rate risk are some of the factors explaining this home bias by private equity firms. Thus, generating a risk premium for PE firms that over willing to overcome these hurdles. Therefore, there is sufficient preliminary evidence to proceed with this hypothesis. This hypothesis is tested by using a binary variable for foreign and domestic deals. When the beta is positive and statistically significant, it might provide sufficient evidence to conclude that foreign deals are indeed delivering higher returns due to the risk premium given for the extra hurdles caused by different macro-economic, cultural and geographical variables. The other hypothesises provide the supportive factors that can explain the variation in returns.

H2a*: Lower trust among nations and people create a higher return for the private equity firm.*

This hypothesis has been based on the findings of Bottazzi, Da rin & Hellman (2011) and Guiso, Sapienza & Zingales (2009). In the paper by Bottazzi et al. (2011), trust is considered as highly important for venture capital managers when making an investment decision after having controlled for geographic variables. a negative coefficient was found between high trust and success, Consequently, it can be deduced from the finding, that low trust is complimentary for more advanced financial contracts, to achieve better monitoring. Unlike in a high trust country, where PE firms might not write financial contracts and monitoring activities that result in higher returns.

H2b: *PE firms with a lower HHI score, which are better diversified, get a higher return than PE firms that are less diversified among countries and industries.*

Findings from Lossen (2007) indicates that no relationship was found between the rate of return and diversification across countries. It is important to note that it implicates that diversified PE firms with the increased costs would not enjoy

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exceeding incremental benefits from it. These costs are usually generated from the increased due diligence and monitoring as a result of asymmetric information and agency problems. It matters for whether the additional costs should return a premium to investors for the extra hurdles (Lossen, 2007). To measure the diversification in country and industry we use the Herfindahl-Hirschman Index (HHI), see Appendix 1 for calculation. The HHI measure is retrieved from Bloomberg and represents each respective PE firm's exposure to country and industry diversification based on their *total* portfolio of investment and is therefore unrelated to the sample used in this paper.

H2c*: Firms with higher cultural distance generate a higher return on investment.*

Initially, this idea stems from Watson and George (2010). The paper's methodology can be considered similar to ours since we are conducting an OLS with similar variables; though our analysis has a more extensive representation of cross-country deals and target countries. Therefore, it cannot be representative for cross-country deals from different PE domiciled countries so no generalizations can be made. As the previous literature states that investors prefer what is familiar and known, the cultural aspect may be a hindrance to investing in abroad. Therefore, the perceived increase in risk should be awarded higher returns (Bottazzi, Hellmann, & Da Rin, 2012).

H2d: *Target companies that are far away and experience high geographical distance generate a higher return for the PE firm than target companies with low geographical distance.*

A paper by Aizenman & Kendall (2008) introduces geographical distance as a significant determinant for venture capital and private equity firms when investing. Even though it relates only to the investment decision and not necessarily to success, we consider it as an important metric along with cultural distance in determining whether cross-country and domestic deal's returns differ.

H3a: *Host countries with higher economic freedom generate higher returns for the PE firm.*

This hypothesis comes from the premise that higher freedom comes along with more financial flexibility and thus affects the return for the private equity firm. The paper by Watson and George (2010) perceives business freedom as a way how easy

it is to conduct business in that specific country along with the efficiency of its regulatory process. We used economic freedom as it encompasses more aspects of different areas into its score than business freedom.

H3b: *Host countries that have a small government size, and low taxation burden, as a % of GDP, generate lower post-tax returns for the PE firm.*

This hypothesis is based on the paper by Watson and George (2010). Although no evidence for government size was found. Only the level of taxation is statistically significant and negatively related to the rate of return for the PE firm. We happen to believe that government size and taxation is correlated as there cannot be a big government if the tax revenues are low. Therefore, we see both are intertwined and cannot be separated among each other. Higher taxation burden in the target country should reduce the post-tax return on investments for the PE firm.

Endogeneity and heteroskedasticity

There are likely endogeneity issues in the form selection bias, which can also cause measurement errors and survivorship bias in the form of backfill bias. Since information disclosure is voluntary, the possibility of overrepresentation of some PE firms is likely and can results in selection bias. Measurement can be made that the reported value deviates from the true value. Though, this selection is present in every other database available, as the disclosed deals only represent parts of the total PE deals conducted. To mitigate selection bias, multiple control variables have been applied in the analysis, such as target regions and firm size. An example of a control variable is S&P, which eludes the problem of comparing the rate of returns to market returns from 2007, when the market was at an all-time high, to return from 2009 when the market was in the middle of a recession. Furthermore, firms with different sizes have a different basis for success, and it can, therefore, make it hard to draw any conclusions for our results. Another method used by PE performance papers, for example, Kaplan & Schroar (2005) and Harris, Jenkinson & Kaplan (2014), where the authors ran multivariate regressions along with multiple dependent variables such as PME, IRR, TVPI and investment multiples. This could only have been a legitimate alternative if the data type available was more detailed regarding cash flows.

The main disadvantage of databases is the lack of the use of information collection through the freedom of information act (FOIA) (Kaplan & Schoar, 2005; Harris,

Jenkinson & Kaplan, 2014), in which general/limited partners in a PE fund are subjected to information disclosure standards about realized cash flows. This is because general/limited partners participating can be financial institutions that are liable to this. This can add to selection biases where good performing private equity deals are overrepresented because PE firms choose to report them to obtain additional financing from new limited partners. The opposite could also be the case since good performing private equity funds can avoid investors that are subjected to FOIA requests. This type is not likely to be the case for our research since we are only using deals that were voluntarily reported by the PE firm. Another bias could be the overrepresentation of US funds, which makes it hard to generalize whether 'foreign' investors perform better on average than domestic. The same applies to the time-frame we have selected. Many of the more recent deals, or over the last five years, have not been realized. Thus, our sample consists of broad representation of deals conducted in the time-frame 1980-2010, compared to the last nine years. The notion that cross-border deals are only performed when the private equity firm through increased screening and monitoring can select the best target firm for each country is another selection bias that we need to consider. This can scrutinize our generalizations but can partly be resolved by controlling for firm size and country fixed effects.

The paper touches upon survivorship bias that arises when a private equity fund can create a new fund or survive because of bad performance of other funds. This is profoundly affected by past performance. The form of survivorship bias that is relevant for our thesis is the so-called backfill bias where managers can enter their returns from deals that happened years ago on a voluntary basis. Since both Bloomberg and Zephyr collect their data in that way, our results will likely contain this form of bias.

Both selection and backfill bias is something that cannot be dealt with it, as only a fraction of the total PE deals is publicly disclosed. Similarly, this would have been the case if this thesis was focussed on collecting IRR results. Therefore, it is inevitable regardless of the choice of database and cannot be solved as it occurs during the data collection process. As a result, it can be that the performance of the PE sector, in general, can be overvalued, which will be the case for domestic as well as foreign deals, as a result, because PE firms can only disclose the deals of choice. However, this effect does not have a difference in overvaluation for

domestic or foreign deals since it depends on the specialization and the investment scope of the PE firm. So, the effects of foreign- and domestic deals can still be investigated.

To deal with the problem of heteroskedasticity, a robustness check has been run using White's test. At the same time, it also crossed different independent variables among each other to look for intersectional crossings. All the regressions in this paper have been utilized with adjusted standard errors for heteroskedasticity and autocorrelation. Another problem that arose is multicollinearity among some different independent variables such as the freedom scores or the macro-economic data. These variables have been omitted in separate regressions run per hypothesis.

Regression formula

To conduct the data analysis and test the hypotheses, we perform a multivariate linear regression using several variables that we believe to be of importance when considering the research question. However, to test the effect of independent variable on the return log variables were applied and tested separately to control for this effect by using country fixed effects or sub-samples. Therefore, in order to reject or accept some of the hypothesis, its statistical significance was checked by using T-ratios. Economic significance can be derived from the beta coefficient. The regression formula and its variables are:

$$
\begin{aligned}
ROI \ = \alpha \ + \ &\beta \ Cultural \ distance + \ \beta \ Geographical \ distance \\
&+ \ \beta \ industry \ diversification + \ \beta \ Trust \ amongst \ nations \\
&+ \ \beta \ Firm's \ age + \ \beta \ economic \ freedom \\
&+ \ \beta \ country \ diversification + \ \beta \ S\&P \ market \ return \\
&+ \ \beta \ government \ size + \ \beta \ taxation \ burden + \ \beta \ PE \ firm \ age \\
&+ \ \beta \ firm \ size + \ \beta \ holding \ period + u_t
\end{aligned}
$$

Return on Investment

The return on investment (ROI) is the only dependent variable we are using for our regression and gives specific deal related information rather than fund performance. Deal cash flows have been collected through Bloomberg and Zephyr and it represents the cumulation of all related transactions by the PE firm to the target firm. We have used an adjusted method of calculating the returns.

The rate of return is calculated as:

$$
ROI = \frac{\sum exit \ transaction(s)}{\sum investment(s)} - 1 \qquad\qquad (1)
$$

The returns are measured in logs, so all the values are converted by using the following formula

$$\text{Log}(1 + Y)$$

In bankruptcy cases, to make it measurable, a constant has been added so that the log of 0 is not used.

$$\text{Log}(1 + X + 0.1)$$

We did not calculate the interest income and management fees in the returns. We assumed all acquisition premia and currency gains/losses were incorporated in the transactions. Even though it would represent the most accurate picture of the full return on investment and is likely to create measurement errors. It is unfeasible to integrate since Bloomberg nor Zephyr reported this data. Therefore, we have decided to continue with only transactional deal information.

it would have been difficult to determine how much of the the total risk premium can be allocated to a factor such as acquisition premium since we do not have the information about acquisition premiums. We can only prove that foreign deals are generating higher returns by regressing foreign/domestic deals as a binary variable to all other independent variables. If it turns out that foreign deals are better performing than it is proof of the presence of a risk premium in return.

The problem with other performance measures IRR, as described by Braun, Jenkinson and Stoff (2017), is that it can contain a collection of realized and unrealized deals together based on conservative method, in which some unrealized deals were assumed to be complete, as used by Harris, Jenkinson and Kaplan (2014). The measurement of the IRR or any form of returns from private equity deals is a challenging form of valuation, as the interim CF is often not public information. Therefore, we will use only the buy and sell price as a proxy for the Return on Investment. PME is another variable that had been widely used by researchers, such as by Kaplan and Schoar (2005), and gives a better representation of the abnormal return that can be explained by the investigated factors. The advantage of using PME compared to IRR is that it directly compares investment in a private equity fund, which excludes all the fees, to an investment in a market fund (Kaplan & Schoar, 2005). Thus, PME can only be calculated by using all related cash flows of an investment fund, thus not applicable to our analysis.

Data and preliminary analysis

Variables

The independent variables were chosen based on the literature review, as these factors are empirically acknowledged as important when considering foreign investments. We went through of mix of macroeconomic host factors, PE firm factors and cultural factors. The most significant independent variables are given in table 1. All variables have been converted to logs. Appendix 1 contains a discussion and a description of the independent variables .

Variable	Definition and measurement	Source
Geographical Distance	A measure of geographical distance in km between the capital cities.	Distancefromto.net
Cultural distance	A scale variable measured by cultural dimension and country comparison developed by Hofstede. The formula used to calculate this: $$Cultural\ Distance = \frac{\sum (Iij - Iiu)^2}{6}$$	hofstede-insights.com
Trust	Measure between 1-4 that measures the opinion of someone's view internal and to other countries based on the trust matrix.	Trust matrix based on Eurobarometer surveys
S&P	The cumulative return of the S&P500 matching the holding period of the specific investment	Bloomberg
Firm Size	Size of target firm is proxied the cumulation of the investments made.	Bloomberg
Economic freedom	Is directly obtained as a score by the heritage foundation in the economic freedom index 2019. Scale is 0-100 and is allocated to the year of the first investment.	Heritage foundation
Country- and industry diversification	Measures the country/industry diversification based on the combined historical and current portfolio (total portfolio) of the respective PE firm. Portfolio Diversification is divided n regions and sectors. To measure diversification, the HHI index is used, which squares the percentages invested depicted by *S*, per category and sums it up. $$HHI = S_1^2 + S_2^2 + S_3^2 + \cdots + S_n^2$$ The lower the score the more diversified the PE firm is.	Bloomberg

Table 1: Variable Description

Dataset

The data set consists of 700 deals across sixteen different countries, where an approximately 50/50 division has been applied to ensure diverse representation. The timeframe used for this sample is 1981-2016. Appendix 5 contains the frequency tables about the characteristics of our sample, such as investor countries, countries receiving investment, sector and method of exit. Table 2 depicts the summary statistics for our sample. This chapter serves a description of how representative our sample is and to underline trends with respective to home bias by and private equity portfolio developments.

	#	Min	Mean	Median	Max	SD	Percentile 25	Percentile 75
Total	700	-100 %	160 %	67 %	3900 %	391 %	-6 %	164 %
S&P	700	-49 %	30 %	25 %	356 %	41 %	-1 %	51 %
Foreign	352	-100 %	196 %	77 %	3900 %	422 %	17 %	189 %
Domestic	348	-100 %	124 %	49 %	3816 %	354 %	-43 %	154 %
US	244	-100 %	121 %	36 %	3816 %	380 %	-49 %	140 %
UK	171	-100 %	153 %	81 %	2161 %	296 %	0 %	140 %

Table 2: Summary Statistics of Return

Table 2, which only includes univariate results, shows that foreign deals generate a higher return then the domestic deals. Foreign deals have a higher mean and higher percentiles then domestic deal, showing higher returns for foreign investments. However, with a standard deviation of 422%, foreign deals come with a higher risk than domestic. Likewise, we see that downward risk for domestic deals is much higher; this is mainly due to the broad representation of bankruptcy cases in US domestic deals. This is a similar trend when comparing the percentile for the US deals with the UK ones. Furthermore, by looking at the 25th percentile and bankruptcy cases, we see that there are fewer foreign investments with negative results. There are bankruptcy cases in both samples; however, out of 55 bankruptcies, 44 have been domestic. Even though the risk of foreign investments is higher, the lowest-yielding investments in foreign deals are still higher than for domestic deals.
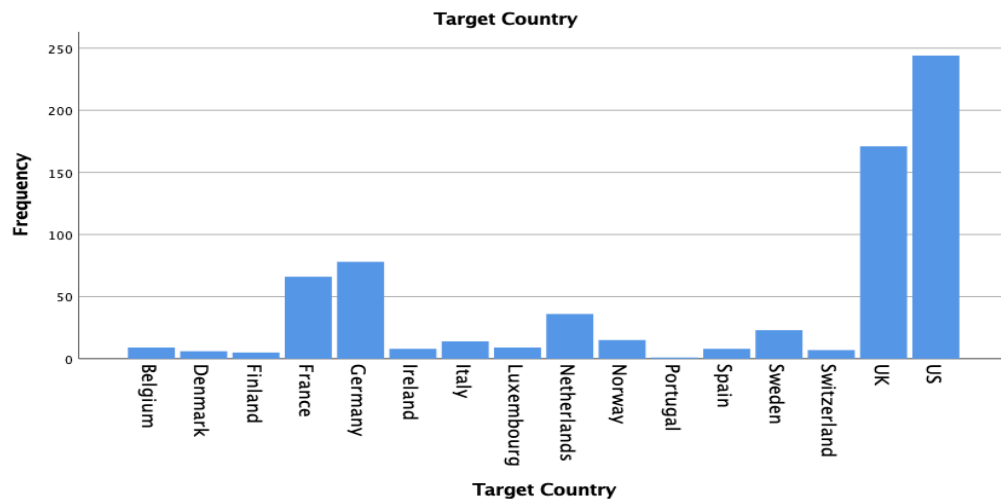
Figure 1: Number of deals per target country

As the dominant private equity market, the US is represented with 244 deals; the UK is represented by 171 deals, making over half of the dataset represented by these countries (table 7; figure 1). There is a vast overrepresentation by these two private equity markets because the most prominent private equity firms are established in those countries (table 8; figure 2) and are investing in domestic firms that is aligned with the findings of Coval and Moskowitz (1999) regarding home bias. Not only did the US and UK have most domestic deals, but these two countries are also their primary receivers when it comes to deals, with the US closing most deals in the UK followed by France and Germany (table 9). The UK closes most of its deals in other European countries. Another difference, the UK has more foreign deals than the US. The biggest private equity party in Scandinavia is Sweden, investing most capital in other Scandinavian countries and Germany. This trend is in conjunction with the notion of home bias (Coval & Moskowitz, 1999), and that most cross border deals are conducted in countries that are culturally close to each other. When it comes to exits, the US and UK are more represented for different exit methods (table 11; figure 4). It is understandable that countries with most deals also have the highest degree of failure. IPOs and additional offerings are also more common exit methods for US and UK. A possible explanation could be that the information asymmetry between foreign and domestic buyers, as described by Portes and Rey (2005). On the contrary, in Scandinavia, Germany and France, investments are more likely to be sold to competitors of the target company. The sample covers ten different sectors (table 10; figure 3).

Correlation matrix

Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Return														
2. Firm size	-.272**													
3. Holding Period	.051	.195**												
4. Geographical Distance	.181**	-.085*	-.082*											
5. Firm Age	-.017	.263**	.049	-.004										
6. Trust	-.023	-.070	.026	-.575**	.017									
7. Industry Divers.	.183**	-.225**	-.066	.056	-.067	.008								
8. Country Diversification	.175**	-.236**	-.024	-.063	-.030	.231**	.498**							
9. Cultural Distance	.192**	-.079*	-.071	.945**	.015	-.486**	.056	.013						
10. Economic Freedom	-.093*	.133**	.075*	-.243**	-.065	.012	.007	-.068	-.342**					
11. Taxation Burden	.144**	-.161**	-.033	.436**	.071	.050	.052	.322**	.551**	-.431**				
12. Government Size	.217**	-.083*	-.039	.426**	.122**	-.050	.059	.220**	.531**	-.345**	.754**			
13. S&P	.181**	.098**	.315**	.039	.047	-.028	.041	-.006	.011	.118**	-.070	.207**		
14. PE firm age	-.067	.126**	-.003	.030	.025	-.022	-.096*	-.150**	.030	.067	-.025	.003	.040	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Even though correlation indicates nothing about causation, it is interesting to see that most variables identified moves along with the returns. Logically, the bigger the firm size, the more correlated it will become with the market, which seems natural since big companies are usually listed on the stock market or affected by the business cycles that move along the stock market. It also moves with PE firm age, which can be a logical move since the oldest PE firms that have a persistent record can draw more funds and take-over bigger firms; and firm size is correlated with firm age since they had more time to grow. Older PE firms also seem also to be able to invest in large companies from a large distance, both geographically and culturally, as well as holding them for more extended periods than smaller firms.

When it comes to distance, the holding period is negatively correlated with firms that are farther away. A plausible explanation can be information asymmetry with cross-border investments. The holding period is highly correlated with market returns, which is not unreasonable since more extended holding periods seem to be able to get higher market returns. Geographical distance is negatively correlated with trust as the distance increases. The highest significant correlation for geographical distance is cultural distance, which was expected given the high difference in scores among domestic and foreign deals. Distance is also highly correlated with country variables such as taxation burden, size and economic freedom. The overrepresentation of US and UK firms investing in cross-border deals in other European countries and Scandinavia can explain this relationship. When it comes to trust, we see significant negative relationship between the holding period and the level of trust. It seems that companies in high trust countries will sell in a shorter period, whereas in low trust environments, the PE firms decide to hold it. The reason could be that PE firms in high trust environments can implement efficiency changes faster and can sell the company faster.

Both types of diversification have a significant positive relationship with each other. As we remember from the variable section, the lower the score, the more diversified the PE firm is. PE firms that are specialized in one industry also seem to specialize in specific countries; though there are some essential differences. When trust is high, the PE firm is less diversified. Furthermore, it is negatively correlated with taxation burden, when the taxation burden is high companies are less likely to diversify among countries. PE firms are likely investing to conjunct with local tax regulation that it might not have the resources to diversify. As

expected, taxation and government size are highly correlated among each other. It makes sense since taxation burden is linked with more tax revenues for the government. Even though high taxation seems to suppress economic freedom. Strangely, it also moves along with higher taxation burdens and government size. Bigger firms, which was also a significant correlation, seem to be better able to deal with high taxation target countries. Higher taxation burden often has multiple tax exemption posts.

Univariate regressions

All regressions have been run with heteroscedastic-consistent standard error corrections. Omitted results in the tables have been left empty since some of the regressors were perfectly collinear based on the characteristics of the sub-sample and have been marked with -. The regressions tables and results can be found in Appendix 6.

Firm size is highly statistically significant since its T-ratio is above its critical value for the significance level (table 12). However, the beta coefficient is negative; indicating that the return on investment decreases. A possible explanation can be that bigger companies are closer to their full capacity, whereas the smaller firms have higher growth potential. For both foreign- and domestic deals (table 13) it stays negative. On a continental level (table 14), firm size is highly significant for European firms, whereas for American firms, it is not significant. Geographical distance is statiscally significant at 1%. The beta coefficient is also found to be positive, meaning that the farther away the firm is, the more positively it will affect the rate of return. When controlling for the effects of geographical distance (table 16), we see that the effects of cultural distance only matters for firms that are in middle-range. Companies in the short range are close enough to easily monitor and the cultural differences are fairly small. Companies in the far-away-range are more likely to be intensly monitored so that the cultural differences disappears. In the middle range however, you get a semi-solution to the problem. Companies are perhaps not far enough away to intensively monitor, but still have a high cultural difference. This finding is in conjunction with the findings of Aizemann & Kendall (2008). The distance makes it harder to track the portfolio company and therefore, the intensified monitoring that comes along with it. The risk/return premise is valid for this case as well. This is especially true for cross-border deals between Europe and the US. Though for US investors, it does not affect European cross-border

deals. A better integrated American market is the explanation over the different countries on the European continent.

As expected, the univariate analysis for culture indicates that it is highly statistically significant. The beta sign is positive, concerning that a higher cultural distance will lead to higher returns. This finding is in conjunction with the findings of Nahata, Hazarika & Tandon (2014). A possible explanation lies in the fact that higher cultural distance increases the screening and monitoring intensity of the private equity firm in order to cope with cultural differences. Higher cultural distance increases the risk of the investment overall and can explain that the investor gets rewarded for the extra risk. Sub-sampling it for geographical distance,

'Firm age', 'Holding period' and 'Trust', do not seem to affect the return when regressed univariately. By controlling for foreign or domestic deals, 'Firm age' becomes significant for foreign deals. Though, the coefficient is negative; meaning that an increase in firm age indicates a decrease in returns. The holding period is not significant for anything when controls applied. This is merely explanatory since every company case is different; there is no relationship between the period to hold a company and the return on investment. Contrary to the claims made by Bottazzi, Da Rin and Hellman (2011), there is no evidence that trust among nations has a significant role in explaining return on investments for foreign nor domestic deals; it would only have a positive effect on a regional level for PE firms that invest in the US and a negative effect on investments in Southern Europe. This is merely due to the risk/return relationship. A decrease in the trust would increase the risk, and thus, a risk premium is added to the return. When measuring the degree of shareholder degree of influence and ownership concentration, it does not seem to affect the return on investment. Controlling for continentals, it does not seem to create any significance. The only significant result can be traced back to firm size, specifically for bigger firms. Considering the age of the PE company, it is statistically significant in the US and Europe, but has a negative beta coefficient, when investing in medium-sized firms (table 14).

As expected, the market return is highly statistically significant to predict returns. This is consistent with the results from Phalippou & Zollo (2005), where a relationship is shown of the co-variation of the PE portfolio and the market index. This is due to business cycles and stock market cycles. On a continental scale, it is a good predictor for both European and US business cycles. A probable reason is

that these market movements are more closely aligned with the S&P 500 index. This applies only to small-and-medium firms. Oddly, bigger firms do not seem to generate a significant relationship. For country host characteristics: economic freedom, taxation and size of government are all significant. Both 'Taxation burden' and 'Government size' illustrate a positive beta coefficient. Size of government seems to matter more for domestic deals than for foreign. On a continental level, size of government and taxation level is affecting the returns positively; In the US it is only size of government. A bigger government could mean that more public projects and investments positively affect returns. In the South of Europe, it is the opposite, taxation burden does not seem to result in benefits for the target firm and the PE firm and thus reduces the rate. An increase in economic freedom negatively affects the return on investment. This is contradictory to findings of business freedom by Watson and George (2010), who claimed that higher business freedom would lead to more opportunities for target firms due to less regulation. Only a positive significant relationship was found between economic freedom and return on investment for small firms. Though when looking across foreign/domestic deals; no significant relationships are found.

When considering diversification effects, both industry and country diversification are statistically significant. Though, the economic significance is less, since the beta coefficients are so small that it barely affects the return. The interpretation of this result is counterintuitive since it contradicts diversification benefits meaning that an 'increase in diversification' equals a lower HHI score, which can only be obtained when a firm is further specialized in certain countries and industries. Both types of specializations are useful for PE firms with domestic portfolios. PE firms that have specialized in US investments seem to be able to generate a positive return; Europe itself has no significance. In these portfolios, companies that are mid- and big sized are the ones that positively affect the return on investment. This finding is in contradiction to the findings of Lossen (2007) who found that industry diversification should increase the rate of return.

Results

As a robustness measure, when testing our hypotheses, the regression was run in segments to capture the effects of the different variables on the dependent variable. We generated two tables, one with country fixed effects (table 3) and another without (table 4). The main question in this thesis is to investigate if foreign PE investments outperform domestic PE investments. Table 3 summarizes the results from the OLS regressions when running the whole sample with country fixed effects. Later, we will also introduce summaries for subsamples of EU vs. The US and sorted by firm size.

	1	2	3	4	5	6
Trust	1,207	1,253	0,675	0,602	0,614	0,627
	0,828	0,813	0,814	0,815	0,8219	0,826
Distance	-0,055	-0,084	-0,032	-0,032	-0,034	-0,027
	0,0584	0,060	0,0616	0,062	0,0621	0,0631
Culture	-0,273 *	-0,199	-0,190	-0,185	-0,19	-0,18
	0,156	0,133	0,135	0,141	0,1394	0,141
S&P		1,234 ***	1,269 ***	1,128 ***	1,131 ***	1,069 ***
		0,235	0,232	0,243	0,276	0,2952
Firm Size			-0,124 **	-0,130 **	-0,13 **	-0,14 ***
			0,051	0,052	0,0516	0,0529
Foreign	1,135 **	1,062 **	0,810 *	0,781 *	0,804 *	0,756 *
	0,507	0,440	0,449	0,466	0,465	0,471
Firm Age				0,022		0,0269
				0,042		0,0419
Fund Age				-0,061		-0,046
				0,067		0,0677
Country Div.			0,272 *	0,228	0,25	0,247
			0,174	0,176	0,174	0,1753
Tax				-3,524 **	-3,62 **	-3,982 **
				1,742	1,741	1,8174
Government Size				-0,431	-0,456	0,199
				0,875	0,867	0,879
Industry Diversification			0,455 ***	0,413 **	0,418 **	0,4073 **
			0,166	0,162	0,162	0,1633
Industry						-0,008
						0,0095
Economic Freedom					-2E-04	0,0009
					0,033	0,0033
Holding Period						0,0775
						0,1129
Constant	-0,665	-0,239	-1,941 *	4,390	5,181	5,46
	0,545	0,375	1,172	3,110	3,504	3,572
R^2	0,0931	0,1370	0,1720	0,184	0,183	0,189

Table 3: This table presents the estimated coefficients for the regression run with country fixed effects. We report coefficient estimates, the standard errors (light grey), and the significance level (1%, 5%, and 10% level of significance is denoted by ***, **, *)

The main findings show support for H1 that foreign investments generate a higher return than domestic investments. This is demonstrated by the statistically significant variable 'Foreign.' The variable is also economically significant with a coefficient of 0,756. However, the variable loses some statistic and economic significance when introducing additional variables. Furthermore, the results show that external factors such as Firm Size and the return on the S&P500 index as well as internal fund factors measured by the Herfindahl-Hirschman Index (HHI), which measures country- and industry diversification, are the most important factors explaining cross-country returns. The S&P factor is always statistically significant in the 1% level. When the market index is up 1%, the PE investments increase by over 1,2%. This is in line with Harris, Jenkinson and Kaplan (2014) that PE outperformed the S&P index. So, when the stock market is booming, PE investments are booming as well. This shows that the stock market is a good indicator of business cycles, domestically and internationally.

Despite paper from Coval and Moskowitz (1999), we do not find that returns are positively correlated with Cultural distance and we reject H2c. This is indicated by the lack of statistically significant coefficient in all regressions. One should believe that PE managers from different cultures can introduce new ways of thinking and innovation. However, the same explanation can be used here, as for the trust factor. Our sample consists of countries with a lot of commonalities and the cultural differences may not be significant sufficiently. Also, the sample consists of some of the most developed countries in the world, which applies similar technologies and management practices.

When comparing foreign- and domestic deals, the results point out that 'Geographical distance' does not have any statistically impact on the return, which contradicts Aizenman & Kendall (2008). However, we believe that the decision whether to make a foreign or domestic investment should not be influenced by the geographical distance to the potential target company, but rather on how easy it is to travel to the target firm. This can be epitomized by the fact that the distance from Oslo to London is 1,154 km and the distance from Oslo to Tromsø is 1,148 km, or from New York City to Los Angeles the distance is 3,935 km, and from London to Paris is only 343 km. Based on these outcomes, we can reject the hypothesis H2d that higher geographical distanced deals yield higher returns.

To tackle idiosyncratic risk, investors know the benefits of a diversified portfolio and measured by the HHI score, we investigated if this diversification effect benefits PE funds as well. As a higher HHI score indicates less diversification and there is a positive correlation between returns and the 'Industry diversification,; we find that PE firms should specialize in Industries. However, there is no statistical significance for the 'Country diversification,' and thus, we fail to reject hypothesis H2b. Both factors are statistically significant in the 5 % level when *not* controlling for country fixed effects (see Appendix 8) and supports the statement that specialized PE funds (in both countries and industries) earn a higher return then diversified PE funds. In private equity investments, the acquirer often takes an active role in managing the acquired company and this requires specialized knowledge to be a success. Therefore, the more specialized a PE firm is, the higher the return will be. However, economic significance is diminishing when controlling for more variables. This indicates that the factor loses its value when looking at the overall critical factor for investment decisions and may not be as vital as one could expect. This is not necessarily uncommon as Lossen (2007) used PE fund returns rather than deal returns as a measure, it seems that some deals made by specialization funds outperform the diversified funds, this is not illogical since they are more exposed to risk and experience a higher standard deviation of mean returns as a result. The returns by specialization funds would include a risk premium for the idiosyncratic risk left. Another probable explanation discussed by Lossen (2007) for why diversification across financing stages did not affect returns, is that the marginal costs exceed the marginal benefits of diversifying. When regressed against culture in regression 3, we believe that the significance of cultural distance gives a risk premium to specialized funds.

Despite the findings of Watson and George (2010), we did not find any impact of a host country's 'Economic Freedom' on the return on investment. Again, this could be seen in context with EU and EAA agreement where there are trade rules from the EU directive which each member has to follow. This means that the factors are similar across the sample and most countries have the same amount of economic freedom, making it non-essential factor when making an investment decision and thus we reject hypothesis 3a. As with the trust factor, it would be interesting to introduce more eastern countries into the sample to see whether a country's facilitation for both foreign and domestic business could affect the results.

As the hypothesis states, we would expect that countries with higher taxation would be less attractive to invest in as this reduces returns. We find significance for this when controlling for country fixed effects and thus accept hypothesis 3b. This relationship is, as we would expect, negative, and the relative economic significance is high with a beta over 3.5. Without the country fixed effects, there is no correlation between return and taxation. This result indicates that when diciding which country to invest in, tax should not matter for for deciding, but if the taxrate changes during the investment period it will have a huge impact on the results. So, investors should avoid countries with unstable tax policies. Even though there is a relationship between taxation and government size, we do not find the variable for government size to be significant in either of the two cases.

When screening for potential targets, PE firms often go for production companies where there is great potential for improvements and cost-cutting in production. Therefore, it was natural to investigate if the choice of the industry had any impact on the return. However, the 'Industry' factor was not significant in any of the regressions and none of the respective industries was significant when running dummy variables for the different industries in the sample. As discussed earlier, we found that PE firms that specialized in specific industries had a significant impact on returns.

In line with the findings from Bottazi et al. (2016) and Guisio et al. (2009), we find 'Trust' to be a significant impact on the returns. This is shown in table 4, which is the regression when *not* controlling for fixed effects. The table displays a highly significant coefficient, both statistically and economically. The coefficient is positive which indicates that higher trust leads to higher returns. An explanation for this result is that higher trust leads to higher transparency and lower monitoring costs. However, this conclusion is contrast to Botazzi et al. (2016), as they found the opposite relationship; lower trust leads to higher return. One reason for this contradiction may be the different measures of investment success. Where Botazzi et al. uses investment outcomes as a dependent variable such as IPO, Exit and Failure, representing different levels of success, we use the rate of return instead. Another explanation for the lack of significance might be the diversification, or absence of it, in our country portfolio. The portfolio consists of the US and northern and western European countries which have done a lot of trade with each other and can arguably be seen as some of the most trustworthy countries in the world.

Furthermore, approximately half of the deals in our sample is in the EU or the EEA. These are countries with high bilateral trust amongst each other from years of trade and a free workflow due to the European Union. This will naturally influence the low variance in trust between countries. Therefore, it may be interesting to include the portfolio with countries from other continents further.

When controlling for country fixed effects, 'Trust' looses it significance. This result can be explained by the fact that trust is a fairly stable measure and countries rearly change their opinion of trust towards eachother. Therefore, when the investment is made, investors don't need to worry about the releative trust between the two countries.

This result indicates that 'Trust' is highly important for fund managers to concider, as it do influence the return. However, this measure is perhaps most important when diciding which countries to invest in and not so much during the investment period. So, in conclusion we reject Hypothesis 2a that lower trust yields higher returns, as this paper found the opposite relationship.

Table 4 shows the summary regressions without controlling for country fixed effects. The table drives the same conclusions as before, whit two major differences; 'Trust' is highly significant, both statistically and economically and 'Tax' loses its statistical significance.

	1	2	3	4	5	6
Trust	2,400 ***	2,330 ***	1,358 **	1,024 *	1,046 *	1,04 *
	0,577	0,560	0,531	0,569	0,5699	0,572
Distance	-0,076	-0,104 *	-0,041	-0,022	-0,02	-0,013
	0,0541	0,054	0,0584	0,059	0,0597	0,061
Culture	-0,195 *	-0,152 *	-0,086	-0,110	-0,129	-0,128
	0,1095	0,0938	0,100	0,102	0,1021	0,1035
S&P		1,236 ***	1,281 ***	1,202 ***	1,2122 ***	1,207 ***
		0,239	0,235	0,063	0,264	0,275
Firm Size			-0,138 ***	-0,140 ***	-0,137 ***	-0,146 ***
			0,050	0,052	0,05	0,052
Foreign	1,236 ***	1,206 ***	0,740 **	0,650 *	0,6825 *	0,654 *
	0,393	0,349	0,377	0,376	0,3733	0,377
Firm Age				0,018		0,018
				0,041		0,041
Fund Age				-0,053		-0,034
				0,066		0,068
Country Div.			0,409 **	0,314 *	0,3367 *	0,358 **
			0,175	0,178	0,1763	0,176
Tax				0,243	0,13	0,084
				0,557	0,5484	0,557
Government Size				0,564	0,59	0,663
				0,660	0,662	0,666
Industry Diversification			0,404 ***	0,412 ***	0,420 ***	0,401 **
			0,154	0,159	0,1591	0,159
Industry						-0,007
						0,0095
Economic Freedom					-0,681	-0,558
					0,556	0,5712
Holding Period						0,028
						0,108
Constant	-1,282 ***	-1,361 ***	-2,546 **	-3,230 **	-1,98	-2,16
	0,298	0,292	1,073	1,350	1,7693	1,766
R^2	0,0655	0,1110	0,1580	0,166	0,167	0,171

Table 4: This table presents the estimated coefficients for the regression run on the full sample without country fixed effects. We report coefficient estimates, the standard errors (light grey), and the significance level (1%, 5%, and 10% level of significance is denoted by ***, **, *)

Subsamples

Table 5 shows the regression results for the subsamples containing only Foreign, Domestic, North America (NA) and Europe (EU). The table highlights differences between foreign and domestic investments, as well as the natural comparison between the NA and EU. Most of the deals in NA are domestic, but in the EU, there is a mixture of both.

	Foreign	Domestic	NA	EU
Trust	0,281	2,230	-0,471	0,035
	0,408	1,530	1,903	0,427
Distance	-0,101 **		2,33	-0,089 *
	0,05		4,62	0,050 ***
Culture	0,023		-0,051	0,012
	0,077		0,105	0,081
S&P	0,810 ***	0,518	0,816	0,552 ***
	0,233	0,333	0,536	0,213
Firm Size	-0,291 ***	-0,110 *	-0,162 **	-0,265 ***
	0,043	0,056	0,079	0,043
Foreign			-8,640	0,410
			17,330	0,284
Firm Age	-0,022	0,030	0,005	0,026
	0,323	0,050	0,070	0,032
Fund Age	0,018	-0,063	-0,138	-0,020
	0,045	0,094	0,162	0,045
Country Div.	-0,231 *	0,828 ***	0,541 *	-0,155
	0,145	0,245	0,345	0,144
Tax	-0,011	-2,480 **	-15,652 **	0,037
	0,448	0,990	7,230	0,619
Government Size	-0,251	2,110 **	-10,717	-0,118
	0,515	1,018	7,270	0,590
Industry Div.	0,188	0,163	0,324	-0,009
	0,154	0,189	0,242	0,151
Industry	-0,011	-0,009	-0,006	-0,012
	0,008	0,011	0,014	0,008
Economic Freedom	-0,220	-2,400 **	9,990 *	-0,242
	0,488	0,970	6,043	0,449
Holding Period	-0,044	0,190 *	0,413 *	-0,032
	0,104	0,113	0,217	0,091
Constant	3,570 **	1,106	17,995	3,418 **
	1,469	2,486	12,190	1,398
Observations	350	350	244	456
R^2	0,2420	0,1790	0,3020	0,155

Table 5: This table presents the estimated coefficients for the regression run on the total sample. We report coefficient estimates, the standard errors (light grey), and the significance level (1%, 5%, and 10% level of significance is denoted by ***, **, *)

When dividing into subsamples, we still find S&P return and Firm Size to be statistically significant, and thus, they seem to be the most important factors. As S&P is a proxy for how the western economy is going, we can see that this is also true for companies not listed. So, when doing PE deals, consider not only the target company but also the macroeconomic situation. Firm Size is perhaps the second most important factor, and its significance level is at the 1%. Its economic interpretation is that the larger the target, the less return you get. This may be because larger companies are often more developed, and it takes a higher effort to streamline those companies. There will also be harder to increase sales and market share as big production companies more often will be closer to its potential, then smaller companies will be.

A surprising result compared to table 2 is when looking at the foreign and EU sample, distance is statistically significant with a negative coefficient. This means that an increase in km will decrease the returns by 0,125% and 0,119% respectively, which is in contrast from looking at the full sample. This is also in support of rejecting H2d, as this result points out that an increase in geographical distance will decrease the rate of return. It only applies to investments in Europe. This result can be considered as a verification for the home bias and the common factors that cause it described by Coval & Moskowitz (1999). It might indicate that the marginal costs of these hurdles to overcome by the PE firm in a cross-border deal do not result in marginal benefits in the form of a risk premium. In other words, the costs overcoming obstacles in foreign countries that are caused by differences in legal systems, taxes, and cultural do not generate in higher returns; confirming that home bias is legitimate outcome when regressing both foreign and domestic deals as a consequence as conjunction with the findings of Mishra (2015) and Strong & Xu (2003). When comparing to the US, the US is a large common market where there are fewer hurdles between states than between European countries. Furthermore, we see that the economic magnitude of the S&P is less significant than for the whole sample which may be because the majority of foreign deals takes place in Europe and that the S&P might not be the best market predictor.

An interesting observation regarding the North American regression is that the effect of the S&P index disappears and is no longer significant. As the majority of the NA sample consists of domestic deals, it is expected that the S&P should affect the NA sample, if not more, then at least the same as the full sample. One possible

explanation for this can be that our NA-sample is being skewed by the high number of bankruptcy's, as this sample contains 44 of the bankruptcy cases, which is independent of the S&P. Another interesting observation in this sample is that the US is more dependent on government decisions and regulations showed by the significance of Economic Freedom and Tax. With the tax cuts and financial incentives, we have seen the last couple of years from the American government; we can expect this to have had a good effect on the PE market in America.

Since the majority of US deals influences the domestic sample, it displays a lot of the same results as the North American (NA) sample. A noteworthy discrepancy is the statistical significance of Country Diversification. An explanation for this may be that the NA sample consists of some of the largest PE firms in the world which are forced to invest in a more diversified country portfolio, while the domestic sample includes several smaller, non-American, PE-firms which are less diversified purely due to size. Naturally, their portfolio is more focused on domestic deals and therefore less diversified on the country.

The most significant discrepancies between the foreign and domestic sample are the Country diversification and Government Size/Tax. For the diversification this is a natural result as when a PE firm is diversified amongst countries, they have a low score. In the foreign case, the diversification is negative, which means that PE funds that are better diversified receive a higher return. For the domestic sample, the positive coefficient indicates fewer diversifications leads to higher returns. So, for funds investing domestically, it is better to be focused on that country, but for funds investing foreign, they should diversify and have knowledge about FDI. The changes in significance for Tax and Government Size comes from the fact that most of the domestic sample consists of US investments, where we have seen that those factors have higher influence.

Firm Size

When looking at the subsample for firm size, there are mostly two interesting findings: The market factor impacts the biggest firms the most and Firm Age for Big Firms is statistically significant at the 10% level. See, Appendix 9 for a table of the regression.

The first notably about this table is that the market is the only statistically significant factor, other than Firm Age from the big sample and that culture and the two HHI index factors lose their significance. This shows that the dilemma *foreign vs.*

domestic buyouts do not discriminate on the size of the buyout. It does not matter whether it is a small or big PE firm investing because they have the same prerequisites and the same obstacles to overcome when investing in a foreign country. Another interesting observation is how the economic importance of the market varies from Firm Size. The bigger the company, the more influence it is by the S&P index. However, the loss of significance may be due to the small sample sizes that come from the splits, but the S&P is showed to be a robust factor.

Lastly, 'Firm Age' is significant in 10% for the biggest buyouts. This means that in the investments above $1 billion, the firm age is negatively correlated with returns. So, the older the target company is, the worse the investment will be. 'Firm Size' was negatively collinear with returns when running regressions for the full sample. The same argument can be made here; The bigger and older a company is, the closer it is to its full potential. In other words, the company has matured. Therefore, it is harder for a PE firm to get a high relative return. However, we need to keep in mind that the more significant the investment, the less a company needs to earn to get a satisfying return.

To see whether our identified effects hold during market recessions and booms, we divided the sample into two categories: *booms* and *busts*. If a company is acquired one year before a crisis or sold in the middle, it falls in the bust category. As table 6 shows, 'Industry Diversification,' 'Firm Size' and 'Tax' is still statistically significant in periods of economic prosperity. However, in the down periods, we find some interesting results. First, 'Holding Period' is statistically significant in the 1%. This is an expected result since one can argue that if a PE firm can endure the crisis and sell it in the years after, the returns will most likely be higher. Second, 'Government Size' seems to matter more in the bust periods, which is an indication that countries with capital-strong governments can limit the fall of the economic environment in that respective county. So, during the 2008 financial crisis, it was better to hold an investment in Norway, than in Spain, which struggled more. These governments have more leeway when stimulating the economy and might, therefore, hinder cases of bankruptcy. Lastly, during the down periods, it is better to be a foreign investor, as indicated by the positive statistically significant coefficient for 'Foreign.' This may be the result of overrepresentation of US companies in our sample, as the US economy has taken some of the hardest hits during the crises.

Table 6 considers how the identified variables are affected by the economic environment. The results show an essential trend in times of recession, which has yet to be explored in previous literature. The factors 'Holding Period' and 'Government Size' is significant in 1 % and 5% respectively and will be important to consider if investing in a down period.

Regression Results

	Boom	Bust
Trust	0,490	-0,420
	0,362	1,059
Distance	0,019	-0,080
	0,034	0,079
Culture	0,019	-0,0748
	0,053	0,105
S&P	-0,149	0,373
	0,131	0,270
Firm Size	-0,196 ***	-0,195 ***
	0,043	0,065
Foreign	0,089	0,420 **
	0,103	0,185
Firm Age	0,016	0,015
	0,034	0,055
Fund Age	0,032	-0,106
	0,055	0,086
Country Div.	0,164	0,174
	0,125	0,297
Tax	-0,804 **	0,619
	0,388	0,931
Government Size	0,901	2,110 **
	0,459	0,969
Industry Div.	0,254 **	0,214
	0,125	0,291
Industry	-0,010	-0,005
	0,008	0,014
Economic Freedom	-0,116	2,176
	0,436	1,410
Holding Period	0,058	0,454 ***
	0,071	0,175
Constant	-0,018	-8,220 **
	1,336	3,417
Observations	489	211
R^2	0,1540	0,2100

Table 6: This table presents the estimated coefficients for the regression run on the subsample booms and busts. We report coefficient estimates, the standard errors (light grey), and the significance level (1%, 5%, and 10% level of significance is denoted by ***, **, *)

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Robustness check

In the methodology section, the problem of heteroscedasticity has been described and discussed. To cope with this issue, Brooks (2014) presents two solutions that we can apply. Firstly, converting all the 'size' variables into logs. We have incorporated log estimates for scale variables, such as geographical distance, cultural and returns, that depict signficant discrepancies in the data, to account for these substantial interval differences. All independent variables are in logs. A second solution to the problem is using heteroscedasticity-consistent standard error estimates. Before implementing, we formulate the test hypothesis for heteroscedasticity:

H0: the variation in the error terms is homoscedastic

H1: the variation in the error is not homoscedastic

To test the hypothesis, we ran both a White's test and a Breusch-Pagan test, see Appendix 7 for results. To conclude, there is clear evidence from both tests that there is the presence of heteroscedasticity. To deal with that, we implemented heteroskedastic-consistent standard errors to suppress its effects on standard errors. The results did not change as the same variables were significant, but with a more conservative measure.

Lastly, when running multiple univariate and multivariate regressions with different inputs and sub-samples, we still see the same patterns and results, which gives us an indication of robustness in our results.

Conclusion

This thesis set out to investigate whether foreign private equity deals outperformed domestic deals. With the support of the binary factor 'Foreign' we conclude that foreign investments do perform better than domestic. The factor is statistically significant in the 10% and its economic significance is 0,756 when controlling for every variable and therefore impactful. This is also supported by the summary statistics which show a higher return for foreign investments, though, with higher standard deviation.

The factors driving these results are 'Trust', 'Taxation burden' and a risk premium. As shown, 'Trust' should impact the investors choice of country, while 'Tax' influences returns during the investment period. Therefore investors should chose high trust countries with no indications of a tax increase. Even though the risk premium is not measured in this paper, it consists of all hurdels coming from investing in a foreign country. This can be currency fluctuations, which can be hard to hedge for an investment with a longer and uncertain timeframe, or lower possibilities for monitoring.

The factors 'Culture' and 'Geographical distance' seems to have little explanatory power. However, as Lossen (2007) described, we expect that when making a foreign investment, the due diligence increases and the PE firms are making better investment choices. This is to make up for the asymmetric information and lack of monitoring possibilities.

The analysis showed that the biggest driver of PE returns is the market factor. This result is amplified when sorting for firm size, and it just goes to show that the S&P500 index is a good measure of the state of the economy. Furthermore, when the market is in a recession 'Holding Period' and 'Government Size' are significant. This means that if the PE firm avoids buying in the year prior to a crisis and is able to hold the company through the recessions, this will obviously be benefitial. Also, a strong government are able to mitigate the ramifications of a recession. Therefore, investors should concider this when investing in a foreign country.

As there is a limited research on cross-border PE investments, this thesis has helped to expand and verify existing findings of previous research papers, such as Lossen (2007) (diversification), but it also contrasts some findings such as Aizenman &

Kendall (2008) (geographical distance), Watson and George (2010) (host factors) and Bottazi et al. (2016) (trust). From a research perspective, this paper adds to the current literature about PE performance and regular finance papers about the identification and effects of common risk factors on the rate of return. While earlier researchers have explored vital factors affecting foreign PE investments individually, none have included a combination of factors to this extent.

For investment professionals and finance researchers, the factors identified can enhance due diligence for cross-border investment decisions. Though future research for this investment professionals can be in the form of monitoring effects on cross-border target firms and its added benefits. Future research can be done in the way of measuring the magnitude of individual impacts, weighing the risk premium per country, or investigating the difference between foreign- and domestic ownership of target firms, for example in asset growth or productivity. Besides, the same research factors can be applied to other asset class and investors such as cross-border venture capital and real estate returns to see if it also applies to those empirics as well.

Discussion and limitations

Researching private equity is hard since only a small fraction of the total PE deals conducted is reported. This made the data collection process very hard and time-consuming and paved the way for selection bias, measurement errors and backfill bias.

Comparing the PE performance at a deal-level enabled was a better choice than going for fund-level performance. Only a fraction of the funds is disclosed, and an even smaller fraction will wholly be composed of either domestic- or foreign investments. Though our measure also has a major disadvantage in a possible measurement bias; it only represents a transaction value where we ignored interim cash flows, management fees and interest income. Research about the PE performance can only be closer to accuracy when all information has been disclosed and the fund has been liquidated, thereby adjusting returns that could enhance measurement errors. There were no options to tackle selection bias. To mitigate the effects of the biases identified, we went for an OLS with different sub-samples and controls to get a better insight. This has partly enabled this research to still present interesting findings and facts that are of importantance for investment managers and researchers specialized in finance.

Given the broad timeframe we applied, it is tough to find cross-border funds that have been liquidated since most of the early deals have been made domestically. Cross-border deals increased during the start of the 2000s; most cross-border funds are still harvesting. As a consequence, there might not have been enough cross-border funds that could represent the cross-border fund market. Therefore, the deal-level performance proved to be more feasible.

Data collection took most of our time during this semester. In the end, we ended up with 700 deals from Bloomberg, we had to delve into PE portfolios to find deals that were fully disclosed and usable for our sample. Identifying these deals proved to be a hard- and time-consuming job. The choice of Bloomberg was made on the experience that it was the only database that would present the PE transactions chronologically.

Bloomberg only collect its data from voluntarily deal reporting by PE funds, thus enabling selection bias and measurement errors. Other professional databases such as Preqin and Burgiss are collecting data from filings of financial institutions and partners that are bound to the FOIA requests making it required to disclose their realized cash flows (Harris, Jenkinson & Kaplan, 2014). Thereby giving a better accuracy of the total cash flows earned of PE firms. However, Bloomberg seemed to have been the best choice; even though given this selection bias, it also enhances survivorship bias since PE firms are reporting these deals on these databases to attract new investors. Voluntarily reporting deal values also enhances the probability of measurement errors in the returns. The measurement error is serious since it can overestimate the returns of private equity, thereby wrongly informing investors about the risks and rewards of private equity investments All the deals had to be screened before it could have been accepted to our sample, this is a form of selection bias, but on the other hand it was a method where we could ensure that the PE deal information was accurate and usable.

Future research would be by expanding the sample size to include countries from different regions. This might highlight the extend of the effects of trust, cultural distance and market return. Furthermore, it would be compulsive to see if the results can be consistent over regions and countries that experience higher degrees of geographical and cultural distance such as Asia, Africa and the Middle East arise as these countries will continue to grow and become important target regions for PE firms.

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Appendices

Appendix 1 – Variable description/discussion

As described in the methodology section, the variables were chosen based on an extensive literature review. Since financial information regarding the private equity industry can be hard to get, as well as multiple sources needed for factors related to cross-country relationships, this was a time-consuming exercise. Below we will explain how these variables were collected, what they are and how certain factors were measured. All independent variables were collected and later converted into logs for the analysis part.

Geographical distance

As the world has become more interconnected and we have more and more multinational companies, the definition of foreign and domestic firms may be a little vague. An investment firm may have offices in multiple countries and investments made by the local PE team may be viewed as a domestic investment. However, we have chosen to define domestic investment as where both the headquarters of the target firm and the PE firm is established in the same country. So, if the investment is made in Norway by a local team, but the headquarters of the PE firm is in Sweden, we will view it as a foreign investment. The geographical distance is measured in kilometers between the two main capitals of each country. These values are directly obtained from the website https://www.distancefromto.net. Just as the return, we measured this by using logs as distance in simple form which gives a more realistic view of how to define what's far away and how it is perceived by investment managers. See Appendix 3 for distance matrix.

Cultural distance

In order to measure the cultural factor between nations we used the Hofstede model, which is a measure of six dimensions of national cultures. The model measures uncertainty avoidance, individualism/collectivism, masculinity/femininity,Power Distance, indulgence/restraint and Long/Short Term Orientation (Hofstede, 2011). As we need a numerical measure for the cultural difference between two countries and that these measures are per country, we used the formula developed by Kogut & Sing (1988) for cultural distance between United States and other countries. However, they scaled the distance to be a number between 0-100 by dividing the

brackets term on V_i, which is the variance of the index. We chose not to do this as we want to capture full the spread. The formula is as follows:

$$\text{Cultural Distance} = \frac{\sum(Iij - Iiu)^2}{6}$$

Where I_{ij} is the Ith cultural dimension of the jth and uth country. This formula is used in order to better capture the distance between countries and eliminates problem of negative numbers. The higher the score, the higher cultural distance between two countries are. The cultural distance for domestic deals were set to zero, as we expect no cultural differences within one country. This also counts for the United States even though there are a lot of cultural differences across states. This is country-to-country analysis rather than regional differences. The cultural distance matrix used in the analysis is given by Appendix 2.

Trust

The trust vector displays the average level of trust from European citizines among each other and bilattarilly among other European countries and the inclusion of the US, is measured by a scale from 1 to 4. 1 means that there is trust at all whereas 4 is the highest level of trust. The trust matrix is based upon the matrix created by Zingales, Sapienza & Guiso (2009). See Appendix 4 for the trust matrix. The trust matrix is derived from different Eurobarometer surveys and the summary of the results of the years have been inserted in the trust matrix. However, the trust matrix did not cover all the countries we used. Therefore, we used the trust matrix of another paper by Guiso, L., Sapienza, P., & Zingales, L. (2009). For countries that no trust score was given, we assumed the same score as that counterparty gave them. So, for example, some U.S. scores have been based on this assumption since American citizens were not among the participants in the Eurobarometer survey.

Industry- and country diversification

Both country, which we call country diversification, and industry, which we call generalist variable, diversification is measured by calculating the Herfindahl-Hirschman-indices per PE-firm's portfolio. It is based on the current and historical portfolio of the PE firm that is obtained by the portfolio exposure function in Bloomberg. The country diversification has been used as in regional terms since that was the function of Bloomberg. Just as for the industry, we try to infer whether it matters for cross-border deals to invest in a specialized region or that

diversification can generate higher returns. This measurement has been chosen based on its simplicity and its ability to clearly distinguish specialized from a diversified PE firm. The score is calculated as followed:

$$HHI = S_1^2 + S_2^2 + S_3^2 + \cdots + S_n^2 \tag{1}$$

S is the percentage number written in absolute numbers rather than decimals. Unlike Lossen (2007) that calculated HHI by squaring decimals and subtracting one from the sum, we kept the traditional HHI index calculation. Though it requires a slightly different interpretation than the method used in the paper. The bigger discrepancies as a result illustrate the degree of diversification better. Keep in mind, the interpretation of the score can be different. The higher the score, the more concentrated the PE-firm is in an industry or region. As an example, we have Firm A and Firm B. Firm A invests 100 percent in the Northern American region and firm B invests 50% in Western Europe and 50% in Eastern Europe. Respectively, you'll get for Firm A:

$$HHI = 100^2 = 10,000$$

Firm B:

$$HHI = 50^2 + 50^2 = 5,000$$

Firm B is more diversified since it has a lower HHI score.

S&P market return

To be able to compare deal performance to market performance, we regress the S&P 500 cumulative return to the return on investment We know most of the movement in PE-returns is explained by market movements. In selecting a proper market index, we examined the MSCI index as a proxy since most papers use this one. We also looked to link European investments to the movement of FTSE index and for American returns the S&P 500 index. Due to our time frame we ended up with the S&P as our proxy for market return, as both the MSCI and FTSE indexes did not go long enough back in time. To calculate the market return based on holding period, daily returns have been downloaded. Subsequently, the cumulative return could be calculated.

Firm age

Firm age is obtained by looking at the Bloomberg profile or by counseling Google, and has been calculated by substracting the foundation from the year of the first investment.

PE firm age

PE firm age is obtained by looking at the Bloomberg profile or by counseling Google, and has been calculated by substracting the foundation from the year of the first investment.

Size of government

Size of the government is measured by using the percentage of government spending of GDP for a specific year. Source of the statistics comes from the OECD database. Records date back till 1980 to 2019, for some countries where there were no details available before year of measure has been assumed to be equal to the first recorded year. All other countries and years have been matched to the related year of the deal.

Firm size

Firm size is proxied by the cumulation of transactional values by the respective announcement dates. It is directly related what the private equity firm was willing to pay for the firm including the acquisition premium. We also measured this variable in logarithm form for the same reason that some firm values can show extreme outliers. This value is given in US dollars and given in exact units.

Taxation burden

Taxation burden applies to the target country and affects the post-tax return for the relative PE firm. Taxation burden is measured by using the percentage of total tax revenue of GDP for a specific year. Source of the statistics comes from the OECD database. Records date back till 1980 to 2019, for some countries where there were no details available before year of measure has been assumed to be equal to the first recorded year. All other countries and years have been matched to the related deals.

Economic freedom

Economic freedom is about the efficiency of public policy process, liberty, restraint government interference and market openness. It has been measured from 0-100 every year since inception for all countries. This score has been assigned to the year

of the first investment. Though we believe that the change in the variable over the years is captured by the sample size and will sufficiently capture the effects of a changing economic freedom landscape for all target countries. All target countries were represented in the database, though some years had not been given. Therefore, we have used the closest recorded result as a proxy for this gap.

Appendix 2 – Cultural distance

Country of destination

	Norway	U.K	U.S	France	Germany	Denmark	Sweden	Netherland	Belguim	Luxumbour	Italy	Switzerland	Spain	Ireland	Portugal	Finland
Norway	0,00															
U.K	742,83	0,00														
U.S	624,50	132,00	0,00													
France	202,00	569,17	583,83	0,00												
Germany	787,83	854,67	819,00	1412,50	0,00											
Denmark	1023,00	541,50	835,17	1301,00	423,17	0,00										
Sweden	217,83	697,00	808,00	120,50	1177,00	1232,17	0,00									
Netherlan	1242,83	971,00	1084,33	1845,50	108,67	373,17	1513,33	0,00								
Belguim	528,00	447,50	544,83	847,00	212,50	162,00	752,17	294,50	0,00							
Luxumbou	234,67	562,50	693,17	394,67	554,50	677,67	180,50	730,17	357,00	0,00						
Italy	1030,00	605,17	649,83	1487,33	254,50	167,67	1515,83	335,50	244,33	876,67	0,00					
Switzerlar	926,67	254,17	513,50	995,00	520,50	137,33	944,83	451,17	140,67	562,33	345,67	0,00				
Spain	623,67	956,50	824,83	1256,67	127,17	499,67	1145,83	362,17	181,67	668,67	324,00	591,00	0,00			
Ireland	676,00	193,17	125,83	518,33	1106,17	844,67	837,50	1416,50	579,00	883,00	786,33	512,33	916,00	0,00		
Portugal	1041,83	1962,33	1604,00	1942,17	620,67	1306,50	1864,33	1059,00	774,17	1430,83	960,83	1488,17	237,17	1596,50	0,00	
Finland	76,33	528,17	427,17	320,00	502,17	661,67	345,83	852,17	238,67	242,67	651,33	556,67	329,00	445,67	749,50	-

Appendix 3 – Geographical distance between capital cities (Km)

	Norway	U.K	U.S	France	Germany	Denmark	Sweden	Netherlan	Belguim	Luxumbou	Italy	Switzerland	Spain	Ireland	Portugal
Norway	-														
U.K	1153.89	-													
U.S	6232.1	5897.96	-												
France	1341.63	342.74	6164.6	-											
Germany	1310.41	917.19	6815.73	684.28											
Denmark	483.52	955.95	6511.1	1026.73	840.75										
Sweden	416.73	1433.25	6635.86	1543.66	1314.22	522.27	-								
Netherlan	912.56	357.29	6188.89	430.03	668.68	621.1	1125.48	-							
Belguim	1084.79	320.77	6216.38	263.72	601.98	765.15	1280.35	173.83	-						
Luxumbou	1182.56	489.17	6385.66	286.83	430.74	801.55	1323.75	319.24	186.53	-					
Italy	2007.7	1434.12	7216.98	1106.27	1184.32	1532.85	1977.24	1298.11	1173.75	989.44	-				
Switzerlar	1402.24	776.05	6651.37	488.05	670.54	964.44	1469.56	614.58	497.89	305.90	684.69				
Spain	2387.47	1262.61	6087.84	1052.76	1869.55	2072.50	2593.01	1481.35	1316.18	1279.15	1363.68	1246.25	-		
Ireland	1265.19	463.97	5441.73	780.80	1317.86	1239.21	1628.86	756.07	776.15	951.99	1886.69	1239.21	1450.40	-	
Portugal	2739.29	1585.78	5736.55	1454.09	2313.77	2478.68	2989.89	1864.44	1713.60	1712.11	1862.96	1723.09	503.11	1642.22	-
Finland	787.45	1821.34	6930.28	-	-	-	395.92	-	-	-	-	-	-	-	-

Appendix 4 – Trust matrix

Country of destination

Country of origin	Norway	U,K	U,S	France	Germany	Denmark	Sweden	Netherlan	Belguim	Luxumbou	Italy	Switzerlar	Spain	Ireland	Portugal
Norway	3,42	3,27	2,93	2,93	2,99	3,53	3,49	3,26	3,18	2,91	2,65		2,56	3,01	2,6
U,K	3,06	3,29	2,32	2,32	2,62	3,13	3,03	3,16	2,91	2,59	2,51	3,18	2,47	2,61	2,47
U,S	2,93	2,32	2,95	3,18	2,85	2,86	3,03	2,72	2,92	2,99	2,66	3,03	2,81	2,91	2,92
France	2,97	2,55	3,18	3,18	2,74	2,96	2,99	2,94	3,07	2,83	2,43	3,03	2,68	2,72	2,59
Germany	2,92	2,69	2,85	2,85	3,5	2,97	2,99	2,9	2,84	2,76	2,36	3,25	2,66	2,59	2,48
Denmark	3,5	3,22	2,86	2,86	3,12	3,39	3,41	3,33	3,18	2,86	2,53	3,28	2,66	3,02	2,67
Sweden	3,65	3,43	3,03	3,04	3,13	3,57	3,59	3,33	3,23	2,98	2,81	3,5	2,86	3,26	2,97
Netherlan	3,3	3	2,72	2,72	2,84	3,29	3,34	3,28	3,18	2,97	2,35	3,26	2,64	2,8	2,74
Belguim	2,91	2,84	2,92	2,92	2,45	3,01	2,99	2,9	3,28	2,82	2,4	3,16	2,59	2,75	2,53
Luxumbou	2,91	2,59	2,99	2,83	2,76	2,86	2,98	2,97	2,82	3,46	2,54	3,09	2,65	2,55	2,56
Italy	2,78	2,51	2,66	2,66	2,63	2,7	2,89	2,77	2,64	2,54	2,8	2,85	2,64	2,37	2,32
Switzerland		3,18	3,03	3,03	3,25	3,28	3,5	3,26	3,16	3,09	2,85	3,02	2,79	3,05	2,79
Spain	2,79	2,31	2,37	2,37	2,66	2,73	2,84	2,85	2,73	2,65	2,61	2,79	3,32	2,57	2,51
Ireland	2,93	2,81	2,81	2,81	2,78	2,99	2,92	3	2,93	2,55	2,65	3,05	2,64	3,33	2,65
Portugal	2,22	2,66	2,91	2,91	2,54	2,66	2,24	2,7	2,66	2,56	2,55	2,79	2,59	2,51	3,29
Finland	3,48	3,18	2,92	2,92	2,89	3,3	3,35	3,14	3,07	2,94	2,51		2,61	2,92	2,67

Appendix 5 – Summary Statistics

	Return	Country Divers.	Culture	S&P	economic freedom	taxation burden
Mean	.14	3.73	1.30	.095	1.92	1.51
Median	.22	3.71	.0000	.10	1.92	1.51
Std. Deviation	.57	0.18	1.34	.13	0.04	0.08
Minimum	-5.91	3.40	.00	-.29	1.85	1.36
Maximum	1.60	4.00	3.29	.66	2.00	1.69
Percentiles 25	-0.03	3.55	.00	-.00	1.92	1.43
75	0.42	3.91	2.76	.18	1.96	1.56

	Firm Size	Holding Period	Geographical Distance	Firm Age	Log Return	Industry Diversification
Mean	8.45	0.61	1.66	1.25	.14	3.73
Median	8.51	0.62	.00	1.33	.22	3.71
Std. Deviation	.68	0.26	1.72	.62	.57	0.18
Minimum	6.34	-.48	.00	.00	-5.91	3.07
Maximum	10.68	1.24	3.86	2.63	1.60	4.00
Percentiles 25	8.00	0.44	.00	.90	-.03	3.15
75	8.90	0.78	3.77	1.72	.42	3.35

	Government size	PE firm age	Trust
Mean	1.63	1.11	0.46
Median	1.62	1.26	0.47
Std. Deviation	0.06	0.63	0.05
Minimum	1.51	-2.00	0.37
Maximum	1.81	2.18	0.56
Percentiles 25	1.57	1.08	0.43
75	1.67	1.36	0.50

Sample Characteristics

Table 7 composed of cross-border deals among target countries and the number of domestic deals.

Country of Target				
	Frequency	Percent	Valid Percent	Cumulative %
Belgium	9	1.3	1.3	1.3
Denmark	6	.9	.9	2.1
Finland	4	.7	.7	2.9
France	66	9.4	9.4	12.3
Germany	78	11.1	11.1	23.4
Ireland	8	1.1	1.1	24.6
Italy	14	2.0	2.0	26.6
Luxembourg	9	1.3	1.3	27.9
Netherlands	36	5.1	5.1	33.0
Norway	15	2.1	2.1	35.1
Portugal	1	.1	.1	35.3
Spain	8	1.1	1.1	36.4
Sweden	23	3.3	3.3	39.7
Switzerland	7	1.0	1.0	40.7
UK	171	24.4	24.4	65.1
US	244	34.9	34.9	100.0
Total	**700**	**100.0**	**100.0**	

Table 8 with origin countries of PE firms of our sample

Country of PE firm				
	Frequency	Percent	Valid Percent	Cumulative %
Belgium	1	.1	.1	.1
Finland	4	.6	.6	.7
France	17	2.4	2.4	3.1
Germany	8	1.1	1.1	4.3
Ireland	9	1.3	1.3	5.6
Netherlands	9	1.3	1.3	6.9
Norway	6	.9	.9	7.7
Sweden	25	3.6	3.6	11.3
Switzerland	10	1.4	1.4	12.7
UK	240	34.3	34.3	47.0
US	371	53.0	53.0	100.0
Total	**700**	**100.0**	**100.0**	

Table with origin countries of PE firms of our sample

Table 9 with countries that received investments from PE firms

Cross border investments						
	US	UK	Germany	France	Norway	Sweden
Belgium	3	4		1		
Denmark	1	2				3
Finland		3				2
France	18	34	1			
Germany	39	26		2		5
Ireland	3	5				
Italy	11	3				
Luxembourg	3	6				
Netherlands	12	18				
Norway	2	6				3
Portugal		1				
Spain	6	2				
Sweden	3	5			1	
Switzerland	2	1	1			
UK	62		1	1	1	1
US		22	1	1		
Total foreign	165	138	4	5	2	15
Domestic	206	102	4	12	4	11
Total	**371**	**240**	**8**	**17**	**6**	**25**

	Finland	Ireland	Belgium	Netherlands	Switzerland
Belgium				1	
Denmark					
Finland					
France					1
Germany				2	
Ireland					
Italy					
Luxembourg					
Netherlands			1		
Norway					
Portugal					
Spain					
Sweden	3				
Switzerland					
UK		2			2
US	1	7		1	4
Foreign total	4	9	1	4	7
Domestic				5	3
Total	**4**	**9**	**1**	**9**	**10**

Table 10 Number of exit methods and indvidiual exits per country

exit method				
	Frequency	Percent	Valid Percent	Cumulative %
Additional Offering	43	6.1	6.1	6.1
Bankruptcy	56	8.0	8.0	14.1
IPO	26	3.7	3.7	17.9
MBO	13	1.9	1.9	19.7
Secondary PE Buyout	164	23.4	23.4	43.1
Secondary Sale	395	56.4	56.4	99.6
Secondary VC Buyout	3	.4	.4	100.0
Total	**700**	**100.0**	**100.0**	

	Frequency	Percent	Valid Percent	Cumulative %
Additional Offering				

Exit method per country					
Additional Offering		Bankruptcy		IPO	
F	D	F	D	F	D
Belgium					
Denmark				1	
Finland					
France		2		1	
Germany 7		2			
Ireland 1				1	
Italy					
Luxembourg		1			
Netherlands 3				2	
Norway			1		1
Portugal					
Spain				1	
Sweden				1	1
Switzerland	1				2
UK 5	5	4	4	3	7
US 2	19	3	39	10	5
Total	**18**	**25**	**12**	**47**	**6**	**16**

	MBO		Secondary. PE buyout		Secondary Sale	
	F	D	F	D	F	D
Belgium			2		7	
Denmark			1		4	
Finland			2		3	
France	1	1	21	6	28	5
Germany	1		22	1	42	3
Ireland			1		5	
Italy			5		9	
Luxembourg			3		5	
Netherlands	1		9		16	5
Norway			3	1	8	1
Portugal					1	
Spain			2		5	
Sweden			4	3	7	7
Switzerland	1		2		2	
UK	2	2	18	25	36	59
US	1	3	8	25	23	114
Total	**7**	**6**	**103**	**61**	**201**	**194**

Table 11 with total number industry/sector and individual per country industry

industry/sector				
	Frequency	Percent	Valid Percent	Cumulative %
Communications	77	11.0	11.0	11.0
Consumer Discretionary	179	25.6	25.6	36.6
Consumer Staples	57	8.1	8.1	44.7
Energy	21	3.0	3.0	47.7
Financials	44	6.3	6.3	54.0
Health Care	78	11.1	11.1	65.1
Industrials	98	14.0	14.0	79.1
Materials	46	6.6	6.6	85.7
Technology	95	13.6	13.6	99.3
Utilities	5	.7	.7	100.0
Total	**700**	**100.0**	**100.0**	

Industry per country					
communications		Consumer discret.		Consumer staples	
F	D	F	D	F	D
Belgium				2	
Denmark	1				
Finland	1		2		
France	7		18	3	4	3
Germany	10		15	2	3	
Ireland	3				1	
Italy	2		5			
Luxembourg	2					
Netherlands	4		3		4	1
Norway	2	1	1	1	2	3
Portugal						
Spain	1		2		1	
Sweden	1	8	3	2	1	2
Switzerland						
UK	7	8	25	46	7	7
US	3	26	8	46	3	12
Total	**41**	**36**	**8**	**98**	**32**	**25**

	Energy		Financials		Health care	
	F	D	F	D	F	D
Belgium				1	1	
Denmark					2	
Finland						
France		1	1		4	
Germany	1		2	2	7	
Ireland			2		2	
Italy	1		1		1	
Luxembourg			1		1	
Netherlands	1	1	2		3	
Norway		2	1		3	
Portugal						
Spain	1	2	1		1	
Sweden	1			2	1	1
Switzerland			1		1	1
UK	1	1	6	14	3	7
US	2	8	2	7	4	32
Total	**8**	**13**	**21**	**23**	**37**	**41**

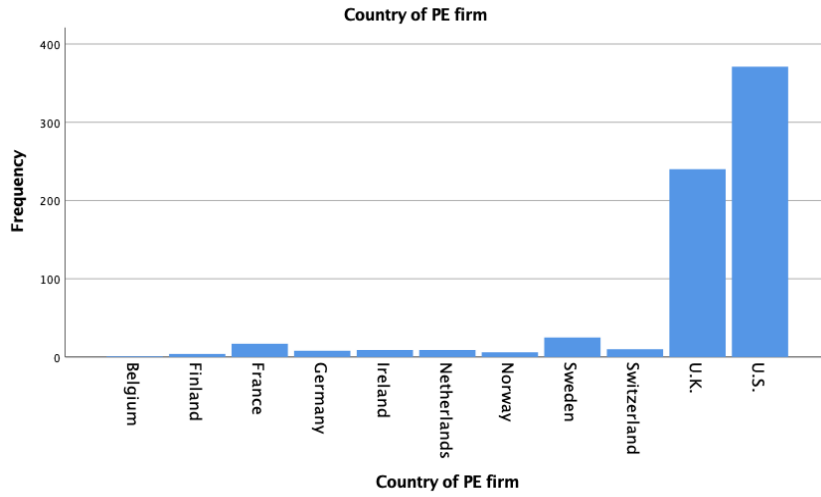|	Industrials		Materials		Technology	
	F	D	F	D	F	D
Belgium	4				1	
Denmark	3					
Finland	1					
France	7	3	3	2	3	
Germany	17	3	3	1	7	
Ireland			1		2	
Italy	1				3	
Luxembourg	2				1	
Netherlands	3	3	4		6	
Norway			1			
Portugal					1	
Spain	1					
Sweden	1	2			4	1
Switzerland	2	1			1	1
UK	7	10	4		10	6
US	3	24	2		10	38
Total	**52**	**46**	**30**	**3**	**49**	**46**

Bar Charts

Figure 2: Deals per PE firms home country
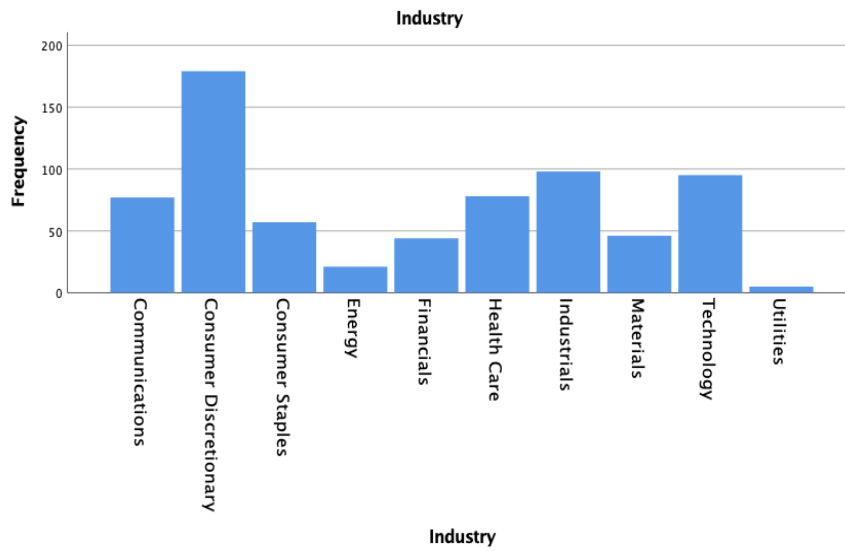
Figure 3: Deals per Industry
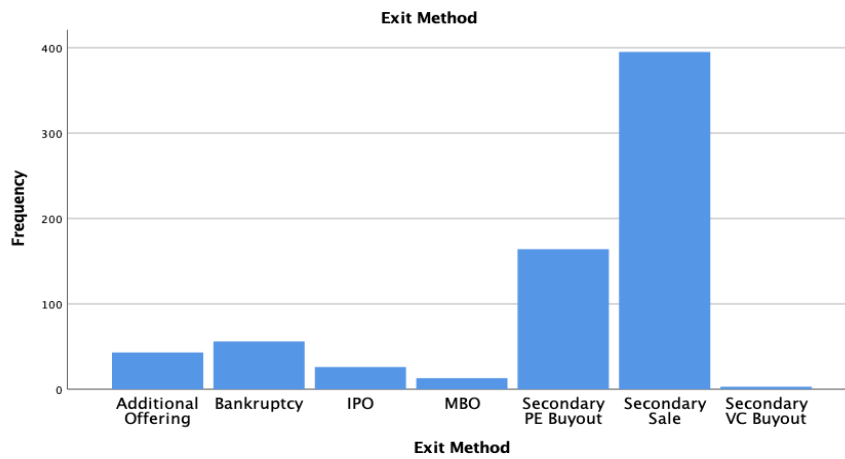
Figure 4: Exit method

Appendix 6 – Univariate Regressions

Univariate regressions on dependent variable Log Return

Log Return	coefficient	T-ratio
1 Firm Size	-0.227	-6.970***
2.Holding Period	0.011	0.803
3. Geographic Distance	0.060	4.895***
4.Firm Age	-0.015	-0.392
5. Trust	-0.251	-0.776
6. Industry Diversification	0.644	5.220***
7. Country Divers.	0.559	4.978***
8. Cultural distance	0.082	5.234***
9. Economic Freedom	-1.229	-2.996***
10. Taxation Burden	0.097	4.05***
11. Size of Government	2.039	6.519***
12. Log S&P	0.776	4.222***
13. PE Firm Age	-0.008	-2.980***

Table 12: This table presents the estimated coefficients for the regression run on the total sample. We report coefficient estimates, and the T-ratio (1%, 5%, and 10% level of significance is denoted by ***, **, *)

Table with foreign and domestic univariate regressions

Log Return	Domestic		Foreign	
	coefficient	T-ratio	coefficient	T-ratio
1. Firm Size	-0.138	-2.816***	-0.258	-7.121***
2.Holding Period	0.019	1.355	-0.087	-0.810
3. Geographic Distance	-	-	-0.009	-0.229
4. Firm Age	0.342	1.478	-0.093	-2.357**
5. Trust	4.975	4.195***	0.501	1.199
6. Industry Divers.	0.698	4.189***	0.467	2.877**
7. Country Diversification	0.909	5,400***	0.150	1.157
8. Cultural distance	-	-	0.048	0.867
9. Economic Freedom	-1.591	-1.705*	-0.164	-0.338
10. Taxation Burden	0.802	1.486	0.061	0.187
11. Size of Government	2.782	5.695***	0.478	1.135
12. S&P	0.882	3.378***	0.619	2.703***
13. PE Firm Age	-0.167	-2.436**	-0.004	-1.504

Table 13: This table presents the estimated coefficients for the regression run on the total sample. We report coefficient estimates, and the T-ratio (1%, 5%, and 10% level of significance is denoted by ***, **, *). Sub-group size: Domestic (348), Foreign (352)

Table with univariate regressions continent-level

Log Return	US		Europe	
	coefficient	T-ratio	coefficient	T-ratio
1. Firm Size	-0.101	1.631	-0.258	-6.679***
2. Holding Period	0.427	1.422	-0.075	-0.837
3. Geographic Distance	0.075	2.732***	0.016	1.150
4. Firm Age	0.033	0.348	-0.033	-0.953
5. Trust	-2.773	-2.401**	0.038	0.116
6. Industry Diversification	0.887	5.318***	0.218	1.368
7. Country Diversification	1.122	5.053***	0.037	0.310
8. Cultural distance	0.122	2.763***	0.0252	1.488
9. Economic Freedom	5.422	1.618	-0.617	-1.447
10. Taxation Burden	-11.522	-2.678***	0.342	1.029
11. Size of Government	5.775	4.049***	0.684	1.973**
12. S&P	0.122	2.763***	0.402	2.227**
13. PE Firm Age	-0.212	-2.925***	-0.039	-1.616

Table 14: This table presents the estimated coefficients for the regression run on the total sample. We report coefficient estimates, and the T-ratio (1%, 5%, and 10% level of significance is denoted by ***, **, *) Sub-group size: US (244), Europe (456)

Table with univariate regressions firm size-level

Log Return	small		medium		big	
	coefficient	T-ratio	coefficient	T-ratio	coefficient	T-ratio
1. Firm Size	-0.258	-1.835*	-0.192	-2.536**	-0.246	-2.391**
2.Holding Period	0.020	1.118	0.017	0.946	-0.109	-0.618
3. Geographic Distance	0.117	4.164***	0.034	2.251**	-0.122	0.963
4. Firm Age	0.048	0.559	0.086	1.706*	-0.140	-1.993*
5. Trust	-1.332	-1.793*	0.004	0.114	-0.266	-0.415
6.Industry Divers.	0.817	3.240***	0.388	2.881***	0.299	1.504
7.Country Divers.	0.437	1.512	0.493	4.470***	0.549	2.639***
8. Cultural distance	0.168	4.649***	0.044	2.326**	0.034	1.136
9. Economic Freedom	-2.360	-2.566**	-0.708	-1.709*	0.301	0.322
10.Taxation Burden	1.893	2.979***	0.623	2.582**	0.380	0.963
11.Size of Government	3.161	4.171***	1.685	5.310***	1.731	3.418***
12. S&P	0.923	2.361**	0.938	4.770***	0.485	0.253
13. PE Firm Age	0.05	0.560	-0.033	-1.447	0.001	0.308

Table 15: This table presents the estimated coefficients for the regression run on the total sample. We report coefficient estimates, and the T-ratio (1%, 5%, and 10% level of significance is denoted by ***, **, *) Sub-group size: Small (178), Medium (343), Big (179)

Table with univariate regressions on distance-level

Log Return	Close		Middle range		Far away	
	coefficient	T-ratio	coefficient	T-ratio	coefficient	T-ratio
1. Firm Size	-0.131	2.652***	-0.352	-7.046***	-0.249	-5.340***
2.Holding Period	0.347	1.533***	-0.237	-1.891*	-0.004	-0.290
3. Geographic Distance	-	-	-0.002	-0.020	-1.408	-1.223
4. Firm Age	0.056	0.905	-0.020	-3.238***	-0.140	-1.993*
5. Trust	4.610	3.959***	0.890	1.586	-0.030	-0.571
6. Industry Divers.	0.687	4.137***	0.778	2.417***	0.286	1.355
7. Country Divers.	0.881	5.294***	0.423	1.985**	0.233	-1.015
8. Cultural distance	0.108	0.655	0.044	2.326**	-0.005	-0.062
9.Economic Freedom	-1.674	-1.914*	-0.084	-0.618	-0.594	-0.854
10.Taxation Burden	0.776	1.510***	-0.251	-0.433	0.065	-0.140
11.Size of Government	2.724	5.642***	0.010	0.171	0.450	0.671
12. S&P	0.907	3.530**	0.595	2.028**	0.579	2.023**
13. PE Firm Age	-0.148	-2.392**	-0.056	-1.760*	0.011	0.166

Table 16: This table presents the estimated coefficients for the regression run on the total sample. We report coefficient estimates, and the T-ratio (1%, 5%, and 10% level of significance is denoted by ***, **, *) sub-group: Close (354), Middle-range (156), Far-away (190)

Appendix 7 – Test for Heteroscedasticity

Heteroskedasticity Test: White
Null hypothesis: Homoskedasticity

F-statistic	1.633197	Prob. F(13,686)	0.0714
Obs*R-squared	21.01447	Prob. Chi-Square(13)	0.0726
Scaled explained SS	206.5989	Prob. Chi-Square(13)	0.0000

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Sample: 1 700
Included observations: 700

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.065506	1.590715	1.927125	0.0544
LOG_FIRM_SIZE^2	-0.005723	0.004483	-1.276544	0.2022
LOG_HOLDING_PERIOD^2	-0.216109	0.172073	-1.255915	0.2096
LOG_DISTANCE^2	-0.014736	0.015093	-0.976324	0.3292
LOG_OF_FIRM_AGE^2	-0.021581	0.033741	-0.639604	0.5226
LOG_TRUST^2	-0.848805	1.277518	-0.664417	0.5066
LOG_INDUSTRY_DIVERS_^2	0.000734	0.048955	0.014990	0.9880
LOG_COUNTRY_DIVERSIFICATION^2	-0.086533	0.044443	-1.947043	0.0519
LOG_CULTURE^2	-0.016608	0.026861	-0.618292	0.5366
LOG_ECONOMIC_FREEDOM^2	-0.056416	0.327217	-0.172412	0.8632
LOG_TAXATION_BURDEN01^2	0.934089	0.331263	2.819780	0.0049
LOG_SIZE_OF_GOVERNMENT^2	-1.024923	0.380576	-2.693082	0.0073
LOG_SP^2	1.682867	1.343113	1.252959	0.2106
LOG_PE_FIRM_AGE^2	0.010094	0.060220	0.167616	0.8669

R-squared	0.030021	Mean dependent var	0.265935
Adjusted R-squared	0.011639	S.D. dependent var	1.204147
S.E. of regression	1.197119	Akaike info criterion	3.217509
Sum squared resid	983.1017		
Log likelihood	-1112.128		
F-statistic	1.633197		
Prob(F-statistic)	0.071428		

The test exemplifies that there is heteroskedasticity present when running it in least squares. It is significant in the 10%. The auxiliary regression shows multiple sources of heteroscedasticity. Significant results are country diversification and taxation burden, size of government and firm size. More sources are also the reason why we see a higher R-squared than with White's test.

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	2.456224	Prob. F(13,686)	0.0029
Obs*R-squared	31.13342	Prob. Chi-Square(13)	0.0032
Scaled explained SS	306.0809	Prob. Chi-Square(13)	0.0000

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Sample: 1 700
Included observations: 700

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.563212	3.196393	1.740465	0.0822
LOG_FIRM_SIZE	-0.076740	0.073776	-1.040172	0.2986
LOG_HOLDING_PERIOD	-0.650824	0.189731	-3.430247	0.0006
LOG_DISTANCE	-0.084059	0.093680	-0.897298	0.3699
LOG_OF_FIRM_AGE	-0.065095	0.075884	-0.857820	0.3913
LOG_TRUST	-1.040634	1.162977	-0.894802	0.3712
LOG_INDUSTRY_DIVERS_	-0.057315	0.332110	-0.172579	0.8630
LOG_COUNTRY_DIVERSIFICATION	-0.602429	0.331481	-1.817385	0.0696
LOG_CULTURE	-0.020212	0.123534	-0.163613	0.8701
LOG_ECONOMIC_FREEDOM	0.035483	1.210257	0.029319	0.9766
LOG_TAXATION_BURDEN01	3.118163	1.004047	3.105594	0.0020
LOG_SIZE_OF_GOVERNMENT	-3.663562	1.295277	-2.828400	0.0048
LOG_SP	0.657210	0.402938	1.631045	0.1033
LOG_PE_FIRM_AGE	0.026220	0.073137	0.358509	0.7201

R-squared	0.044476	Mean dependent var	0.265935
Adjusted R-squared	0.026369	S.D. dependent var	1.204147
S.E. of regression	1.188165	Akaike info criterion	3.202494
Sum squared resid	968.4505		
Log likelihood	-1106.873		
F-statistic	2.456224		
Prob(F-statistic)	0.002888		

The test exemplifies that there is heteroskedasticity present when running it in least squares. It is significant in the 1%, which is substantially higher than white's test. The auxiliary regression shows multiple sources of heteroscedasticity. Significant results are country diversification and taxation burden, size of government, holding period and firm size. More sources are also the reason why we see a higher R-squared than with White's test. Though R-squared remains low overall.Interestingly, holding period seems to cause most of the heteroskedasticity even

Appendix 8 - Sub-regression based on firm size

The table shows the regression results for the whole sample when divided into different firm size. Small size: 0-99 million, Medium : 100 million-1 billion, Big: > 1 billion. The results indicate that the larger the firm, the more it is impacted by the world economy.

	Small	Medium	Large
Trust	-0,261	0,072	0,015
	0,184	0,095	0,313
Distance	0,0406	0,004	-0,226
	0,1463	0,057	0,148
Culture	0,120	0,036	0,131
	0,1998	0,008	0,197
S&P	1,289 **	1,366 ***	1,927 ***
	0,627	0,264	0,574
Firm Size	0,000	0,000	0,000
	0,000	0,000	0,000
Foreign	0,677	-0,220	0,187
	1,153	0,475	1,410
Firm Age	0,057	0,053	-0,184 *
	0,000	0,047	0,114
Fund Age	0,058	-0,001	-0,001
	0,116	0,002	0,006
Country Div.	0,766	0,180	0,330
	0,500	0,209	0,616
Tax	0,019	0,008	-0,011
	0,024	0,009	0,020
Government Size	0,003	0,000	0,010
	0,022	0,009	0,017
Industry Div.	0,726	0,339	0,176
	0,465	0,229	0,444
Industry	0,004	-0,006	-0,023
	0,026	0,011	0,024
Economic Freedom	-0,012	-0,004	0,007
	0,011	0,004	0,010
Holding Period	0,019	-0,001	-0,022
	0,031	0,012	0,025
Constant	-3,799 *	-1,278	-2,341
	2,335	0,954	3,056
Observations	173	386	142
R^2	0,2440	0,1490	0,1590

Table 19: This table presents the estimated coefficients for the regression run on subsamples. We report coefficient estimates, the standard errors (light grey), and the significance level (1%, 5%, and 10% level of significance is denoted by ***, **, *)