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VALUE CREATION THROUGH FOREIGN ACQUISITIONS

An Empirical Analysis on FDIs by Finnish Firms

Master's Thesis in
International Business

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LIST OF ABBREVIATIONS

approx.	approximately
AAR	Average Abnormal Return
AR	Abnormal Return
CAAR	Cumulative Average Abnormal Return
CAR	Cumulative Abnormal Return
CBA	Cross-Border Acquisition
CBMA	Cross-Border Mergers & Acquisition
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
HeSE	Helsinki Stock Exchange
JV	Joint Venture
IJV	International Joint Venture
M&A	Mergers & Acquisition
MNC	Multinational Company
OECD	Organization for Economic Co-operation and Development
R&D	Research and Development
UNCTAD	United Nations Conference on Trade and Development

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ABSTRACT:

Large multinational firms from European countries such as Finland have been engaging in FDIs to expand their business and generate higher value creation. However, scholars are still divided over the presumption, that FDIs and especially the announcement of FDIs leads to higher value creation for acquiring firms.

In this thesis, this ambiguity is investigated for Finnish acquiring firms by examining the stock market reactions on the announcement of FDIs. Additionally, the impact of various investment and target country related factors and their interaction effects on the potential value creation is analyzed. The empirical test is conducted in an event study, based on a sample data of 150 foreign acquisitions made by Finnish firms in the period of 2007-2018.

The results indicate that, regardless of overlapping events occurring within an event window of (10,+10) days, the announcement of an FDI does, in fact, on average have a significant positive impact for shareholders of Finnish acquiring firms. Moreover, very small-sized acquisitions, acquisitions financed by a mixed payment method, fully acquired foreign targets that are financed by cash and located in (politically) low-risk countries lead to positive significant value creation.

However, acquisitions directed to high R&D-intensity fields, relatively large and large sized acquisitions, foreign units that are partially acquired, financed by stock and located in developing countries indicate insignificant value creation. The cultural distance and the country risk variable, when grouping solely as low and high, seem to have no significant impact on value creation either.

KEY WORDS: Foreign direct investment, cross-border acquisitions, value creation effects, shareholder wealth, interaction effects, event study

1. Introduction

1.1 Study background

After World War II, foreign direct investments (FDIs) and especially value creation through foreign acquisitions have increased overwhelmingly in the global economy (Godley 1999). Foreign and cross-border acquisitions respectively constitute an outflow of capital through purchases of complete or at least parts of foreign units (OECD 2010). Such purchases are typically executed by multinational companies (MNCs), which are enterprises that own, or to a certain degree control value-added activity in multiple countries (Dunning and Laundan 2008).

In the late sixties, roughly 70% and in the late eighties close to 80% of worldwide FDIs were made in developed countries. Furthermore, about one-third of FDI outflows by the end of the sixties and nearly 40% of all FDI inflows in the late eighties were at that time made in Western European countries, which today consists of mainly countries in the European Union (Dunning 1993). Moreover, until the early 1990s, foreign acquisitions made by other developed countries were the USA and Japan. Hence, research on foreign acquisitions was predominantly conducted for Western European countries, Japan and Anglo-Saxon countries such as the US and the UK respectively (Froot, Scharfstein and Stein 1993).

Until then there has not been made extensive research on FDIs by Finnish companies or more specifically value creation through Finnish-outward FDIs. In the early 1990s, due to the growing number of FDI flows in the Finnish market, an increasing number of studies on value creation by Finnish companies have emerged (Larimo 1992; Kallunki 1996; Booth, Kallunki and Martikainen 1997). This was furthermore explained by the high levels of outward-FDI flows from Finland by the end of the 1990s. Foreign acquisitions by Finnish firms until the late 1980s were predominantly executed in European countries (Larimo 1994). From 1986-2006, according to a study on value creation through FDIs by Finnish firms

developed by Larimo and Pynnönen (2008), nearly 75% of foreign acquisitions by Finnish firms were made in developed economies and only roughly 25% in emerging markets.

Nevertheless, since the early 2000s, a growing number of studies on foreign acquisitions in developing countries had emerged. A considerable amount of research in that subject matter has especially been made in the Far East and South Asia due to the increasing economic significance of countries such as China and India (Chen and Young 2010; Gubbi, Aulakh, Ray, Sarkar, and Chittoor 2010). Thus, it becomes interesting to analyze how this dynamic has changed in more recent times for global and especially Finnish FDI flows.

Since 2006, global FDI and particularly cross-border mergers & acquisitions (CBMAs), have been growing rapidly, despite financial crisis along the way (OSF 2017). The same applied to Finland and the Nordic economies, which in respect of deal values and deal counts exhibited a peak of corporate M&As in 2012 as illustrated in **Figure 1** when looking at the outward FDI flows in billion EUR in the time period of 2004-2018.

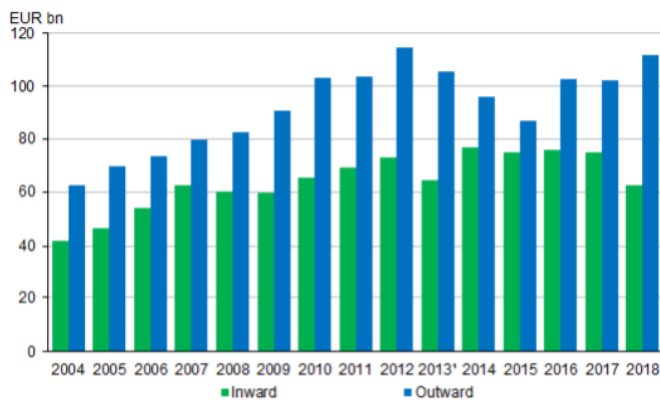


Figure 1. Finnish FDI in the time period of 2004-2018.¹

However, this trend has not lasted and does not hold for the past recent years. Global flows of FDI fell by 23 % in 2017 to \$ 1.43 trillion from \$1.86 trillion in 2016, which is a significant

¹ Source: OSF (2018)

decline in FDI flows (UNCTAD 2018). The latest global investment reports reveal that outward investments by European MNCs fell by 21% in 2017 from the previous year whereas MNCs from emerging economies such as Hong Kong demonstrated increasing FDI outflows amounting to 39% or India even by 123% (UNCTAD 2018).

A similar declining trend was observed for Finnish FDIs, were in 2017 the net amount of FDI from Finland amounted to EUR -0.3 billion, which was significantly lower than the EUR 23.2 billion of net flows in 2016 (OSF 2017). Despite the appeal of the growing emerging economies for lucrative FDIs, Finland's investments as a whole are still mainly directed to developed markets. Hence, it becomes inevitable to ascertain how Finnish firms have performed on average the last years and more specifically after 2006 with the significant increase in FDIs from that year ongoing.

Finland's largest firms rank among the top 100 global companies in the world, despite having a relatively small economy (Larimo and Pynnönen 2008; OSF 2017). The country's population totaled only 5.5 million inhabitants in 2017 and its GDP amounted to EUR 223.8 billion, nevertheless, Finland is one of the world leaders in technology and paper & pulp industries OSF 2017). Furthermore, it must be stressed that many well-known Finnish companies dominate their respective industries, whereby it is to be noted that many dominating Finnish MNCs have used FDIs as their crucial expansion strategies (Benito, Larimo, Narula and Pedersen 2002; Larimo 2003).

1.2 Research question and Objectives

This thesis investigates stock price reactions to the announcements of the foreign acquisitions made by Finnish publicly listed corporations starting 2007. Thus, the purpose of this study is to ascertain whether foreign acquisitions increase shareholders' wealth and to determine the impact of specific value drivers on shareholders' wealth. Studies prior to 2007 analyzing value creation through foreign acquisitions in developed economies such as the US (Harris and Ravenscraft 1990) and European countries such as the UK (Conn, Cosh, Guest, and

Hughes 2005) disclose a great deal of ambiguity. The same holds true for research being conducted after 2006. Studies post-2006, which are predominantly originating from emerging markets, such as Gubbi et al. (2010) for Indian firms or Shuying and Seongcheol (2017) for Chinese firms, are ambiguous as well in terms of potential value creation.

The most recent study dealing with value creation effects of foreign acquisitions executed by Finnish firms is referable to Larimo and Pynnönen (2016), where shareholder wealth gains have clearly been observed. However, in order to better explain those wealth gains, features related to the investments and target countries of the acquirers have to be investigated. In recent studies by international scholars as well as in the research paper by Larimo and Pynnönen (2016), these FDI variables were included and analyzed in order to reaffirm the value creation effects. Moreover, based on the interaction effects of predetermined variables, the validity of potential value creation effects can be reinforced.

This thesis contributes to the existing literature by identifying how value creation effects through foreign acquisitions of Finnish firms have altered in more recent times and more specifically, after the observation period used in the research paper by Larimo and Pynnönen (2016). Furthermore, the method of payment as an investment-related feature is analyzed in conjunction with more recent Finnish foreign acquisitions and hence contributes to the existing literature. Lastly, the interaction effects between value creation, method of payment and the level of development have not been investigated for Finnish acquiring firms to the best of the author's knowledge and thus contribute as well to the existing literature in the study field of this thesis. The research question thus is as follows:

“Has there been value creation for shareholders of acquiring Finnish firms for the time period of 01/24/2007 – 7/23/2018 and which value factors have a significant impact?”

Objectives for this thesis are the following:

- To discuss and compare recent studies dealing with the value creation effects for acquirers from various countries in theory.
- To analyze previous research on value creation applying investment and target country variables as well as interaction effects in order to formulate hypotheses.
- To empirically test the significance of value creation, selected value drivers and interaction effects.

1.3 Delimitations

Value creation effects are measurable in multiple ways. With regard to the purpose of this thesis, among all the stakeholders of a Finnish acquiring firm, the value creation for its shareholders will solely be of importance. Furthermore, the value creation will be measured based on the stock price movements that are affected by the announcements of foreign acquisitions only and not on the basis of other events such as earning calls or the like.

There are various value drivers that are frequently used by scholars to determine their impact on a firm's value creation. The value drivers that possibly have an impact on the value creation for Finnish acquirers in this thesis were specifically limited to those defined in chapter 3 since it is of interest in this study how these effects have altered over time compared to earlier Finnish studies in that subject matter.

Studies that deal with the subject matter of this thesis often either analyze from an acquiring firm or target firm's viewpoint or both. The dataset in this thesis is limited to (Finnish) acquiring firms only since the value creation for their Finnish shareholders is of significance. Thus, any effects on the target firms are omitted. Moreover, all acquiring firms are operating in the manufacturing industry. Firms from other industries such as the financial sector are omitted.

1.4 Structure of the thesis

In the first chapter of the thesis, the reader gets a general idea of the topic. It is introduced with a brief historical course of FDIs, followed by the research question and objectives with an elucidation of the purpose and contribution of the thesis. Lastly, the delimitations are discussed in order to reveal the reader what will be focused on.

The second chapter will discuss the literature review. It first discusses value creation effects and value drivers of earlier studies and then concludes with formulated hypotheses that will serve as a basis for the empirical analysis in chapter 4.

The third chapter firstly deals with the data selection. It informs the reader with the conditions that are requisite for the conduction of the empirical analysis and provides information about the sources of the data and summarizes the descriptive statistics. Secondly, the variable operationalization will be presented and lastly, the methodology used in this thesis, which is the event study methodology, and its prerequisites will be explained.

In the fourth chapter, the results of the empirical analysis are presented and will be evaluated, compared as well as discussed with earlier studies.

In the fifth and final chapter, the thesis and major findings are briefly summarized. Concludingly, the initial research question will be answered, managerial implications and suggestions for future research will be provided as well.

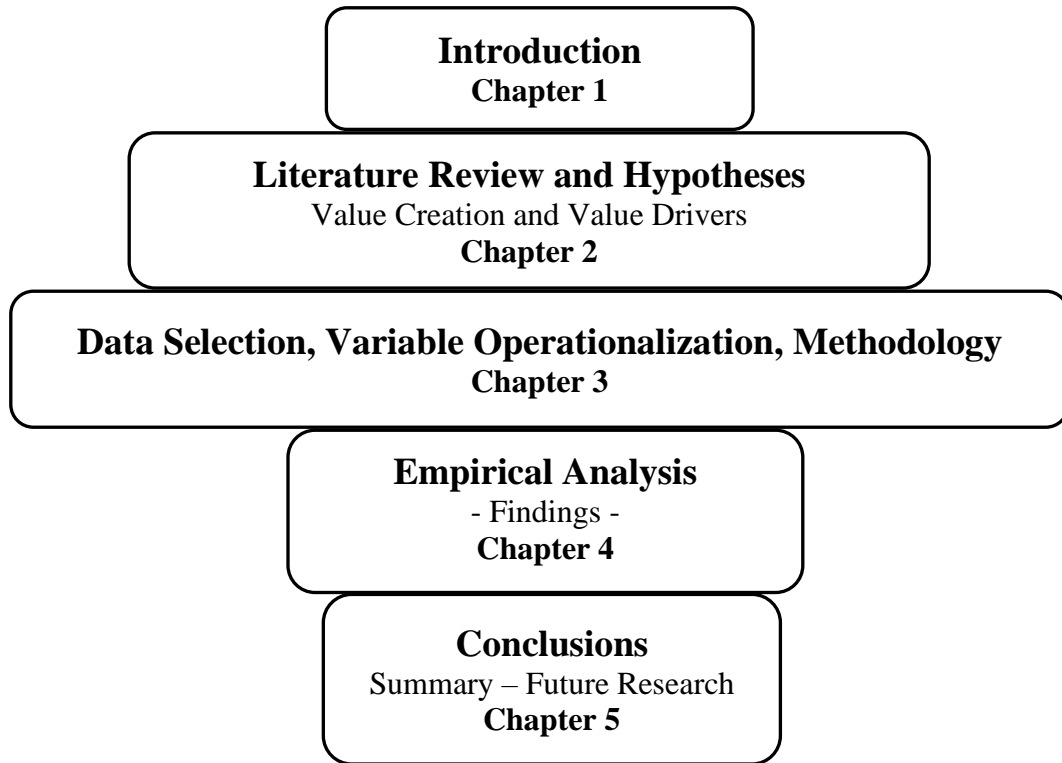


Figure 2. The structure of the thesis.

2. Literature Review and Hypotheses

Value Creation through foreign acquisitions has been investigated for decades by numerous scholars. It is a substantial and very popular field of study in finance that still provides a lot of room for further research and clarity. For this study, the short-term value creation effects Finnish MNCs experience upon the announcement of a foreign acquisition were chosen. In this chapter, various studies by international scholars analyzing the short-term value creation effects of international MNCs are compared and discussed in section 2.1. Previous academic literature that is dealing with short-term value creation effects mostly comprises additional value drivers, which are often investment and target country related. The interrelationship between those and possible value creation effects of earlier studies is discussed in the sections 2.2. and 2.3, with concluding hypotheses formulation that serve as premises for the empirical analysis in chapter 4. As the last point in section 2.4, possible interaction effects of several value drivers are discussed with concluding hypotheses formulation.

2.1 Value Creation Effects

Most of the research with regard to value creation analyzed acquiring firms from developed economies such as the US, UK and Europe (Moeller and Schlingemann 2005; Conn et al 2005; Faccio and Masulis 2005). Empirical evidence from these studies, however, were ambiguous. The same applied to studies on acquiring firms from emerging economies (Chari, Parker and Teslar 2004; Ficici and Aybar 2009). More recent empirical evidence found from 2010 as of this writing discloses miscellaneous results in terms of value creation as well. It is worth mentioning that the number of studies deriving from emerging markets has significantly increased. This is clearly depicted in **Table 1**, which summarizes 16 studies investigating value creation effects for various countries and their origin of investors respectively. It furthermore summarizes other sample features such as the respective target countries of FDIs, the number of investing firms and their FDIs completed and the timing of

the respective FDIs. Lastly, it lists the results of the studies focusing on value creation measured as abnormal returns (ARs)².

About one third (6 of 16) of the studies reveal non-significant negative abnormal returns. The majority, however, roughly two thirds (10 of 16) of the above studies, indicate significant positive abnormal returns for the investors of the respective acquiring firms. There are no clear correlations between the studies in Table 1 with regard to the sample features. The only obvious commonality is that the studies, where the origins of investors are solely developed countries, such as the USA, Japan and, Finland, disclose positive value creation. In regard to the respective investing firms' country of origin, only six are fully or at least partially from developing countries. The majority of investors originate from emerging economies, which is in contrast to the study of Larimo and Pynnönen (2016) where only two of 26 studies include investors from emerging markets.

Locke et al. (2011) tested ARs for 30 Indian acquiring firms with target countries in the USA and Europe. Their study found significant positive mean ARs (0.0081%) at the 1% level on the announcement days for acquisitions in the USA and Europe as well. The study by Bhagat et al. (2011), conducted in the same year for investors from BRICS nations, indicate positive ARs (1.09%) at the 1% level on the event day. They investigated 698 FDIs made in OECD & non-OECD countries. Their results show that, when subsampling the BRICS countries individually, the investors from India, China and South Africa experience positive ARs and those from Brazil and Russia negative ARs.

Ings and Inoue (2012) analyzed the value creation for Japanese investors in 198 FDIs directed to G7 & non-G7 countries. They found positive significant ARs (1% at the 0.05 level) for the 81 FDIs made in G7 and the 117 FDIs made in non-G7 countries. Rani et al. (2014) found positive AR of 2.25% (0.05 level) for Indian investors that have completed 255 cross-border acquisitions. In more recent times, Rani et al. (2017) have found significant positive AR

² Defined and explained in chapter 3.3 Methodology.

Table 1. Summary of the sample features and results in selected studies focusing on value creation in FDI for 2010 - 2020.

Study	SAMPLE FEATURES						Abnormal Positive Value Creation
	Origin of Investors	Target countries of FDI	Number of FDI	Number of Investing Firms	Timing of FDI		
Talay, Montreal, Dalgic, Dalgic and Dallas (2010)	USA	OECD	279	497	1985-04	YES	
Locke, Lawrence and Duppati (2011)	India	USA & Europe	NI	30	2000-07	YES	
Bhagat, Malhotra and Zhu (2011)	BRICS	OECD & Non-OECD	698	NI	1991-08	YES	
Ings and Inoue (2012)	Japan	G7 & Non G7	198 ^a	NI	2000-10	YES	
Sheng, Bortoluzzo, Garcia, and Boebe (2012)	Brazil	The Americas	67	25	1994-08	YES	
Remigijus and Karolis (2013)	EU-27	New & Old EU States	183 ^b	NI	2004-11	NO	
Dakessian and Feldmann (2013)	Multilatimas	NI	607	182	1989-11	NO	
Rani, Yadav and Jain (2014)	India	Domestic & Cross-Border	268/255	NI	2003-08	YES ^c	
Narayan and Thenmozki (2014)	Developing & Emerging	Developing & Emerging	151 ^d	NI	1999-07	NO	
Li, Li and Wang (2015)	China	Non-OECD	367	NI	2000-11	YES	
Black, Doukas, Xing and Guo (2015)	China	OECD & non-OECD	43	19	2000-09	NO	
Larimo and Pynnönen (2016)	Finland	OECD & non-OECD	297	48	1986-06	YES	
Hu, Zhang and Tan (2016)	China	OECD & non-OECD	111	NI	2002-11	YES	
Shuying and Seongsheol (2017)	China	USA & Korea	102 ^e	NI	2008-17	NO	
Jain, Kashiramka and Jain (2017)	India	NI	52	NI	2013-15	YES	
Ficci (2018)	Eastern Europe ^f	NI	621	NI	2006-16	NO	
Dranev, Frolova, and Ochirova (2019)	North America, Europe, China & India	Developed & Emerging	64	NI	2010-18	YES	
Jain, Kashiramka, and Jain (2020)	India	NI	110	NI	2012-15	YES	

NI= no information BRICS = Brazil, Russia, India, China, South Africa G7 = Canada, France, Germany, Italy, Japan, UK, USA ^a = 81 in G7 117 in Non-G7 ^b = 49 in New EU 134 in Old EU States

Multilatimas = Argentina, Brazil, Chile, Columbia, Mexico, Peru, Venezuela ^c = only for Cross-Border acquisitions ^d = 111 from Developing 40 from Emerging countries

^e = 83 in USA 19 in Korea ^f = Czech Republic, Hungary, Poland, Slovakia

(0.61% at the 0.01 level) on the announcement day for Indian investors as well based on 52 FDIs. Li et al. (2015) found positive AR (0.027 at the 1% level) for Chinese investors in 367 FDIs directed to non-OECD countries and Hu et al. (2016), who's research comprised 111 FDIs, found positive significant AR (0.0086 with a p-value of 0.129) as well.

On the other hand, the studies by Remigijus and Karolis (2013), Dakessian and Feldmann (2013), Narayan and Thenmozki (2014), Black et al. (2015), Shuying and Sheongcheol (2017) as well as Ficici (2018) indicated no significant value creation for their investors. However, the most recent studies on value creation found positive abnormal returns for their sample firms. Dranev, Frolova, and Ochirova (2019) analyzed the stock reactions on the announcement of 61 CBMAs by acquiring firms from North America, Europe, China and India. Their results indicate positive significant ARs (0.84% at the 0.01 level) on the announcement day. The same holds true for the most recent study for Indian investors by Jain, Kashiramka, and Jain (2020). Their study generated significant ARs of 0.49% at the 5% level on the announcement day for 110 CBAs, made in the time period of 2010-2015 and directed to developed and emerging target countries.

Regarding the value creation effects of earlier Finnish studies, positive value creation could be identified based on the sample of Larimo and Pynnönen (2016). The abnormal return identified amounts to 0.57% on the announcement day, with a p-value of 0.023 significant at the 5% level. The primary purpose of an (international) firm is to maximize its shareholder value (Koller, Goedhart and Wessels 2005). In this respect and according to the above findings referring to the positive value creation for international as well as Finnish firms, the following assumption is made:

Hypothesis 1: The announcement of foreign acquisitions results in positive value creation for acquiring firms.

2.2 Interrelationship of Value Creation and selected Investment variables

2.2.1 R&D-Intensity

A firm can overcome the liability of foreignness, when penetrating a new foreign market (Morck and Yeung 1992). The liability of foreignness states that a firm, expanding to a foreign market, encounters costs that a local enterprise typically does not have to deal with (Hennart 1982). This issue can be circumvented if an MNC possesses intangible assets, which were accumulated in its homeland (Morck and Yeung 1992). Prior to a foreign acquisition, a firm has to consider this issue, when analyzing the field of industry, it is planning to invest in. Thus, the research and development intensity of a field becomes of interest. According to King, Cording and Christmann (2008), firms with high R&D spending increase their odds of successful innovation and hence gain attractiveness. Furthermore, it is highlighted that the higher the target's R&D-intensity, the higher are the number of potential resource combinations between the target company and the acquiring firm (Phillips and Zhdanov 2012).

With respect to earlier studies, Ma and Xiao (2017) found a positive value creation effect for MNCs investing in a high R&D-intensity field of industries, supporting the result by arguing that investors consider acquired companies with high R&D-intensity more attractive. However, achieving innovation through high R&D-intensity industries is not guaranteed and therefore comes with uncertainty. Larimo and Pynnönen (2016) found that investments made in the highest level of R&D industries exhibited only weak statistical significance and thus no considerable contribution to a firm's value creation. Their results were attributed to the higher premiums being paid for the target firms by the acquiring firms. Therefore, in this study it is expected that investors will react more positively on foreign acquisitions made in rather low- and medium R&D-intensity industries.

Hypothesis 2: The value creation is higher in foreign acquisitions made in low and medium R&D-intensity fields than in high R&D-intensity fields.

2.2.2 Relative Size

A very common factor in cross-border M&A studies, that has a possible effect on a firm's value creation is the relative size of a foreign investment (Markides and Ittner 1994; Cakici, Hessel, and Tandon 1996; Gubbi et al. 2010). According to Sudarsanam, Holl and Salami (1996), the smaller the relative size of a deal and therefore the smaller the respective target, the easier the integration process of the foreign unit. Moreover, smaller foreign investments are often believed to involve less risk and easier to manage than bigger foreign acquisitions (Larimo and Pynnönen 2008). Bieshaar, Knight and van Wassenauer (2001) find insignificance for big deals and stress that the market perceives them as value-destroying, since the benefits would be outweighed by the higher costs a larger deal entail.

On the other hand, in more recent studies such as Black et al. (2015), it is argued that the smaller a target is relative to its acquirer, the lower the impact that will be felt in the acquirer's operations which ultimately leads to less value creation. Although larger targets can be somewhat more difficult to monitor and manage, several studies have found positive value creation when the target was bigger.

Narayan and Thenmozi (2014), Ings and Inoue (2012) and Bhagat et al. (2011) all found a positive relationship between a bigger relative investment size and value creation. Dikova and Sahib (2013) augment the positive relation by stating that a higher relative size brings economic benefits and synergies. Furthermore, they argue that larger deals are more likely to alter the acquiring firm's future size and have a higher probability to attract publicity as well. With respect to the latter findings and arguments, the following will be assumed:

Hypothesis 3: Large foreign acquisitions lead to higher value creation than small foreign acquisitions.

2.2.3 Level of Ownership

Another widely used factor that affects the magnitude of value creation in FDI is the level of ownership. An MNC can enter a foreign market through typically four types of modes, which all exhibit different levels of ownership. These are namely full and partial acquisitions as well as (international) joint ventures and wholly-owned subsidiaries (López-Duarte and García-Canal 2007). In this study, only acquisitions of existing foreign enterprises are investigated. The acquisition of an already existing and established foreign firm is the quickest way to enter a foreign market (Rani et al. 2014). Partial acquisitions have the advantage for both acquirer and acquiree to be involved in any major decision-making process evenly (Lynch 1989). Moreover, it provides both entities a period of time to gain mutual familiarity with each other and the venture's operations (Bleeke and Ernst 1991).

Furthermore, a firm can acquire competitive assets from foreign local companies such as well-established brands or advanced technologies (Chen and Zeng 2004). However, partial (equity stake) acquisition and (international) joint ventures respectively imply profit division and contingent discrepancies due to the shared decision makings (Larimo and Pynnönen 2008). Often times if the acquiree is from a developing country, the acquirer risks the diffusion of firm internal assets since a common goal of firms in developing countries is reverse internalization, which signifies the seeking of managerial talent, proprietary technology and financial resources (Banai, Chanin and Teng 1999). According to Butz (1994), if it is not a full acquisition/wholly-owned subsidiary, shareholders can impede the acquiring firms' actions. Moreover, full acquisitions are equivalent to majority equity ownership and imply reduced complications in decision-making processes, no profit sharing and quicker organizational responses to environmental changes (Rani et al. 2014).

Despite these advantages of full acquisitions, they are usually costlier and require greater management resources (Larimo and Pynnönen 2008). The most recent studies that analyze the influence of the level of ownership on a firm's value creation through foreign acquisitions

reveal mixed results. Larimo and Pynnönen (2016) found positive value creation in full acquisitions and positive, but non-significant value creation in partial acquisitions. However, the difference in the level of ownership is not statistically significant. Otherwise, López-Duarte and García-Canal (2007) found positive value creation in full acquisitions for Spanish acquirers and Rani et al. (2014) indicate a higher shareholder wealth effect of complete cross-border acquisitions for Indian investors. With regard to the findings of Larimo and Pynnönen (2016) supporting positive value creation in full acquisitions and based on the initial arguments advocating full ownership, it is expected that:

Hypothesis 4: Full acquisitions create higher shareholder wealth than partial acquisitions.

2.2.4 Method of Payment

The transactions of foreign acquisitions are typically financed with either stock shares (equities), cash or a combination of both (Hitt, King, Krishman, Makri, Schijven, Shimizu, and Zhu 2012). The market conditions are essentially influencing the method of payment from an acquiring firm's standpoint (Sudarsanam and Mahate 2003). Because of information asymmetry in cross-border M&As, acquiring firms' managers with inside information tend to compensate acquired foreign firms with overvalued stock instead of cash. This can be explained with negative long-term returns that are expected by the managers of acquiring firms and hence a mutual risk-sharing of a poor deal with the target firm (Shleifer and Vishny 2003). Thus, pure stock share (equity) payments can induce negative price reactions, because the market is often aware of information asymmetry³ (Berck and DeMarzo 2014).

On the other hand, the use of cash more often causes positive price reactions in the market, since it indicates potential undervaluation of the acquiring firm and acquiring firms' managers expect higher performance after the foreign acquisition (Travlos 1987; Hitt et al 2012). Furthermore, in the context of foreign acquisitions involving firms from developing

³ Further elaborated in Chapter 3.3 Methodology

countries, target firms' shareholders usually have lower investor protection and hence are reluctant to accept foreign equity (Rossi and Volpin 2004). Therefore, cash payments are generally preferred and acquiring companies are forced to compensate with cash payments (Chari et al. 2004).

Abhyankar, Ho, and Zhao (2005) support the conclusion that foreign acquisitions financed with cash create higher value creation. Jensen (1986) and Black et al. (2015) found that stock payments affect foreign acquisitions positively. While King, Dalton, Daily, and Covin (2004) found no impact of the payment method on the value creation of acquisitions at all, Eckbo et al. (2000) came to the conclusion that a combination of payment methods, including both cash and stock, outperform pure cash and stock deals respectively. In this study, it will be assumed that:

Hypothesis 5: A combination of both cash and stock has a higher positive impact on the announcement of a foreign acquisition than sole cash or stock payments.

2.3 Interrelationship of Value Creation and selected Target country variables

2.3.1 Level of Development

Until the late 1990s, most FDI flows were among developed countries. However, since the early 2000s, a significantly growing number of FDI flows directed to developing countries, and thus increasing research in that regard emerged. Therefore, a very common target country-specific feature included in various cross-border acquisition studies is the level of development. Generally, it can be distinguished between developed and developing target countries. Locke et al. (2011) found positive value creation for international acquisitions made in the USA and Europe. Hu et al. (2016) found significant value creation for acquisitions made in several OECD countries and hence supports the positive influence of FDIs made in developed markets. These findings can be attributed to the fact that investors

may perceive investments made in developed countries more profitable due to the more advanced infrastructure, higher standard of living and less political risk (Larimo and Pynnönen 2008).

On the other hand, acquiring firms are subjected to much more competitive and often saturated markets when investing in developed countries (Larimo and Pynnönen 2016). Narayan and Thenmozi (2014) and Black et al. (2015) both found a negative impact of FDIs made in developing countries. Possible explanations for that can be weaker purchasing power of the consumers, different distribution chains, a more volatile political stability and underdeveloped infrastructure (Larimo and Pynnönen 2008). However, in contrast to that, Bhagat et al. (2011) and Sheng et al. (2012) found positive value creation effects for acquisitions made into developing countries. Higher economic growth rates and huge cost advantages are potential reasons that investors may perceive FDIs in developing markets as more lucrative. With respect to the latter assumptions and the more recent emphasis on emerging economies due to globalization, in this study the following premises is made:

Hypothesis 6: Foreign acquisitions made in developing countries will lead to higher value creation than in developed countries.

2.3.2 Cultural Distance

Every foreign acquisition is subject to cultural disparities between an acquiring firm and the respective target firm since they both involve different organizational cultures that are embedded in different national cultures (Sheng et al. 2012; Dakessian et al. 2013). For MNCs implementing foreign acquisitions, it is inevitable to get a comprehension of both national and organizational culture in order to impact its performance and thus the potential value creation that is expected by the company's shareholders (Dakessian et al. 2013).

Hofstede (1980) defines organizational culture as the collective programming of the mind which distinguishes members of one organization from another. National cultures are often

the essence of organizational culture (Pool 2000). An acquiring firm hence not only has to adapt to a new national culture but to a new organizational culture as well after a foreign acquisition, what is often referred to as double-layered acculturation (Barkema, Bell and Pennings 1996).

As the cultural distance between two firms increases, integration problems, higher costs of information acquisition, knowledge transfer and the reduction of employee commitment may occur which eventually leads to weaker organizational performance and thus to less value creation (Talay et al. 2010). Therefore, it can be expected that there is a negative relationship between cultural distance and an MNC's value creation. Recent studies (Talay et al. 2010; Dakessian et al. 2013; Li et al. 2015) analyzing the impact of cultural distance on value creation in foreign acquisitions support a negative relationship between an acquiring firm's value creation and its cultural distance to the target firm.

However, some studies found a positive impact of cultural distance on value creation especially between acquiring firms from developed countries and target firms from emerging countries (Chari et al. 2004; Bhagat et al. 2011). The most recent study including cultural distance for Finnish acquiring firms found a negative relationship solely for investments made in target countries with very high cultural distance from Finland (Larimo and Pynnönen 2016). Based on these findings, the following is expected in this study:

Hypothesis 7: The value creation is higher in culturally low-distant target countries than culturally high-distant target countries.

2.3.3 Country Risk

Whenever an MNC is executing an FDI, the investment is subjected to the respective target country's risk (López-Duarte and García-Canal 2007). Click (2005) found that a country's risk is referable to its political risk. A target country's political risk can be measured by the level of its political inconsistency and corporate quality. As a target country indicates a high

level of both, an acquiring investor's value deteriorates (Busse and Hefeker 2007). Especially developing countries are often dealing with corruption, the inability to prevent property rights and slow license and permission processes (Topal 2016). Even with a structured economic model, alterations in the policies are often unpredictable in developing countries. Due to this issue, acquiring firms' investors ought to consider target countries with low political risk (López-Duarte and García-Canal 2007).

According to Gubbi et al. (2010), a target country's political risk has an impact on an acquiring firm's acquisition performance and hence the shareholder's value creation. They found less value creation in countries with high country risk. No empirical support for the assumption of a negative relationship between country (political) risk and value creation was found by Merchant (2002) and Gerpott and Jakobin (2007). Nevertheless, based on the earlier arguments against high country risk and the findings of López-Duarte and García-Canal (2007) and Larimo and Pynnönen (2016) supporting positive value creation by investing in low country-risk target countries, the following is expected:

Hypothesis 8: Foreign acquisitions executed in target countries with low (political) country risk lead to higher value creation than in high (political) country risk target countries.

2.4 Interaction effects

A substantial factor related to any investment of an acquiring firm is the method of payment. As mentioned earlier, a foreign acquisition can either be financed by exclusively paying cash or purely by stock (equity). Based on previous research, both are found to be either advantageous or disadvantageous depending on various conditions that are referable to the respective target country the investment is directed to as well as the investment itself (Rossi and Volpin 2004; Boateng and Bi 2013; Zhang, Wang and Jones 2019).

Investment-related factors that can be taken into account are the relative size of the investment and the level of ownership. Considering the value creation effects of a foreign acquisition and the method of payment taking into account the afore-mentioned investment factors facilitate an analysis of possible interaction effects of these variables. To the author's knowledge, there is no previous research investigating those interaction effects on the value creation of acquisitions made by Finnish acquirers. Additionally, it will be tested if there is a significant effect of the level of ownership in conjunction with the target country factors' cultural distance as well as country risk on the value creation of Finnish acquirers.

The relative size of an investment has a significant impact on the choice of the payment method for a foreign acquisition (Sankar and Leepsa 2018). The larger the relative size of the investment, the more likely the acquiring firm is willing to compensate with stock (equity) payments (Rossi and Volpin 2004). A possible explanation according to Zhang et al. (2019) is that if the target size relative to the acquirer size is higher, the acquirer may not possess sufficient cash to finance the acquisition. Moreover, firms that are acquiring relatively larger targets are more prone to use stocks as a payment method in order to share the risk of overpayment with the target firm (Faccio and Masulis 2005). Thus, on average the larger the relative size of an investment, the higher the value creation should be when stock (equity) instead of cash is used as a payment method.

Hypothesis 9a: Stock (equity) payments lead to higher value creation than cash payments if the relative size of the investment is high.

On the other hand, according to Zhang et al. (2019) the relative size of an investment is negatively correlated with cash as the payment method. Their findings indicate that on average the smaller the relative size of the investment, the higher the likelihood for cash financing of an international acquisition. Thus, based on these findings the following is expected for Finnish foreign acquisitions:

Hypothesis 9b: Cash payments lead to higher value creation than stock payments if the relative size of the investment is low.

The relationship between the method of payment of a foreign acquisition and the level of ownership has been extensively analyzed in earlier studies (Stulz 1988; Amihud, Lev and Travlos 1990; Zhang et al. 2019). Michaely, Grullon and Swary (1997) found that cash as a choice of payment is associated with a higher level of ownership of the acquirer. From the acquiring firms' viewpoint, higher ownership prompts them to compensate with cash in order to not dilute their ownership after the acquisition has been completed (Zhang et al. 2019). In contrast to that premise, the lesser the acquiring firm holds ownership, and thus the more the target firm holds, the higher the probability that stock (equity) is used as the payment method (Stulz 1988). Therefore, the following two assumptions for Finnish foreign acquisitions are made:

Hypothesis 10a: Cash payments lead to higher value creation than stock payments for full acquisitions.

Hypothesis 10b: Stock payments lead to higher value creation than cash payments for partial acquisitions.

As addressed earlier in this section 2.3.2, Cultural Distance, the higher the cultural distance, the more likely merged firms could encounter for instance high integration problems or higher costs of knowledge transfer, which eventually lead to weaker organizational performance (Talay et al. 2010). Analyzing the level of ownership factors in conjunction with a target country's cultural distance from the Finnish acquiring firms, it therefore could be expected that full acquisitions result into higher value creation when the distance to the target country is high, and correspondingly partial acquisitions would be more profitable in culturally close target countries. Thus, the following premises are made:

Hypothesis 11a: The value creation is higher for full acquisitions than partial acquisitions when the cultural distance of the target country is high.

Hypothesis 11b: The value creation is higher for partial acquisitions than full acquisitions when the cultural distance of the target country is low.

With regard to a target country's (political) risk, it is important to consider the right level of entry mode. If a target country indicated a high level of political inconsistency and corporate quality, the acquiring firm's value of the unit in the respective country deteriorates as mentioned earlier in the section Country Risk. Hence, it could be assumed that partial acquisitions lead to higher value creation than full acquisitions due to a possible minimization of the acquiring firm's risk through, for instance, gaining local networks through a cooperation with a local partner (Larimo and Pynnönen 2016). Thus, it will be expected that:

Hypothesis 12a: Partial acquisitions lead to a higher value creation than full acquisitions when the target country has a high (political) country risk.

Hypothesis 12b: Full acquisitions lead to a higher value creation than partial acquisitions when the target country has a low (political) country risk.

3 Sample Selection, Variable Operationalization, Methodology

Before empirically testing the hypothesis, the research methodology of this thesis will be explained in this chapter. In section 3.1, information and prerequisites for the sample selection and data collection are being given. Secondly, in section 3.2 the variable operationalization will be revealed to provide an understanding of the variables that are empirically tested in chapter 4. Lastly, the methodology of the thesis and its prerequisites will be elucidated in section 3.3.

This thesis uses a deductive research approach, therefore the basis for the empirical analysis is formed through existing theory, which is then concluded with hypotheses that serve as premises for the actual empirical test. Moreover, this study is conducted by using a quantitative research method with quantitative data, meaning that the collected data is numeric and statistical (Saunders, Thornhill and Lewis 2009). The purpose of quantitative research is typically to test if an independent variable X has a significant effect on a dependent variable Y. On the other hand, for better comprehension, a qualitative research method acquires non-numerical data usually through face-to-face interviews, case studies, questionnaires, etc. (Saunders et al. 2009).

In regard to the research's credibility, the reliability and validity of the research have to be emphasized according to Saunders et al. (2009). Reliability discusses if a study's sample selection and data collection techniques will generate the same results at different times or if similar findings will be attained by different scholars. Validity according to Saunders et al. (2009) questions whether a research's findings are really what they appear to be, in other words, if the relationship between two variables is a casual relationship.

With reference to the research method and the variables being utilized in this study, it can be concluded that they will yield reliable and valid results. This can be substantiated by earlier results that were gained in similar studies (López-Duarte and García-Canal 2007, Larimo and Pynnönen 2008, and Li et al. 2015) in which equal analysis procedures such as the event

study methodology and similar variable operationalizations revealed positive influences of independent variables on dependent variables such as those applied in this study.

3.1 Sample Selection

The initial sample of this study comprises all foreign acquisitions made by Finnish publicly listed manufacturing firms from 01/24/2007 – 7/23/2018. This time period was chosen in order to have a sufficient range of at least 10 years with foreign acquisitions made by Finnish firms and moreover to fulfill the contribution of this study, which includes the investigation of the FDI's made by Finnish MNCs post the time period used in the research of Larimo and Pynnönen (2016). The potential of the sample constitutes 250 foreign acquisitions. For the purpose of this study and to ensure credibility when conducting the analysis, the foreign acquisitions have to fulfill predetermined conditions to be included in the sample. These are as follows:

- The date of the foreign acquisition announcement is identifiable either on the Helsinki Stock Exchange (OMX) or from the press releases of the firm.
- The acquiring (parent) firms are located in Finland.
- Daily closing stock prices for every Finnish acquiring firm are obtainable from the HeSE (OMX), in order to compute the daily stock returns as logarithmic closing price differences for the estimation period and 11-day event period around the announcement.
- Every stock has to have the required time-series of returns both in the estimation and the event periods.
- The primary announcement days are those when the preliminary information regarding the firms' FDI was given to the HeSE, thus secondary announcements such as the completion of previously announced foreign acquisitions do not constitute an announcement day.
- Relative to the size of the investment, the turnover of the acquired target firm had to be at least one million euros.

- The major confounding announcements such as earnings, dividends or share repurchases +/- 1 day around the announcement days were identified.

All the conditions above were fulfilled in 150 foreign acquisitions made by 33 Finnish firms in 42 target countries. **Figure 3** shows the total number of the remaining annual Finnish foreign acquisitions without overlapping events, meaning only those events announced on day $t=0$, which are not overlapping with any other event in the event period +/- 10.⁴ In total the non-overlapping events comprise 129 acquisitions.

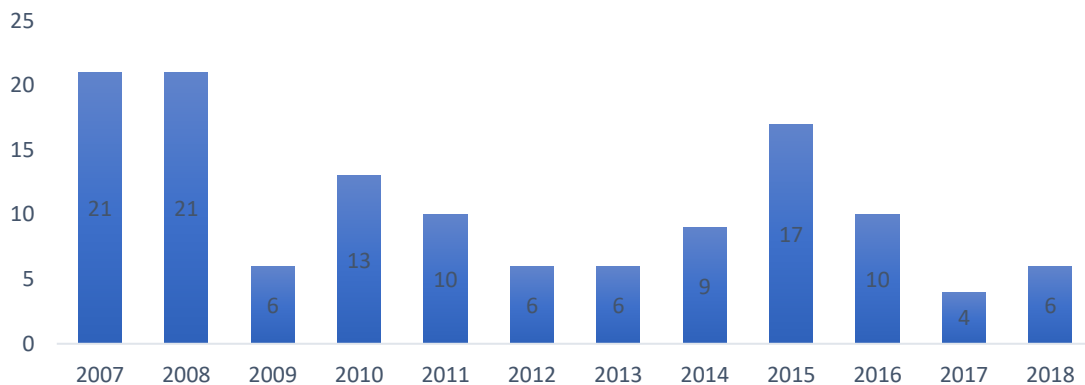


Figure 3. Finnish foreign acquisitions (by year) without overlapping events

As a comparison, **Figure 4** exhibits the total number of acquisitions including those overlapping with other events in the event period. Most FDIs were made until 2008. The decline of FDIs in 2009 can be referred to the global financial crisis taking place in 2008. From 2010 – 2013 the number of FDIs slightly increased after the market slowly recovered from the crisis, but FDIs are still much lesser in this time period, which is characterized by the European debt crisis. In 2015 the number of FDIs increased again with a declining trend in the most recent years.

⁴ Further explained in chapter 3.3 Methodology

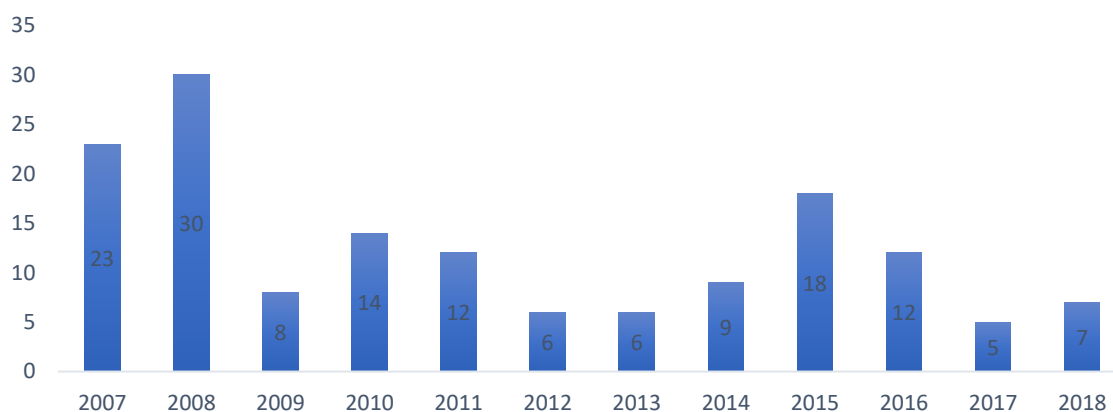


Figure 4. Finnish foreign acquisitions (by year) with overlapping events

Based on the available data, only about one third of the acquisitions was the first investment in a specific target country. Most of the foreign acquired firms, roughly two thirds (66%), were either in medium-high or high R&D industries and the majority (ca. 88%) of investments were either very small or small (the relative size less than 5%), 83% were full acquisitions and 70% were sole cash or stock payments. With respect to the target countries, 67% of the acquisitions were made in developed countries, 79% in culturally relatively close and less than 5% in politically high-risk countries.

3.2 Variable Operationalization

The operationalizations of the variables incorporated in this thesis are presented in **Table 2**. The data for the variables were received from the FDI register of Finnish firms and were grouped, characterized and revised with the supervision of the author's advisor. The table includes the control variables introduced in the literature review, the respective expected value creation and references to previous studies that have used the respective operationalizations in their studies.

Table 2. Variable operationalization

Relation of Variables	Control Variable	Operationalization	Expected Value creation	References
<i>Variables related to the nature of the investment</i>	Research and development intensity	The four-digit SIC code of the industry of the foreign acquisition. Intensity 0.1-1 % = low, 1.1-2.99 % = medium low, 3-3.99% = medium high, 4% or higher = high.	Greater in high R&D intensity fields	King et al. (2008), Ficici and Aybar (2009), Phillips and Zhdanov (2012)
	The Relative size of the investment	Based on the total sales of the target firm in the year preceding the investment in relation to the total sales of the acquiring firm in the year preceding the investment. The investments were classified into two main groups: small including very small (relative size less than 1%) and small (size 1-4.99%) and large including relatively large (size 5-9.99%) and large (size 10.0% or more).	Greater in bigger investments	Bhagat et al. (2011), Ings and Inoue (2012), Narayan and Thenmozi (2014), Li et al. (2015)
	Ownership arrangement	A dummy variable which takes a value of one, if the investment was a full acquisition (ownership 95–100 %), and zero if the investment was a partial acquisition (ownership 10–94 %)	Greater in full acquisitions	López-Duarte and García-Canal (2007), Rani et al. (2014),
	Method of Payment	A dummy variable that takes a value of one, if the investment included a combination of cash and stock (equity) and 0 if otherwise.	Greater in the mix of cash and stock payments	Faccio and Masulis (2005), Bhagat et al. (2011), Ings and Inoue (2012), Hu et al. (2016)
<i>Variables related to the nature of the host country</i>	Level of development	A dummy variable for grouping of countries into developed (North American, Western European, Asian and Oceanic OECD countries) and developing countries (all others).	Greater in developing countries	Locke et al. (2011), Sheng et al. (2012), Narayan and Thenmozi (2014), Black et al. (2015)
	Cultural Distance	A composite index based on differences between Finland and the target country of the investment along the four cultural dimensions (power distance, uncertainty avoidance, individuality, and masculinity - femininity) by Hofstede (1980). Target countries were classified into three groups: low distance (less than 1.5), medium distance (1.5-2.99), and high distance (3.00 or more).	Greater in culturally closer countries	Ficici and Aybar (2009), Talay et al. (2010), Dakessian et al. (2013), Li et al. (2015)
	Country risk	The Euromoney's country-risk scores. Groupings: 0 to 49 (high), 50-74 (medium), and from 75 to 100 (low country-risk).	Greater in low-risk countries	Gerpott and Jakobin (2007), Gubbi et al. (2010), Topal (2016)

3.3 Methodology

In order to reliably determine an acquiring firm's value creation effects, in the form of abnormal returns, based on the announcement of a foreign acquisition, the market must fully reflect available stock prices and relevant information (Fama and French 1992). This argument can be referred to as the efficient market hypothesis (EMH). Additionally, the market must not have the capability to predict information and stock price changes in the market will only occur if new information appears (Fama 1969). The methodology of this study is conducted on the basis of the semi-strong EMH version, which assumes that stock prices reflect all available current as well as past published information. Moreover, stock

prices instantly re-adjust to new public information such as the announcement of a foreign acquisition (Burton 2003; Bruner 2004; Tuch and O'Sullivan 2007).

In order to examine short-term effects that events such as acquisitions have on a company's stock price, event studies are a common methodology used in the financial literature (Bowman 1983). The event study methodology of this thesis will be based on the model of MacKinlay (1997). An event study is intended to measure the effect of an unanticipated event on stock prices. Typically, as a measurement, abnormal returns are calculated for each firm or acquisition on the event day and in order to detect any leakage of information, a day prior to as well as a day after the event day. (McWilliams and Siegel 1997). The abnormal returns emerging after the announcement of an event are equivalent to the expected excess returns with respect to what a stock would have obtained otherwise if the event had not occurred (Motis 2007).

The event study is being conducted in four incremental steps:

1. Specification of estimation period and event window for the calculation of the daily logarithmic returns of the individual stocks and market returns.
2. Computation of the firms' daily abnormal returns and average abnormal returns (AARs) of the respective event days.
3. Computation of the firms' cumulative abnormal returns (CARs) and cumulative average abnormal returns (CAARs) of the respective event windows.
4. Testing the significance of the AARs and CAARs
5. Testing the effects of investment and target country-specific factors as well as interaction effects on CAARs

The calculation and organization of the event study in steps 1-3 will be implemented in Excel with the inspiration of the research paper by Santos and Victorio (2013). Steps 4-5 will be implemented with the statistical programming tool R-Statistics, which is a common tool for yielding valid empirical results (Lai, Lortie, Muenchen, Yang, and Ma 2019). In order to

calculate the ARs in the event window, an estimation period of 250 trading days (approx. number of annual trading days) and an event period of +/- 10 trading days surrounding each announcement day is used to investigate the stock price reactions of a foreign acquisition. The allocation of the estimation period and the event window is depicted in the timeline of the event study in **Figure 5**.

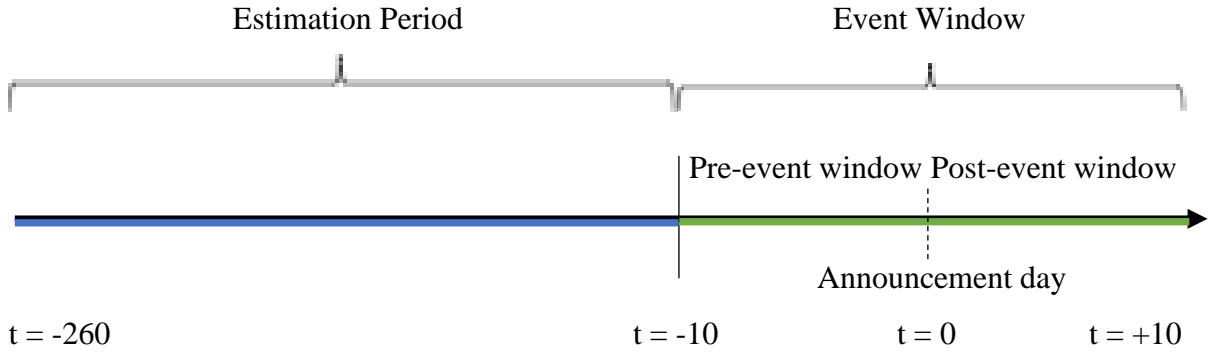


Figure 5. The timeline of the event study.

The estimation period is the period prior to the event day surrounded by the event window. It is requisite for the computation of the market model, which determines the “normal” behavior of the stock market in which the firms are operating (Brown and Warner 1980). In order to do so, the market model parameters $\hat{\alpha}_i$ and $\hat{\beta}_i$ must be estimated using the market model which can be depicted as the following time-series regression:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}, \quad (1)$$

R_{it} = return on the stock of firm i on day t

R_{mt} = market return on day t

α_i = market model alpha

β_i = market model beta

ε_{it} = error term with the conditions $E(\varepsilon_{it}) = 0$, $\text{Var}(\varepsilon_{it}) = \sigma_{\varepsilon_i}^2$ and $\text{Cov}(\varepsilon_{is}, \varepsilon_{it}) = 0$ for all $s \neq t$.

The logarithmic firm i 's stock return and market return mt are obtained by the following ratios:

$$\ln\left(\frac{p_t}{p_{t-1}}\right) \quad (2)$$

$$\ln\left(\frac{i_t}{i_{t-1}}\right) \quad (3)$$

where,

p_t = firm i 's closing stock price on day t

p_{t-1} = firm i 's closing stock price on day $t-1$

i_t = market index closing price on day t

i_{t-1} = market index closing price on day $t-1$.

The daily ARs are now obtained by subtracting each firm i 's return on day t from the “normal” return which consists of the market model parameters and the market return:

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}) \quad (4)$$

Using a long event window can reduce the power of the test statistic and implicate confounding events⁵ which lead to biased implications (Brown and Warner 1980). Therefore, in the past studies usually agree on a short-term event window of +/- 1 around the announcement day (McWilliams and Siegel 1997). Due to pre-mature share price reactions, induced by the anticipation of upcoming events in the stock market in advance as well as possible slow post-event information processing, it is advantageous to account for that by

⁵ The sample selection in Figure 2 is eliminated from confounding events in the event window +/- 10 around the event day. The sample in Figure 3 with overlapping events does include events such as other acquisitions in the event window +/- 10 around the event day.

cumulating the abnormal returns over the short-term event window (Fama, Fisher, Jensen, and Roll 1969). These are calculated for each firm i 's stock as the CARs:

$$CAR_{it} = \sum_{s=1}^t AR_{is} \quad (5)$$

Since this study investigates the value creation of multiple Finnish firms, the overall average of unexpected excess returns across firms for each day t in the event window is of interest. According to Kothari and Warner (2007), this is obtained by averaging the ARs of all N firms on day t in the event window of ± 10 days separately:

$$AAR_t = \frac{1}{N} \sum_{i=1}^N AR_{it} \quad (6)$$

Lastly, to obtain the abnormal performance of all Finnish acquiring firms in the sample, the total number of CARs must be compounded to form the CAARs (Kothari and Warner 2007). Depending on the predetermined event period, which in this study are $[-1/+1]$, $[-1/-5]$ and $[+1/+5]$ respectively, they signify the abnormal performance over the respective period:

$$CAAR(t_1 + 1, t_2) = \sum_{t=t_1+1}^{t_2} AAR_t \quad (7)$$

Furthermore, after calculating the AARs and CAARs it is substantial to determine their statistical significance. Therefore, the following assumptions are made:

$$H_0: (C)AAR = 0 \quad (8)$$

$$H_1: (C)AAR \neq 0 \quad (9)$$

The above premises state that, if the null hypothesis is equal to zero, then the announcement of a foreign acquisition has no impact on a firm's stock returns. On the other hand, if the null

hypothesis is rejected, then the announcement of a foreign acquisition has a significant impact on a firm's stock returns.

In order to test the statistical significance in this study, a parametric t-student test will be implemented. Based on Brown and Warner (1985) the test statistic for the null hypotheses has a t-student distribution assuming the (C)AARs exhibit a normal distribution, are independently distributed as well as indicating no occurrence of event clustering, meaning that events in the sample are announced on the same calendar date. The number of events in this study is large and all events occurring on the same calendar date have been excluded. Thus, the parametric one-sample t-test for the AARs and the CAARs respectively is sufficient and will be calculated as:

$$t_{AAR_t} = \sqrt{N} \frac{AAR_t}{\sqrt{\sigma^2(AAR_t)}} \sim t(N) \quad (10)$$

$$t_{CAAR_t} = \sqrt{N} \frac{CAAR_t}{\sqrt{\sigma^2(CAAR_t)}} \sim t(N) \quad (11)$$

where the two denominator terms signify the respective standard deviations and N the number of events. According to MacKinlay et al. (1997), they can be defined as the cross-sectional variances. For the AARs, the cross-sectional variance is:

$$\sigma^2(AAR_t) = \frac{1}{N-1} \sum_{i=1}^N (AR_{i,t} - AAR_t)^2 \quad (12).$$

Respectively for the CAARs, the cross-sectional variance is:

$$\sigma^2(CAAR_t) = \frac{1}{N-1} \sum_{i=1}^N (CAR_{i,t} - CAAR_t)^2 \quad (13)$$

Concludingly, with regard to the hypotheses of the value drivers discussed in the literature review in section 2.2 and 2.3 and explained in variable operationalization in section 3.2, the equality of the mean (C)AARs in the respective event windows are tested with the two-sample t-test, which has been applied for previous event studies by several scholars (Brown and Warner 1985; López-Duarte and García-Canal 2007; Larimo and Pynnönen 2016).

Due to the formulation of the hypotheses in section 2.2-2.4, the respective null and alternative hypotheses for the two-sample t-tests are as followed:

$$H_0: (C)AAR_i \leq (C)AAR_0 \quad (14)$$

$$H_1: (C)AAR_i > (C)AAR_0 \quad (15)$$

These above premises are one-tailed and are applied to the **Hypothesis 2-11b**. Furthermore, the following premises:

$$H_0: (C)AAR_1 - (C)AAR_2 = 0 \quad (16)$$

$$H_1: (C)AAR_1 - (C)AAR_2 \neq 0 \quad (17),$$

are two-tailed and are used to determine the statistical differences of the variables hypothesized in **Hypothesis 2-11b**. When testing the significance of the t-tests, significance levels, that indicate the magnitude of the risk that the differences are caused by coincidence, must be defined. The most common significance levels which will be used in this study as well are 1% (0.01), 5% (0.05) and 10% (0.10) (Heikkilä 2014). The significance levels moreover serve as a threshold for the p-value. The p-value informs about the probability of H_0 being true and will be used in this study to eventually assess the results of the t-tests. If it lies below the significance level, it allows the null hypothesis to be rejected (DeVeaux, Velleman and Block 2009).

4 Empirical Test and Results

In this chapter, the results of the empirical analysis will be presented. In section 4.1, the abnormal returns of the Finnish firms will be displayed and interpreted. In section 4.2, information about the abnormal returns for subperiods will be shortly discussed. Section 4.3 assesses the impact of the various specific features on the abnormal returns for Finnish firms and concludingly, section 4.4 evaluates the interaction effects of several features.

4.1 Value Creation effects for Finnish firms

As addressed in chapter 3, the sample data was divided into overlapping and non-overlapping events to calculate the daily abnormal returns and to analyze the impact of the announcement with and without other events taking place in the event window. **Figure 6** shows the cumulative abnormal returns *without* overlapping events in the event window for the days -10 to +10 around the acquisition announcement day (=0).

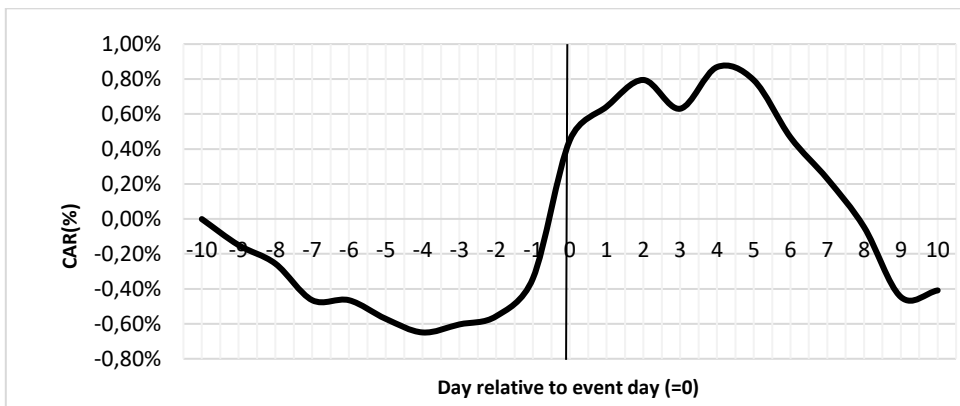


Figure 6. Cumulative abnormal returns around the announcement day (=0) without overlapping events.

When analyzing the graph, it can be seen that there is an obvious increase of ARs in the event period (-1,+1) around the foreign acquisition announcement day. It can also be observed that the stock returns start rising at least four days prior to the announcement day, which could indicate a leakage of information by managers or investors. The same observation holds true

for the post-event period, where the ARs still increase until at least +4 days after the event has been announced. However, the highest change in returns takes place on the event day (=0), which can be observed in the jump of ARs from day -1. **Figure 7** shows the CARs *with* overlapping events in the event window for the days (-10,+10) around the event day.

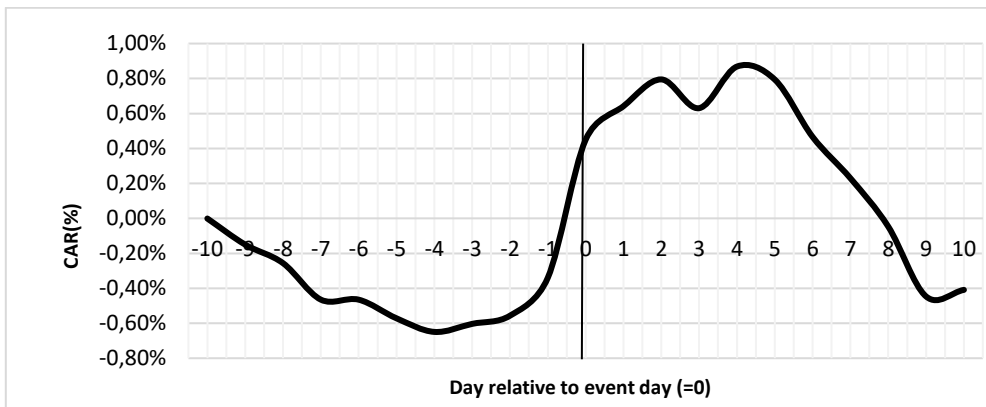


Figure 7. Cumulative abnormal returns around the announcement day (=0) with overlapping events.

In the above figure, similar observations can be found. The largest jump of ARs is seen between day -1 and the event day as well. Although, the change is not as pronounced as in Figure 6 without overlapping events, a clear effect of the announcement of the foreign acquisition prevails. Moreover, it is interesting to observe that an increase in ARs in this event window, with overlapping events, begins two days prior to the event day and could possibly be attributable to the overlapping events, that in the prior-event period may have induced investors to negatively value the stocks. However, regardless of taking into account overlapping events, based on the two CAR graphs, the announcements of FDIs on the event day result in unexpected returns.

In order to determine if Hypothesis 1 can be verified, daily unexpected returns have been tested on their significance. Furthermore, in order to identify differences in the magnitude of daily abnormal returns when considering possible overlapping events, those (C)AARs calculated with and without events in the event window both will be evaluated. **Table 3**

outlines the daily AARs around the announcement day in an event window of (-5,+5) without overlapping events.

Table 3. Daily (Cumulative) Average Abnormal Returns around the FDI announcement day (without overlapping events).⁶

Panel A: Average Abnormal Returns (AAR)			
Day	AAR(%)	T-Test	P-value
-5	-0.11%	-0.750	0.454
-4	-0.08%	-0.361	0.718
-3	0.05%	0.290	0.772
-2	0.05%	0.271	0.786
-1	0.22%	1.176	0.241
0	0.79%	2.594	0.010
1	0.19%	1.023	0.308
2	0.15%	0.798	0.426
3	-0.16%	-1.289	0.199
4	0.24%	1.368	0.173
5	-0.07%	-0.432	0.665

Panel B: Cumulative Average Abnormal Return (CAAR)			
Window	CAAR(%)	T-Test	P-value
(-5,-1)	0.13%	0.305	0.760
(-1,+1)	1.20%	3.791	0.000
(+1,+5)	0.34%	0.784	0.434

Panel C: Number of Positive and Negative Returns					
Day	Positive	Negative	>+5%	<-5%	Total
AR:t=+1	76	53	3	2	129
AR:t=0	77	52	9	2	129
AR:t=-1	68	61	2	1	129
CAR(-1,+1)	81	48	14	2	129

Panel A indicates no statistically significant AARs for the Finnish sample firms at the 1%, 5% or at least 10% level on any days in the pre-event nor post-event day window. When cumulating the AARs, the same can be observed in **Panel B**, where no statistically significant

⁶ The computation of the T-Test and P-Value are detailed in **Appendix 1.1**

return for the event windows (-5,-1) and (+1,+5) can be substantiated. On the other hand, the AAR on the announcement day equals **0.79%** and is statistically significant at the 5% level. It can be revalidated by looking at the p-value which amounts to **0.010** and thus keenly supports positive significant abnormal stock return on the announcement day. Panel B reinforces this statement with a positive significant CAAR of **1.20%** at the 5% level for the event period (-1,+1) over the announcement day.

When examining **Panel C**, it becomes evident that there are more positive abnormal average stock returns to be found on the event day as well as a day prior to and post the event day. On the event day, 77 (60%) out of 129 stock returns are positive and 81 (63%) of CARs over the (-1,+1) event window are positive. Based on these results, it can be concluded that investors perceive the announcement of foreign acquisitions for Finnish acquiring firms as positive. Therefore, Hypothesis 1 is supported. Including the overlapping events in the calculation of the (C)AARs does not have any significant impact on the outcome of the stock returns on the announcement day.

Table 4 demonstrates the daily abnormal stock returns around the FDI announcement day with overlapping events. As in the case without overlapping events, significant positive abnormal stock returns are apparent on the event day as well as for the day prior and post the event day, though not statistically significant for the latter two. The AAR on the event day is **0.61%** at the 5% level with a p-value of **0.029**, which is less significant than the p-value of the AARs without overlapping events. As a comparison, the study on value creation for Finnish acquiring firms for the time period 1986-2006 (Larimo and Pynnönen 2016) yielded a significant AAR of 0.57 and a CAAR(-1,+1) of 1.06. The AAR, as well as the CAAR, are lower than the unexpected returns without overlapping events. Nevertheless, the CAAR on the event day is highly significant at the 5% level with a p-value of **0.000** and amounts to **1.04%**.

A possible explanation for the lesser (C)AARs with overlapping events could be as stated earlier, that investors undervalue those stock returns since confounding events may bias the

actual value of the stock returns that would have otherwise prevailed. However, regardless of overlapping events, 84 (56%) out of 150 stock returns are positive and 93 (62%) out of 150 CARs over the (-1,+1) event window are positive and thus contribute to the verification of Hypothesis 1.

Table 4. Daily (Cumulative) Average Abnormal Returns around the FDI announcement day (with overlapping events).⁷

Panel A: Average Abnormal Returns (AAR)					
Day	AAR(%)	T-Test	P-value		
-5	-0.01%	-0.074	0.941		
-4	-0.12%	-0.614	0.539		
-3	-0.02%	-0.131	0.895		
-2	-0.01%	-0.055	0.955		
-1	0.20%	1.175	0.242		
0	0.61%	2.202	0.029		
1	0.23%	1.316	0.190		
2	0.15%	0.846	0.398		
3	-0.08%	-0.677	0.499		
4	0.22%	1.317	0.189		
5	-0.24%	-1.441	0.151		
Panel B: Cumulative Average Abnormal Returns (CAAR)					
Window	CAAR(%)	T-Test	P-value		
(-5,-1)	0.04%	0.109	0.913		
(-1,+1)	1.04%	3,455	0.000		
(+1,+5)	0.27%	0.679	0.497		
Panel C: Number of Positive and Negative Returns					
Day	Positive	Negative	>+5%	<-5%	Total
AR:t=+1	89	61	3	2	150
AR:t=0	84	66	9	4	150
AR:t=-1	79	71	2	2	150
CAR(-1,+1)	93	57	15	4	150

⁷ The computation of the T-Test and P-Value are detailed in **Appendix 1.2**

4.2 Value Creation in various time periods

The sample of abnormal returns for Finnish firms has been divided into four subperiods. In order to ascertain if there are any worth mentioning differences (in abnormal returns)⁸ depending on different time periods that have been subjected to economic straits and additionally, differences in the impact of the FDI announcements in the time periods. The total sample is split into the subperiods: 2007-2008 (n=53), 2009-2010 (n=22), 2011-2014 (n=33), and 2015-2018 (n=42). The two first subperiods both indicate insignificant negative AARs for the Finnish acquiring firms on the event day. The AAR for the subperiod 2007-2008 is with a value of -0.0002 insignificant (p-value of 0.968). The negative impact of FDI announcements on ARs in this period could, as earlier addressed in this study, possibly be attributable to the financial crisis that occurred over that period.

For the period 2009-2010, an insignificant unexpected average stock return of -0.003 with a p-value of 0.4785 is observable. After separating the dataset in solely 2009 and 2010 acquisitions respectively, it could be observed that the 2009 AAR is negative and the 2010 positive. Although the number of foreign acquisitions of Finnish firms in 2009 was sparse, it could be concluded that the instable financial markets after 2008 proceeded to have a negative effect on investors' perception of those Finnish FDIs. The results of the two latter periods are both significant, at the 5% level for the 2011-2014 period and for the 2015-2018 period at the borderline 10% level. Nevertheless, they both indicate positive AARs (0.0192 and 0.0086) on the event day.

4.3 Impacts of various Investment and Target country features on Value Creation

The effects of the various investment and target country factors on value creation that have been discussed and hypothesized in chapter 2.2 and 2.3 will be evaluated in this section. **Table 5** outlines the results of the impact of investment and target country factors.

⁸ The computation of the T-Test and P-Value are detailed in **Appendix 2**

Table 5. The Impact of Investment and Target country-related factors on Value Creation.⁹

VARIABLE	Mean (%)	t-value	N	Positive (%)
<u>Investment related:</u>				
R&D intensity				
Low	1.65	2.24**	24	62.5
Medium-Low	1.17	1.66	16	68.8
Medium-High	0.94	2.00**	55	58.2
High	0.00	0.00	13	53.8
Diff (Low or Med-Low vs. Med-High or High) ^a	-0.70	-0.93		
Relative size				
Very Small	0.88	2.13**	81	61.7
Small	0.46	0.60	24	56.5
Relatively Large	3.88	1.58	5	80.0
Large	2.27	1.42	9	66.7
Diff (Rel.Large/Large vs. Very Small/Small) ^a	2.07	1.89*		
Level of Ownership				
Partial	0.86	0.81	22	45.5
Full	1.30	4.03***	121	64.5
Diff (Partial/ Full) ^a	0.43	0.39		
Method of Payment				
Cash	2.07	3.57***	9	88.9
Stock (equity)	0.39	0.75	24	62.5
Mix	6.77	5.28***	9	100
Diff (Mix vs. Cash or Stock) ^a	5.92	4.38***		
<u>Target country related:</u>				
Level of development				
Developed	0.75	1.78*	75	57.3
Developing	0.97	1.40	31	61.3
Diff (Developed vs. Developing) ^a	-0.22	-0.28		
Cultural distance				
Low	0.96	1.61	22	31.8
Medium	0.81	1.47	53	41.5
High	-0.40	-0.57	14	35.7
Diff (Low or Medium vs. High) ^a	1.26	1.22		
Country risk				
Low	0.72	1.48	62	58.1
Medium	1.81	2.68***	30	76.7
High	-0.95	-0.74	5	40.0
Diff (Low vs. Med/High) ^a	-0.69	-0.86		

Statistical significance levels: * 10 %, ** 5 %, *** 1 %

^a The t-value for testing the equality of CAAR(-1, +1)s is the standard two-sample t-test with pooled or unpooled variances depending on whether the F-test of equality of the variances was significant at the 5 percent level or not.

The empirical tests have been implemented by using t-tests. The CAARs were classified based on the specific investment and target country factors, and then tested on significance.

⁹ The computation of the two-sample T-Test, P-Value and F-Tests for the Differences are detailed in **Appendix 3**

Additionally, the differences in CAR means have been tested in order to verify the Hypotheses formulated in chapter 2.2 and 2.3. It is noteworthy that the author's available dataset has not contained information about every individual acquisition's relevant background factors. Some subgroups indicate <10 observations, thus limited number of events must be taken into account.

4.3.1 Investment-related variables

4.3.1.1 R&D-Intensity

It was initially expected that value creation for Finnish acquiring firms will more likely occur when the investments are directed to rather low- and medium R&D intensity firms. Based on the results in Table 5, this assumption can be partially supported. The low- and medium-low R&D variables both indicate positive values with a significant CAAR (at the 0.05 level) for the low R&D variable. The CAAR of the high R&D variable exhibits an insignificant value of zero. Although, the CAAR for the medium-high class indicates a positive value of 2.00, significant at the 5% level, the difference (low or med-low vs. med-high or high) indicates a negative insignificant CAAR value. This result could be attributable to the possible explanation of Larimo and Pynnönen (2016), that high-R&D investments are less attractive due to the high premiums being paid by acquiring firms. In addition, the medium-low R&D CAAR has a higher mean than the medium-high variable, though not significant. Thus, Hypothesis 2 can only be partially confirmed.

4.3.1.2 Relative Size

The relative size of an investment was measured as the ratio of the total sales of the Finnish acquirer and the total sales of the acquiree in the year preceding the acquisition. The results indicate positive mean values for large or relatively large investments. However, they both are insignificant. This may be due to the small number of available data with information

regarding relatively large or large size investments, which mitigates the significance and the likelihood of normal distribution for the population. Furthermore, the results exhibit a significant difference of 1.89 at the borderline 10% level, which concludes that the relative size of an investment, in fact, does have an impact on the ARs. Nevertheless, there is no empirical evidence for larger investments to yield higher value creation than smaller investments. Very small deals have rather yielded a significant mean return. Even though its mean only amounts to 0.88, it is statistically significant at the 5% level.

This result is in line with earlier studies by Remigijus and Karolis (2013), Li et al. (2015) and Shuying and Seongcheol (2017). Moreover, this result reinforces the statement that the smaller the relative size of an investment, the less risk is involved and the easier the integration process of the new foreign unit (Sudarsanam et al. 1996; Larimo and Pynnönen 2008). Hypothesis 3 hence is not supported.

4.3.1.3 Level of Ownership

The results for the level of ownership clearly favors full acquisitions with a mean CAR of 1.30, highly statistically significant at the 1% level. In that aspect, Hypothesis 4 can be confirmed. On the other hand, partial acquisitions indicate a minor positive mean return of 0.86, though not statistically significant. Moreover, the difference in ARs between full and partial acquisitions is not significant either and thus reduces the empirical support of Hypothesis 4.

These results are in exact correspondence with those by Larimo and Pynnönen (2008) and only partially in line with the results by López-Duarte and García-Canal (2007), who only found positive value creation for full acquisitions made by Spanish firms, and Rani et al. (2014) who's results solely indicated higher shareholder wealth effects of complete cross-border acquisitions for Indian investors. Concludingly, only partial empirical evidence for Hypothesis 4 can be found.

4.3.1.4 Method of Payment

In the theoretical part of this study, the advantages and disadvantages of payment methods were elucidated. Clear benefits of cash as a payment method for foreign investment deals outweigh stock (equity) payments (Charie et al. 2004; Berck and DeMarzo 2014). However, a mix of payment methods was expected to yield higher ARs than sole cash or stock payments. With respect to the results gained in this study, the aforementioned statements can be approved. The CAAR of stock payments is 0.39 and non-significant as expected. Cash payments have a mean return of 2.07, highly statistically significant at the 1% level, which would weaken the empirical evidence for Hypothesis 5. Nevertheless, when analyzing the mean CAR (6.77) for mixed payments, which is highly significant at the 1% level, it becomes evident that they yield higher mean returns than both cash or stock payments. This is reinforced by the highly statistically significant (0.01 level) CAAR of the difference (Mix vs. Cash or Stock) which amounts to 5.92. The results comply with those of Eckbo and Thorburn (2000) and moreover all mixed payment deals indicate positive ARs. In that regard, Hypothesis 5 is supported.

4.3.2 Target country-related variables

4.3.2.1 Level of Development

In regard to the level of development in a specific target country, investments directed to developing target countries were expected to be higher than those directed to developed countries. Based on the results, this assumption cannot be verified. Although the CAAR of investments in developing target countries indicates a positive and even higher value (0.97) than the developed CAAR, it is not statistically significant. The mean CAR for the developed variable is only 0.75 and statistically significant, though only at the borderline 10% level. Additionally, the difference (developed vs. developing) exhibits a negative mean return and is non-significant, which indicates no empirical support for Hypothesis 6. The possible explanations for rejecting Hypothesis 6 could be a weaker purchasing power of the countries'

consumers, underdeveloped infrastructure or volatile political stability (Larimo and Pynnönen 2008). The same result for the level of development was found in the studies by Narayan and Thenmozi (2014) and Black et al. (2015), where investments directed to developing countries were rather value-destroying. In contrast, the studies by Bhagat et al. (2011) and Sheng et al. (2012) indicate value-creating results.

4.3.2.2 Cultural Distance

The culture distance analysis was based on Hofstede's dimensions and the formula developed by Kogut and Singh (1988). Regarding Hypothesis 7, it was investigated if investments made in culturally closer countries yield higher returns than in culturally high distant countries. According to the results, when grouping as listed in Table 5, investments in exclusively high culturally distant target countries exhibit a negative CAAR (-0.40), statistically insignificant. Testing the difference (Low or Medium vs. High) yields a value of 1.26, which indicates that the difference in the cultural distance must have an impact on ARs, however, it is not significant either. When solely testing the low or medium class, a positive mean CAR of 0.86, statistically significant at the 5% level was found. Similar results were found in the research of Talay et al. (2010), Dakessian and Feldmann (2013) and Li et al. (2015). According to the latter grouping, at least some empirical evidence for Hypothesis 8 can be concluded.

4.3.2.3 Country Risk

Regarding the country (political) risk involved in FDIs, no statistical significance was found in a two-sided test, with a mean low-risk CAR of 0.72 and a t-value of 1.48. A one-sided test, however, was significant, although only borderline statistically significant at the 10% level (p -value = 0.07). As expected, the mean CAR of the high-risk investments indicates an insignificant negative mean value (-0.95) and the mean difference (Low vs. Med/High) is non-significant and negative as well. The results are in line with Gubbi et al. (2010) for Indian

firms and partially in line with López-Duarte and García-Canal (2007) for Spanish firms. It is moreover interesting and noteworthy, that the sole medium country risk class indicates a positive CAAR of 1.81, highly significant at the 1% level. After analyzing the CARs of those investments made into medium (political) risk target countries, a majority of the positive CARs are in fact resulting from FDIs directed to emerging countries such as China, India or other Southeast Asian markets. All in all, the initial results only indicate partial empirical support for Hypothesis 8.

4.4 Interaction effects

In this section, the interaction effects of various background factors that have an impact on the value creation of FDI announcements will be discussed and compared. **Table 6a** and **Table 6b** illustrate the results with their respective statistical significance levels. As stressed earlier, it must be noted again that the author did not have sufficient or only sparse information on the variables in order to make clear statements about all Hypotheses formulated.

Table 6a. Interaction effects of Various Background Factors on Value Creation.

VARIABLE	Method of Payment		Difference ¹⁰
	Cash	Stock	
Relative Size			
Small	Mean (%) N	1.50** 7	0.78 13
Large	Mean (%) N	NDA	-2.96 2
Difference (Small – Large)		1.50	-2.18
Level of Ownership			
Full	Mean (%) N	3.47** 8	1.12*** 15
Partial	Mean (%) N	NDA	-1.29 9
Difference (Full – Partial)		3.47	-0.07**

Statistical significance levels: * 10 %, ** 5 %, *** 1 %
NDA = No Data Available

¹⁰ The computation of the CAAR, T-Test, P-Value and F-Tests are detailed in **Appendix 4.1**

With regard to the payment method, it was expected that acquisitions financed with cash lead to higher value creation when the relative size of the investments is small. Consequently, the value creation is higher when stock payments are executed for large-sized FDIs. According to Table 6a, small acquisitions that have been financed by stock payments lead to negative value creation. Hypothesis 9a, therefore, cannot be supported in this study. Due to no available data on large investments financed by cash, no conclusion can be drawn on that and furthermore neither on the significance of the difference in large cash vs. large stock payments.

On the other hand, small-sized acquisitions financed by cash, indicate higher statistically significant ARs (1.50 at 0.05 level) than when financed by stock (equity) payments, which is in accordance with Zhang et al. (2019). Though the difference (0.72) is statistically non-significant, Hypothesis 9b receives partial support. When investigating the value creation effects in conjunction with the payment method and ownership degree, it was assumed that cash payments lead to higher ARs than stock payments for full acquisitions and consequently stock payments to higher ARs than cash payments for partial acquisitions.

Based on the few observations available, Hypothesis 10a can be fully supported, which is in consistence with the study by Michaely et al. (1997). The mean CAR is 3.47 and statistically significant at the 5% level in the one-sided test. Moreover, the difference (Full-cash vs. Full-stock) is significant as well, at least at the borderline 10% level in the one-sided test. Stock payments for partial acquisitions indicate an insignificant negative mean CAR (-1.29). Furthermore, due to no available data for partially acquired cash payments, no statements can be made on that case, nor on the significance of the difference. Thus, Hypothesis 10b must be rejected in this study.

In **Table 6b**, the interaction effects on value creation with the country risk and cultural distance in connection with the level of ownership are tabulated. Full acquisitions made in culturally high distant target countries were assumed to generate higher value creation and

on the other side, partial acquisitions made in culturally close target countries lead to higher value creation. The mean CAR for fully acquired, high cultural distant units indicate a non-significant value of 0.47. The difference (Full-High vs. Partial-High) is negative and insignificant as well. Therefore, there is no empirical support for Hypothesis 11a. This result stands in contradiction to López-Duarte and García-Canal (2007) and Larimo and Pynnönen (2016).

Partial acquisitions in culturally close target countries indicate no statistically significant AR based on the few observations available. Moreover, the difference (Full-Low vs. Partial-Low) is negative and insignificant. Therefore, Hypothesis 11b receives no support either. However, in this study, full acquisitions lead to higher value creation in culturally close target countries, with a mean CAR of 1.62, significant at the 5% level. This result could be referable to the findings in Table 5, where full acquisitions, in general, were positively valued by Finnish acquirers.

Table 6b. Interaction effects of Various Background Factors on Value Creation.

		Level of Ownership		Difference ¹¹
		Full	Partial	
Cultural Distance				
High	Mean (%)	0.47	0.52	-0.05
	N	48	9	
Low	Mean (%)	1.62**	0.12	-1.50
	N	15	2	
Difference (High – Low)		-1.15	0.40	
Country Risk				
High	Mean (%)	0.16	NDA	0.16
	N	3		
Low	Mean (%)	0.97***	-1.67	-0.70
	N	76	12	
Difference (High – Low)		-0.81	-1.67	

Statistical significance levels: * 10 %, ** 5 %, *** 1 %
NDA = No Data Available

¹¹ The computation of the CAAR, T-Test, P-Value and F-Tests are detailed in **Appendix 4.2**

With regard to the country risk, no conclusion can be drawn for Hypothesis 12a, due to no available information for partial acquisitions in high (political) risk target countries. Nevertheless, the results for full acquisitions made in low-risk target countries are in line with the studies of López-Duarte and García-Canal (2007) and Larimo and Pynnönen (2016). The CAAR of 0.97 is statistically significant at the 5% level and thus gives empirical support for Hypothesis 12b, though only partially, since the difference (Low-risk Full vs. Low-risk Partial) is insignificant.

5 Conclusion

The chapter will concludingly summarize the results in section 5.1. In addition, managerial implications are elucidated in section 5.2. and the limitations of this thesis as well as potential future research areas will be suggested in section 5.3

5.1 Summary of the results

The thesis has investigated if Finnish acquiring firms experience value creation caused by FDI announcements and how the value creation is affected by investment and target country factors on the announcement days. Additionally, the interaction effects of the various background factors on value creation on the announcement days have been analyzed. The empirical study was based on 129 (150 with overlapping events) foreign acquisitions executed by 33 Finnish firms in 42 target countries in the period of 2007-2018. The analyses of this thesis indicated highly significant positive ARs on the day of an FDI announcement for the shareholders of the Finnish acquiring firms.

Table 7 tabulates and summarizes the results of this study and earlier studies. The results of earlier studies have predominantly exhibited that FDIs, in fact, account for the higher value creation effects on announcement days and consequently higher shareholder wealth. However, some scholars obtained different results in that regard as well as for the effects of the various background factors on value creation. The results of this thesis regarding ARs are in compliance with the earlier studies by Locke et al. (2011), Sheng et al. (2012) and more recently Jain et al. (2017). In contrast, Dakessian and Feldmann (2013), Narayan and Thenmozki (2014) and most recently Ficici (2018) did not find ARs for their sample data.

Regarding the various background factors, the results indicated that rather lower than higher R&D-intensive investments generate significant value creation, although without a significant difference in the intensity. Very small acquisitions seem to generate higher shareholder wealth than larger investments, which contradicts the initial premise of higher

Table 7. Summary of the results.

Hypothesis (on value creation)	Results (Supported; Not Supported)	Earlier studies	Results (Supported; Not Supported)
H1: FDI announcement positive	Supported	Locke et al. (2011)	Supported
		Sheng et al. (2012)	Supported
		Jain et al. (2017)	Supported
H2: Low/Med R&D > High R&D	Only Low R&D supported (insignificant Diff)	Larimo and Pynnönen (2016)	Not Supported
		Ma and Xiao (2017)	Not Supported
H3: Large Size > Small Size	Only Very Small size supported	Remigijus and Karolis (2013)	Supported
		Li et al. (2015)	Supported
H4: Full FDIs > Partial FDIs	Partially Supported (insignificant Diff)	Larimo and Pynnönen (2008)	Supported
		Rani et al. (2014)	Partially Supported
H5: Mix > Cash/Stock	Supported	Eckbo and Thorburn (2000)	Supported
		Abhyankar et al. (2005)	Not Supported
H6: developing > developed	Not Supported	Bhagat et al. (2001)	Supported
		Narayan and Thenmozi (2014)	Not Supported
H7: Low Cu_Dis > High Cu_Dis	Partially Supported (insignificant Diff)	Talay et al. (2010)	Supported
		Dakessian and Feldmann (2013)	Supported
H8: Low/Med Risk > High Risk	Only Med Risk supported (insignificant Diff)	López-Duarte and García-Canal (2007)	Partially Supported
		Gubbi et al. (2010)	Supported
H9a: Stock/Large Size > Cash/Large Size	Not Supported	Faccio and Masulis (2005)	Supported
H9b: Cash/Small Size > Stock/ Small Size	Supported (insignificant Diff)	Zhang et al. (2019)	Supported
H10a: Cash/Full FDIs > Stock/Full FDIs	Supported	Michaely et al. (1997)	Supported
H10b: Stock/Partial FDIs > Cash/Partial FDIs	Not Supported	Stulz (1988)	Supported
H11a: Full FDIs/Cu_Dis High > Partial FDIs/Cu_Dis High	Not Supported	López-Duarte and García-Canal (2007)	Supported
		Larimo and Pynnönen (2016)	Supported
H11b: Partial FDIs/Cu_Dis Close > Full FDIs/ Cu_Dis Close	Not Supported	Larimo and Pynnönen (2016)	Not Supported
H12a: Partial FDIs/High risk > Full FDIs/High risk	NDA	López-Duarte and García-Canal (2007)	Not Supported
H12b: Full FDIs/Low risk > Partial FDIs/Low risk	Supported	López-Duarte and García-Canal (2007)	Supported

NDA = No Data Available

In agreement with Eckbo and Thorburn (2000), a mixed payment method for FDIs, as expected, leads to higher value creation than sole cash or stock payments, with a significance in the difference. Furthermore, concerning the target country-related variables, it is

insignificant whether the target country is developed or not. However, for the sample in this thesis, acquisitions directed to developed markets are considered more positively, which coincides with the results of Bhagat et al. (2011) and Sheng et al. (2012). A negative relationship between the cultural distance of a target country and value creation was found in this study, as well as in the studies by Talay et al. (2010), Dakessian and Feldmann (2013) and Li et al. (2015), with the difference (Low vs. Med/High) being insignificant. Lastly, the degree of country-risk does not seem to have a significant impact on value creation. Nevertheless, high country-risk investments appear to affect the value creation negatively, as was concluded by López-Duarte and García-Canal (2007) as well.

Regarding the interaction effects, a closer look discloses that smaller acquisitions do in fact lead to higher value creation when financed by cash, which was found by Zhang et al. (2019) as well. Moreover, regardless of acquisitions being compensated by stock, large-sized investments do still indicate negative value creation. Full acquisitions though lead to higher value creation in this study, regardless of the payment method, which contradicted the findings of Zhang et al. (2019).

On the other hand, full acquisitions do not seem to generate significantly higher value creation in culturally high distant target countries, but rather in culturally low-distant countries, although without a significant difference which stands in contradiction to the results by Talay et al. (2010). Concludingly, neither high-risk nor low-risk target country acquisitions generate higher value creation when the unit in the target country is partially acquired. In accordance with the results of Larimo and Pynnönen (2016), only full acquisitions in low-risk target countries lead to higher value creation.

5.2 Managerial implications

Based on the contributing findings regarding the method of payments, managers of Finnish acquiring firms ought to consider a mix of cash and stock to compensate FDI transactions. Additionally, cash payments ought to be preferred as well, especially for small-sized and fully acquired foreign units. Furthermore, concerning the investment and target country factors that already have been investigated for Finnish acquiring firms, FDIs are advisable to be directed to low R&D-intensity rather than higher R&D-intensity industries. Moreover, very small foreign units rather than larger targets should be taken into account. With regard to the level of ownership, full acquisitions are more lucrative in culturally low-distant and low-risk target countries.

Nevertheless, when considering the target country's degree of (political) risk, medium-risk target countries do not have to be a reason for deterrence. The same holds true for the decision of a target country's development level. The acquisition of firms in developed target countries does not excessively generate higher shareholder wealth and FDIs in developing countries do not deteriorate the shareholder wealth either. When considering the aforementioned factors in a decision-making process, emphasis should be put on target countries that may have been classified as developing and medium-risk countries respectively, because they will account for higher shareholder wealth as well, since firms in target countries that are classified in this category accounted for multiple cases of abnormal stock returns.

5.3 Limitations and potential Future research areas

In the literature review in chapter 2, further hypotheses with factors that may have an impact on the value creation could have been formulated and investigated. However, the available data for Finnish firms was limited and additional information on the existing data which could be obtainable was impossible to realize due to restricted time and means by the author.

A higher sample size than the sample data utilized and described in chapter 3, would lead to more valid results in the computation of ARs. The initial available sample comprised a potential of 250 foreign acquisitions. Unfortunately, over one-fifth had to be excluded due to the respective acquiring companies' missing stock prices or acquiring firms not being publicly listed. Additionally, the time period could be extended in order to have a larger sample size, which would potentially facilitate a more accurate and obvious distinction of CARs, with and without being influenced by overlapping events, in the (-10,+10) event window.

In order to gain more reliable results in the computation of the various background factors in section 4.3 and their interaction effects on the value creation in section 4.4, it would have been more advantageous to include a higher number of acquisitions for each class of factors. A minimum number of at least 30 acquisitions for the computation of mean CARs for each factor class may lead to more reliable results since a normal distribution would prevail in this instance. However, especially for the cases in section 4.4, a much higher number ($n \geq 30$) ought to be present for the computation of each mean CAR. Again, the author's access to more information was limited and available data for the required factors was either limited or not available.

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APPENDICES

APPENDIX 1.1 T-Test and P-Value for (C)AARs without overlapping events in R-Statistics

```
t=-5
> t.test(minus5,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: minus5
t = -0.75014, df = 128, p-value = 0.4545
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.003879560 0.001746615
sample estimates:
mean of x
-0.00106647
```

```
t=-3
> t.test(minus3,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: minus3
t = 0.29007, df = 128, p-value = 0.7722
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.002678467 0.003598676
sample estimates:
mean of x
0.0004601
```

```
t=-4
> t.test(minus4,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: minus4
t = -0.36115, df = 128, p-value = 0.7186
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.005040076 0.003484225
sample estimates:
mean of x
-0.00077793
```

```
t=-2
> t.test(minus2,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: minus2
t = 0.271, df = 128, p-value = 0.7868
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.002947489 0.003883000
sample estimates:
mean of x
0.00046776
```

t=-1

```
> t.test(minus1,mu=0,conf.level=0.95)
```

One Sample t-test

data: minus1

t = 1.1763, df = 128, p-value = 0.2417

alternative hypothesis: true mean is not equal to 0

95 percent confidence interval:

-0.001479393 0.005817059

sample estimates:

mean of x

0.00216883

t=1

```
> t.test(one,mu=0,conf.level=0.95)
```

One Sample t-test

data: one

t = 1.0231, df = 128, p-value = 0.3082

alternative hypothesis: true mean is not equal to 0

95 percent confidence interval:

-0.001791144 0.005626417

sample estimates:

mean of x

0.00191764

t=0

```
> t.test(null,mu=0,conf.level=0.95)
```

One Sample t-test

data: null

t = 2.5942, df = 128, p-value = 0.01059

alternative hypothesis: true mean is not equal to 0

95 percent confidence interval:

0.001873656

0.013919355

sample estimates:

mean of x

0.00789651

t=2

```
> t.test(two,mu=0,conf.level=0.95)
```

One Sample t-test

data: two

t = 0.79818, df = 128, p-value =
0.4262

alternative hypothesis: true mean is not equal to 0

95 percent confidence interval:

-0.002266498 0.005331462

sample estimates:

mean of x

0.00153248

t=3

```
> t.test(three,mu=0,conf.level=0.95)
```

One Sample t-test

data: two

t = -1.2897, df = 128, p-value = 0.1995

alternative hypothesis: true mean is not equal to 0

95 percent confidence interval:

-0.0041679941 0.0008786576

sample estimates:

mean of x

-0.00164467

t=5

```
> t.test(five,mu=0,conf.level=0.95)
```

One Sample t-test

data: five

t = -0.43278, df = 128, p-value = 0.6659

alternative hypothesis: true mean is not equal to 0

95 percent confidence interval:

-0.004144352 0.002656778

sample estimates:

mean of x

-0.00074379

t=4

```
> t.test(four,mu=0,conf.level=0.95)
```

One Sample t-test

data: four

t = 1.3686, df = 128, p-value = 0.1735

alternative hypothesis: true mean is not equal to 0

95 percent confidence interval:

-0.00106098

0.00582081

sample estimates:

mean of x

0.00237992

APPENDIX 1.2 T-Test and P-Value for (C)AARs with overlapping events in R-Statistics

```
t=-5
> t.test(minus5,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: minus5
t = -0.074494, df = 149, p-value = 0.9407
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.003138108 0.002910095
sample estimates:
mean of x
-0.00011401
```

```
t=-3
> t.test(minus3,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: minus3
t = -0.13164, df = 149, p-value = 0.8954
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.003092105 0.002705862
sample estimates:
mean of x
-0.00019312
```

```
t=-4
> t.test(minus4,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: minus4
t = -0.61497, df = 149, p-value = 0.5395
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.005091660 0.002674645
sample estimates:
mean of x
-0.00120851
```

```
t=-2
> t.test(minus2,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: minus2
t = -0.055773, df = 149, p-value = 0.9556
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.003395403 0.003208993
sample estimates:
mean of x
-9.32E+01
```



```
t=-1
> t.test(minus1,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: minus1
t = 1.1751, df = 149, p-value = 0.2418
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.001370535 0.005392405
sample estimates:
mean of x
0.00201094
```

```
t=1
> t.test(one,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: one
t = 1.3165, df = 149, p-value = 0.19
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.00114437 0.00571314
sample estimates:
mean of x
0.00228439
```

```
t=3
> t.test(three,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: three
t = -0.67719, df = 149, p-value = 0.4993
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.003319258 0.001624886
sample estimates:
mean of x
-0.00084719
```

```
t=0
> t.test(null,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: null
t = 2.2027, df = 149, p-value = 0.02915
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
0.000629579 0.011606594
sample estimates:
mean of x
0.00611809
```

```
t=2
> t.test(two,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: two
t = 0.84654, df = 149, p-value = 0.3986
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.001965253 0.004911194
sample estimates:
mean of x
0.00147297
```

```
t=4
> t.test(four,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: four
t = 1.3174, df = 149, p-value = 0.1897
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.001087016 0.005436014
sample estimates:
mean of x
0.0021745
```

```
t=5  
> t.test(five,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: five  
t = -1.4411, df = 149, p-value = 0.1517  
alternative hypothesis: true mean is not equal to 0  
95 percent confidence interval:  
-0.0055750947 0.0008727877  
sample estimates:  
mean of x  
-0.00235115
```

APPENDIX 2 T-Test and P-Value on AARs for subperiods in R-Statistics.

2007-2008

```
> t.test(n53,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: n53
t = -0.040373, df = 52, p-value = 0.968
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.008155553 0.007833852
sample estimates:
mean of x
-0.00016085
```

2011-2014

```
> t.test(n33,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: n33
t = 2.3727, df = 32, p-value = 0.02384
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
0.002715185 0.035658666
sample estimates:
mean of x
0.01918693
```

2009-2010

```
> t.test(n22,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: n22
t = -0.72166, df = 21, p-value = 0.4785
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.012245036 0.005935945
sample estimates:
mean of x
-0.00315455
```

2015-2018

```
> t.test(n42,mu=0,conf.level=0.95)
```

One Sample t-test

```
data: n42
t = 1.7699, df = 41, p-value = 0.08418
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
-0.001216746 0.018471903
sample estimates:
mean of x
8.63E-03
```

APPENDIX 3 Two-sample T-Test, P-Value and F-Tests including Investment and Target country related variables in R-Statistics

R&D-Intensity

> var.test(RD1,RD2)

F test to compare two variances

data: RD1 and RD2

F = 1.4881, num df = 67, denom df = 39, p-value = 0.1816

alternative hypothesis: true ratio of variances
is not equal to 1

95 percent confidence interval:

0.8278796 2.5634076

sample estimates:

ratio of variances

1.488.108

> t.test(RD1,RD2,var.equal=T)

Two Sample t-test

data: RD1 and RD2

t = -0.92723, df = 106, p-value = 0.3559

alternative hypothesis: true difference in means
is not equal to 0

95 percent confidence interval:

-0.021842641 0.007922157

sample estimates:

mean of x mean of y

0.007648604 0.014608845

Relative Size

> var.test(rellarge,relsmall)

F test to compare two variances

data: rellarge and relsmall

F = 1.7912, num df = 13, denom df = 103, p-value = 0.1082

alternative hypothesis: true ratio of variances
is not equal to 1

95 percent confidence interval:

0.8813911 4.7813425

sample estimates:

ratio of variances

1.791.236

> t.test(rellarge,relsmall,var.equal=T)

Two Sample t-test

data: rellarge and relsmall

t = 1.8896, df = 116, p-value = 0.06131

alternative hypothesis: true difference in means
is not equal to 0

95 percent confidence interval:

-0.0009957551 0.0423174347

sample estimates:

mean of x mean of y

0.028495081 0.007834241

Level of Ownership

```
> var.test(partial,full)
```

F test to compare two variances

```
data: partial and full
F = 0.50113, num df = 120, denom df = 21, p-value = 0.02146
alternative hypothesis: true ratio of variances
is not equal to 1
95 percent confidence interval:
 0.2370432 0.9053946
sample estimates:
ratio of variances
 1
```

```
> t.test(full,partial,var.equal=F)
```

Welch Two Sample t-test

```
data: full and partial
t = 0.38681, df = 24.965, p-value = 0.7022
alternative hypothesis: true difference in means
is not equal to 0
95 percent confidence interval:
-0.01862414 0.02723684
sample estimates:
mean of x mean of y
0.012952657 0.008646309
```

Method of Payment

```
> var.test(mix,cashstock)
```

F test to compare two variances

```
data: mix and cashstock
F = 2.4546, num df = 8, denom df = 32, p-value = 0.06779
alternative hypothesis: true ratio of variances
is not equal to 1
95 percent confidence interval:
 0.9368172 9.5252378
sample estimates:
ratio of variances
 2.454.606
```

```
> t.test(mix,cashstock,mu=0,conf.level=0.95,var.equal=F)
```

Welch Two Sample t-test

```
data: mix and cashstock
t = 4.3789, df = 9.8461, p-value = 0.001432
alternative hypothesis: true difference in means
is not equal to 0
95 percent confidence interval:
 0.02903281 0.08944872
sample estimates:
mean of x mean of y
0.067725122 0.008484359
```

Level of Development

```
> var.test(developed,developing)
```

F test to compare two variances

data: developed and developing

F = 0.88908, num df = 74, denom df = 30, p-value = 0.6683

alternative hypothesis: true ratio of variances

is not equal to 1

95 percent confidence interval:

0.4648097 1.5715127

sample estimates:

ratio of variances

0.8890795

```
> t.test(developed,developing,mu=0,var.equal=T)
```

Two Sample t-test

data: developed and developing

t = -0.2758, df = 104, p-value = 0.7832

alternative hypothesis: true difference in means

is not equal to 0

95 percent confidence interval:

-0.01793892 0.01355829

sample estimates:

mean of x mean of y

0.007522708 0.009713022

Cultural Distance

```
> var.test(cullowmed,culhigh)
```

F test to compare two variances

data: cullowmed and culhigh

F = 1.9123, num df = 74, denom df = 13, p-value = 0.1932

alternative hypothesis: true ratio of variances

is not equal to 1

95 percent confidence interval:

0.7089442 3.9863483

sample estimates:

ratio of variances

1.912.304

```
> t.test(cullowmed,culhigh,mu=0,conf.level=0.95,var.equal=T)
```

Two Sample t-test

data: cullowmed and culhigh

t = 1.2181, df = 87, p-value = 0.2265

alternative hypothesis: true difference in means

is not equal to 0

95 percent confidence interval:

-0.007969238 0.033201021

sample estimates:

mean of x mean of y

0.008570369 -0.004045522

Country Risk

```
> var.test(lowrisk,medhighrisk)
```

F test to compare two variances

data: lowrisk and medhighrisk

F = 1.0942, num df = 61, denom df = 34, p-value = 0.7905

alternative hypothesis: true ratio of variances is not equal to 1

95 percent confidence interval:

0.5842437 1.9456064

sample estimates:

ratio of variances

1.094.159

```
>
```

```
t.test(lowrisk,medhighrisk,var.equal=T)
```

Two Sample t-test

data: lowrisk and medhighrisk

t = -0.85824, df = 95, p-value = 0.3929

alternative hypothesis: true difference in means is not equal to 0

95 percent confidence interval:

-0.022856280 0.009059047

sample estimates:

mean of x mean of y

0.007242246 0.014140862

APPENDIX 4.1 T-Test, P-Value and F-Tests for the Differences of Method of Payment in combination with Relative Size and Level of Ownership in R-Statistics

Method of Payment + Relative Size

```
> var.test(cashsmall,stocksmall)
```

F test to compare two variances

```
data: cashsmall and stocksmall
F = 0.3059, num df = 6, denom df = 12, p-value = 0.1561
alternative hypothesis: true ratio of variances
is not equal to 1
95 percent confidence interval:
 0.08204861 1.64154041
sample estimates:
ratio of variances
 0.3059012
```

```
> t.test(cashsmall,stocksmall,var.equal=T)
```

Two Sample t-test

```
data: cashsmall and stocksmall
t = 0.74037, df = 18, p-value = 0.4686
alternative hypothesis: true difference in means
is not equal to 0
95 percent confidence interval:
-0.01312827 0.02741630
sample estimates:
mean of x mean of y
0.014950741 0.007806727
```

Method of Payment + Level of Ownership

```
> var.test(cashfull,stockfull)
```

F test to compare two variances

```
data: cashfull and stockfull
F = 11.043, num df = 7, denom df = 14, p-value = 0.0001882
alternative hypothesis: true ratio of variances
is not equal to 1
95 percent confidence interval:
 3.26735 50.75662
sample estimates:
ratio of variances
 1.104.342
```

```
> t.test(cashfull,stockfull,alternative="greater",var.equal=F)
```

Welch Two Sample t-test

```
data: cashfull and stockfull
t = 1.5028, df = 7.6835, p-value = 0.08641
alternative hypothesis: true difference in means
is greater than 0
95 percent confidence interval:
-0.00574507      Inf
sample estimates:
mean of x mean of y
0.03470776 0.01116286
```


APPENDIX 4.2 T-Test, P-Value and F-Tests for the Differences of Level of Ownership in combination with Cultural Distance and Country Risk in R-Statistics

Ownership + Cultural Distance

> var.test(fullhigh,partialhigh)

F test to compare two variances

data: fullhigh and partialhigh
 F = 1.9852, num df = 47, denom df = 8, p-value = 0.3054
 alternative hypothesis: true ratio of variances
 is not equal to 1
 95 percent confidence interval:
 0.5203516 4.9152146
 sample estimates:
 ratio of variances
 1.985.244

> t.test(fullhigh,partialhigh,var.equal=T)

Two Sample t-test

data: fullhigh and partialhigh
 t = -0.037913, df = 55, p-value = 0.9699
 alternative hypothesis: true difference in means
 is not equal to 0
 95 percent confidence interval:
 -0.02741223 0.02639430
 sample estimates:
 mean of x mean of y
 0.004670731 0.005179698

> var.test(lowfull,lowpartial)

F test to compare two variances

data: lowfull and lowpartial
 F = 2.0025, num df = 14, denom df = 1, p-value = 0.9827
 alternative hypothesis: true ratio of variances
 is not equal to 1
 95 percent confidence interval:
 0.002038093 12.611512696
 sample estimates:
 ratio of variances
 2.002.483

> t.test(lowfull,lowpartial,var.equal=T)

Two Sample t-test

data: lowfull and lowpartial
 t = 0.69148, df = 15, p-value = 0.4998
 alternative hypothesis: true difference in means
 is not equal to 0
 95 percent confidence interval:
 -0.03113860 0.06104427
 sample estimates:
 mean of x mean of y
 0.01615284 0.00120000

Ownership + Country Risk

```
> var.test(partiallow,fulllow)
```

F test to compare two variances

data: partiallow and fulllow

F = 1.5079, num df = 11, denom df = 75, p-value = 0.293

alternative hypothesis: true ratio of variances is not equal to 1

95 percent confidence interval:

0.6949611 4.4935869

sample estimates:

ratio of variances

1.507.936

```
> t.test(partiallow,fulllow,var.equal=T)
```

Two Sample t-test

data: partiallow and fulllow

t = 0.59567, df = 86, p-value = 0.553

alternative hypothesis: true difference in means is not equal to 0

95 percent confidence interval:

-0.01643241 0.03049330

sample estimates:

mean of x mean of y

0.016747719 0.009717277