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**Abstract:**

This thesis provides an analysis of the M&A performance of deals taking place in Europe initiated by Israeli, Japanese or South Korean acquirers. A sample of 654 deals and daily stock price data in the period 1 January 2002 to 1 January 2019 is used to find short-term wealth effects in an event study and a regression analysis. The event study results indicate that the cumulative average abnormal return is 0.42%, but this finding is statistically insignificant. Furthermore, I find no statistical evidence for country, sector classification and period differences in the event study. The regression analysis however, shows evidence for country, sector classification and period differences, as Israeli acquirers tend to outperform the others, high-tech acquirers underperform with respect to non-high-tech acquirers and the pre regulation period underperforms the after regulation period, during crisis period and after crisis period.

**Keywords:** Mergers and Acquisitions (M&A), short term performance, high-tech acquisitions, M&A regulation, corporate governance, financial crisis

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## 1. Introduction

In these hot summer days, everyone can appreciate a good functioning air-conditioning system. World's largest air-conditioning equipment maker Daikin is located in Japan and acquired Austria's AHT Cooling Systems for €881m at the end of 2018. This acquisition is one of many mergers and acquisition (M&A) deals that involves the takeover of a European target by a third country acquirer. I recently went to Israel and Japan and was really impressed by the technological opportunities these countries are offering. This increased my interest in these countries and their technological possibilities, and was one of the main drivers to focus on them in my M&A analysis. To extend the data sample with other high technological countries outside Europe, South Korea is added. The amount of M&A deals from these countries in Europe is increasing and needs additional research. I was wondering what the effect of being a high-tech acquirer is on the M&A performance.

In this thesis an analysis of the M&A performance is conducted to find the short-term wealth effects measured by the cumulated average abnormal return (CAAR) in an event study. I run a t-test to check the significance of the obtained cumulated average abnormal returns, to be able to conclude if results are not the result of pure luck/chance. Furthermore, I run a regression analysis to find the factors that influence the obtained cumulated abnormal returns. In the regression analysis I am controlling for country, period and industry sector dummies, governance scores and the size of the firm, to be able to find the drivers of the change in stock performance after the announcement of M&A deals.

M&As are an important strategic way to enhance shareholder value. To evaluate the performance of a M&A deal, the stock returns surrounding the announcement date are analyzed in an event study. Research on M&A performance has mainly focused on the US, finding ambiguous results. Doukas et al. (1988) found a significant positive effect of the acquisition announcement if the acquirer was not yet operating in the targets' country. However, Mandelker (1974), Dodd (1980) and Asquith (1983) show that acquirers gain a small statistically *insignificant* abnormal return. In general it is accepted that acquirers do not earn significant abnormal returns in US samples.

For Japan however, Pettway and Yamada (1986), Kang et al. (2000) and Hanamura et al. (2011), found a significant positive abnormal return ranging from 1% to 2%. Also in South Korea, firms doing M&As give some evidence that acquirers shareholders earn a positive stock return (Chiang & Jung, 2004, Cho & Jun, 2004, Byun & Woo, 2008). The South Korean researches however mainly focuses on domestic deals. Until now, research on Israeli acquirers is limited, where according to Blumen (2016) and Tarba et al. (2017)

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cause of the high rate of growth in Israel, M&A activity has been heightened recently. Tarba et al. (2017) argue that Israeli synergy potential (similarities and complementarities) between high-tech firms, effectiveness of post-acquisition integration, and organizational cultural differences could positively influence overall acquisition performance. Ranft & Lord (2000) further states that the development of human capital in Israeli society could be an important aspect of the probable success of any M&A activity involving Israeli acquirers.

Based on this, I expect the abnormal stock returns surrounding the announcement date for acquirers from Israel, Japan and South Korea to be positive. I am testing the hypothesis that states: ‘High-tech country cross border M&A activities in Europe, results in positive cumulative abnormal stock returns.’

Solely focusing on high-tech acquirers based on the industry sector classification, the literature still is divided about the question what influence being a high-tech sector acquirer has on the M&A performance. Where Aybar and Ficici (2009) find that M&A announcements of high-tech sector acquirers lead to further value destructions, Kohers and Kohers (2000) find that high-tech sector acquirers have a high potential of accumulating knowledge and thus experiencing higher potential to create value. Furthermore, Deshmukh (2012) find that high-tech transactions are value-additive for both targets and acquirers. I am answering the research question what the influence of being a high-tech sector acquirer is on the cross border M&A activities performance, with hypothesis 2: ‘High-tech sector acquirers’ cross border M&A deals in Europe leads to positive cumulative abnormal abnormal stock returns’.

Campa and Hernando (2004) find that M&A deals in industries that are heavily regulated, generate lower value than M&A announcements in unregulated industries. Dissanaik et al. (2016) find that improvements of legal shareholder rights entails an increase in the acquirer’s returns. Furthermore, Nicholson et al. (2014) is asking if the financial crisis has impact on the short term shareholders returns in an European acquisition sample, and find that the abnormal stock return is significantly higher in the post-crisis period than in the pre-crisis period. However, Wan & Yiu (2009) argue that firms that pursue acquisitions during a crisis benefit from newly created opportunities and that these deals are positively related to firm performance during an environmental jolt or crisis. Based on this, hypotheses 3 to 6 are testing the performance in four periods to see the differences per time periods.

To be able to test these hypotheses, a data set of 654 M&A deals from January 1, 2002 until January 1, 2019 is collected from the FactSet database where the acquirer is located in Israel, Japan or South Korea. Stock price information and financial values are obtained via Thomson Reuters Datastream. The event study

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methodology is used to obtain the cumulative average abnormal returns (CAAR) in various event windows. Additionally, OLS regressions are performed on the cumulative abnormal returns (CAR) to test the hypotheses on significance.

I found that the acquirers' CAAR is positive for the various event windows in the event study, ranging from 0.2568% to 0.4699%, however not being statistically significant. This is in line with previous research on this topic, as Mandelker (1974), Dodd (1980) and Asquith (1983) shows that acquirers gain a small statistically insignificant abnormal return. The country differences are not found to be significant in the event study, where the dummies however are mainly significant in the regression analysis, indicating that Israeli and Japanese acquirers in general outperform South Korean ones. Focusing solely on high-tech sector acquirers based on the industry code, a negative and insignificant CAAR is found in the event study. In the regression analysis a negative high-tech coefficient is found, being significant at the 1% level. This finding provides evidence that being a high-tech acquirer in general has a negative effect on the post M&A stock performance of the acquirer. This finding is in line with Aybar and Ficici (2009), arguing that high-tech M&A deals are mainly to be value destructive, but is contrary to Kohers & Kohers (2000), and more recently Deshmukh (2012) and Zhovtobryukh (2014) finding significantly higher returns if the M&A deal is technological. Additional evidence is found that being a high-tech sector acquirer is value destructive. Lastly, I find differences per period, where the last three periods (after regulation, during crisis and after crisis) clearly outperform the pre regulation period, giving statistical evidence in the regression analysis.

I am contributing to the existing literature by using a unique dataset of M&A deals in Europe, initiated by Israeli, Japanese and South Korean acquirers, contrary to most studies on the US market. This extension is valuable as it is helpful to see if the found US results are generalizable. This thesis gives additional insights in the unanswered questions about (high-tech) M&A performance, country and period differences and motivates future researchers to subdivide in various periods, industry sectors and countries. Especially the country differences in this sample need to be examined further.

The remainder of this thesis is structured as follows. In chapter 2, I will start with a literature review to come to the hypotheses that are tested later on. In this literature review, current theories on cross-border mergers and acquisitions are compared and recent researches on this topic are summarized. Reasons for cross-border M&A's are given from the perspective of the firm, and previous research on the stock performance after M&A deal announcements is mentioned, to form hypotheses. In chapter 3, the data retrieval and collection process is further elaborated. Chapter 4 will present the methodology and tested model, and chapter 5 gives the results of these tests. Finally, chapter 6 covers the conclusions and limitations.

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## 2. Literature review and hypotheses

In this section I will discuss the existing literature on the performance of mergers and acquisitions (M&A) deals to eventually come to the hypotheses that are tested. Firstly, some general information about the motives for M&A deals are given to see that the literature makes a distinction between value increasing and value decreasing motives. Furthermore, I will elaborate on the M&A Regulation framework in Europe and the Financial crisis of 2007-2008, as these two events are expected to have influence on the performance of the M&A deals. Thirdly, I will discuss several ways the acquirers' performance in M&A deals is tested over time, according to the existing literature. Afterwards I will focus on previous research on the performance of acquirers' in general, and the performance of Japanese, Israeli and South Korean acquirers in particular. In the end I will form hypotheses based on the aforementioned literature that are tested in the remainder of this thesis.

### 2.1 Motives for M&A

With M&As, the ownership of companies or other business organizations is transferred or consolidated with other entities. A merger is a legal consolidation of two entities into one (new) entity. An acquisition happens when one entity takes over the other entity, and the other ceases to exist. For the empirical purpose of this study the difference between both is not quite relevant, as we take them together as M&A. M&As allows a firm to grow or downsize, expand globally, or change the nature of their businesses and competitive position. In the literature, some main theories on the motives for M&As are settled, which are value increasing and value decreasing theories.

#### **Value increasing M&A theories**

M&As are part of the strategic management of a firm and allows one to combine or diversify resources and/or costs. As Bösecke (2009) states, M&As are implemented strategically as a method of firm survival and the deals provide an alternative way to grow. In the perspective of the increase of value, a M&A deal occurs if it generates sufficient synergies between the target and acquirer to offset the costs of the deal. These additional synergies contributes to the total value of the firm (Hitt et al., 2001). Synergies that could be achieved are financial synergies, operative synergies and managerial synergies. In the literature there are three theories of how these synergies could enhance firm and shareholders value by doing a M&A deal.

Firstly, according to Mukherjee et al. (2004) operational and financial synergies are the primary motivation for M&A deals. With a merger or acquisition, efficiency gains are obtained by economies of scale and scope. With economies of scale, the cost per unit output decreases with increasing scale, and with

economies of scope the simultaneous manufacturing of different products is more cost-effective than manufacturing them on their own. In M&A deals, a distinction is made between horizontal acquisitions and vertical acquisitions. In horizontal acquisitions, the acquirer takes over a target in the same industry in which the acquirer competes. Reasons to participate in horizontal acquisitions are the avoidance of excessive competition and increased efficiency cause of economies of scale and scope. In general, acquisitions with similar characteristics result in higher stock performance than those with different characteristics, cause of less implementing costs. In vertical acquisitions, the acquirer takes over a target which is a supplier or distributor of one or more of the firm's goods or services. This could ease the availability of goods or services and reduce the transaction costs, increase the market power and increase the efficiency, once more facilitating the economies of scale and scope. As the firm controls additional parts of the value chain it also increases the firm's vertical market power.

A second theory is the Q-Theory of Mergers, initiated by Jovanovic and Rousseau (2002). The Q-ratio is the ratio of the market value of the acquirers' stock to the replacement cost of its assets. Generally, high Q-firms buy low Q-firms and total takeover returns are larger when the target has a low Q and the acquirer has a high Q (Rhodes-Kropf and Robinson, 2008). This is in line with earlier research on this topic, where Andrade et al. (2001) report that, in more than two-thirds of all mergers since 1973, the acquirer's Q exceeded the target's Q.

A third theory is the industry shocks hypothesis. According to Mitchell and Mulherin (1996) takeover and restructuring activities tend to cluster within a narrow range. Industry shocks are a source of takeover activity and positive economic disturbance should increase the amount of deals taking place. Harford (2005) finds evidence for the fact that economic, regulatory and technological shocks drive industry merger waves, but this depends on the availability of liquidity. Later on, we will focus on the effect of regulatory changes on the amount and performance of M&A deals.

### **Value decreasing merger theories: principal-agent problem**

Not all M&A deals lead to a positive performance for the acquirer. Cause of the principal-agent problem the interests of the management and shareholders are not always in line, which could lead to a shareholder value decrease rather than an increase after the deal. According to Berkovitch and Narayanan (1993), the agency motive states that some M&A deals are motivated by the self-interest of the acquirers' management. For example, as Shleifer and Vishny (1986) argue, the management might acquire firms that enhance the dependence of the firm on their own skills even though such an acquisition might reduce the value of the firm: management entrenchment. In fact, the management is protecting their own position by enlarging the

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dependence on their own capabilities. The agency problem is especially severe in firms with large free cash flows (Jensen, 1986). This thus is especially important in deals that are primarily financed with free cash.

A second reason where the interests of shareholders and management are not in line, is with empire building. Jensen (1986) finds that many compensation schemes are positively related to the growth of the firm's sales, so that managers have incentives to solely increase sales to unprecedented heights, neglecting risks. So with management entrenchment and empire building the management is primarily protecting their own interests and is not mainly focusing on the value-maximization for shareholders, so that inefficient deals are signed. Roll (1986) gives another explanation for the agency problem and inefficient deals, given by the managerial hubris, the believe of the manager that they can manage the assets of a target firm more efficiently than the target firm's current management. Malmendier & Tate (2008) find empirical evidence for managerial hubris, as the more hubris the CEO exhibits, the more likely they are expected to participate in a merger. Corporate Governance rules and codes are used to prevent a deadlock between management and shareholders and to tackle abovementioned problems, and is often added as control variable in empirical analysis on M&A performance. Better governance standards are expected to earn a higher abnormal return. In the underlying analysis I will thus add the Environmental, Social and Governance (ESG) code as a control variable in the regression analysis to see if a better ESG score improves the abnormal returns.

## 2.2 M&A performance measurement

I have yet mentioned the concept of positive/negative abnormal stock returns. In the underlying analysis an event study is used to test for M&A performance. In section 3 I will further elaborate on the event study, but keep in mind this is not the only way of measuring M&A performance. Where event studies, focus on the short term returns around the deal announcement dates, other methods to test for M&A performance are long term based. Zollo and Meier (2008) summarizes the way M&A performance is tested in a 1970 to 2006 sample. They conducted a review of empirical articles analyzing M&A performance, and find that 41% of the studies used the short term event study method. Another 28% of the studies used long-term accounting measures, most of them used in strategic management and organization studies journals. Also, long-term window event studies is used in 19% of the studies, which is a measure that is growing in popularity in finance journals (Loughran & Vijh, 1997). Next to methodological measurements, the use of assessments of synergy realization or strategic objectives realizations (14%), or variance of integration process performance measures (9%) are ways of subjective performance measures.

As there are many other ways M&A performance is tested, there is according to Zollo and Meier (2008) "clearly value in having different approaches, as different metrics shed light on different aspects of the

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complex acquisition process, the paucity of theoretical explanation, as well as of empirical validation, of the relationship among all these measures might present an important limiting factor for the development of scholarship in the field.” Actually comparing the different research methods is difficult, and any method itself has strengths and weaknesses dependent on the research objective and data sample. Bruner (2002) reviews different methods and gives the following strengths and weaknesses. On the one hand, in an event study, the strengths are that the value creation for investors is directly observed, and that it is a *forward-looking measure*: the stock prices are the present value of expected *future* cash flows. Weaknesses are lying in the fact that the event study requires significant assumptions about the efficiency and rationality, and that it is vulnerable to confounding events, even though the law of large number deals with this problem. On the other hand, the accounting research method is credible in the sense that all statements are certified, but differences in accounting principles between countries make cross-border comparison difficult.

There is thus no leading way of testing M&A performance, as every method has its own strengths and weaknesses. As I am focusing on the short-term M&A performance of the acquirer in the 11-day event window, an event study is used. I will elaborate on this method further in section 3.

### 2.3 Previous results on M&A Performance

In the literature there is consensus about the fact that the target’s cumulative average abnormal returns (CAAR) around the announcement date is positive. However, in analyzing the previous literature on post-merger performance of acquirers, I find that the literature is divided. Dependent on the sample, one finds a positive CAAR, where others find a negative CAAR. Most results specifically depend on the timeframe the research is conducted in and the countries that are participating. Some researchers are even distinguishing in time periods to find a positive CAAR in one period and a negative CAAR in the other.

#### **Positive CAAR performance**

For instance, Asquith et al. (1983) found evidence for the fact that acquirers have a positive CAAR and argue that the inconclusive findings of earlier studies may be due to methodological deficiencies. They find that gains are larger before 1969, but M&A deals after 1969 also contributed to an increase in the acquirer’s stock price, giving evidence for the value-maximizing hypothesis of the acquiring firm. Doukas et al. (1988) find that acquirers that are not operating in the target firm’s country, experience significant positive abnormal returns around the announcement date of a deal. Abnormal returns are even larger when firms expand into new industry and geographic markets, giving evidence for the theory of corporate multinationalism, where cause of international expansion the firm’s market value will increase. They conclude that the benefits of cross-border M&A’s are greatest by investing in less developed countries.

Eckbo and Thorburn (2000) find evidence in the Canadian market that domestic acquirers earn a positive CAAR, while foreign acquirers' CAAR is indistinguishable from zero, supporting the fact that cross border acquisitions are subject to more barriers. More recently, the results of Kotaro et al. (2013) indicate that M&As by Japanese firms enhance acquirers shareholder wealth, and are larger in cross-border acquisitions targeting developing countries and in acquisitions achieving full control of targets. Evidence is provided that Japanese acquisitions are efficient investments. In a Chinese example, according to Tao et al. (2017), evidence is provided that shareholders of Chinese firms that acquire a target in a country with low levels of political risk have a higher CAAR than those firms targeting in high level of political risk countries. Wu et al. (2016) find that M&A activities provided a positive CAAR during the [-10, +10] window, finding research and development possibilities and M&A experience as key explaining factors.

Furthermore, an innovation orientation and the stage of development of the host country helps to create additional positive effects. Next to investigating financial and strategic variables as predictors of M&A performance, Weber and Tarba (2010) argue in an Israeli example that human resource practices are necessary to prevent restrictions in post-merger integration and thus performance, in line with the knowledge-based theory of the firm. This theory considers knowledge as the most important resource for a firm. In line with this theory, it is expected that firms that are experiencing higher R&D expenses and are participating in technological sectors, have higher post-merger CAARs cause of increased possibilities to exploit knowledge.

### **Negative CAAR performance**

However, as I said, the literature is divided and many papers found evidence for negative cumulative average abnormal returns (CAAR) around the announcement date. Starting with Bradley et al. (1988), they find in an American example focusing on tender offers that acquiring firms realized a significant positive CAAR only during the unregulated period, 1963-1968, and realized a negative CAAR during the stricter regulated 1981-1984 period. The earlier mentioned paper of Doukas et al. (1988) also provides evidence for negative acquirers CAAR if the acquirer is already participating in the target firm's country.

Agrawal et al. (1992) is analysing the post-merger five year long term performance in an American example, and find that the acquiring firms stockholder suffer a statistically significant loss of about 10% after the completion of the M&A deal. However, by taking such a long time, it is difficult to control for the fact that other factors are influencing the results. Smith and Kim (1994) are linking the free cash flows and financial slack to find that bidder returns are significantly negative for firms with high free cash flows. The negative returns of bidders are concentrated among combinations where the bidders and targets are similarly

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classified. Walker (2000) makes a distinction between different M&A motives, and finds that for diversification strategies that cite potential overlap, a significant statistical stock market reaction of -3.35% for the acquirer is found. Houston et al. (2001) found an average negative abnormal return for the acquirer, but without statistical significance. As many papers find negative abnormal returns, the statistical significance is a next question to draw conclusion based on the findings. Also, the paper of Houston et al. (2001) is focusing solely on bank mergers with a deal value over \$400 million, a quite specific example with just 64 mergers. A more extended sample is used by Andrade et al. (2001), analysing a total of 3,688 completed M&A deals in the period 1973-1998. In the [-1, +1] and [-20, +142]<sup>1</sup> timeframe the returns of acquiring firms are -0.7% and -3.8% respectively, again finding no statistical significance.

Aw and Chatterjee (2004) used a sample of 79 UK M&A deals that exceeded \$400m, finding a negative CAAR in the period 1991-1996, this time statistically significant. Moeller et al. (2005) is one example that confirms the thought that returns differ per period, dependent on the presence of a merger wave or other economic circumstances. They found that the acquiring-firm shareholders profit is positive from 1990 until 1997, but that the losses from 1998 until 2001 offset the gains from the previous period. By analysing the aggregate sample from 1990 until 2001, one could draw insufficient conclusions and this confirms the importance of splitting in relevant subsequent time frames, as I will do in the underlying analysis.

As the literature still is divided, it is relevant to keep searching for clarifying answers. I will thus test the following general hypothesis in the analysis:

Hypothesis 1: High-tech country cross border M&A activities in Europe, results in positive cumulative abnormal stock returns.

### **High-tech acquirer performance**

The full data sample of deals consists of deals from Israel, Japan and South Korea. As in general these countries are highly technological orientated, this does not mean all M&A deals are technology orientated. If I use the sector industry classification (SIC) code, I can actually focus on the impact of the firm being in a high-tech sector.

As previous literature shows, the performance of the acquirer is affected by the nature of the acquirer firm's industry and sector (Markides & Ittner, 1994, Brouthers & Brouthers, 2000). Aybar and Ficici (2009)

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<sup>1</sup> The +142 days is the average of the actual completion and integration of the deal.

analysed a total sample of 433 cross-border acquisitions from a variety of countries. They are focusing on the high-tech performance question and argue that M&A deals in high-tech sectors may bring significant product and process technologies and efficiency enhancement efforts, but the informational asymmetry and compatibility premiums may lead to value destruction. They found, on average, negative cumulative abnormal returns (CARs) surrounding the announcement date, suggesting that the M&A announcement is perceived by investors as value destructive. In general, focusing on the high-tech sector acquisitions by industry type, they find a negative market reaction, with significant CAR differences. In the cross-sectional analysis however, Aybar and Ficici (2009) find that M&A announcements of high-tech sector acquirers lead to further value destructions, but that this is only statistically significant in the [-10, +10] window. Narrower timeframes still give insignificant results, so that further research in different event windows is necessary.

Furthermore, Cloudt et al. (2006) argue that acquirers should focus on taking over targets that are neither too unrelated nor too similar in terms of their knowledge base. As most high-tech sector firms have knowledge as their main asset, this could be another indication that taking over another knowledge based firm, could lead to value destruction.

On the other hand, if knowledge or information is present, value creation can be obtained by integrated ability to share information in order to implement new products or processes that will increase the competitive advantage of the organization (Pablo & Javidan, 2009). Furthermore, according to Kohers and Kohers (2000) high-tech sector acquirers have a high potential of accumulating knowledge and thus experiencing higher potential to create value. Deshmukh (2012) find that high-tech sector transactions are value-additive for both targets and acquirers. Lastly, Zhovtobryukh (2014) shows evidence for the fact that significantly higher returns to the shareholders of the acquiring firm are obtained if the M&A deal is technological. This results from the ability to facilitate the target's technology and leveraging the capability to generate innovations continuously, both aspects are unavailable for non-high-tech sector acquirers.

Based on these findings, the effect on the M&A performance of being a high-tech sector firm and having lots of knowledge and information still is not sufficiently researched. In the analysis I will focus on the Standard Industrial Classification (SIC) codes that are capturing high-tech firms. In a paper of Hall and Vopel (1997), their classification of the high-technology sector consists of Computers and Computer

Equipment, Electrical Machinery, Electronic Instruments and Communication Equipment, Transportation Equipment, Optical and Medical Instruments and Biopharmaceuticals<sup>2</sup>.

I will test the following hypothesis to draw conclusions about the relation between being a high-tech sector acquirer and the post M&A stock performance:

Hypothesis 2: High-tech sector acquirers' cross border M&A deals in Europe leads to positive cumulative abnormal stock returns.

#### 2.4 Economic Environment

The general economic environment influences the performance of individual stocks and could thus influence the performance of M&A deals if performance is measured by stock returns. The M&A regulations and general condition of the economy and the presence or absence of a financial crisis are factors that are influencing the M&A performance and thus need to be discussed and controlled for.

#### M&A Regulation

M&A regulations are one factor that influences the economic environment where the M&A deals are taking place in. The regulations are considered as one way to incorporate corporate governance structures. Also regulations give the opportunity to control deals and protect consumers or the market. Council Regulation 139/2004<sup>3</sup> tries to ensure that the competition within the internal market is not distorted, and that the market position of the undertakings does not form an obstacle to competition. The European Commission (EC) substantiates in every deal with an European dimension if it is compatible with the internal market. The European dimension, however is independent from the countries the firms are actually operating in. It solely depends on the level of turnover worldwide, so that the EC can block deals from acquirers from outside the EU more often. The EC can even block deals where both participating parties are both from outside the EU, if it damages the European competition, as they did in the GE/Honeywell case (Fox, 2007). Cause of this, European targets from non EU countries do not have to be excluded from the data sample. The European Commission has raised the suspicion of protectionist motivations for blocking M&A deals in the 1990's (Aktas et al., 2007). As the research of Aktas et al. (2007) sees on data from 1990's, before the new 139/2004 Regulation framework, other authors questioned their results. Bradford et

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<sup>2</sup> This means that the following SIC-codes are used: SIC 28: Chemicals and Allied Products, SIC 35: Industrial and Commercial Machinery and Computer Equipment, SIC 36: Electronics and Electrical Equipment, SIC 37: Transportation Equipment, SIC 38: Measuring, Analyzing and Controlling Instruments; Photographic, Medical and Optical Goods, SIC 48: Communications, SIC 73: Business Services, SIC 87: Engineering, Accounting, Research, Management and Related Services.

<sup>3</sup> Council Regulation 139/2004 of 20 January 2004 on the control of concentrations between undertakings (the EC Merger Regulation)

al. (2018) did find contrary results, where no protectionist motivations are found in a more recent framework, with data coming from the period after the new 139/2004 Regulation was implemented.

With contrary results in the literature, I cannot draw conclusions about the European Commission being protectionist. However, a further convergence and harmonizing of legal frameworks at least within Europe, would create a better level playing field, contributing to prevent problems as agency costs. The harmonized European M&A framework stimulates further economic integration and better protects legal shareholder rights. As Dissanaiké et al. (2016) show, improvements of legal shareholder rights entails an increase in the acquirer's returns. Also, Drobetz and Momtaz (2016) find that the regulations led to more M&A deals financed by cash, and less hostile takeovers occurring. Especially this last phenomena, is expected to lead to higher acquirer's returns. Also, further integrated and harmonized legal frameworks, lessens the post-merger costs and time of integration, leading to higher returns. Based on this, I expect the after regulation performance to be better than prior regulation performance, where the turnaround point lies on the date of the implementation of EC 139/2004, which is January 20, 2004.

However, Campa and Hernando (2004), find that M&A deals in industries that had previously been under government control or that are still heavily regulated, generate lower value than M&A announcements in unregulated industries. This finding is consistent with the existence of legal, cultural or transaction barriers as obstacles. These barriers lessens the probability of the M&A deal actually being completed as announced, and thus reduces the chance of having a positive stock performance. It seems Campa and Hernando (2004) are focussing on the role of regulations as barriers, where in the sense of agency problems it could even give additional opportunities. On 12 December 2012, The European Commission published the 'Action Plan'<sup>4</sup>, which among others strengthens the disclosure requirements and improve quality of corporate governance reports. This addition further removes agency problems between the management and the shareholders, leading to higher expectations of acquirer's post-merger performance, leading to the following two hypotheses:

Hypothesis 3: Prior to EC No. 139/2004, high-tech country cross border M&A activities in Europe, results in positive cumulative abnormal stock returns.

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<sup>4</sup> Action Plan: European company law and corporate governance - a modern legal framework for more engaged shareholders and sustainable companies. Retrieved on 5 June 2019 on <https://eur-lex.europa.eu/uri/idm.oclc.org/LexUriServ/LexUriServ.do?uri=COM:2012:0740:FIN:EN:PDF>.

Hypothesis 4: After EC No. 139/2004, high-tech country cross border M&A activities in Europe, results in more positive cumulative abnormal stock returns than prior regulation.

### **Financial Crisis**

Next to M&A Regulations, the general temper of the market/economy shapes the economic environment where M&A deals are taking place in. As we are experiencing an economic downturn with longer lasting decreasing stock prices, the performance of M&A deals can be influenced. This long lasting decrease of stock prices, is exactly what happened due to the financial crisis of 2007-2008. A crisis in the subprime mortgage market in the United States spread quickly throughout the world and other markets, leading to a pronounced decline in stock prices that accelerated quickly after October 2008. The exact start of the financial crisis is subject of discussion, but most often 9 August, 2007 is seen as the ‘day the world changed’ when BNP Paribas froze three of their funds as there was no way of valuating the complex CDOs. Eventually, this led to the Lehman Brothers collapse on 15 September 2008 spreading it into a global financial crisis. As in a crisis stock prices are in a negative downturn, a crisis could affect the performance of M&A deals if it is measured by stock performance. By comparing the actual individual stock returns with the market returns (that captures the economic downturn), a correction for the crisis is partly captured if we use the market model (Coutts et al. 1994). As M&A deals are one way to combine or diversify resources and/or costs, a crisis does not change this goal. However, in periods of economic downturn, M&A deals are expected to create less value.

Nicholson et al. (2014) is asking if the financial crisis has impact on the short term shareholders returns in a European acquisition sample, and finds that the abnormal stock return is significantly higher in the post-crisis period than in the pre-crisis period. Campello et al. (2010) argue that cause of the financial crisis there are more constraints to get credit from banks, so that the inability to borrow externally caused many firms to bypass attractive investment opportunities or deals. However, Wan & Yiu (2009) find general support that M&A deals are positively related to firm performance during an environmental jolt or crisis. Whereas many firms will act conservatively during a crisis, Wan & Yiu (2009) argue that firms that pursue acquisitions during a crisis benefit from newly created opportunities. In the end, M&A deals take place to enhance shareholder value, or exploit possible opportunities due to synergies. Even in a crisis, these goals are served, so that positive shareholder abnormal returns are still expected. However, once more, M&A deals are expected to create less value in periods of economic downturn. The following hypotheses are tested to control for this fact:

Hypothesis 5: During the financial crisis, high-tech country cross border M&A activities in Europe, results in positive cumulative abnormal stock returns.

Hypothesis 6: After the financial crisis, high-tech country cross border M&A activities in Europe, results in more positive cumulative abnormal stock returns than during crisis.

### 2.5 Previous research on Israel, Japan and South Korea

Most researches have focused on US companies as either acquirers or targets. Others used such specific characteristics that no general conclusions can be made. The underlying sample consists of Israeli, Japanese and South Korean acquirers taking over a European target. As far as I know, no such research has been done until now, where it could be quite interesting. The Israeli high-tech industry is one of the fastest growing, innovative and impactful industries in recent decades (Almor et al. 2014). According to Blumen (2016) and Tarba et al. (2017), with a high rate of growth in Israel, M&A activity has been heightened. Tarba et al. (2017) argue that Israeli synergy potential (similarities and complementarities) between high-tech sector firms, effectiveness of post-acquisition integration, and organizational cultural differences could positively influence overall acquisition performance. Furthermore, Ranft & Lord (2000) state that the development of human capital in Israeli society could be an important aspect of the probable success of any M&A activity. It could thus be interesting to capture Israeli acquirers in the sample to test these arguments on the M&A performance.

Furthermore, Japan is the third largest economy in the world, with export mainly focusing on highly technological products. Previous research on Japan showed that shareholders of Japanese M&A deals gained positive cumulative abnormal returns (Pettway and Yamada, 1986, Pettway et al., 1990, Kang et al., 2000, Yeh and Hoshino, 2001, Yeh and Hoshino, 2002). As there are a lot of differences between American and Japanese firms, the performance researches on US samples are not representative. Cultural differences are that Japanese workers stick long to the same firm cause of restricted labour mobility and loyalty. Furthermore, in Japan a firm is lead in interest of the managers and employees, where in America the stockholders are served first. All of these differences can have influence on the post-M&A performance for the acquirers stockholder. With this in mind, it is interesting to look at the effect on Japanese acquirers stock price.

In 1997, the South Korean government lifted restrictions on foreign acquisitions (Freund and Djankov, 2000). According to Froese et al. (2008), cause of the limited restrictions, the value of foreign M&A into Korea has risen sharply from \$2 billion in 1997 to more than \$15 billion following the Asian financial crisis

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of 1997-1998. The other way around, Korean firms doing M&A's give some evidence that acquirers shareholders earn a positive stock return (Chiang & Jung, 2004, Cho & Jun, 2004, Byun & Woo, 2008). Most of the research either focuses solely on domestic deals or domestic and cross-border deals together. As Cho and Jun (2004) argue, the differences between Korean and the US are determined by the fact that the Korean market is a buyer-orientated market. It is thus interesting to focus on the performance of Korean acquirers taking over a European target to see if I can find evidence in line with previous research.

## 2.6 Hypotheses

After discussing the main literature, we have seen that many aspects are still in need for additional research or are not answered until now. As there are still questions about the M&A performance in general, a more specific approach could give additional insights. I am thus extending the current literature by taking a longer timeframe with acquirers from countries that are not yet widely covered in the literature, focusing on the high-technological country aspect. I am summarizing the before mentioned hypotheses before I continue with the methodological part.

First, the general hypothesis states:

Hypothesis 1: High-tech country cross border M&A activities in Europe, results in positive cumulative abnormal stock returns.

To focus solely on the high-tech sector orientated acquirers, sector industry classification-codes are used and a dummy is created to test the following hypothesis:

Hypothesis 2: High-tech sector acquirers cross border M&A deals in Europe leads to positive cumulative abnormal stock returns.

Based on the literature there is evidence that M&A performance is influenced by various factors including the periods the deals take place in. I will thus test the performances in several sub periods by the following hypotheses:

Hypothesis 3: Prior to EC No. 139/2004, high-tech country cross border M&A activities in Europe, results in positive cumulative abnormal stock returns.

Hypothesis 4: After EC No. 139/2004, high-tech country cross border M&A activities in Europe, results in more positive cumulative abnormal stock returns than prior regulation.

Hypothesis 5: During the financial crisis, high-tech country cross border M&A activities in Europe, results in positive cumulative abnormal stock returns.

Hypothesis 6: After the financial crisis, high-tech country cross border M&A activities in Europe, results in more positive cumulative abnormal stock returns than during crisis.

All hypotheses are tested under the null of no abnormal returns,  $\alpha = 0$ . In the next section I will discuss the data collection and data preparation process, and I will provide the summary statistics.

### 3. Data and summary statistics

This section discusses the data collection and preparation process, and gives an overview and summary of the data sample.

#### 3.1 Deal information collection process

I am focusing on completed M&A deals in the period from 1 January 2002 until 1 January 2019 from acquiring companies from Israel, Japan and South Korea taking over European target firms. By refining the sample some adjustments are made to ease the research and to tackle the problem of data availability. To assure that stock price data is available, the database is limited to publicly exchange traded companies (MacKinlay, 1997). To collect data about the M&A deals, the database of FactSet is used, to find a total of 704 deals in the specific time period. To find individual stock prices and market prices for the specific periods around the announcement dates, Thomson Reuters Datastream is used, as this tool gives me the opportunity to automatically match the individuals' stock price with the corresponding market prices according to the ISIN codes. Cause of data unavailability for a couple of acquirers' stock prices in the estimation and event window, 21 cases are dropped out to have a total final sample of 682 deals. To be sure to have unique observations to be able to merge databases, another 29 cases are dropped out as they have a similar ISIN and announcement date, coming from the fact that a specific acquirer announced more deals on a specific day or takes over various firms on one day. The final full sample database consists of 654 deals. An overview of all deals is added in Appendix 3.

Previous papers used a different amount of deals, dependent on the data availability and the chosen amount of countries the acquirers come from. Doukas et al. (1988) is analysing 301 deals in an U.S. sample, and Aybar and Ficici (2009) is examining 433 deals from 58 emerging-market multinationals. Chen and Young (2010) just use 39 deals with a focus solely on Chinese listed companies. A total sample of 698 observations is used in an analysis on the performance of emerging country cross-border acquisitions from Brazil, China, Malaysia, Mexico, Philippines, Russia and South Africa (Bhagat, Malhotra and Zhu, 2001). I conclude that the final sample of 654 deals is sufficient to draw significant conclusions, compared to earlier research on this topic. As more deals take place in Japan (472 deals), rather than South Korea (64) and Israel (118), I will research the separated effect on the performance per country individually to see if this gives statistically significant different results.

To summarize, the following criteria are used to obtain the data in FactSet:

- The deal announcement date lies between 1<sup>st</sup> January 2002 to 1<sup>st</sup> January 2019;

- Target location is in Western or Eastern Europe;
- Acquirer location is in Israel, Japan or South Korea;
- Acquirer ownership type is public company;
- Deal type is acquisition / merger;
- Transaction status is completed;
- Firm identifiers added: ISIN, Ticker, Cusip, Sedol, NAICS Sector and SIC Industry Group/Code.

### 3.2 Further data preparation process

From the 654 deals, the ISIN code is used to be able to link the deal information to specific stock price performances via the Thomson Reuters Datastream add-in in Microsoft Excel. Closing price daily returns are used to be sure that enough data is available, and to capture the per day effects of the announcement. The obtained returns of the acquirer around the announcement date (event date) is the dependent variable in the underlying analysis.

Based on the ISIN codes, control variables can be obtained and linked, dependent on the goal of the research. In the underlying sample, there are 379 unique ISIN codes / firms. Via Datastream information for these unique firms is obtained about the size of the firm, measured by the Market Value (WC 08001). Furthermore, ESG-scores ranging from 1 to 100 are added. These are often used as governance indicators and cover the governance of the firm. In particular the way the firm is managed, the role of shareholders and the corporate social responsibility is captured within this indicator. These two control variables enables me to check if higher/lower Market Values or higher/lower Governance Scores are statistically linked to a higher/lower post deal performance.

Looking for industry sector specific effects, I am solely focusing on the influence of being a high-tech sector firm. As we have seen in section 2.3, I will, according to Hall and Vopel (1997), focus on the Sector Industry Classification (SIC) codes that capture high-tech firms (see footnote 2). To capture the fact that a firm is high-tech orientated, a dummy variable is constituted with value = 1 if a firm has first two SIC numbers of 28, 35, 36, 37, 38, 48, 73 or 87, or value = 0 otherwise. With this dummy variable I am able to indicate the presence or absence of the effect of being a high-tech sector firm on the M&A performance, measured by CAAR.

In the same way, three country dummies are constituted for Israel, Japan and South Korea, to look if the effect on the performance exists for all countries, and/or differs per country. Lastly, a period dummy is

created for the various periods described under the hypotheses section. An overview of all variables and their definitions and main properties can be found in Appendix 1.

### 3.3 Summary statistics

As we see in Table 1, the dataset mainly consists of Japanese acquirers taking over European targets, counting for more than 72% of all deals. Israeli acquirers are involved in 18.04% of the deals, where South Koreans acquirers just participate in 9.79% of the deals.

**Table 1 – Overview of M&A deals per country**

This table shows the total amount of deals in the full sample divided per country, where the acquirer comes from one of the three countries. N gives the total observations, where the % gives the percentage of deals where the acquirer comes from one of the three countries.

Country	N	%
Israel	118	18.04%
Japan	472	72,17%
South Korea	64	9,79%
<b>Total</b>	<b>654</b>	<b>100%</b>

In Table 2 we see the amount of high-tech sector acquirers based on their Sector Industry Classification (SIC) code with respect to the whole data sample. We clearly see that most acquirers from Israel, Japan and South Korea have something to do with technology and high-tech, but to say that all firms do is too simplified. As I yet described, a dummy is constituted to solve for this problem.

**Table 2 – Total amount of actual high-tech firms**

This table shows the total amount of deals that are done by high-tech sector acquirers and other non-high-tech acquirers, based on the SIC codes in line with Hall and Vopel (1997).

Sector Industry Classification	N	%
High-tech sector acquirers	415	63,64%
Other acquirers	248	36,36%

<b>Total</b>	<b>654</b>	<b>100%</b>
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As I am subdividing in different periods, the total deals per year as absolute numbers and percentages are given in Appendix 2. I do not see a clearly decreasing amount of deals taking place in the crisis, as the goal of a deal still is enhancing shareholder value, even in a period of economic turmoil. In general, we see an increasing trend of deals taking place, at least in this specific example of deals from Israeli, Japanese and South Korean acquirers into Europe. Deals are evenly divided over the periods, so that the amount of deals per year do not bias the results.

## 4. Methodology

In this section the methodology and the model to test the hypotheses are presented. I will elaborate on the event study and the appropriate estimation and event windows. Furthermore, the regression analysis is discussed, where relevant information is given about the tested control variables and sub-periods and sub-samples.

### 4.1 The event study

In empirical research on the performance of M&A deals, the most used method to test the stock performance after the deal announcement, is the event study. In analyzing M&A deals, the performance of the deal is measured with the acquirers' post-deal stock returns. Fama et al. (1969) were the first in looking at the adjustment of stock prices to new information. According to the semi-strong form of the efficient market hypothesis, prices reflect all publicly available information and change instantaneous to reflect new public information. As new information influences the publicly available information about a specific stock, this information could influence the stock price if we assume stock prices depend on current available expectations about the future.

In this analysis an event-study is used to find the acquirers' cumulative average abnormal returns (CAAR) around the announcement date of the M&A deal (event). According to MacKinlay (1997), an event study measures the impact of a specific event on the value of a firm, where the measure of this impact can be constructed using security prices observed over a relatively short time period. To capture the actual effect of the M&A deals, it requires to measure the abnormal returns in comparison to the normal returns.

The abnormal returns give the difference between the actual return and the benchmark return, where the benchmark return often is called the normal return, to make the description of *abnormal* return more clear. For an individual firm,  $i$ , and event date,  $t$ , the abnormal return is given by:

$$AR_{it} = R_{it} - E(R_{it}/X_t),$$

where  $AR_{it}$  is the abnormal,  $R_{it}$  is the actual, and  $E(R_{it}/X_t)$  is the normal return. The normal return is a measure of the return in the case that no M&A deal would have occurred. For modeling the normal returns, two choices can be made, according to MacKinlay (1997). First, the constant mean return model can be used, where we assume and expect the return of the stock to be constant dependent on the past returns:  $X_t$  has a constant mean. Second, we can use the market model, in which  $X_t$  is equal to the market return, and we

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assume a stable linear relation between the market return and the security return, based on the  $\beta$  of the stock, the sensitivity of the individual stock towards the market. Later on, other models are developed, but Cable and Holland (1999) state that there is a preference for regression-based models, with the market model generally outperforming the capital asset pricing model, mean adjusted returns model and the index model. Coutts et al. (1994) cast doubt on the validity of the statistical assumptions underlying the market model and the use of these studies as a tool of applied financial research, but do not give any suggestions to overcome the assumption problem. As the market model is easy to use, still used in practice and overcomes the problem of short term market up- and downturns, I am using the market model in the underlying analysis. With the market model, I try to find the (ab)normal returns, that are based on specific time windows. Thomson Reuters Datastream automatically links the individual stock performance to the stock performance of the relevant market, based on the ISIN codes. Before I continue with discussing the cumulative (average) abnormal returns, something must be said about the estimation and event windows the normal and abnormal returns are based on.

### **Estimation window**

Normal or benchmark returns are important, as the actual returns are compared to these normal returns. The normal returns are calculated according to a specific time period, the estimation window, which is the window where the normal return estimations are based on. The estimation window starts 145 trading days ( $T = -145$ ) before the deal announcement date, and ends at 10 days before the announcement date ( $T = -10$ ). Thomson Reuters Datastream automatically controls for the fact that there is no stock market trade in weekends and some holidays. I assume the estimation window to end 10 days prior to the actual announcement, to exclude the leakage of information or insider trading. To calculate the normal returns, these two factors could influence the normal return calculations and have to be excluded as much as possible. The total estimation window thus is: [-145, -10]. With the normal returns based on the estimation window, the abnormal returns are based on the event window.

### **Event window**

As we agree with the semi-strong efficient market hypothesis, an public M&A announcement will be reflected in the stock price immediately, so that we have to focus on a short time period. If we focus on short time frames, it strengthens the power of the analysis and the conclusions that are drawn. With a too long event window we could draw incorrect conclusions, as the longer window captures more errors and circumstances that can influence the stock price apart from the deal announcement. Brown and Warner (1985) also argue that short window event studies that find positive abnormal returns, are effective in identifying abnormal performance in the longer run. I choose for an event window starting 5 days prior to

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the announcement date ( $T = -5$ ) until 5 days after the announcement date ( $T = +5$ ), for a total of 11 days including the day of the actual announcement,  $T = 0$ . Some new information from the M&A deal could already be incorporated in the stock price due to anticipation, or insider trading. As we are not actually testing for these phenomena, a large abnormal return in the days before the announcement date, could indicate insider trading, but is often tested on individual level rather than on cumulated average level. As the literature gives some evidence for overreaction to market events and M&A deal announcements (Bessembinder and Zhang, 2015, Piccoli et al., 2017), there is reason to extend the event window to 5 days after the announcement date, rather than 1 day, as is also used in some papers. As this extension of the event window could capture additional errors from market up- or downturns and other firm specific negative effects, this still is valuable to analyse with the overreaction remarks in mind. The total event window thus is:  $[-5, +5]$ . To check for robustness of the results and to see if the effect are not just a coincidence dependent on the time period, I will also analyse different event windows, to be sure the results are not prone to a bias in the event window choice. I will also check the significance of the AAR and CAAR in the following timeframes:  $[-9, +10]$ ,  $[-5, +1]$ ,  $[-1, +1]$  and  $[0, +1]$ , all capturing trading days.

### **CAR, AAR and CAAR**

By finding the abnormal returns of an individual firm over a specific timeframe, we could easily sum them up, to find the cumulative abnormal returns (CAR). Remember that, the abnormal returns of an individual firm are given by:

$$AR_{it} = R_{it} - E(R_{it}/X_t),$$

where  $AR_{it}$  is the abnormal,  $R_{it}$  is the actual, and  $E(R_{it}/X_t)$  is the normal return. If we use these individual abnormal returns, and summate them over the whole sample of deals cross-sectionally, we get the average abnormal returns (AAR) per day. If we aggregate the individual abnormal returns across time over the event window, we get the cumulative abnormal returns (CAR), which then is given by:

$$CAR = \sum AR_{it}$$

By dividing the CAR over the number of observations, we get the cumulative average abnormal returns (CAAR). The CAAR is thus obtained by aggregating the individual abnormal returns both across time and cross-sectionally.

The CAAR is then given by:

$$CAAR = \frac{1}{n} \sum CAR$$

where  $n$  captures the number of observations, so that multiplying by  $1/n$  gives the average abnormal return.

The CAAR shows the average of the 11-day (or other event windows) CAR's of the 654 observations, and enables us to draw conclusions on the average M&A performance of the whole sample. As a positive CAAR leads to the conclusion that in the event window the returns are positive, a negative CAAR means the M&A deal announcement has a negative influence on the stock price performance, at least in the given event window. With these results found, nothing has just been said about the statistical significance of the results. I run a t-test to check the significance of the results and to test the general hypothesis that argues that high-tech country cross border M&A activities in Europe, results in positive cumulative abnormal stock returns. I am trying to answer the question if the abnormal returns are significantly different from zero, and thus are not the result of pure luck/chance. The outcome of the t-tests indicates the significance of the CAAR, so I am able to draw statistical conclusions with regard to the stated hypotheses.

#### 4.2 Regression analysis

The obtained cumulative abnormal returns (CARs) from the event study analysis is often used as dependent variable in a linear regression analysis to see what variables have an influence on the CAR. A regression analysis is able to control for various factors. Next, I will discuss the factors that are tested and controlled for.

#### **Country, period and high-tech dummies**

In the linear regression various dummy variables are added to control for country, period and the industry sector. A dummy variable is a variable that takes the value 0 or 1 to indicate the absence or presence of a categorical effect that may be expected to shift the outcome (Draper and Smith, 1998). Three dummy variables are constructed to indicate if a deal has taken place in Israel, Japan or South Korea respectively. These dummies then test whether coming from one of the three countries has statistically significant influence on the obtained CAR. One of the country dummies have to be left out as reference category. In the case of nominal variables such as countries, the interpretation of the coefficients of the dummies depends on which country is left out as reference category. However, often there is no obvious candidate that can be seen as 'natural reference'. I leave out the South Korea country dummy as reference category, so that the coefficients of the Israeli and Japanese country dummies depends on the South Korean value. If both Israeli and Japanese country dummies show a positive significant coefficient, Israeli and Japanese M&A deals are in general, statistically performing better than South Korean M&A deals.

Another four dummy variables are created for the time periods to indicate whether an announced M&A deal in a specific time period have a statistically significant influence on the obtained CAR with respect to the reference category. The first time period is used as reference category so that the pre regulation dummy is left out. Other periods then are compared to the pre regulation period. Lastly, a dummy is added for whether an acquirer is a high-tech sector acquirer or not.

### **Firm specific control variables**

In the regression analysis the market value is incorporated as control variable. Moeller et al. (2004) finds evidence that small firms achieve significantly higher abnormal returns after announcing a M&A deal than big firms, suggesting the existence of a size effect in acquisition announcement returns. Gorton et al. (2009) argue that smaller acquirers are often more profitable than larger ones because they usually acquire other companies in order to better position themselves in the industry and to become an attractive target for a M&A deal. I thus expect the firm size measured by the market value to have a negative effect on the CAR.

Furthermore, corporate governance scores as measured by the ESGScore is included in the linear regression to control for the governance quality of the companies. ESG captures the environmental, social and governance aspects of a firm. Corporate governance is about the impact of decisions in the firms made by the board and its influence on all stakeholders and also captures antitakeover provisions. Masulis et al. (2007) find that acquirers with more antitakeover provisions experience a significantly lower abnormal return in the post announcement period. According to Aktas et al. (2015) corporate governance mechanisms may help to avoid costly acquisitions that destroy shareholder value, but they can also facilitate the completion of a deal by lowering the defenses entrenched managers could put up and the cost of acquiring information. I expect the corporate governance control variable to have a positive influence on the CAR, as stronger corporate governance strengthens the defenses for the shareholders, so that only deals will occur that actually add value for them. Thus the ESGScore is expected to have a positive influence on the CAR.

### **Regression model and statistical test**

The following general regression is used to test the effect various variables have on the obtained CAR and to draw conclusions about the hypotheses:

$$CAR_{it} = \beta_0 + \beta_1 * SIZE + \beta_2 * ESG + \beta_3 * JAPAN + \beta_4 * ISRAEL + \beta_5 * HIGHTECH + \beta_6 * AFTERREGULATION + \beta_7 * DURINGCRISIS + \beta_8 * AFTERCRISIS + \varepsilon_i$$

where the  $\beta_1$  and  $\beta_2$  are control variables for the market value and corporate governance scores. Appendix 1 summarizes all variables that are captured in the linear regression. I will run various regressions, adding and deleting variables to see if the results and the significances change. The significance of the  $\beta$ -coefficients are tested with t-tests. Brown and Warner (1985) argue that the t-test is applicable for an event study, even if the normality assumptions are not met.

## 5. Results and analysis

This section discusses the results from the event study and the regression analysis. Firstly, the obtained average abnormal returns (AARs) and cumulative average abnormal returns (CAARs) and significance tests of the whole sample are shown for the various event window lengths. Afterwards I will distinguish between the different countries, periods and industry sector. Finally, I will present and discuss the results of the regression analysis.

### 5.1 Event study results

The outcome of the event study is the cumulative average abnormal return (CAAR). Either a positive or negative and significant or insignificant CAAR is obtained. In the following subsections I will discuss the results of the full sample, the sample separated per country and period, and separated by solely taking into account high-tech sector acquirers.

#### Full sample results

Table 3 presents the results of the obtained CAARs from the full sample and the results of the t-tests that show whether the CAAR is statistically significant different from zero or not.

**Table 3 – CAARs and significance tests**

This table shows the obtained cumulative average abnormal return over the various event windows, with the general tested event window in bold. In the second row the standard deviations of the CAARs are given. The results of the t-test are given in the third row, where the fourth row indicates the significance of the results. Significance = YES if absolute value of t-test > 1.96 and NO if absolute value of t-test < 1.96. The last row gives the total number of observations, which is equal to 654 in all cases.

Trading Days	[-9, +10]	<b>[-5, +5]</b>	[-5, +1]	[-1, +1]	[0, +1]
CAAR	0.2568	<b>0.4167</b>	0.4092	0.4699	0.4595
Standard Deviation CAAR	62.9333	<b>36.9721</b>	21.6479	10.9265	7.9336
t-test CAAR	0.0453	<b>0.2072</b>	0.3476	0.7907	1.0649
Significance	NO	<b>NO</b>	NO	NO	NO
N	654	<b>654</b>	654	654	654

From Table 3 it appears that for various event windows, the CAAR is positive, in line with what I expected to find. If the announcement of the M&A deal is on T=0, the event windows captures the effect of the

announcement on the stock price performance of the acquirer. As there could be some leakage beforehand, slow market-adjustments or overreactions afterwards, I used various event windows, ranging from [-9, +10] to [0, +1] to control for these facts. In all cases the CAAR is positive, but not statistically significant different from zero, based on the obtained t-values. The mean of the abnormal returns thus is not statistically different from zero, indicating that the null hypothesis of no abnormal returns,  $\alpha = 0$ , cannot be rejected. This means that there is no significant statistical difference between the mean in the estimation window (normal return) and in the event window (potential abnormal return). It thus seems that high-tech country cross border M&A activities in Europe, does not result in statistical significant positive cumulative abnormal stock returns.

Where the cumulated average abnormal returns (CAAR) are not statistically significant different from zero in the various event windows, it is interesting to focus on the average abnormal returns (AARs) per day. The AARs give the abnormal returns averaged over the whole sample of deals not aggregated for time. This enables me to find the per day effects and test the significance of them. Table 4 gives the results of the obtained AARs in the [-5, +5] event window.

**Table 4 – Event day AAR for the [-5, +5] window**

This table shows the obtained average abnormal returns per day for the [-5, +5] window. In the second row the standard deviations of the AARs are given. The results of the t-test are given in the third row, where the fourth row indicates the significance of the results. Significance = YES if absolute value of t-test > 1.96 and NO if absolute value of t-test < 1.96. The last row gives the total number of observations, which is equal to 654 in all cases.

Event day:	-5	-4	-3	-2	-1	0	1	2	3	4	5
AAR	-0.1108	-0.162	-0.1050	-0.0303	-0.0294	0.2592	0.2174	0.0496	0.0055	0.1334	-0.1355
SD AAR	3.2885	4.6854	2.6617	2.7616	2.752363	3.5350	4.7129	3.04	3.2357	3.5293	2.6382
t-test AAR	-0.6193	-0.6372	-0.7256	-0.2014	-0.1962	1.3481	0.8480	0.2999	0.0315	0.6952	-0.9442
Significance	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
N	654	654	654	654	654	654	654	654	654	654	654

In Table 4 we see that the average abnormal returns are negative in the days before the announcement of the M&A deal. After the announcement day the returns become positive except from day T=5, but including the announcement day itself with the highest average abnormal return of all days. This indicates an average positive reaction of the acquirers stock price to the announcement of the deal by 0.2592% on the day of the announcement. However, this finding is not statistically significant different from zero as the t-value is ‘just’ 1.3481, where an absolute t-value of 1.96 is needed for the 95% confidence interval and 5% significance

level. The other t-tests give even worse results, again giving evidence for the insignificance of the results. The reversal of the AAR at T=5 could be an indication for an overreaction, but when using the [-10, +10] window, no clear conclusions could be drawn, as returns seem to reverse every day and the effect of the M&A announcement is yet incorporated in the price. Checking for robustness of the AAR results for the other event windows, does not change the main conclusions. Again I am finding that in general returns seem to be positive after the announcement dates, but that these findings are not statistically significant different from zero.

### Country results

By subdividing the full sample in three subsamples, I can solely find the CAAR for a specific country to see if the previous found results are prone to country sample selection. Table 5 presents the results of the analysis performed on the country subsamples.

**Table 5 – Country CAARs and significance tests**

This table shows the obtained cumulative average abnormal returns separated per country over the [-5, +5] event window. In the last column the full sample characteristics are added for comparison reasons. The results of the t-test are given in the third row, where the fourth column indicates the significance of the results. Significance = YES if absolute value of t-test > 1.96 and NO if absolute value of t-test < 1.96. The last row gives the total number of observations per subsample.

	Israel	Japan	South Korea	Full Sample
CAAR	1.3490	0.4803	-1.5108	<b>0.4167</b>
Standard Deviation CAAR	64.7309	30.7015	55.3520	<b>36.9721</b>
t-test CAAR	0.1021	0.2556	-0.1871	<b>0.2072</b>
Significance	NO	NO	NO	<b>NO</b>
N	118	472	64	<b>654</b>

Table 5 indicates the following. It appears that the CAAR is positive for Israel, with a 1.35% CAAR in the 11-day time window. Japan finds a positive CAAR of 0.48%, mainly in line with the full sample outcomes. South Korea shows a strong negative CAAR of -1.51%. Using the sub-samples shows that specific countries in general do under- or overperform in M&A deals with respect to others. These outcomes have to be interpreted with caution, as again we find no statistical significant evidence that the outcomes differ from zero based on the t-values. We see a clear difference between countries. However, no statistical significant conclusion can be drawn that specific country high-tech cross border M&A activities in Europe, does result in a positive cumulative abnormal stock return.

### **Period results**

Another subdividing per period constitutes four periods as described before. In the first period that is called pre regulation period, 46 deals have taken place. After the EC 139/2004 regulation was initiated on 20-01-2004 until the assumed start of the financial crises on 09-08-2007 112 deals have occurred in the after regulation period. During this crisis that is assumed to last until 01-01-2012, 122 deals are completed and after the crisis until the end of the sample on 01-01-2019 another 339 deals occurred. The resulting CAARs per period can be found in Table 6.

**Table 6 – Period CAARs and significance tests**

This table shows the obtained cumulative average abnormal returns separated per period over the [-5, +5] event window. The dates are explained in the text and correspond with the period dummies. On 20-01-2004 Regulation 139/2004 was initiated, and the period beforehand I call 'prior regulation', even if there was some regulation. From 20-01-2004 until 09-08-2007 is the after regulation and 09-08-2007 until 01-01-2012 is the during crisis period. All deals after 01-01-2012 are assumed to be after crisis. The results of the t-test are given in the third row, where the fourth column indicates the significance of the results. Significance = YES if absolute value of t-test > 1.96 and NO if absolute value of t-test < 1.96. The last row gives the total number of observations per subsample.

	< 20-01-2004	20-01-2004 – 09-08- 2007	09-08-2007 – 01-01-2012	>01-01-2012
CAAR	-1.5180	0.8575	0.9454	0.3814
Standard Deviation CAAR	62.0244	24.9265	25.7806	27.60694
t-test CAAR	-0.1468	0.3209	0.3593	0.2011
Significance	NO	NO	NO	NO
N	46	112	122	339

Firstly, as Table 6 indicates, we again see no statistical significance in all periods. However, as most literature found positive insignificant CAARS, the negative CAAR of -1.52% before the Regulation of 20-01-2004 is quite strange. The subsample of 01-01-2002 until 20-01-2004 occurs partly after the dot-com crash that lasted until October 9, 2002. If this crash is the reason for the low CAAR in this period, the results would be more significant. The other periods exhibit a positive but insignificant CAAR and no statistical prove is given that the CAAR is lower in the financial crisis period. In the event study I thus conclude that I cannot find any statistical significant evidence for hypothesis 3 to 6, as none of the results are significant. I thus find no evidence for a positive abnormal stock return that is statistically significant different from zero by subdividing the sample in sub-samples based on the various periods.

### High-tech sector results

To test hypothesis 2, a sub-sample is made containing solely high-tech sector acquirers based on their Sector Industry Classification (SIC) code. In line with Hall and Vopel (1997), a total of 415 out of 654 cases remain. In Table 7 the results of this sub-sample are presented.

**Table 7 – High-tech sector CAARs and significance tests**

This table shows the obtained cumulative average abnormal returns over the [-5, +5] event window, solely focussing on the high-tech SIC-codes, which remains a sample of 415 observations. The results of the t-test are given in the third row, where the fourth column indicates the significance of the results. Significance = YES if absolute value of t-test > 1.96 and NO if absolute value of t-test < 1.96.

	High-tech acquirer	Full sample
CAAR	-0.0230	<b>0.4167</b>
Standard Deviation CAAR	39.1390	<b>36.9721</b>
t-test CAAR	-0.0089	<b>0.2072</b>
Significance	NO	<b>NO</b>
N	415	<b>654</b>

As Table 7 shows, being a high-tech sector acquirer does not contribute to an additional positive CAAR. The CAAR value is even lower than the full sample CAAR, but again not statistically significant. The null hypothesis of no abnormal returns cannot be rejected. No statistical significant evidence is found for hypothesis 2 in the event study.

### 5.2 Regression results

This section discusses the results of the regression analyses performed on the cumulative abnormal returns (CARs). Ordinary least squares (OLS) regressions were run to test the effect various variables have on the CARs. The variables are explained in chapter 4 and Appendix 1. The results of the OLS regressions are shown in Table 8 and further explained below.

**Table 8 – OLS Regression results**

This table shows the obtained OLS regression results, with \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$  (two sided). Standard errors are noted in parentheses. The acquirers CAR is the dependent variable, calculated in the [-5, +5] event window. Regression (1) regresses the country dummies on the CAR. In regression (2) the variable SIZE is regressed on the CAR. Regression (3) regresses both control variables on the CAR. Regression (4) regresses the country dummies and control variables on the CAR. Regression (5) regresses the HIGHTECH dummy on the CAR. Regression (6) regresses the country dummies, control variables and HIGHTECH dummy on the CAR. Regression (7) includes all variables, except for the control variables SIZE and ESG. Regression (8) includes all variables, including the control variables.

Testing for:	Countries	Size	Controls	Controls and countries	Only high tech	Without periods	Without Controls	All variables
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>SIZE</b>		-0.00* (0.00)	-0.00* (0.00)	-0.00 (0.00)		-0.00 (0.00)		-0.00 (0.00)
<b>ESG</b>			-0.005 (0.0072)	0.0001 (0.0072)		0.0001 (0.0073)		0.0004 (0.0073)
<b>JAPAN</b>	1.9586*** (0.3213)			0.5822 (0.3622)		0.5823 (0.3623)	2.0623*** (0.3236)	0.6280* (0.3646)
<b>ISRAEL</b>	2.7042*** (0.3755)			1.7403*** (0.4015)		1.7427*** (0.4040)	2.8855*** (0.3780)	1.6150*** (0.4080)
<b>HIGHTECH</b>					-0.7322*** (0.2016)	-0.0115 (0.2142)	-0.7135*** (0.2009)	0.0028 (0.2141)
<b>AFTERREGULATION</b>							1.7131*** (0.4292)	-1.0879** (0.4285)
<b>DURINGCRISIS</b>							1.9336*** (0.4134)	-0.7910** (0.3980)
<b>POSTCRISIS</b>							1.6173*** (0.3878)	-1.4706*** (0.3825)
<b>Intercept</b>	-1.4872	0.3676	0.7750	-0.5309	0.9016	-0.5244	-2.7168	0.6222
<b>N</b>	654	654	654	654	654	654	654	654
<b>R<sup>2</sup></b>	0.0073	0.0006	0.0011	0.0095	0.0006	0.0095	0.0124	0.0147

Firstly, the variable SIZE measures the impact of the MarketValue of the company on the obtained CAR. Either it is significant or not, in all regressions the coefficient is close to zero. As the MarketValue is measured in amounts of thousands, dividing by 1000 gives no other results. I thus conclude that the size of the firm as measured by its market value has no statistically significant influence on the obtained CAR.

Control variable ESG measures the effect of the height of the corporate governance score on the CAR. As I stated before, a higher ESGScore is expected to positively affect the obtained CAR. However, the results of the regression analyses shows that the ESGScore is not statistically significant affecting the CAR, meaning that I find no evidence that firms that have higher corporate governance levels, exhibit a higher post deal abnormal return, at least not in this sample.

The fact that an acquirer is Japanese shows in general a positive coefficient, where the statistical significance differs per regression. In regression (8) where all variables are included, the 10% significance level is reached, meaning that the fact that the acquirer is Japanese, has a positive effect on the CAR with respect to the fact the acquirer is South Korean, as South Korea is the reference category. This seems in line with the results from Table 5, where was shown that the CAAR of Japan outperforms the CAAR of South Korea, even if results are found to be insignificant there.

Also in line with Table 5, is the fact that the coefficient of being a Israeli acquirer is positive in all regressions, showing significance at the 1% level in all cases. Coefficients are highest in the case the control variables are left out. Regressions (1) and (7) shows a significant coefficient of 2.7042 and 2.8855 respectively. As we concluded that the controls are insignificant, the additional noise of the insignificant results could negatively affect the Israeli coefficient. Being an Israeli acquirer positively affects the CAR, with respect to being a South Korean acquirer.

Being a high-tech sector acquirer based on the sector industry classification (SIC) code is tested for in four of the eight regressions. In the case the control variables are added, the high-tech dummy becomes insignificant which can be justified by the extra noise. In regression (7) and (5), where regression (5) solely focuses on the effect of the high-tech dummy on the CAR, I find that being a high-tech acquirer negatively affects the CAR by -0.7322 with a significance level of 1%. This is in line with Table 7, where I found that the CAAR of high-tech sector acquirers is lower than the full sample CAAR. The result in Table 7 was found insignificant in the event study, although the negative effect of being a high-tech sector acquirer is found to be significant in the regression analysis. I thus conclude that being a high-tech sector acquirer does negatively affect the performance of the M&A deal from the perspective of the acquirer.

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With the pre regulation period left out as reference category, the other period dummy variables are compared to the pre regulation period. As found in Table 6, the CAAR of the pre regulation period is the lowest and negative, where the others are higher and positive, but insignificant. From the regression results in Table 8, the dummy coefficients are significant at either the 1% or 5% significance level. In the case the control variables are added, the coefficients are negative and significant, where they are positive and significant in the case the control variables are deleted. Regression (7) shows that results are in line with Table 7, indicating that the after regulation, during crisis and after crisis periods have a positive significant influence on the CAR. The obtained CAR thus is higher in those three periods.

### 5.3 Results

The first hypothesis states that high-tech country cross border M&A activities in Europe, result in positive cumulative abnormal stock returns. Based on the event study, I conclude that for various event windows the CAAR is positive, but insignificant. No evidence is given that the CAAR is statistically different from zero, indicating that the null hypothesis of  $\alpha = 0$  cannot be rejected and no evidence is given for hypothesis 1, so that hypothesis 1 will be rejected.

Hypothesis 2 states that high-tech sector acquirers' cross border M&A deals in Europe leads to positive cumulative abnormal stock returns. From the event study as well as the regression analysis I find evidence that being a high-tech sector acquirer has a negative effect on the M&A performance. Where the event study gives insignificant results, the regression analysis gives statistical significant evidence that being a high-tech sector acquirer has a negative influence on the CAR. Hypothesis 2 is thus rejected.

Hypotheses 3 to 6 captures the time periods. In the event studies, no statistical evidence is found that the null hypothesis of  $\alpha = 0$  can be rejected for any time period. Finding higher CAARs for the last three periods is not significant at any significance level, indicating that based on the event studies hypotheses 3 to 6 have to be rejected. However, based on the regression analysis the last three period dummies show a positive and significant coefficient, meaning that their abnormal returns are statistically different from zero compared to the left out pre regulation reference category. Based on this, hypothesis 3 have to be rejected and hypothesis 4 cannot be rejected, as evidence is given that the after regulation influence is higher than the pre regulation influence. Hypothesis 5 is rejected as no statistical evidence is given that the abnormal returns are different from zero in the crisis period. Hypothesis 6 is rejected as the after crisis coefficient is lower than the during crisis coefficient. Table 9 summarizes the results.

**Table 9 – Summarizing hypotheses results**

This table summarizes the results of the previous analysis. In row 1 to 6 the hypotheses are mentioned. In the second and third column the hypotheses are either rejected or not, indicated by a ✓.

	Rejected	Not rejected
Hypothesis 1: High-tech country cross border M&A activities in Europe, results in positive cumulative abnormal stock returns.	✓	
Hypothesis 2: High-tech sector acquirers' cross border M&A deals in Europe leads to positive cumulative abnormal stock returns.	✓	
Hypothesis 3: Prior to EC No. 139/2004, high-tech country cross border M&A activities in Europe, results in positive cumulative abnormal stock returns.	✓	
Hypothesis 4: After EC No. 139/2004, high-tech country cross border M&A activities in Europe, results in more positive cumulative abnormal stock returns than prior regulation.		✓
Hypothesis 5: During the financial crisis, high-tech country cross border M&A activities in Europe, results in positive cumulative abnormal stock returns.	✓	
Hypothesis 6: After the financial crisis, high-tech country cross border M&A activities in Europe, results in more positive cumulative abnormal stock returns than during crisis.	✓	

#### 5.4 Robustness checks

Robustness checks are necessary for a valid causal inference, so that the coefficients of the critical core variables should be insensitive to adding or dropping variables, under appropriate conditions (Luo and White, 2013). In the analysis different sub-samples for country, industry sector and period are created to check for country, industry sector or periodical specific effects.

As is shown in the event study section, various event windows are used next to the general [-5, +5] window: [-9, +10], [-5, +1], [-1, +1] and [0, +1]. These additional event windows are used to check if the found effects are not just dependent on the chosen time period and to be sure the results are not prone to a bias in the event window choice. As Kothari and Warner (2004) argue, the properties of event study methods can vary by calendar time period and the larger the event window is, the greater noise is exhibited. Longer event windows might not effectively capture the actual effect of the M&A announcement on the acquirers stock price. The additional noise that is exhibited cause of the longer time frame, can be found in Table 3, where the Standard Deviation increases sharply, the longer the time frame is. Changing the event windows however, does not change the main results.

As Table 8 indicates, various regressions are run, including and excluding variables to check if results are robust to variable choice. Instead of simply running one regression containing all variables, separate regressions shows the solely effect of one variable on the CAR by excluding the other variables. As the  $R^2$  decreases by excluding variables, the explanatory power of the obtained results also decreases. However, except from the high-tech sector coefficient becoming significant and the period dummies are becoming positive rather than negative, the main conclusions are insensitive to adding or dropping variables.

## 6. Conclusion and discussion

In this thesis I analyzed the post M&A deal performance around the announcement date of the acquirers' stockholders. A final sample of 654 M&A deals where Israeli, Japanese or South Korean acquirers are taking over European targets is used to first test the significance of the cumulative average abnormal return (CAAR) in the full sample. Secondly, the sample is subdivided for the various time periods, countries and industry sector codes to find the impact of these characteristics on the M&A performance.

As the literature gives evidence that higher governance standards lead to higher abnormal stock returns, that higher market value leads to lower abnormal stock returns, that the financial crisis has a negative effect on the abnormal stock returns and that being a high-tech sector acquirer has a positive influence on the performance, the full sample was subdivided, and time dummies and sector dummies were created to be able to solely focus on these specific characteristics. Furthermore, country samples and country dummies were created to analyze the effect on the performance per country, as the literature found that the country characteristics are quite important for the implementation and cultural differences that cause the performances to differ. An event study and various OLS regressions were used to test the hypotheses and research questions.

The main hypothesis that was analyzed is whether high-tech country cross border M&A activities in Europe, results in positive cumulative abnormal stock returns. Additionally, hypothesis 2 stated that high-tech sector acquirers' cross border M&A deals in Europe leads to positive cumulative abnormal stock returns. Hypotheses 3 to 6 argued that the after regulation and after crisis abnormal returns are higher than the pre regulation and during crisis abnormal returns respectively. The acquirers' CAAR is positive for the various event windows in the event study, ranging from 0.2568% to 0.4699%, but no statistically significant evidence is found for the hypotheses. This is in line with previous research on this topic, as Mandelker (1974), Dodd (1980) and Asquith (1983) shows that acquirers gain a small statistically *insignificant* abnormal return.

The country differences are severe and I could not find any valid reason for this, except from the cultural differences and different regulation regimes. The country differences are not found to be significant in the event study, where the dummies however are mainly significant in the regression analysis, indicating that Israeli and Japanese acquirers in general outperform South Korean ones. One reason for this could be the fact that South Korea (recently) opened their market for cross-border M&As. Solely focusing on high-tech sector acquirers based on the sector industry classification code, a negative CAAR and negative high-tech

dummy coefficient is found, however not being significant in the event study. In the regression analysis the negative coefficient is significant at the 1% level, giving evidence that being a high-tech sector acquirer in general has a negative effect on the post M&A performance of the acquirer. This finding is in line with Aybar and Ficici (2009), arguing that high-tech M&A deals are mainly to be value destructive, but is contrary to Kohers & Kohers (2000), and more recently Deshmukh (2012) and Zhovtobryukh (2014) that find significantly higher returns if the M&A deal is technological. Additional evidence is found that being a high-tech sector acquirer is value destructive. Furthermore, for the various periods, I found that the samples of last three periods (after regulation, during crisis, post crisis), and the corresponding dummies clearly outperform the pre regulation period, giving only statistical evidence in the OLS regression.

This thesis contributes to the existing literature as it uses a unique dataset of M&A deals taking over European targets and analyzing the performance of those deals. As most leading research papers are focusing on the US, it is valuable to extend the research on deals taking place outside the US and investigate the relationship between various characteristics and the performance. This thesis tried to clarify some unanswered questions about (high-tech) M&A performance, country and period differences and motivates future researches to not solely look on the performance given by the obtained CAAR. Samples have to be subdivided in periods, industry sectors and countries to shed light on different factors explaining the abnormal returns.

This thesis still leaves the following questions unanswered that could be addressed in future research. I found evidence for a huge different effect per country on the cumulative abnormal returns. No clear reason is found for this phenomena and research should focus on the fundamentals of this difference. Why do deals from specific countries into Europe lead to higher performance than deals from other countries into Europe? Future research should make clear if the found difference is exclusively valid in this sample, or could be generalized. Furthermore, what causes the high-tech sector acquirers to perform worse? Is it the informational asymmetry and compatibility premiums that lead to value destruction or is the fact that knowledge is their main asset and diversification is more difficult a reason for this phenomena? Lastly, do the conclusions of the different periods with different results holds in a more extended country sample? This could shed new lights on the analysis of M&A performances, as these analyses should then be conducted in periods where the influence of economic downturn is negligible, or the period is controlled for.

As some results are found to be insignificant and others to be significant, one have to be cautious to draw conclusions based on this thesis. Various limitations could arise conducting this analysis. As Asquith (1983) argues, the inconclusive findings of earlier studies may be due to methodological deficiencies. This

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analysis could suffer from the omitted variable bias. There are control variables included, but they only contain firm specific information about the governance and market value. Additionally, according to Masulis et al., (2007), deal-specific characteristics as method of payment, deal size, prior M&A activity or industry relatedness could be controlled for, as well as other firm-specific characteristics as leverage and free cash flow. Due to time constraints controls are limited to the ones described. Furthermore, by finding an insignificant CAAR in the event study, adding more control variables in the regression analysis does not change the main conclusion if the controls do not cover one of the hypotheses. With the results of this study, nothing has been said about the long term performance, as I was focusing on the short term performance. I described ways to test for the long term performance and it is interesting to see how the returns after the deal announcement develop over longer time frames.

For future research it could be interesting to widen and extend the data sample and to include various other countries. By focusing and selecting on the sector industry classification (SIC) codes a high-tech sector sample can be constructed, to solely look at the effect of being high-tech sector acquirer. This sample can also consist of non-high-tech countries, as the SIC selection filters the sample. Especially interesting for future research is the performance of Israeli acquirers, as they tend to be the highest performers. A widened timeframe data sample of Israeli M&A deals in Europe should prove that they actually statistically outperform the others. Another suggestion is to create or use variables that better measure the corporate governance practices, as the ESG measures governance practices as well as environmental and social practices. All in all, this thesis might be useful for future research on (high-tech) M&A performance.

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## 8. Appendices

### Appendix 1 Variable definitions and properties

*This table summarizes the used variables in the regression analysis and their definitions*

Variable	Definition	Mean	Min	Max
SIZE	Captures the annual MarketValue as obtained in Datatstream with identifier WC 08001 in thousands.	3.28e+0.8	502219	5.69e+0.9
ESG	Captures ASSET 4 Environmental, Social and Governance scores, ranging from 0 to 100.	66.44	0	90.58
JAPAN	Dummy variable equal to one when acquirer is located in Japan.	0.4500	0	1
ISRAEL	Dummy variable equal to one when acquirer is located in Israel.	0.5453	0	1
HIGHTECH	Dummy variable equal to one when acquirer has a SIC-code of 28, 35, 36, 37, 38, 48, 73 or 87.	0.7842	0	1
AFTERREGULATION	Dummy variable equal to one when announcement date lies between 20-01-2004 and 09-08-2007.	0.1721	0	1
DURINGCRISIS	Dummy variable equal to one when announcement date lies between 09-08-2007 and 01-01-2012.	0.2474	0	1
AFTERCRISIS	Dummy variable equal to one when announcement date lies between 01-01-2012 and 01-01-2019.	0.5007	0	1

## Appendix 2 The amount of M&A deals per year

*This table shows the total amount of deals per year as absolute number and as percentage of the whole sample.*

Year	Deals	%
2002	18	2,75%
2003	27	4,13%
2004	26	3,96%
2005	36	5,50%
2006	25	3,82%
2007	39	5,96%
2008	40	6,12%
2009	32	3,36%
2010	32	4,89%
2011	50	7,64%
2012	52	7,95%
2013	39	5,96%
2014	44	6,73%
2015	50	7,64%
2016	56	8,56%
2017	55	8,41%
2018	43	6,57%
<b>Total deals</b>	<b>654</b>	<b>100%</b>

### Appendix 3 Full sample of M&A deals

Full sample of M&A deals in period 01-01-2002 until 01-01-2019 where acquirer is located in Israel, Japan and/or South Korea and Target is located in Western or Eastern Europe.

Announcement Date	Target	Target Country	Acquirer	Acquirer Country	Acquirer Primary SIC Industry Code
14-1-2002	SITI SpA	Italy	DAIKIN INDUSTRIES Ltd.	Japan	3585
5-2-2002	Bayer Classics French Generic Business	France	Teva Pharmaceutical Industries Ltd.	Israel	2837
28-2-2002	Universal Drilling & Cutting Equipment Ltd.	United Kingdom	Nitto Kohki Co., Ltd.	Japan	3594
24-4-2002	Vossloh Schwabe GmbH	Germany	Matsushita Electric Works Ltd.	Japan	3645
26-4-2002	PSINet Europe B.V.	Switzerland	Israel Corp. Ltd.; ClearBlue Technologies, Inc.	Israel; United States	1479; 7371
6-5-2002	Feinchemie Schwebda GmbH	Germany	Makhteshim-Agan Industries Ltd.	Israel	2879
13-5-2002	Trend Hair Supplies Co. Ltd.	United Kingdom	Aderans Holdings Co., Ltd.	Japan	3999
21-5-2002	Honeywell Pharmaceutical Fine Chemicals Srl	Italy	Teva Pharmaceutical Industries Ltd.	Israel	2837
24-5-2002	Navintra Oy	Finland	Furuno Electric Co., Ltd.	Japan	3812
6-6-2002	GEIGER Vision Systems GmbH	Germany	Advanced Vision Technology Ltd.	Israel	3555
31-7-2002	Thales Contact Solutions Ltd	United Kingdom	NICE Systems Ltd.	Israel	7371
9-8-2002	Digiplug SAS	France	Faith, Inc.	Japan	7375
30-9-2002	Toyota España SL	Spain	Toyota Motor Corp.	Japan	3711
2-10-2002	Bayer AG /Insecticide & Fungicide Products Business/	Germany	Makhteshim-Agan Industries Ltd.	Israel	2879
4-10-2002	Vascutek Ltd.	United Kingdom	Terumo Corp.	Japan	3826
17-10-2002	Laboratoires Pharmaceutiques Fonet	France	Sankyo Co., Ltd. (Tokyo)	Japan	2834
26-11-2002	Thibo Bouwstaal BV	Netherlands	Hod Assaf Industries Ltd.	Israel	3441
1-12-2002	Nobel Enterprises Ltd.	United Kingdom	Inabata & Co., Ltd.	Japan	2821
13-1-2003	Komar Textil Kft	Hungary	Delta Galil Industries Ltd.	Israel	2322

19-2-2003	Bank Leumi (UK) Plc	United Kingdom	Bank Leumi Le-Israel Ltd.	Israel	6021
24-2-2003	Miza Pharmaceuticals Ltd. /Antigen Unit/	Ireland	Taro Pharmaceutical Industries Ltd.	Israel	2834
4-3-2003	Sistemas Energeticos Cando SA	Spain	Marubeni Corp.; Electric Power Development Co., Ltd.	Japan; Japan	5085; 4911
17-3-2003	Cognis Deutschland /Aromatic Chemicals & Fragrance Bus/	Germany	Kao Corp.	Japan	2844
28-3-2003	Transport-Trading-Group Edam B.V.	Netherlands	Nippon Yusen KK	Japan	4412
1-4-2003	Cowan Andrew Motorsports Ltd.	United Kingdom	Mitsubishi Motors Corp.	Japan	3711
11-7-2003	L. Dæhnfeldt A/S /Flower Seed Ops/	Denmark	Sakata Seed Corp.	Japan	5159
17-7-2003	Pillinger Air Ltd.	United Kingdom	DAIKIN INDUSTRIES Ltd.	Japan	3585
31-7-2003	Luneau Technology SAS	France	Visionix Ltd.	Israel	3559
7-8-2003	Fers Resins SA	Spain	Sumitomo Bakelite Co., Ltd.	Japan	2821
11-8-2003	US & German Operations of Willtek, Inc.	Germany	MB Tech, Inc.	South Korea	3714
18-8-2003	Bosch Automotive Systems Corp. /Differential Gear Operations/	Germany	Toyoda Machine Works Ltd.	Japan	3714
1-9-2003	Pelham International Ltd.	United Kingdom	Pasona, Inc.	Japan	7361
15-9-2003	National Car Parks Ltd. /Old/	United Kingdom	Delek Group Ltd.; National Car Parks Ltd. /Ahouvi/	Israel; United Kingdom	1382; 6799
6-10-2003	PSINet Europe B.V.	Switzerland	Israel Corp. Ltd.	Israel	1479
7-10-2003	Novoferm GmbH	Germany	Sanwa Shutter Corp. /Old/	Japan	3442
31-10-2003	BASF AG /Soil Treatment Business/	Germany	Agro-Kanesho Co., Ltd.	Japan	2879
4-11-2003	Clariant AG /Cellulose Ethers Business/	Germany	Shin-Etsu Chemical Co., Ltd.	Japan	2869
4-11-2003	Partek Forest Oy AB	Finland	Komatsu Ltd.	Japan	3531
6-11-2003	BMG /Recording Division/	Germany	Sony Corp.; Sony Music Entertainment Inc. /Recording Business/	Japan; United States	3651; 3695
13-11-2003	MKG Bank GmbH	Germany	Mitsubishi Corp.	Japan	5099
17-11-2003	Toyota Tsusho Automobile South London Ltd.	United Kingdom	Toyota Tsusho Corp.	Japan	3317
21-11-2003	Philips Heartcare Telemedicine Systems	Switzerland	SHL Telemedicine Ltd.	Israel	3845

28-11-2003	Kia Motors Espana SA	Spain	Kia Motors Corp.	South Korea	3711
16-12-2003	AP Amortiguadores SA	Spain	Kayaba Industry Co., Ltd.	Japan	3714
22-12-2003	Sysmex Molis SA	Belgium	Sysmex Corp.	Japan	3841
7-1-2004	Bodenhoff AS	Denmark	Konica Minolta Holdings, Inc.	Japan	3861
1-2-2004	MacQueen Air Conditioning Ltd.	United Kingdom	DAIKIN INDUSTRIES Ltd.	Japan	3585
11-3-2004	Reifen Schwarz GmbH & Co. KG /14 Stores/	Germany	Bridgestone Corp.	Japan	3011
31-3-2004	Indet Safety Systems AS	Czech Republic	Nippon Kayaku Co., Ltd.	Japan	2865
5-4-2004	Nicolor Vegyipari Rt	Hungary	Dainichiseika Color & Chemicals Mfg. Co., Ltd.	Japan	2819
20-5-2004	Intrepid Energy CNS Ltd	United Kingdom	Sumitomo Corp.	Japan	2992
27-5-2004	International Flavors & Fragrances /Fruit Prep Business/	Switzerland	Frutarom Industries Ltd.	Israel	2087
28-5-2004	Barayo SA	Spain	LG Philips LCD Co., Ltd.	South Korea	3679
5-7-2004	Reis Eurosystems AG	Germany	Glory Ltd.	Japan	3578
8-7-2004	Faurecia SA /Steering Column Operations/ Bitron Industrie SpA /	France	Fuji Kiko Co., Ltd.	Japan	3714
8-7-2004	Vehicle Mounted Relay Ops/	Italy	OMRON Corp.	Japan	3629
27-7-2004	Looklet	United Kingdom	Arazim Investments Ltd.	Israel	6531
17-8-2004	Dorom SRL	Italy	Teva Pharmaceutical Industries Ltd.	Israel	2837
1-9-2004	Wärtsilä France SAS /Mulhouse Industrial Operations/	France	Mitsubishi Corp.	Japan	5099
9-9-2004	Hitachi-Furukawa Loaders Europe SAS	France	Hitachi Construction Machinery Co., Ltd.	Japan	3531
10-9-2004	HT Troplast AG /Trosifol Business/	Germany	Kuraray Co., Ltd.	Japan	2821
26-9-2004	Gruppo Manzoni SpA	Italy	Aida Engineering Ltd.	Japan	3542
27-9-2004	Energy North Sea Holdings Ltd.	United Kingdom	Marubeni Corp.	Japan	5085
4-10-2004	Dione Plc	United Kingdom	Lipman Electronic Engineering Ltd.	Israel	3577
29-10-2004	Sakha Diamond Manufacturing Bvba	Belgium	SAKHA DIAMOND Corp.	Japan	3911
24-11-2004	Maspac Ltd.	Ireland	Goodman Co., Ltd.	Japan	3841
24-11-2004	MNS Nippon Sanso	Germany	Taiyo Nippon Sanso Corp.	Japan	2813
25-11-2004	Markt Norway AS	Norway	Hitachi Koki Co., Ltd.	Japan	3541
21-12-2004	Steinberg Media Technologies GmbH	Germany	Yamaha Corp.	Japan	3931

22-12-2004	Isuzu Iberica SA	Spain	Mitsubishi Motors Corp.; Isuzu Motors Ltd.; Bergé Grupo; Berge Automation SL	Japan; Japan; Spain; Spain	3711; 3711; 5012; 5012
24-12-2004	Suomen Rakennuskone Oy	Finland	Sumitomo Corp.	Japan	2992
3-1-2005	Menzies Hotels Group Ltd.	United Kingdom	Nikko Cordial Corp.; Nikko Principal Investments Ltd.; Menzies Hotels Group Ltd. /Management/	Japan; United Kingdom; United Kingdom	6211; 6771; 6799
7-1-2005	Aderans Sweden AB	Sweden	Aderans Holdings Co., Ltd.	Japan	3999
11-1-2005	Metz Anlagentechnik GmbH /Power Plant Construction Business/	Germany	TAKUMA CO., LTD.	Japan	1623
19-1-2005	UNIT SpA	Italy	Retalix Ltd.	Israel	7372
25-1-2005	Samsmak Foods Sp. z.o.o.	Poland	Ajinomoto Co., Inc.	Japan	2087
24-2-2005	BASF AG /Global Triforine Fungicide Business/	Germany	Sumitomo Corp.	Japan	2992
24-3-2005	Eques Coatings BV	Netherlands	Dainippon Ink & Chemicals, Inc.	Japan	2816
25-3-2005	Doncafe Group doo	Serbia	Strauss-Elite Ltd.	Israel	2095
29-3-2005	Bank of New York-Inter Maritime Bank	Switzerland	Bank Hapoalim BM	Israel	6021
18-4-2005	ErftCarbon GmbH & Co. KG	Germany	Tokai Carbon Co., Ltd.	Japan	2895
19-4-2005	Wärtsilä Oyj Abp /Alsace Diesel Engine Factory/	France	Mitsubishi Heavy Industries, Ltd.	Japan	3731
27-4-2005	Société d'Etudes pour la Réalisation des Moules & Outillages	France	ARRK Corp.	Japan	7373
2-5-2005	Vyncolit NV	Belgium	Sumitomo Bakelite Co., Ltd.; Sumitomo Bakelite Europe NV	Japan; Belgium	2821; 2821
11-5-2005	Kontron Medical SAS	France	Fukuda Denshi Co., Ltd.	Japan	3845
17-5-2005	Joseph Ltd.	United Kingdom	Onward Kashiya Co., Ltd. /Old/	Japan	2326
2-6-2005	Inca Digital Printers Ltd.	United Kingdom	Dainippon Screen Mfg. Co., Ltd.	Japan	3559
7-6-2005	Ceres Container Terminals Europe BV	Netherlands	Nippon Yusen KK	Japan	4412
8-6-2005	TECOMA Holdings AG	Switzerland	EIZO Nanao Corp.; Eizo Nanao AG	Japan; Switzerland	3577; 5045
1-7-2005	Oy Gamecluster Ltd.	Finland	Club iT Corp.	Japan	7359
5-7-2005	ILFORD Imaging Switzerland GmbH	Switzerland	Oji Paper Co., Ltd. /Old/	Japan	2621

7-7-2005	Hyundai Car (UK) Ltd.	United Kingdom	HYUNDAI Corp.	South Korea	3711
19-7-2005	Invensys Plc /Lambda Power Division/	United Kingdom	TDK Corp.	Japan	3675
28-7-2005	Calpine Corp. /Saltend Energy Operations (2)/	United Kingdom	Mitsui & Co., Ltd.; International Power Plc; Normantrail (UK Co. 3) Ltd.	Japan; United Kingdom; United Kingdom	5052; 4911; 8748
4-8-2005	Medika AG	Switzerland	Teva Pharmaceutical Industries Ltd.	Israel	2837
11-8-2005	NetTest A/S	Denmark	Anritsu Corp.	Japan	3825
18-8-2005	Dürr AG /Development Test Systems Business/	Germany	Horiba, Ltd.	Japan	3825
22-9-2005	Canon España SA	Spain	Canon, Inc.	Japan	3579
29-9-2005	TROCELLEN GmbH	Germany	Furukawa Electric Co., Ltd.; Otsuka Chemical Co. Ltd. /Old/; Trocellen GmbH /Furukawa Electric Co. & Otsuka Chemical Co./	Japan; Japan; Japan	3643; 2869; 6799
3-10-2005	BARH Ltd.	United Kingdom	Honda Motor Co., Ltd.	Japan	3711
5-10-2005	Celanese Corp. /Cycloolefine Copolymer Business/	Germany	Daicel Chemical Industries Ltd.; Polyplastics Co., Ltd.	Japan; Japan	2869; 2821
27-10-2005	Rosner GmbH & Co. KG	Germany	Link Theory Holdings Co., Ltd.	Japan	5621
13-11-2005	Interasco A.E.	Greece	Harel Hamishmar Investments Ltd.	Israel	6399
17-11-2005	NICE Switzerland AG	Switzerland	NICE Systems Ltd.	Israel	7371
18-11-2005	P&O Nedlloyd Container Line Ltd. /Europe S Africa Trade Ops/	United Kingdom	Mitsui O.S.K. Lines, Ltd.	Japan	4412
27-12-2005	Avecia Inkjet Ltd.	United Kingdom	FUJIFILM Holdings Corp.	Japan	3861
27-12-2005	POLIFOAM Muanyagfeldolgozo Kft	Hungary	Furukawa Electric Co., Ltd.; Otsuka Chemical Co. Ltd. /Old/; TROCELLEN GmbH	Japan; Japan; Germany	3643; 2869; 3086
30-1-2006	Ticona /German & U.S. Polymer Business/	Germany	Daicel Chemical Industries Ltd.	Japan	2869
27-2-2006	Pilkington Plc	United Kingdom	Nippon Sheet Glass Co., Ltd.	Japan	3211
17-3-2006	Helmut Lang DSM Desotech, Inc.	Austria	Link Theory Holdings Co., Ltd.	Japan	5621
20-3-2006	/Display Coatings Operations/	Netherlands	JSR Corp.	Japan	2822
27-3-2006	Volkswagen Bordnetze GmbH	Germany	Sumitomo Corp.	Japan	2992

5-4-2006	AgfaPhoto GmbH /Substrates Production Division/	Germany	Hyosung Corp.	South Korea	2281
11-4-2006	Image Polymers Europe	United Kingdom	Mitsui Chemicals, Inc.	Japan	2865
24-4-2006	CIM-Team Technische Informatik GmbH	Germany	Zuken, Inc.	Japan	7372
16-5-2006	InSeal Contactless SAS	France	On Track Innovations Ltd.	Israel	3577
18-9-2006	Radstone Technology Plc	United Kingdom	FANUC Ltd.; GE Fanuc Automation Corp.	Japan; United States	3542; 7389
21-9-2006	Siemens Dispolok GmbH	Germany	Mitsui & Co., Ltd.	Japan	5052
28-9-2006	Aquaconsult GmbH	Austria	Sanki Engineering Co., Ltd.	Japan	1796
29-9-2006	PSA Corp. Ltd. /3 Zeebrugge & Antwerp Ferry Terminals/	Belgium	Nippon Yusen KK	Japan	4412
3-10-2006	Acatris Holding BV	Netherlands	Frutarom Industries Ltd.	Israel	2087
20-10-2006	Valeo SA /Motors & Actuators/	France	NIDEC Corp.	Japan	3621
26-10-2006	Energopolis OAO	Russian Federation	Zur Shamir Holdings Ltd.; Global Direct Insurance Investments VOF	Israel; Netherlands	6799; 6399
31-10-2006	Bankpozitif Kredi ve Kalkinma Bankasi AS	Turkey	Bank Hapoalim BM	Israel	6021
6-11-2006	Mitsui Babcock Energy Ltd.	United Kingdom	Doosan Heavy Industries & Construction Co., Ltd.	South Korea	3443
7-11-2006	UIQ Technology AB	Sweden	Telefon AB LM Ericsson; Sony Corp.; Sony Ericsson Mobile Communications AB	Sweden; Japan; Sweden	3663; 3651; 3669
8-11-2006	Ferghana Textile LLC	Uzbekistan	Daewoo International Corp.	South Korea	5051
20-11-2006	Protect Data AB	Sweden	Check Point Software Technologies Ltd.	Israel	7372
27-11-2006	Koninklijke Philips Electronics NV /Sound Solutions /	Belgium	D&M Holdings, Inc.	Japan	3651
29-11-2006	Polenz GmbH	Germany	Electra Consumer Products Ltd.; ACE Klimatechnik GmbH	Israel; Germany	3585; 5075
5-12-2006	Shima-Orsi SRL	Italy	Shima Seiki Mfg. Ltd.	Japan	3552
7-12-2006	Corona Medical SASU	France	Paramount Bed Co., Ltd.	Japan	3821
12-1-2007	ISUZU MOTORS Germany GmbH	Germany	Isuzu Motors Ltd.	Japan	3711
25-1-2007	Luxan BV /Sales Division/	Netherlands	Mitsui & Co., Ltd.	Japan	5052
1-2-2007	Carat International BV	Netherlands	Hitachi Koki Co., Ltd.	Japan	3541
16-2-2007	ednet AG	Switzerland	Elecom Co., Ltd.	Japan	3577

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28-2-2007	Mitsubishi Motor Sales Sweden AB	Sweden	Sumitomo Corp.	Japan	2992
1-3-2007	Roadchef Motorways Ltd.	United Kingdom	Delek Real Estate Ltd.	Israel	6531
2-3-2007	Farsight Security Services Ltd.	United Kingdom	OPTEX Co., Ltd.	Japan	3674
5-3-2007	Neopreg AG	Switzerland	Sumitomo Bakelite Co., Ltd.	Japan	2821
12-3-2007	Paradigm Therapeutics Ltd.	United Kingdom	Takeda Pharmaceutical Co., Ltd.; Takeda Europe Holdings Ltd.	Japan; United Kingdom	2834; 2834
16-3-2007	Aqua SRL	Italy	Rinnai Corp.	Japan	3433
28-3-2007	Belmay Ltd.	United Kingdom	Frutarom Industries Ltd.	Israel	2087
3-4-2007	Cerna Hotel	Romania	Metis Capital Ltd.	Israel	6799
11-4-2007	Capture Projects Ltd.	United Kingdom	Top Image Systems Ltd.	Israel	7372
14-5-2007	New System Srl	Italy	Orbotech Ltd.	Israel	3827
31-5-2007	Press & Plant NV	Belgium	Press Kogyo Co., Ltd.	Japan	3711
18-6-2007	Hitachi Capital (UK) Plc	United Kingdom	Hitachi Capital Corp.	Japan	6153
19-6-2007	Scandlines GmbH	Germany	3i Group Plc; Royal Bank of Scotland Group Plc; Allianz SE; Soci�t� G�n�rale SA; Allianz Capital Partners GmbH; Mizuho Financial Group, Inc.; Deutsche Seereederei GmbH; Scandlines AG /Private Group/	United Kingdom; United Kingdom; Germany; France; Germany; Japan; Germany; Germany	6771; 6021; 6399; 6021; 6771; 6021; 4499; 6799
19-6-2007	Power Electronics Ireland	Ireland	Murata Manufacturing Co. Ltd.	Japan	3675
25-6-2007	Siemens Automation & Drives Group /Medical Monitor Business/	Germany	EIZO Nanao Corp.	Japan	3577
28-6-2007	Ytelcom SAS	France	Leadcom Integrated Solutions Ltd.	Israel	7373
5-7-2007	Microsystem SRL	Italy	Cimatron Ltd.	Israel	7373
24-7-2007	Aquila Piombo SRL	Italy	Okabe Co., Ltd.	Japan	3531
26-7-2007	Ferranti Technologies Ltd.	United Kingdom	Elbit Systems Ltd.	Israel	3795
31-7-2007	Cambridge Display Technology Ltd.	United Kingdom	Sumitomo Chemical Co., Ltd.	Japan	2869
2-8-2007	H.C. Starck GmbH & Co. KG /Battery Products Bus/	Germany	Toda Kogyo Corp.	Japan	2816

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3-8-2007	Daido Metal Russia LLC	Russian Federation	Daido Metal Co., Ltd.	Japan	3562
8-8-2007	AK & N (UK) Ltd.	United Kingdom	ITOCHU Corp.; Sumitomo Chemical Co., Ltd.; Toyo Ink Mfg. Co., Ltd.; AK & N (UK) Ltd. /Private Group/	Japan; Japan; Japan; Japan	5051; 2869; 2893; 6799
21-8-2007	Calrec Audio Ltd.	United Kingdom	D&M Holdings, Inc.	Japan	3651
24-8-2007	Surface Technology Systems Plc	United Kingdom	Sumitomo Precision Products Co., Ltd.	Japan	3674
8-10-2007	Mandator AB	Sweden	Fujitsu Ltd.	Japan	7373
10-10-2007	Omni Consulting Co. Ltd.	United Kingdom	MIND C.T.I. Ltd.	Israel	7389
15-10-2007	Gewürzmüller Group	Germany	Frutarom Industries Ltd.	Israel	2087
6-11-2007	Biogema SA	France	Israel Corp. Ltd.; ICL Performance Products LP	Israel; United States	1479; 2819
19-11-2007	Huntress Search Ltd.	United Kingdom	The Nomura Securities Co., Ltd; Huntress Search Ltd. /Management/	Japan; United Kingdom	6282; 6799
22-11-2007	Tobler SAS	France	Mori Seiki Co., Ltd.	Japan	3541
29-11-2007	L. Bösendorfer Klavierfabrik GmbH	Austria	Yamaha Corp.	Japan	3931
10-12-2007	Telesens LLC	United Kingdom	TTI Team Telecom International Ltd.	Israel	7373
19-12-2007	Flexitech Holding SAS	France	Mitsubishi Corp.; Meiji Flow Systems Co. Ltd.	Japan; Japan	5099; 3714
27-12-2007	Arzi Bank AG	Switzerland	Israel Discount Bank Ltd.	Israel	6021
13-1-2008	Demag Plastics Group	Germany	Sumitomo Heavy Industries, Ltd.	Japan	3559
14-1-2008	Henkel KGaA /Industrial Water Treatment Business/	Germany	ICL-Israel Chemicals Ltd.; BK Giulini GmbH	Israel; Germany	2874; 5169
8-2-2008	Demag Ergotech GmbH	Germany	Sumitomo Heavy Industries, Ltd.	Japan	3559
13-2-2008	Hauzer Techno Coating BV	Netherlands	IHI Corp.; NACHTWACHE Furnaces GmbH	Japan; Germany	3511; 6799
25-2-2008	Identum Ltd.	United Kingdom	Trend Micro, Inc.	Japan	7372
11-3-2008	Arkema SA /Super Absorbent Polymers Ops/	France	Sumitomo Seika Chemicals Co., Ltd.	Japan	2899
12-3-2008	nbn Industrie GmbH	Germany	Mimaki Engineering Co., Ltd.	Japan	3577
2-4-2008	Oval (1632) Ltd.	United Kingdom	D&M Holdings, Inc.; RHJ International SA	Japan; Belgium	3651; 6771
2-4-2008	Hanil E-Hwa Automotive Slovakia sro	Slovakia	Hanil E-Wha Co., Ltd.	South Korea	3714

30-4-2008	Sofeb Informatique SARL	France	Sharp Corp.	Japan	3651
14-5-2008	Doncafe Italy /Doncafe Macedonia/	Macedonia	Strauss Group Ltd.	Israel	2095
21-5-2008	U3 Pharma AG	Germany	Daiichi Sankyo Co., Ltd.	Japan	2834
30-5-2008	Eagle Witzemann SAS	France	Eagle Industry Co., Ltd.	Japan	3053
16-6-2008	Credence Systems GmbH	Germany	Advantest Corp.	Japan	3823
25-6-2008	Eutronsec SpA	Italy	Aladdin Knowledge Systems Ltd.	Israel	7372
1-7-2008	Altra Trading GmbH	Germany	Shamir Optical Industry Ltd.	Israel	3827
1-7-2008	ActiveComp Electronic GmbH	Germany	Macnica, Inc.	Japan	3674
10-7-2008	Sieto SASU	France	Toyota Boshoku Corp.	Japan	3714
14-7-2008	Microsystem SRL	Italy	Cimatron Ltd.	Israel	7373
15-7-2008	MOC Exploration (UK) Ltd.	United Kingdom	Nippon Oil Corp.	Japan	5171
31-7-2008	Epcos AG	Germany	TDK Corp.	Japan	3675
4-8-2008	Hyundai Motor SK sro	Slovakia	Hyundai Motor Co., Ltd.	South Korea	3711
18-8-2008	Moxy Engineering AS	Norway	Doosan Infracore Co., Ltd.	South Korea	3537
1-9-2008	Jil Sander AG	Germany	Onward Holdings Co., Ltd.	Japan	2326
9-9-2008	Auxiliar de Componentes Electricos SA	Spain	Fujikura Ltd.	Japan	3357
11-9-2008	Blue Ocean Wireless Ltd.	United Kingdom	NTT DoCoMo, Inc.	Japan	4812
23-9-2008	Lehman Brothers Holdings, Inc. /Europe & Middle East Ops/	United Kingdom	The Nomura Securities Co., Ltd	Japan	6282
25-9-2008	F2 Chemicals Ltd.	United Kingdom	Showa Denko K.K.	Japan	2869
13-10-2008	Hyundai Automobili Italia Importazioni SpA	Italy	Hyundai Motor Co., Ltd.	South Korea	3711
24-10-2008	Kopieersystemen Nederland BV	Netherlands	Konica Minolta Holdings, Inc.	Japan	3861
4-11-2008	Fujitsu Siemens Computers (Holding) BV	Netherlands	Fujitsu Ltd.	Japan	7373
11-11-2008	Lucite International Ltd.	United Kingdom	Mitsubishi Chemical Corp.	Japan	3089
24-11-2008	Oximeplus SA	Spain	Teijin Ltd.; Esteve SA; Teijin Pharma Ltd.; Oximeplus SA /Private Group/	Japan; Spain; Japan; Spain	2299; 2834; 2834; 6799
1-12-2008	Seiler Pianofortefabrik GmbH	Germany	Samick Musical Instruments Co., Ltd.	South Korea	3931

8-12-2008	Wyndeham Press Group Ltd.	United Kingdom	Bank Leumi Le-Israel Ltd.; Bank Leumi (UK) Plc; Leumi ABL Ltd.; Walstead Investments Ltd.	Israel; United Kingdom; United Kingdom; United Kingdom	6021; 6021; 6197; 2759
11-12-2008	Magan Yu dd	Serbia	Makhteshim-Agan Industries Ltd.	Israel	2879
12-12-2008	Lehman Brothers Holdings, Inc. /French IB Operations/	France	The Nomura Securities Co., Ltd; Banque Nomura France SA	Japan; France	6282; 6211
22-12-2008	Nokia Oyj /Security Appliance Business/	Finland	Check Point Software Technologies Ltd.	Israel	7372
25-12-2008	Haldex Garphyttan AB	Sweden	Suzuki Metal Industry Co., Ltd.	Japan	3315
31-12-2008	Avon Automotive Holdings, Inc. /VMS Business/	United Kingdom	Dong Ah Tire & Rubber Co., Ltd. /Old/	South Korea	3011
19-1-2009	Sokia	Russian Federation	Kia Motors Corp.	South Korea	3711
23-1-2009	STX Europe AS	Norway	STX Shipbuilding Co., Ltd.	South Korea	3731
4-2-2009	myonic GmbH	Germany	Minebea Co., Ltd.	Japan	3562
12-3-2009	Sysmex Nederland BV	Netherlands	Sysmex Corp.	Japan	3841
13-4-2009	Khorol Zerno LLC	Russian Federation	Hyundai Heavy Industries Co., Ltd.	South Korea	3731
6-5-2009	Oranje-Nassau Energie BV	Netherlands	Sumitomo Corp.; SHV Holdings NV; Dyas UK Ltd.; ONH BV; Oranje-Nassau Energie BV /Private Group/	Japan; Netherlands; United Kingdom; Netherlands; Netherlands	2992; 4924; 1382; 6799; 6799
13-5-2009	Computes, Inc.	Italy	Amada Co., Ltd.	Japan	3541
3-6-2009	Metris NV	Belgium	Nikon Corp.	Japan	3577
12-6-2009	Tribac Leaf Ltd. /Worldwide Operations Excluding Zimbabwe/	United Kingdom	Japan Tobacco Inc.; Government of Japan	Japan; Japan	2111; 9141
21-6-2009	Chr. Hansen A/S /Savory Business/	Germany	Frutarom Industries Ltd.	Israel	2087
6-7-2009	LEWA GmbH	Germany	Nikkiso Co., Ltd.	Japan	3842
15-7-2009	PL Automotive Holding BV	Netherlands	Eagle Industry Co., Ltd.	Japan	3053
3-8-2009	Yarden Ltd.	United Kingdom	Osem Investment Ltd.; Osem U.K. Ltd.	Israel; United Kingdom	2099; 2099
4-8-2009	Tillotts Pharma AG	Switzerland	Zeria Pharmaceutical Co., Ltd.	Japan	5122
6-8-2009	Qimonda AG /Graphics Memory Operation/	Germany	Elpida Memory, Inc.	Japan	3674

10-9-2009	Powerlase Ltd.	United Kingdom	EO Technics Co., Ltd.	South Korea	8748
14-9-2009	Skoda Power as	Czech Republic	Doosan Heavy Industries & Construction Co., Ltd.	South Korea	3443
8-10-2009	Bando Kockaya Belt Manufacturing (Turkey), Inc.	Turkey	Bando Chemical Industries Ltd.	Japan	3052
13-11-2009	Petro Summit Investments UK Ltd.	United Kingdom	Idemitsu Kosan Co., Ltd.	Japan	2911
3-12-2009	PERRIN GmbH	Germany	KITZ Corp.	Japan	3491
14-12-2009	Hyproclean Deutschland GmbH	Germany	ICL-Israel Chemicals Ltd.; ICL Industrial Products Ltd.; ICL Performance Products LP	Israel; Israel; United States	2874; 2819; 2819
16-12-2009	Tricorn Partners LLP	United Kingdom	The Nomura Securities Co., Ltd	Japan	6282
18-1-2010	ABV Logistics Ltd.	United Kingdom	COBEP SA; Mitsui O.S.K. Lines, Ltd.; JF Hillebrand UK Ltd.	Belgium; Japan; United Kingdom	6771; 4412; 4731
27-1-2010	Artenius UK Ltd.	United Kingdom	KP Chemical Corp.; Lotte Chemical UK Ltd.	South Korea; United Kingdom	2865; 2865
15-2-2010	Nexen Energy Marketing London Ltd.	United Kingdom	The Nomura Securities Co., Ltd	Japan	6282
24-2-2010	Kabelschlepp GmbH-Hünsborn	Germany	Tsubakimoto Chain Co.	Japan	3535
18-3-2010	ratiopharm GmbH	Germany	Teva Pharmaceutical Industries Ltd.	Israel	2837
26-4-2010	SiCrystal AG	Germany	ROHM Co., Ltd.	Japan	3672
5-5-2010	Isofotón SA	Spain	Toptec Corp.; Affirma Energia Solar	South Korea; Spain	3559; 3674
13-5-2010	Axis Network Technology Ltd.	United Kingdom	Ace Technologies Corp.; Ace & Partners Corp.	South Korea; South Korea	3663; 3663
21-5-2010	Haagtechno BV	Netherlands	Panasonic Corp.	Japan	3639
26-5-2010	The Dow Chemical Co. /Hydrogenated Petroleum Resin Business/	Germany	Arakawa Chemical Industries Ltd.	Japan	2861
17-6-2010	PriceMinister SAS	France	Rakuten, Inc.	Japan	5961
29-6-2010	Noesis Solutions NV	Belgium	Cybernet Systems Co., Ltd.	Japan	7372
6-7-2010	Nokia Oyj /Wireless Modem Business/	Finland	Renesas Electronics Corp.	Japan	3674
6-7-2010	Bora Shipping Ltd.	Bulgaria	COBEP SA; Mitsui O.S.K. Lines, Ltd.; JF Hillebrand Group AG	Belgium; Japan; Germany	6771; 4412; 4731
12-7-2010	Haglofs Scandinavia AB	Sweden	ASICS Corp.	Japan	3949

6-8-2010	Chelford Sap Solutions Ltd.	United Kingdom	NTT DATA Corp.; itelligence AG	Japan; Germany	7373; 7372
8-8-2010	Hotel Lutetia	France	Alrov (Israel) Ltd.	Israel	6799
9-9-2010	Nordic Seafood A/S	Denmark	Nippon Suisan Kaisha, Ltd.	Japan	2092
20-9-2010	Elxys Innovations SA	Greece	Ceragon Networks Ltd.	Israel	4899
1-10-2010	CalEnergy Gas (Australia) Ltd.	United Kingdom	Toyota Tsusho Corp.	Japan	3317
4-10-2010	Sonneborn & Rieck Ltd.	United Kingdom	Fujikura Kasei Co., Ltd.	Japan	2295
15-10-2010	Hansen Industrial Transmissions NV	Belgium	Sumitomo Heavy Industries, Ltd.	Japan	3559
28-10-2010	Theramex SpA	Italy	Teva Pharmaceutical Industries Ltd.	Israel	2837
9-11-2010	Royal Philips Electronics NV /North America & Mexico TV Bus/	Netherlands	Funai Electric Co., Ltd.	Japan	3663
10-11-2010	Lagena Distribution AB	Sweden	COBEP SA; Mitsui O.S.K. Lines, Ltd.; JF Hillebrand Group AG	Belgium; Japan; Germany	6771; 4412; 4731
19-11-2010	Picodrill SA	Switzerland	Asahi Glass Co., Ltd.	Japan	3211
22-11-2010	European Marketing Specialists Network Ltd.	United Kingdom	M3, Inc.; M3 USA Corp.	Japan; United States	7375; 8733
26-11-2010	Bekaert SA /Treated Water Pressurized Container Business/	Belgium	Arisawa Mfg. Co., Ltd.	Japan	3679
29-11-2010	Vincotech GmbH	Germany	Mitsubishi Electric Corp.	Japan	3621
20-12-2010	AE&E Inova AG	Switzerland	Hitachi Zosen Corp.	Japan	3531
20-12-2010	Mantener Holding AG	Switzerland	SONGWON INDUSTRIAL Co., Ltd.	South Korea	2819
27-12-2010	Rieber Og Son ASA /Industrial Spice Business/	Norway	Frutarom Industries Ltd.	Israel	2087
19-1-2011	Nera Networks AS	Norway	Ceragon Networks Ltd.	Israel	4899
19-1-2011	Liquavista BV	Netherlands	Samsung Electronics Co., Ltd.	South Korea	3674
23-1-2011	East Anglian Food Ingredients Ltd.	United Kingdom	Frutarom Industries Ltd.	Israel	2087
27-1-2011	Isagro Italia SRL	Italy	Sumitomo Chemical Co., Ltd.	Japan	2869
31-1-2011	Logan Teleflex (UK) Ltd.	United Kingdom	Daifuku Co., Ltd.	Japan	3535
31-1-2011	Tomori E&P Ltd.	United Kingdom	Mitsubishi Corp.	Japan	5099
31-1-2011	Kaba Gilgen AG	Switzerland	Nabtesco Corp.	Japan	3724
7-2-2011	Amiad France SARL	France	Amiad Filtration Systems Ltd.	Israel	3569
10-2-2011	Banque Safdié SA	Switzerland	Bank Leumi Le-Israel Ltd.	Israel	6021
15-2-2011	CyberTech International BV	Netherlands	NICE Systems Ltd.	Israel	7371

21-2-2011	ProStrakan Group Plc	United Kingdom	Kyowa Hakko Kirin Co., Ltd.	Japan	2834
2-3-2011	Kwik-Fit Holdings Ltd.	United Kingdom	ITOCHU Corp.; ITOCHU Europe Plc	Japan; United Kingdom	5051; 8748
6-3-2011	Hawk-Eye Innovations Ltd.	United Kingdom	Sony Corp.	Japan	3651
24-3-2011	Cayenne Werbeagentur GmbH	Germany	Dentsu, Inc.	Japan	7311
7-4-2011	Acomon AG	Switzerland	Mitsui Chemicals, Inc.	Japan	2865
11-4-2011	Fuentes Fertilizantes SL	Spain	ICL-Israel Chemicals Ltd.	Israel	2874
25-4-2011	Value Team SpA	Italy	Nippon Telegraph & Telephone Corp.; NTT DATA EUROPE GmbH & Co. KG	Japan; Germany	4813; 6799
11-5-2011	Basildon Chemical Co. Ltd.	United Kingdom	KCC Corp.	South Korea	3211
19-5-2011	Nycomed International Management GmbH	Switzerland	Takeda Pharmaceutical Co., Ltd.	Japan	2834
19-5-2011	Landis+Gyr AG	Switzerland	Toshiba Corp.; Government of Japan; Innovation Network Corporation of Japan, Ltd.; Landis & Gyr AG /Private Group/	Japan; Japan; Japan; Switzerland	3651; 9141; 6771; 6799
20-5-2011	Probil Bilgi Islem Destek ve Danismanlik San ve Tic AS	Turkey	AudioCodes Ltd.; Nortel Networks Netas Telekomünikasyon AS	Israel; Turkey	3661; 3669
26-5-2011	Chr. Hansen Italia SpA /Savory Ops/	Italy	Frutarom Industries Ltd.	Israel	2087
2-6-2011	Steak Group Ltd.	United Kingdom	Dentsu, Inc.	Japan	7311
9-6-2011	Polytec Holding AG /Automotive Interior Business/	Germany	Toyota Boshoku Corp.	Japan	3714
9-6-2011	PC-Resin GmbH	Germany	Miwon Specialty Chemical Co., Ltd. /Old/	South Korea	2819
1-7-2011	Freudenberg Nok Mechatronics GmbH & Co. KG /Actuators Ops/	Germany	Eagle Industry Co., Ltd.	Japan	3053
27-7-2011	Amcor Packaging Glass Pharma SAS	France	Nipro Corp.	Japan	3841
3-8-2011	Soc Annick Goutal SA	France	Amorepacific Corp.	South Korea	2844
4-8-2011	Permasteelisa SpA	Italy	JS Group Corp.	Japan	3442
7-8-2011	Annick Goutal SAS	France	Amorepacific Corp.	South Korea	2844
18-8-2011	Global Safety Textiles GmbH	Germany	Hyosung Corp.	South Korea	2281
21-8-2011	Aromco Ltd.	United Kingdom	Frutarom Industries Ltd.	Israel	2087

23-8-2011	Doctors.net.uk Ltd.	United Kingdom	So-net Entertainment Corp.; M3, Inc.; M3 USA Corp.	Japan; Japan; United States	4822; 7375; 8733
1-9-2011	New Index AS	Norway	Seiko Epson Corp.	Japan	3577
1-9-2011	Lundwalls AB	Sweden	Mori Seiki Co., Ltd.	Japan	3541
19-9-2011	The Fizzback Group Ltd.	United Kingdom	NICE Systems Ltd.	Israel	7371
21-9-2011	Play Holdings Ltd.	United Kingdom	Rakuten, Inc.	Japan	5961
26-9-2011	TMD Friction Group SA	Luxembourg	Nisshinbo Holdings Inc.	Japan	2281
28-9-2011	Novagali Pharma SA	France	Santen Pharmaceutical Co., Ltd.	Japan	2834
5-10-2011	CEM Industries Srl	Italy	SodaStream International Ltd.	Israel	2086
27-10-2011	Sony Ericsson Mobile Communications AB	Sweden	Sony Corp.	Japan	3651
16-11-2011	OHL Medio Ambiente Inima SA	Spain	GS Engineering & Construction Corp.	South Korea	8711
21-11-2011	Emil Frey AG /France Distribution Operations 3/	France	Hyundai Motor Co., Ltd.	South Korea	3711
24-11-2011	Colombo Via Della Spiga SRL	Italy	Cheil Industries, Inc. (Gumi)	South Korea	2999
30-11-2011	Copiator Group PlanOrg Informatik	Sweden	Sharp Corp.	Japan	3651
9-12-2011	GmbH /PlanOrg Industry Unit/	Germany	NTT DATA Corp.; itelligence AG	Japan; Germany	7373; 7372
9-12-2011	Nippon Antenna Europe Ltd.	United Kingdom	Harada Industry Co., Ltd.	Japan	3621
13-12-2011	ATG Additive Technology Greiz GmbH	Germany	SONGWON INDUSTRIAL Co., Ltd.	South Korea	2819
23-12-2011	SCHROTH Safety Products GmbH	Germany	Takata Corp.	Japan	3714
29-12-2011	Alkaline SAS	France	Nippon Soda Co., Ltd.	Japan	2819
5-1-2012	Savoury Flavours (Holding) Ltd.	United Kingdom	Frutarom Industries Ltd.	Israel	2087
10-1-2012	Ste Des Fibres De Carbone SA unicorn	France	Toray Industries, Inc.	Japan	2281
11-1-2012	Versicherungsmakler GmbH	Germany	Fujitsu Ltd.	Japan	7373
17-1-2012	RBS Aviation Capital	Ireland	Sumitomo Corp.; Sumitomo Mitsui Financial Group, Inc.; Sumitomo Mitsui Finance & Leasing Co., Ltd.; RBS Aviation Capital /Private Group/	Japan; Japan; Japan; Japan	2992; 6021; 7359; 6799
25-1-2012	Océ NV	Netherlands	Canon, Inc.; Canon Finance Netherlands BV	Japan; Netherlands	3579; 6799

27-1-2012	Raytec Ltd.	United Kingdom	OPTEX Co., Ltd.	Japan	3674
31-1-2012	Nissin Showa UK Ltd.	United Kingdom	Showa Corp.	Japan	3714
4-2-2012	AMASYS GmbH	Switzerland	Amada Co., Ltd.	Japan	3541
10-2-2012	MGLas AG	Germany	Nipro Corp.	Japan	3841
12-2-2012	Etol dd Celje	Slovenia	Frutarom Industries Ltd.	Israel	2087
12-2-2012	Mobiclip SAS	France	Nintendo Co., Ltd.	Japan	3944
14-2-2012	Talaris Ltd.	United Kingdom	Glory Ltd.	Japan	3578
2-3-2012	Oerlikon Solar-Lab SA	Switzerland	Tokyo Electron Ltd.	Japan	3559
5-3-2012	Colt Car Retail Ltd.	United Kingdom	VT Holdings Co., Ltd.	Japan	7539
13-3-2012	Kverneland AS	Norway	Kubota Corp.	Japan	3523
19-3-2012	Seajacks International Ltd.	United Kingdom	Marubeni Corp.; Innovation Network Corporation of Japan, Ltd.	Japan; Japan	5085; 6771
30-3-2012	Flovetro SpA	Italy	Nippon Sheet Glass Co., Ltd.	Japan	3211
30-3-2012	Eveden Ltd.	United Kingdom	Wacoal Holdings Corp.	Japan	2254
12-4-2012	Ansaldo Sistemi Industriali SpA	Italy	NIDEC Corp.	Japan	3621
16-4-2012	Tiami Vattenkemi AB	Sweden	ICL-Israel Chemicals Ltd.; BK Giulini GmbH	Israel; Germany	2874; 5169
18-4-2012	Bento Bantcilik ve Temizlik Maddeleri Sanayi Ticaret AS	Turkey	Nitto Denko Corp.	Japan	3674
14-5-2012	Buongiorno SpA	Italy	NTT DoCoMo, Inc.; DOCOMO Digital Ltd.	Japan; Germany	4812; 7372
24-5-2012	V.D.M. Invest CVA	Belgium	Japan Tobacco Inc.	Japan	2111
31-5-2012	Pago Holding AG	Switzerland	Fuji Seal International, Inc.	Japan	3565
1-6-2012	Nanoradio AB	Sweden	Samsung Electronics Co., Ltd.	South Korea	3674
4-6-2012	WMU Weser Metall Umformtechnik GmbH & Co. KG	Germany	SUNGWOO HITECH Co., Ltd.	South Korea	3714
12-6-2012	Ideaflash Srl	Italy	SK hynix, Inc.	South Korea	3674
13-6-2012	Wuaki TV SL	Spain	Rakuten, Inc.	Japan	5961
25-6-2012	Valeo SA /Access Mechanisms Business/	France	U-Shin Ltd.	Japan	3714
6-7-2012	Quantum Clothing Group Ltd.	United Kingdom	ITOCHU Corp.	Japan	5051
12-7-2012	Aegis Group Plc	United Kingdom	Dentsu, Inc.	Japan	7311
15-7-2012	Bramhope Group Holdings Ltd.	United Kingdom	ITOCHU Corp.	Japan	5051
17-7-2012	CSR Plc /Handset Operations/	United Kingdom	Samsung Electronics Co., Ltd.	South Korea	3674

20-7-2012	net-m privatbank 1891 AG	Germany	NTT DoCoMo, Inc.; net mobile AG	Japan; Germany	4812; 4899
26-7-2012	R-TEK Ltd.	United Kingdom	Kasai Kogyo Co., Ltd.	Japan	3714
1-8-2012	FRISK Software International	Iceland	Commtouch Software Ltd.	Israel	7375
10-8-2012	Kentec Electronics Ltd.	United Kingdom	Hochiki Corp.	Japan	3669
22-8-2012	Takasho Europe GmbH	Germany	Takasho Co., Ltd.	Japan	3524
6-9-2012	Le Nouvel Espace Beaute SAS	France	Aderans Co., Ltd.; Aderans Europe BV; Aderans France SAS	Japan; Netherlands; France	3999; 3999; 3999
19-9-2012	Bernard Dumas SAS	France	Hokuetsu Kishu Paper Co., Ltd.	Japan	2611
25-9-2012	Alto SpA	Italy	Mizuno Corp.	Japan	3949
27-9-2012	Ionbond AG Olten	Switzerland	IHI Corp.	Japan	3511
29-10-2012	itelligence AG	Germany	NTT DATA Corp.; NTT DATA EUROPE GmbH & Co. KG	Japan; Germany	7373; 6799
30-10-2012	Horizon Nuclear Power Ltd.	United Kingdom	Hitachi Ltd.	Japan	3651
5-11-2012	Avingtrans Industrial Products Ltd.	United Kingdom	Kuroda Precision Industries Ltd.	Japan	3545
6-11-2012	Korea Fuel-Tech Poland Sp.z o.o.	Poland	Korea Fuel-Tech Corp.	South Korea	3714
6-11-2012	Alpha Direct Services SAS	France	Rakuten, Inc.	Japan	5961
14-11-2012	Enpure Ltd.	United Kingdom	Doosan Heavy Industries & Construction Co., Ltd.	South Korea	3443
16-11-2012	VegTrug Ltd.	United Kingdom	Takasho Co., Ltd.	Japan	3524
19-11-2012	Eleven GmbH	Germany	Commtouch Software Ltd.	Israel	7375
30-11-2012	SDI-Molan GmbH & Co. KG	Germany	Takata Corp.	Japan	3714
17-12-2012	Dytech Dynamic Fluid Technologies SpA	Italy	Tokai Rubber Industries, Ltd.	Japan	3052
3-1-2013	Amada Denmark A/S	Denmark	Amada Co., Ltd.	Japan	3541
10-1-2013	Visteon Hungary Kft	Hungary	Halla Climate Control Corp.	South Korea	3714
17-1-2013	IHI Charging Systems International GmbH	Germany	IHI Corp.	Japan	3511
25-1-2013	Anvis Group GmbH	Germany	Tokai Rubber Industries, Ltd.	Japan	3052
25-1-2013	Franco Vago SpA	Italy	Nippon Express Co., Ltd.	Japan	4731
28-1-2013	Soleco SRL	Italy	Ellomay Capital Ltd.	Israel	4911
30-1-2013	KH-Automation Projects GmbH	Germany	Mitsubishi Electric Corp.	Japan	3621
4-2-2013	Sutton & East Surrey Water Plc	United Kingdom	Sumitomo Corp.	Japan	2992
18-2-2013	Kienle + Spiess GmbH	Germany	Sumitomo Corp.	Japan	2992

25-2-2013	Thermphos International BV /P2S5 Bus/	Germany	Israel Corp. Ltd.; ICL Performance Products LP	Israel; United States	1479; 2819
1-3-2013	Isuzu Truck (UK) Ltd.	United Kingdom	Isuzu Motors Ltd.	Japan	3711
18-3-2013	Whessoe Oil & Gas Ltd.	United Kingdom	Samsung C&T Corp. /Old/	South Korea	1542
19-3-2013	Solar Holding SRL	Italy	Mitsubishi Corp.; Government of Japan; Solar Ventures SRL; Innovation Network Corporation of Japan, Ltd.; Solar Holding SRL /Private Group/; AME Ventures Srl	Japan; Italy; Japan; Italy; Italy	5099; 9141; 4911; 6771; 6799; 6771
28-3-2013	Nabtesco Oclap SRL	Italy	Nabtesco Corp.	Japan	3724
4-4-2013	Heraeus Holding GmbH /Heraeus Dental Business/	Germany	Mitsui Chemicals, Inc.	Japan	2865
8-4-2013	RunMyProcess SAS	France	Fujitsu Ltd.	Japan	7373
10-4-2013	Software Imaging Technology Ltd.	United Kingdom	Hancom, Inc.	South Korea	7372
25-4-2013	Arets Graphics NV	Belgium	Toyo Ink SC Holdings Co., Ltd.	Japan	2893
4-6-2013	Geveke Werktuigbouw BV	Netherlands	Nikkiso Co., Ltd.	Japan	3842
4-6-2013	IPtronics A/S almeda GmbH	Denmark	Mellanox Technologies Ltd.	Israel	3674
1-7-2013	/Telehealth Services Business/	Germany	SHL Telemedicine Ltd.	Israel	3845
2-7-2013	Metaform Langues SARL	France	CDS Co., Ltd.	Japan	2741
16-7-2013	Thin Materials AG	Germany	Nissan Chemical Industries Ltd.	Japan	2879
31-7-2013	Spinreact SA	Spain	Toyobo Co., Ltd.	Japan	2823
1-8-2013	LECIP Arcontia AB	Sweden	Lecip Holdings Corp.	Japan	3823
8-8-2013	Innovative Components Technologies GmbH	Germany	Dongkook Industrial Co., Ltd.	South Korea	3714
21-8-2013	ZPD A/S	Denmark	Zeria Pharmaceutical Co., Ltd.	Japan	5122
27-8-2013	Fine Trade GmbH	Austria	NTT DoCoMo, Inc.; DOCOMO Digital Ltd.	Japan; Germany	4812; 7372
3-9-2013	John Claxton Associates Ltd.	United Kingdom	RRsat Global Communications Network Ltd.	Israel	3663
24-9-2013	Partec GmbH	Germany	Symex Corp.	Japan	3841
25-9-2013	Symex Inostics GmbH	Germany	Symex Corp.	Japan	3841
16-10-2013	ISEM SRL /Orthosulfamuron Herbicide Business/	Italy	Nihon Nohyaku Co., Ltd.	Japan	2879
31-10-2013	Everis Spain SL	Spain	NTT DATA Corp.	Japan	7373

5-11-2013	EBS Romania SA	Romania	NTT DATA Corp.; NTT DATA EMEA Ltd.	Japan; United Kingdom	7373; 7372
9-12-2013	Arcelormittal Wire International SA	Luxembourg	KISWIRE Ltd.	South Korea	3315
10-12-2013	Scantec GmbH	Germany	Macnica, Inc.; MACNICA GmbH	Japan; Germany	3674; 5065
18-12-2013	Ceramic Fuel Cells (Powder) Ltd.	United Kingdom	Israel Corp. Ltd.; ICL Performance Products LP	Israel; United States	1479; 2819
18-12-2013	Hagesüd Group	Germany	ICL-Israel Chemicals Ltd.	Israel	2874
23-12-2013	Jujo Thermal Ltd.	Finland	Nippon Paper Industries Co., Ltd.	Japan	2611
9-1-2014	Lighthouse (UK) Ltd.	United Kingdom	Max Co., Ltd.	Japan	3579
30-1-2014	Meteor Gummiwerke K H Bädje GmbH & Co. KG	Germany	Toyoda Gosei Co., Ltd.	Japan	3714
3-2-2014	PHP Fibers GmbH	Germany	Toyobo Co., Ltd.; Indorama Ventures Public Co. Ltd.	Japan; Thailand	2823; 2824
4-2-2014	e-Prototypy SA	Poland	ARRK Corp.; Materialise NV	Japan; Belgium	7373; 7372
10-2-2014	Inox Tech SpA	Italy	SeAH Holdings Corp.	South Korea	3312
12-2-2014	Europacifico Alimentos del Mar SL	Spain	Nippon Suisan Kaisha, Ltd.; Pesquera Friosur SA	Japan; Chile	2092; 0912
14-2-2014	Viber Media, Inc.	Cyprus	Rakuten, Inc.	Japan	5961
17-2-2014	Glorichem Forschung & Entwicklung GmbH	Austria	Miwon Specialty Chemical Co., Ltd. /Old/	South Korea	2819
6-3-2014	NIKAD Electronics Ltd. /Semiconductor bus & 2 Subsidiaries/	United Kingdom	Enplas Corp.; Enplas (Europe) BV	Japan; Netherlands	3674; 3544
22-4-2014	KTW Kunststofftechnik Weißenburg GmbH & Co. KG	Germany	Nifco Inc.	Japan	2821
30-4-2014	Auxquimia SA	Spain	ICL-Israel Chemicals Ltd.; ICL Performance Products LP	Israel; United States	2874; 2819
1-5-2014	Circuit Foil Luxembourg SARL	Luxembourg	Doosan Corp.	South Korea	3672
12-5-2014	Engine Lease Finance Corp.	Ireland	Mitsubishi UFJ Lease & Finance Co., Ltd.	Japan	7359
15-5-2014	ALM 2010 Ltd.	United Kingdom	Fuyo General Lease Co., Ltd.	Japan	7377
26-5-2014	Reinnervate Ltd.	United Kingdom	ReproCELL Inc.	Japan	8071
5-6-2014	Softeq Development Fllc /Firmware Business/	Belarus	SK hynix, Inc.	South Korea	3674

11-6-2014	Zandera Ltd.	United Kingdom	Japan Tobacco Inc.	Japan	2111
25-6-2014	Administração e Gestão de Sistemas de Salubridade SA	Portugal	Marubeni Corp.; Government of Japan; Innovation Network Corporation of Japan, Ltd.; Administração e Gestão de Sist de Salub SA /Private	Japan; Japan; Japan; Japan; Japan	5085; 9141; 6771; 6799
1-7-2014	Steinmüller Engineering GmbH	Germany	IHI Corp.	Japan	3511
2-7-2014	Switch Engineering Oy	Finland	YASKAWA Electric Corp.	Japan	3822
7-7-2014	SPTS Technologies Ltd.	United Kingdom	Orbotech Ltd.	Israel	3827
22-7-2014	YB Holding SA	France	Iseki & Co., Ltd.	Japan	3523
29-7-2014	Cellectis AB	Sweden	Takara Bio Inc.	Japan	2836
21-8-2014	GGF BV	Netherlands	SoftBank Corp. /Old/	Japan	4813
18-9-2014	Rodriguez I SL	Spain	Ellomay Capital Ltd.; Solarsteinn SL	Israel; Spain	4911; 6799
19-9-2014	Parker MHP S.R.L.	Italy	The Yokohama Rubber Co. Ltd.	Japan	3011
19-9-2014	Seguisolar SL	Spain	Ellomay Capital Ltd.	Israel	4911
24-9-2014	Contera Pharma ApS	Denmark	Bukwang Pharmaceutical Co., Ltd.	South Korea	2834
30-9-2014	Ubisecure Solutions, Inc.	Finland	GMO Cloud K.K.; GMO GlobalSign KK; GMO GlobalSign Ltd.	Japan; Japan; United Kingdom	7379; 7373; 7373
2-10-2014	BASF SE/Pay-Off ME Solution Business/	Germany	Agro-Kanesho Co., Ltd.	Japan	2879
7-10-2014	Trovit Search SL	Spain	NEXT Co., Ltd.	Japan	7375
26-10-2014	ICL-Israel Chemicals Ltd. /APW Business/	Germany	Kurita Water Industries Ltd.	Japan	4941
28-10-2014	MobFox Mobile Advertising GmbH	Austria	Matomy Media Group, Inc.	Israel	7311
29-10-2014	Nuvisan CDD Holding GmbH	Germany	Linical Co., Ltd.	Japan	8731
31-10-2014	Intedis GmbH & Co. KG /Tool Property/	Germany	Zuken, Inc.	Japan	7372
14-11-2014	Ansell Electrical Products Ltd.	United Kingdom	ENDO Lighting Corp.	Japan	3645
24-11-2014	Griffin Mill Garages Ltd.	United Kingdom	VT Holdings Co., Ltd.	Japan	7539
28-11-2014	Excitor A/S	Denmark	Soliton Systems KK	Japan	7373
1-12-2014	Lloyd Dynamowerke GmbH & Co. KG	Germany	Hyosung Corp.	South Korea	2281
10-12-2014	Fiberblaze A/S	Denmark	Silicom Ltd.	Israel	3661
10-12-2014	Saati SpA /Carbon Fiber & Prepreg European Business/	Italy	Toray Industries, Inc.	Japan	2281

19-12-2014	Sartorius Mechatronics T&H GmbH	Germany	Minebea Co., Ltd.; Government of Japan; Development Bank of Japan, Inc. /Private Equity/	Japan; Japan; Japan	3562; 9141; 6771
24-12-2014	Cambridge Fluid Systems Ltd.	United Kingdom	Ham-Let (Israel-Canada) Ltd.	Israel	5065
26-12-2014	DJ Cool Klima Ve Sogutma Cihazlari Sanayi Ticaret AS	Turkey	DENSO Corp.; Denso International Asia Pte Ltd.	Japan; Singapore	3694; 5013
7-1-2015	Lonstroff AG	Switzerland	Sumitomo Rubber Industries, Ltd.	Japan	3011
27-1-2015	ProLactal GmbH	Austria	ICL-Israel Chemicals Ltd.	Israel	2874
30-1-2015	ASK Industries SpA Solvay SA /German Refrigerant & Pharma Propellants Bus/	Italy	JVC Kenwood Corp.	Japan	3651
30-1-2015	Refrigerant & Pharma Propellants Bus/	Germany	DAIKIN INDUSTRIES Ltd.	Japan	3585
3-2-2015	Foodblenders Ltd.	United Kingdom	Frutarom Industries Ltd.	Israel	2087
6-2-2015	Merz Dental GmbH	Germany	Shofu, Inc.	Japan	3843
11-2-2015	Make Me Reach SAS	France	Perion Network Ltd.	Israel	7372
23-2-2015	Heptares Therapeutics Ltd.	United Kingdom	Sosei Group Corp.	Japan	2834
23-2-2015	Magna Steyr Battery Systems GmbH & Co. oG	Austria	Samsung SDI Co., Ltd.	South Korea	3691
24-2-2015	Ansaldobreda SpA	Italy	Hitachi Ltd.	Japan	3651
27-2-2015	Optos Plc	United Kingdom	Nikon Corp.	Japan	3577
5-3-2015	Quandoo GmbH	Germany	Recruit Holdings Co., Ltd.	Japan	7361
11-3-2015	Domino Printing Sciences Plc	United Kingdom	Brother Industries, Ltd.	Japan	3579
18-3-2015	TAIGA International NV	Belgium	Frutarom Industries Ltd.	Israel	2087
18-3-2015	Schütz Group GmbH & Co. KG /2 Subsidiaries/ Gesellschaft für	Germany	Mani, Inc.	Japan	3841
23-3-2015	Patientenhilfe DGP mbH	Germany	SHL Telemedicine Ltd.	Israel	3845
10-4-2015	Eastern Space Systems SRL	Romania	RR Media Ltd.	Israel	3663
1-5-2015	ABC Technology SAS	France	Eagle Industry Co., Ltd.	Japan	3053
18-5-2015	Sushi Bar Atari-Ya Ltd.	United Kingdom	Asrapport Dining Co., Ltd.; Hanshinshuhan, Inc.	Japan; Japan	5812; 5141
25-5-2015	Sektor Gruppen AS	Norway	Citycon Oyj; Gazit-Globe Ltd.	Finland; Israel	6512; 6531
9-6-2015	KYB Advanced Manufacturing Spain SA	Spain	Kayaba Industry Co., Ltd.	Japan	3714

10-6-2015	Bayer AG /Diabetes Device Unit/	Germany	Panasonic Corp.; KKR Holdings LP; Kohlberg Kravis Roberts & Co. LP; Panasonic Healthcare Holdings Co., Ltd.	Japan; United States; United States; Japan	3639; 6282; 6771; 3845
17-6-2015	GKFX Financial Services Ltd.	United Kingdom	EZTrader, Inc.	Israel	6211
22-6-2015	Nipro Pharma Glass AG	Switzerland	Nipro Corp.	Japan	3841
30-6-2015	Chip Man Technologies Oy /Cellular Imaging/	Finland	Yokogawa Electric Corp.	Japan	3823
1-7-2015	SolviCore GmbH & Co. KG	Germany	Toray Industries, Inc.	Japan	2281
6-7-2015	Quipper Ltd.	United Kingdom	Recruit Holdings Co., Ltd.	Japan	7361
9-7-2015	Provence Huiles SA	France	ITOCHU Corp.	Japan	5051
9-7-2015	Impromat CZ spol sro	Czech Republic	Ricoh Co., Ltd.	Japan	3579
13-7-2015	Fits.me Holdings Ltd.	United Kingdom	Rakuten, Inc.	Japan	4724
14-7-2015	MIRA Ltd.	United Kingdom	Horiba, Ltd.	Japan	3825
17-7-2015	AR Metallizing NV	Belgium	Nissha Printing Co., Ltd.	Japan	2759
23-7-2015	Powervation Ltd.	Ireland	ROHM Co., Ltd.	Japan	3672
25-7-2015	Allergan Plc /Generic Drug Bus/	Ireland	Teva Pharmaceutical Industries Ltd.	Israel	2837
17-8-2015	R+S Group GmbH	Germany	Hansol Paper Co., Ltd.	South Korea	2621
25-8-2015	Arisa SA	Spain	NIDEC Corp.; Nidec-Shimpo Corp.	Japan; Japan	3621; 3566
25-8-2015	DeLclima SpA	Italy	Mitsubishi Electric Corp.	Japan	3621
7-10-2015	Medica Asia (Holdco) Ltd.	United Kingdom	Mitsui & Co., Ltd.; SMS Co., Ltd.	Japan; Japan	5052; 7389
8-10-2015	Softkinetic Systems SA	Belgium	Sony Corp.	Japan	3651
9-10-2015	Nissan Otomotiv AS VTN	Turkey	Nissan Motor Co., Ltd.	Japan	3711
13-11-2015	Beteiligungsgesellschaft mbH	Germany	IHI Corp.	Japan	3511
13-11-2015	metabo AG	Germany	Hitachi Koki Co., Ltd.	Japan	3541
17-11-2015	UShareSoft SAS	France	Fujitsu Ltd.	Japan	7373
24-11-2015	Biopta Ltd.	United Kingdom	ReproCELL Inc.	Japan	8071
10-12-2015	Carlsson Autotechnik GmbH	Germany	SAMBO MOTORS Co., Ltd.	South Korea	3714
11-12-2015	Bronto Skylift Oy AB	Finland	MORITA HOLDINGS CORP.	Japan	3711
14-12-2015	Sagama GmbH	Germany	Frutarom Industries Ltd.	Israel	2087
22-12-2015	USG People NV	Netherlands	Recruit Holdings Co., Ltd.	Japan	7361
25-12-2015	Isuzu RUS JSC	Russian Federation	Isuzu Motors Ltd.; Sojitz Corp.	Japan; Japan	3711; 1799

31-12-2015	Active Communications Europe BV	Netherlands	AudioCodes Ltd.	Israel	3661
7-1-2016	Laidlaw Solutions Ltd.	United Kingdom	Bank Leumi Le-Israel Ltd.; Orbis Partners Ltd.; Leumi ABL Ltd.; Intrinsic Equity Ltd.; Laidlaw Solutions Ltd. /Private Group/	Israel; United Kingdom; United Kingdom; United Kingdom; United Kingdom	6021; 6282; 6197; 6771; 6799
15-1-2016	photonamic GmbH & Co. KG	Germany	SBI Holdings, Inc.	Japan	6211
15-1-2016	Lames SpA	Italy	Hi-Lex Corp.	Japan	3714
21-1-2016	Serviabertis SL	Spain	NTT DATA Corp.; Everis Spain SL	Japan; Spain	7373; 7372
25-1-2016	Green Lab Magyarország Mérnöki Iroda Kft	Hungary	BATM Advanced Communications Ltd.	Israel	3661
28-1-2016	Assoun Distribution	France	Mitsubishi Pencil Co., Ltd.	Japan	3951
10-2-2016	SABMiller Plc /Peroni, Grolsch & Meantime Beer Breweries/	United Kingdom	Asahi Group Holdings Ltd.	Japan	2082
16-2-2016	City Discovery SAS	France	Veltra Corp. (Japan)	Japan	7372
17-2-2016	KBC Advanced Technologies Ltd.	United Kingdom	Yokogawa Electric Corp.	Japan	3823
22-2-2016	VIPA GmbH	Germany	YASKAWA Electric Corp.	Japan	3822
25-2-2016	net mobile AG	Germany	NTT DoCoMo, Inc.; DOCOMO Digital GmbH	Japan; Germany	4812; 7372
3-3-2016	Assa Abloy AB /Car Lock Business/	Czech Republic	Alpha Corp. (Yokohama)	Japan	3429
3-3-2016	BDP Holdings Ltd.	United Kingdom	Nippon Koei Co., Ltd.	Japan	8711
26-3-2016	Alliance Tire Group BV	Netherlands	The Yokohama Rubber Co. Ltd.	Japan	3011
4-4-2016	Mars Entertainment Group (Turkey)	Turkey	CJ CGV Co., Ltd.; Mars Entertainment Group (Turkey) /Private Group/	South Korea; Turkey	7832; 6799
3-5-2016	Extrakt Chemie Dr. Bruno Stellmach GmbH & Co. Kg	Germany	Frutarom Industries Ltd.	Israel	2087
6-5-2016	Wessex Garages Holdings Ltd.	United Kingdom	VT Holdings Co., Ltd.	Japan	7539
8-5-2016	Altium Capital Ltd.	United Kingdom	GCA Savvian Corp.	Japan	6282
9-5-2016	Johann HAY GmbH & Co. KG	Germany	Musashi Seimitsu Industry Co., Ltd.	Japan	3714
12-5-2016	Gardasoft Vision Ltd.	United Kingdom	OPTEx Co., Ltd.	Japan	3674

22-5-2016	E.C.E. SRL	Italy	NIDEC Corp.	Japan	3621
10-6-2016	Slavyansky Timber Terminal Ltd.	Russian Federation	Iida Group Holdings Co., Ltd.; Ferst Vud Primore OOO; Slavyansky Timber Terminal Ltd. /Private Group/	Japan; Russian Federation; Russian Federation	1521; 1541; 6799
20-6-2016	PPG Industries, Inc. /European Glass Fiber Business/	Netherlands	Nippon Electric Glass Co., Ltd.	Japan	3679
18-7-2016	ARM Holdings Plc	United Kingdom	SoftBank Group Corp.	Japan	4813
25-7-2016	Nolax Holding AG /Functional Airbag Film Business/	Switzerland	Nitto Denko Corp.	Japan	3674
3-8-2016	Redbrook Ingredient Services Ltd.	Ireland	Frutarom Industries Ltd.	Israel	2087
8-8-2016	Estover Energy Ltd. /Kent Project/	United Kingdom	Mitsui Engineering & Shipbuilding Co., Ltd. /Old;/ Burmeister & Wain Scandinavian Contractor A/S; Copenhagen Infrastructure Partners GP ApS; Estover Energy Ltd. /Kent Project//Private Group/	Japan; Denmark; Denmark; United Kingdom	8711; 3612; 6771; 6799
6-9-2016	BIOMEVA GmbH	Germany	Asahi Glass Co., Ltd.	Japan	3211
20-9-2016	Mark Roberts Motion Control Ltd.	United Kingdom	Nikon Corp.	Japan	3577
20-9-2016	Showa Boeki Co., Ltd. /2 Subsidiaries/	Netherlands	Asrapport Dining Co., Ltd.	Japan	5812
20-9-2016	Sylphéo SARL	France	Renault SA; Nissan Motor Co., Ltd.; Renault-Nissan-Mitsubishi Alliance	France; Japan; Netherlands	3711; 3711; 3711
27-9-2016	Nefos AG	Switzerland	NTT DATA Corp.; NTT DATA EMEA Ltd.	Japan; United Kingdom	7373; 7372
28-9-2016	Luvata Oy /Special Products Division/	Finland	Mitsubishi Materials Corp.	Japan	3366
29-9-2016	MOSSO Kwasniewscy Sp. J.	Poland	Kewpie Corp.	Japan	2033
30-9-2016	Norvalves AS	Norway	Ham-Let (Israel-Canada) Ltd.	Israel	5065
4-10-2016	Alphatron Marine Beheer BV	Netherlands	Japan Radio Co., Ltd.	Japan	3663
7-10-2016	Axio Data Group Ltd.	United Kingdom	M3, Inc.	Japan	7375
12-10-2016	IPDiA SA	France	Murata Manufacturing Co. Ltd.	Japan	3675
20-10-2016	SGL GE Holding GmbH	Germany	Showa Denko K.K.	Japan	2869
25-10-2016	Norther NV	Belgium	Eneco Wind Belgium SA; Mitsubishi Corp.; ENECO Holding NV; Elicio NV; Diamond Offshore	Belgium; Japan; Netherlands;	4911; 5099; 4911;

			Wind Holdings II BV; Norther NV /Private Group/; Elnu NV	Belgium; Netherlands; Belgium; Belgium	4911; 4911; 4911; 4911
28-10-2016	Ganymed Pharmaceuticals AG	Germany	Astellas Pharma, Inc.	Japan	2834
3-11-2016	Plaza Centers NV /Belgrade Plaza/	Serbia	BIG Shopping Centers Ltd.	Israel	1542
16-11-2016	Orgen Gida Sanayi Ve Ticaret AS	Turkey	Ajinomoto Co., Inc.	Japan	2087
22-11-2016	CFAO SA	France	Toyota Tsusho Corp.	Japan	3317
24-11-2016	Total Terminal International Algeciras SA	Spain	Hyundai Merchant Marine Co., Ltd.	South Korea	4731
2-12-2016	Chaucer Foods Ltd.	United Kingdom	Nagatanien Holdings Co., Ltd.; Government of Japan; Innovation Network Corporation of Japan, Ltd.; Chaucer Foods Ltd. /Private Group/	Japan; Japan; Japan; Japan	2099; 9141; 6771; 2099
6-12-2016	Helios dd	Slovenia	Kansai Paint Co., Ltd.	Japan	2851
7-12-2016	Metnext SA	France	Weathernews, Inc.	Japan	7383
8-12-2016	Mirage Technologies S.L.	Spain	Topcon Corp.	Japan	3829
13-12-2016	SABMiller Ltd. /8 Central & Eastern European Sub/	Germany	Asahi Group Holdings Ltd.	Japan	2082
15-12-2016	APEM SAS	France	IDEC Corp.	Japan	3625
16-12-2016	Harmonic Drive AG	Germany	Harmonic Drive Systems, Inc.; Government of Japan; Innovation Network Corporation of Japan, Ltd.; Harmonic Drive AG /Private Group/	Japan; Japan; Japan; Japan	3566; 9141; 6771; 6799
19-12-2016	CMC Biologics A/S	Denmark	Asahi Glass Co., Ltd.	Japan	3211
22-12-2016	DataLase Ltd.	United Kingdom	Sato Holdings Corp.	Japan	3565
22-12-2016	Zephir Corp. SA Sports Direct	Belgium	Panasonic Corp.	Japan	3639
27-12-2016	International Plc /Dunlop Brand Overseas Bus/	United Kingdom	Dunlop Sports Co., Ltd.; Dunlop International Co. Ltd.	Japan; Japan	3949; 5014
5-1-2017	Micheldever Group Ltd.	United Kingdom	Sumitomo Rubber Industries, Ltd.	Japan	3011
10-1-2017	The Prospect Japan Fund Ltd.	United Kingdom	Prospect Co., Ltd.	Japan	6531
31-1-2017	OVALO GmbH	Germany	Nabtesco Corp.	Japan	3724
31-1-2017	NoordLease BV	Netherlands	Hitachi Capital Corp.	Japan	6153

31-1-2017	Hito Ltd.	United Kingdom	OUTSOURCING, Inc.	Japan	7389
1-2-2017	Vantodio Holdings Ltd.	Cyprus	Frutarom Industries Ltd.	Israel	2087
15-2-2017	Melaud AB	Sweden	Samsung Electronics Co., Ltd.	South Korea	3674
24-2-2017	MC Marine Energy Ltd.	United Kingdom	Mitsui O.S.K. Lines, Ltd.	Japan	4412
24-2-2017	Chemtrade Aglobis AG	Switzerland	Mitsui & Co., Ltd.	Japan	5052
2-3-2017	FW Energie BV	Netherlands	Sumitomo Heavy Industries, Ltd.	Japan	3559
21-3-2017	Medfiles Oy Ltd.	Finland	WDB Holdings Co., Ltd.	Japan	8742
23-3-2017	Vanderlande Industries BV	Netherlands	Toyota Industries Corp.	Japan	3711
23-3-2017	Agalimmune Ltd.	United Kingdom	BioLineRx Ltd.	Israel	2834
27-3-2017	Sealord Caistor Ltd.	United Kingdom	Nippon Suisan Kaisha, Ltd.	Japan	2092
28-3-2017	Strauss Coffee BV	Netherlands	Strauss Group Ltd.	Israel	2095
3-4-2017	Ogeda SA	Belgium	Astellas Pharma, Inc.	Japan	2834
4-4-2017	This Place Ltd.	United Kingdom	Infoteria Corp.	Japan	7372
4-4-2017	NuGeneration Ltd.	United Kingdom	Toshiba Corp.	Japan	3651
4-4-2017	René Laurent SAS	France	Frutarom Industries Ltd.	Israel	2087
13-4-2017	Quintus Technologies AB	Sweden	Kobe Steel, Ltd.	Japan	3312
26-4-2017	Oxford Instruments Plc /Industrial Analysis Business/	United Kingdom	Hitachi High-Technologies Corp.	Japan	3559
27-4-2017	Zetes Industries SA	Belgium	Panasonic Corp.	Japan	3639
27-4-2017	Temple Lifts Ltd.	United Kingdom	Hitachi Ltd.	Japan	3651
27-4-2017	ISOLITE GmbH	Germany	Hitachi Chemical Co., Ltd.	Japan	3674
3-5-2017	Tower-Factory GmbH	Germany	Fuji Machine Mfg Co., Ltd.	Japan	3541
9-5-2017	Waterman Group Plc	United Kingdom	CTI Engineering Co., Ltd.	Japan	8711
17-5-2017	Centre People Appointments Ltd.	United Kingdom	Quick Co., Ltd.	Japan	7361
31-5-2017	Oxford Gene Technology Ltd.	United Kingdom	Sysmex Corp.	Japan	3841
1-6-2017	Ravioli	Russian Federation	CJ CheilJedang Corp.	South Korea	2061
1-6-2017	ID-Solutions S.R.L.	Italy	Murata Manufacturing Co. Ltd.	Japan	3675
13-6-2017	Nutrafur SA	Spain	Frutarom Industries Ltd.	Israel	2087
14-6-2017	TrustYou GmbH	Germany	Recruit Holdings Co., Ltd.	Japan	7361
14-6-2017	Selexis SA	Switzerland	JSR Corp.	Japan	2822
26-6-2017	Xerox Research Centre Europe	France	NAVER Corp.	South Korea	7375

26-6-2017	Amec Foster Wheeler Plc /Circulating Fluidised Bed Boiler Bus/	United Kingdom	Sumitomo Heavy Industries, Ltd.	Japan	3559
4-7-2017	LGB Elettropompe S.r.l.	Italy	NIDEC Corp.	Japan	3621
10-7-2017	Innoetics	Greece	Samsung Electronics Co., Ltd.	South Korea	3674
13-7-2017	ReadSpeaker Holding BV	Netherlands	HOYA Corp.	Japan	3851
14-7-2017	National Car Parks Ltd.	United Kingdom	Park24 Co., Ltd.; Government of Japan; Development Bank of Japan, Inc.; National Car Parks Ltd. /Private Group 2/	Japan; Japan; Japan; Japan	7521; 9141; 6111; 6799
21-7-2017	TechInvent AS	Norway	Yokogawa Electric Corp.	Japan	3823
27-7-2017	YAR Bank LLC	Russian Federation	SBI Holdings, Inc.	Japan	6211
15-8-2017	Flavours & Essences (UK) Ltd.	United Kingdom	Frutarom Industries Ltd.	Israel	2087
18-8-2017	Kükre AS	Turkey	Ajinomoto Co., Inc.	Japan	2087
22-8-2017	Mühlehof-Gewürze AG	Switzerland	Frutarom Industries Ltd.	Israel	2087
23-8-2017	Icon Genetics GmbH	Germany	Denka Co., Ltd.	Japan	2819
1-9-2017	A.M.P. Air Conditioning Ltd.	United Kingdom	Panasonic Corp.	Japan	3639
12-10-2017	Kotkamills Imprex Oy	Finland	Dongwha Enterprise Co., Ltd.	South Korea	2493
17-10-2017	Harder & Steenbeck GmbH & Co. KG	Germany	ANEST IWATA Corp.	Japan	3563
10-11-2017	Akzo Nobel Pulp & Performance /Paper Activities/ Koninklijke	France	Kurita Water Industries Ltd.	Japan	4941
4-12-2017	Drukinktfabrieken Van Son BV	Netherlands	T&K Toka Co., Ltd.	Japan	2893
8-12-2017	Gebrüder Ahle GmbH & Co. KG	Germany	Mitsubishi Steel Mfg. Co., Ltd.	Japan	3499
19-12-2017	Radio Activity S.r.l.	Italy	JVC Kenwood Corp.	Japan	3651
20-12-2017	Pollena-Aroma Sp zoo	Poland	Frutarom Industries Ltd.	Israel	2087
22-12-2017	OPM France SAS	France	SodaStream International Ltd.	Israel	2086
27-12-2017	RaySpec Ltd.	United Kingdom	Polatechno Co., Ltd.	Japan	3679
5-1-2018	TiGenix NV	Belgium	Takeda Pharmaceutical Co., Ltd.	Japan	2834
5-1-2018	Semeci Ltd.	Ireland	Glory Ltd.	Japan	3578
9-1-2018	Northgate Public Services (UK) Ltd.	United Kingdom	NEC Corp.	Japan	7373
15-1-2018	Azalea Maritime BV	Netherlands	Mitsui O.S.K. Lines, Ltd.	Japan	4412
8-2-2018	Brockton Capital LLP	United Kingdom	Alony Hetz Properties & Investments Ltd.	Israel	6531
1-3-2018	Rein Medical GmbH	Germany	JVC Kenwood Corp.	Japan	3651

15-3-2018	TenCate Advanced Composites BV	Netherlands	Toray Industries, Inc.	Japan	2281
15-3-2018	Ovako Group AB	Sweden	Nippon Steel & Sumitomo Metal Corp.	Japan	3312
16-3-2018	Donskoy Tabak OAO	Russian Federation	Japan Tobacco Inc.	Japan	2111
28-3-2018	Shire Plc	Ireland	Takeda Pharmaceutical Co., Ltd.	Japan	2834
30-3-2018	Vekoma Rides Manufacturing BV	Netherlands	Sansei Technologies, Inc.	Japan	3559
9-4-2018	Contact Lens Precision Laboratories Ltd.	United Kingdom	Seed Co., Ltd. /7743/	Japan	3851
11-4-2018	Threadgreen Industrial Ltd. /Robin Portfolio/	Germany	Edmond de Rothschild (Suisse) SA; Migdal Insurance & Financial Holdings Ltd.; Cording Real Estate Group LLP; Threadgreen Industrial Ltd. /Robin Portfolio//Pvt Grup/	Switzerland; Israel; United Kingdom; Germany	6771; 6311; 6531; 6799
26-4-2018	ZKW Group GmbH	Austria	LG Electronics, Inc.; LG Corp.; ZKW Group GmbH /Private Group/	South Korea; South Korea; Austria	3651; 3651; 6799
9-5-2018	Mitula Group Ltd.	Spain	Lifull Co., Ltd.; Trovit Search SL	Japan; Spain	7375; 8999
11-5-2018	EGE Towers	Turkey	CS Wind Corp.	South Korea	4939
25-5-2018	Lafert SpA	Italy	Sumitomo Heavy Industries, Ltd.	Japan	3559
2-7-2018	CIMA SpA	Italy	NIDEC Corp.	Japan	3621
2-7-2018	ALOS GmbH	Germany	Kyocera Corp.	Japan	3674
4-7-2018	Reifen-Müller KG	Germany	HANKOOK TIRE Co., Ltd.	South Korea	3011
5-7-2018	Praxair, Inc. /Europe Industrial Gas Subs/	United Kingdom	Taiyo Nippon Sanso Corp.; TNSC Euro-Holding SLU; TNSC Germany GmbH	Japan; Spain; Germany	2813; 2813; 4924
9-7-2018	Eminence SAS	France	Delta Galil Industries Ltd.	Israel	2322
3-8-2018	ASTES4 SA	Switzerland	Mitsubishi Electric Corp.	Japan	3621
6-8-2018	Lomapharm Rudolf Lohmann GmbH KG	Germany	Daicel Corp.	Japan	2869
9-8-2018	Hutchinson Nichirin Brake Hoses SL	Spain	Nichirin Co., Ltd.	Japan	3052
10-8-2018	Quethera Ltd.	United Kingdom	Astellas Pharma, Inc.	Japan	2834
22-8-2018	Inapal Plásticos SA	Portugal	Teijin Ltd.	Japan	2299
22-8-2018	Professional Esports League SL	Spain	Akatsuki, Inc.	Japan	8999
28-8-2018	Mainfrost Tiefkühlkost GmbH	Germany	CJ CheilJedang Corp.	South Korea	2061
27-9-2018	Medica Asia (Holdco) Ltd.	United Kingdom	SMS Co., Ltd.	Japan	7389
1-10-2018	Société de Peinture de Pièces Plastiques SAS	France	Alpha Corp. (Yokohama)	Japan	3429

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8-10-2018	VB-Leasing International Holding GmbH	Austria	Nomura Holdings, Inc.; City of Padova; APS Holding SpA; Balbec Capital LP; VB Leasing International Holding GmbH /Private Group/	Japan; Italy; Italy; United Kingdom; Austria	6282; 9161; 7521; 6771; 6799
17-10-2018	Zhilabs SL	Spain	Samsung Electronics Co., Ltd.	South Korea	3674
18-10-2018	Global Star International SAS	France	Nishi-Nippon Railroad Co., Ltd.	Japan	4011
19-11-2018	Chrysal International BV	Netherlands	OAT Agrico Co., Ltd.	Japan	2879
26-11-2018	AHT Cooling Systems GmbH	Austria	DAIKIN INDUSTRIES Ltd.; Daikin Europe NV	Japan; Belgium	3585; 3585
30-11-2018	Integration Diagnostics Sweden AB	Sweden	Nakanishi Inc.	Japan	3843
4-12-2018	Malgrat Pharma Chemicals SL	Spain	AGC, Inc. (Japan)	Japan	3211
11-12-2018	UTT Technische Textilien GmbH & Co. KG	Germany	Toyobo Co., Ltd.; Indorama Resources Ltd.; PHP Fibers GmbH	Japan; Thailand; Germany	2823; 6799; 2281
17-12-2018	Socionext Embedded Software Austria GmbH	Austria	ArtSpark Holdings, Inc.	Japan	7372
18-12-2018	ESA sro	Czech Republic	Hitachi Transport System, Ltd.	Japan	4214
20-12-2018	Montalbán Atlas Capital SL	Spain	Daiwa Securities Group Inc.; Daiwa Corporate Advisory Holdings Ltd.; Daiwa Capital Markets Europe Ltd.	Japan; United Kingdom; United Kingdom	6211; 6282; 6211
27-12-2018	KMD A/S	Denmark	NEC Corp.	Japan	7373

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