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School of Business and Management
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Master's Program in Strategic Finance and Business Analytics

Master's Thesis

A Comparative Analysis of the Market and Book Performance of Two Finnish Meat Sector Companies

Author: Iida Laaksonen
Examiner 1: Associate Professor Sheraz Ahmed
Examiner 2: Professor Eero Pätäri
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ABSTRACT

Author: Iida Laaksonen

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Even though Atria and HKScan account for 90 per cent of the meat sourcing in Finland, there is a limited number of previous comparative studies on these two companies. The purpose of this study is to conduct a comparative analysis of the market and book performance of public Finnish meat sector companies. The market performance is tested with an event study method including both efficiency improvement and investment announcements during 2001-2017. The market performance is tested with the financial ratio analysis, including financial ratios during 2004-2017.

The stock market reaction to Atria's efficiency improvement announcements is negative, and for HKScan there is no stock market reaction. For investment announcements, there is no difference, as there is no reaction. The comparison of book performance imply that Atria has performed similarly to its history, but worse than its industrial peers outside Finland. HKScan has performed worse than its historical average and its peers outside Finland.

TIIVISTELMÄ

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Vaikka Atria ja HKSan kattavat 90 prosenttia lihanhankinnasta Suomessa, näiden kahden yrityksen aikaisempien vertailevien tutkimusten määrä on rajallinen. Tämän tutkimuksen tavoitteena on toteuttaa kahden listatun suomalaisen liha-alan yritysten markkina- ja kirjanpitoarvojen toimintakyvyn vertaileva tutkimus. Markkinoilla suoriutuminen testataan tapahtuma-menetelmän avulla, sisällyttäen sekä tehokkuuden parantamiseen, että investointeihin liittyviä pörssi-ilmoituksia vuosilta 2001-2017. Kirjanpitoarvollinen suoriutuminen testataan tunnuslukuanalysiin avulla, sisältäen tunnuslukuja vuosilta 2004-2017.

Pörssireaktio Atrian tehokkuuden parantamiseen liittyviin ilmoituksiin on negatiivinen, kun taas HKScanin kohdalla reaktiota ei ole. Investointi-ilmoituksien kohdalla yritysten välillä ei ole eroa, sillä pörssireaktiota ei ole. Kirjanpitoarvojen vertailu osoittaa Atrian suoriutuneen samantapaisesti historiaansa nähden, mutta huonommin kuin saman toimialan ulkomaiset yritykset. HKScan on suoriutunut huonommin historiaansa ja saman toimialan ulkomaisiin yrityksiin nähden.

ACKNOWLEDGEMENTS

Life is a continuous learning path One can never be always right. The decisions to start to do something without knowing whether you are doing it right or wrong, can be pernicious, or it can prove to be a success. Even though my studies are reaching their end, I am still at the beginning of my lifetime learning process.

I want to thank my family and friend for always supporting me during my studies. The times I did not believe in my own decisions, you gave me your opinions and helped me to believe in my decisions and to strengthen my opinions. I want to thank also my supervisor Sheraz Ahmed for all the help and advice I got during my thesis project.

Nousiainen, 24.6.2019.

Iida Laaksonen

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

AAR	average abnormal return
AMEX	American Stock Exchange
CAAR	cumulative average abnormal return
CEEC	Central and Eastern European countries
EPS	earnings per share
EU	European Union
IFRS	International Financial Reporting Standards
KKO	Kuopion karjanmyyntiosuuskunta, Kuopio Livestock Sales Co-operative
LSO	Lounais-Suomen Osuusteurastamo
NACE	Nomenclature of Economic Activities
NPV	net present value
NYSE	New York Stock Exchange
ROA	return on assets
ROE	return on equity
SKO	Savo-Karjalan Osuuskunta
SVM	Shareholder value maximization
TLK	Tuottajain Lihakeskuskunta

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

This research is conducted to compare two Finnish meat sector companies. This chapter introduces the motivation and background of the study. After this, the objectives and research questions are defined. Finally, the outline of the paper is introduced.

1.1 Background

The Finnish agricultural sector has gone through many different changes in the 21st century: increased concentration in retailers, enlargement of the European Union (EU), changes in demand and supply, and Russian sanctions. The combined market share of two main retailers in Finland rose steadily during the 2000s, exceeding 70 percent in 2006 for the first time. Only five years later, in 2011, the combined market share was already over 80 percent, and that is where it was also at the end of 2017. (Finnish Food Marketing Association 2005-2018) This increase in combined market share has most likely increased also the purchasing power of these retailers, and therefore has also affected the Finnish agricultural sector (Kuosmanen and Niemi 2009). Another thing that has most obviously affected Finnish agricultural sector, is the enlargement of the European Union in 2004. This meant increased competition as Finnish foodstuff compete from then on with Central and Eastern European foodstuff. Moreover, the enlargement of EU meant even more complex common agricultural policy. (Mäkimattila 1999)

As a result of many different events, the Finnish meat sector has gone through different demand and supply problems. For example, the Finnish meat sector has suffered from overproduction of piglets in 2010s. There were many different reasons for that, but in the worst case one of the meat processing companies ended up burning its hogs because they could not be slaughtered. (Talouselämä 2015) One of the latest adversities for the Finnish agricultural sector was when the European Union introduced

its sanctions against Russia, after which Russia introduced its counter sanctions against the European Union in September 2014 (Przygoda 2014). These counter sanctions included agricultural products, and therefore the Finnish meat sector lost one of its markets and potential future cash flows.

All these above-mentioned changes have modified the operational environment of the agricultural sector. Farming had become mainly unprofitable in the whole of Finland due to low producer prices. There were even predictions that pig farmers could not pay any salary to themselves. The last rivet for farmers was when Finnish Food Authority announced that the beforehand agreed schedule for subsidy payments was going to be late. Because of all this, 700 tractors and 5500 demonstrators gathered in Helsinki in the beginning of 2016. (Maaseudun Tulevaisuus 2016) This was an influential event and caused a lot of discussion in the media.

After the 2016 demonstration, the difficult years have continued. In 2018, the harvest was partly destroyed by unprecedented heat. The price of grain increased, but that did not help livestock producers. As the harvest size was in some areas only half of the normal harvest, livestock producers were either forced to buy more food at a more expensive price than usually or to decrease the number of animals. (Luke 2018, Luke 2019) The Finnish government decided to pay crisis packages to farmers, due to lost harvest and unprofitable business (Maaseudun Tulevaisuus 2019). All this aroused my interest in the Finnish Agricultural sector and the public companies operating in it.

A number of papers have studied different changes in the Finnish food industry, such as the widening gap between retail and producer prices of food (Kuosmanen and Niemi 2009) and the internationalization of the Finnish meat company HKScan (Ikäheimo 2011, Nisso 2012). However, there is no previous comparative analysis of the market and book performance of Finnish meat sector companies. This study concentrates on the meat sector companies in Finland, and slaughterhouses are the key players in the

meat sector. They serve as intermediaries that determine the price of meat and the number of contracts, and therefore also the “flow of meat”.

1.2 Research questions and objectives

The purpose of this study is to conduct a comparative analysis of the market and book performance of public Finnish meat sector companies. This study aims to clarify how the market performance of public Finnish meat sector companies differ in stock market announcements. Moreover, the study sets to find out how the Finnish meat sector has performed during high uncertainty in the industry and how the book performance of the Finnish public meat sector companies differs among themselves and compared to industry competitors outside Finland. In relation to all changes in the 21st century in Finnish agricultural sector, it would have been convenient to study the whole Finnish agricultural sector, including both meat producing companies and dairy companies. However, there are no public dairy companies in Finland listed in the stock market, and therefore dairy companies could not be included in this study. Because of this, the concentration will be in two public Finnish meat sector companies, Atria and HKScan.

Atria’s and HKScan’s stock prices have multiplied from the year 2001 until the mid-2007. The stock price development of Atria and HKScan in 2001-2017 is presented in Figure 1 including also benchmark Helsinki all share index. The price is set to 100 at the beginning of the period. When compared to year 2001, Atria’s and HKScan’s stock prices have developed well. However, when the price is set to 100 at the time of financial crisis in 2007, the stock price development seems very different (see Figure 2). Stock prices of Atria and HKScan have not developed the same pace as benchmark Helsinki all share index.

In order to find out, how the market performance of Atria and HKScan differ in stock market announcements, a short-term event study is conducted. Due to the fact, that there are so many different factors affecting the value of a company, the research had

to be limited to focus on only certain types of events. As HKScan and Atria have both expanded abroad, made large investments, and have both made a large amount of efficiency improvement announcements, the focus will be on these types of events in the short-term analysis.

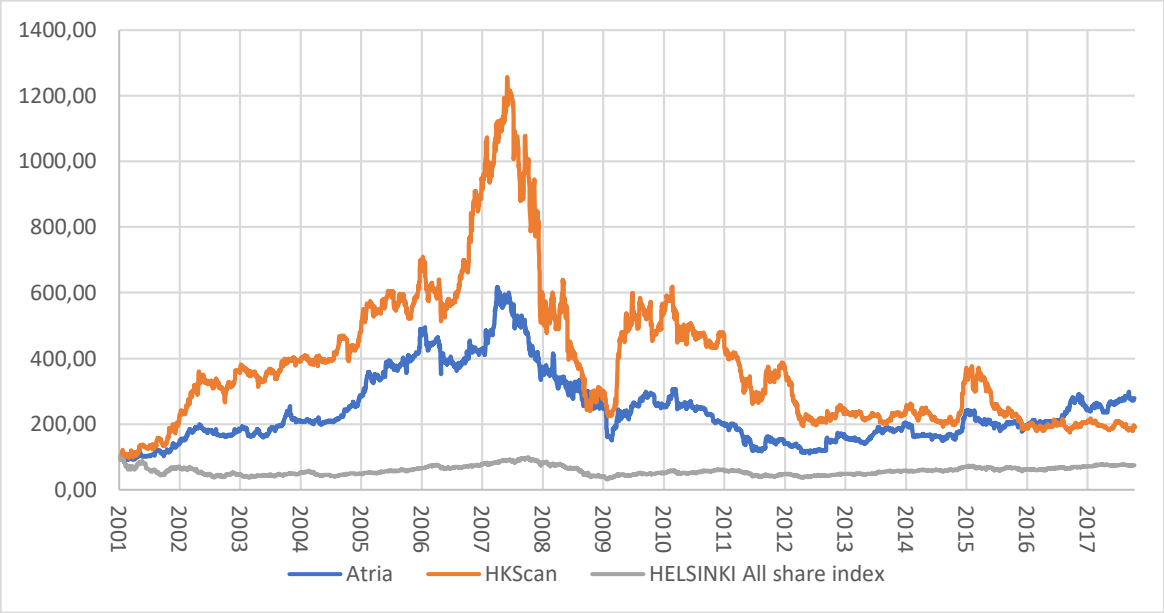

Figure 1 Stock price development during 2001-2017 (base year 2001)

For the long-run study, a financial ratio analysis is conducted utilizing Welch's t-test and one sample t-test. The comparison is made between Atria's and HKScan's actual returns, and between both company's actual return and their industry peers. Additionally, two different abnormal performance values are calculated, first using the industry average and second using the company's own historical average.

The 21st century is interesting period to conduct a financial ratio study because of many different changes in the Finnish agricultural sector; increased concentration in retailers, enlargement of the European Union, changes in demand and supply, Russian sanctions, and increased concentration in meat sector companies. The data used in the event study and in the financial ratio analysis differ among themselves. The timeframe used in the event study is 2001-2017. This is simply because the availability

of stock market announcements begins from 2001. In the ratio analysis, the timeframe used is 2004-2017. The timeframe begins only from 2004 due to differences in accounting standards prior that. The final sample in the event study consists of 95 events.

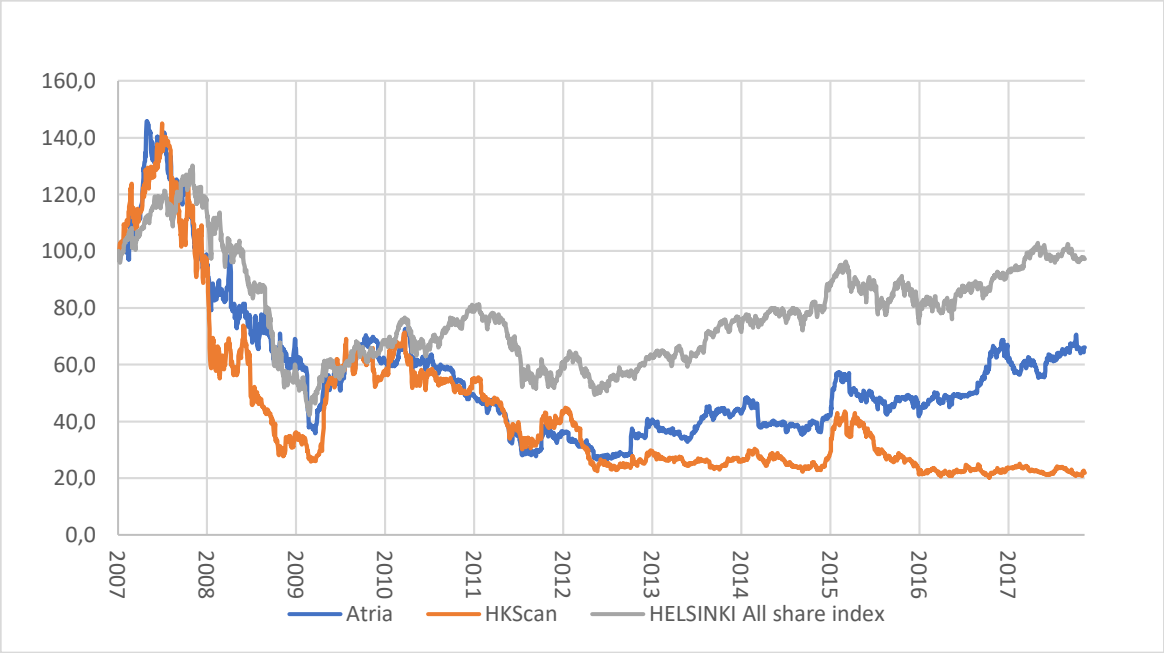

Figure 2 Stock price development during 2007-2017 (base year 2007)

Three different research questions are formed for this study:

1. Do efficiency improvement and investment announcements cause a market reaction for Finnish meat sector companies? (category-wise)
2. How does the market performance of two Finnish meat sector companies differ in the case of efficiency improvement and investment announcements? (company-wise)
3. How has the Finnish meat sector performed during high uncertainty in the industry?
    a. How does the book performance of two Finnish meat sector companies differ?

b. How does the book performance of two Finnish meat sector companies differ compared to industry competitors outside Finland?

The rest of the paper is organized as follows. The Finnish meat industry is introduced in the second section by looking at structural change, after which the focus will be on the current characteristics of the Finnish meat sector. Also, Atria and HKScan and their history are introduced. After the Finnish meat industry is introduced, the theoretical background is presented in the third section. The fourth section focuses on the methods applied in this study; the event study is first introduced, which after the financial ratio study is introduced. The fifth section presents the results. Finally, the conclusions are presented in the sixth section.

2 FINNISH MEAT INDUSTRY

This chapter begins with a description of Finnish agriculture before European Union membership, following with a description how things changed after the European Union membership. After this, changes in the Finnish meat sector during the 21st century are gone through, such as increased concentration in retailers, widened gap between retail and producer prices of food, enlargement of the EU in 2004, changes in demand and supply, Russian sanctions, and increased concentration in the meat sector. Finally, two leading meat companies in Finland are introduced.

2.1 Structural change in the Finnish meat industry

In 1980s, Finnish agriculture was very different from the Finnish agriculture that we know now. At that time, a small-scale farm was enough for the livelihood of a family. Even though Finland was a member of the European Free Trade Association and had a contract with the European Economic Community, agriculture was outside of these agreements and contracts. At that time, overproduction was a strong character in Finnish agriculture, as high producer prices encouraged farmers to increase production volumes even more. Overproduction was later controlled for by introducing two-level prices. This means that the best price was paid only for a certain amount of commodity, and a lower price was paid for the amount exceeding the limit value, the latter one being lower than the cost of production. Until the membership in the EU, the basic foods were within the scope of price regulation. Foods produced domestically required an import permit. (Laurila 2004, 351-354) The Finnish agricultural sector faced dramatic change after Finland became a member of the European Union.

In 1994 Finland adapted the same price and market system as in the EU, meaning that Finland complied to EU agricultural policy one year in advance, becoming a European Union member state in 1995 (Laurila 2004, 355). This ended the 38 year period of basically unchanged farm system in Finland. As Finland was now part of

the Single European Market, foreign trade increased. European Union agricultural policy had mainly similar objectives as the Finland's own agricultural policy, but there were also differences; Finland's previous policies tried to ensure security of supply in Finland, whereas European Union agricultural policy tried to ensure this only in the Single European Market, not in every member state separately (Laurila 2004, 354-355).

Even though the objectives matched quite well, many other things changed dramatically. For example, in 1995, the European Union introduced a new market and control mechanism for agriculture, which increased bureaucracy and paperwork for farmers. If the farmer did not deliver all the necessary papers and applications before the due date, it meant losing all or part of the subsidy. (Laurila 2004, 359-360) EU membership also meant that the producer prices decreased 45 per cent on average. However, this decrease was somewhat compensated by the subsidies. Without these subsidies, agricultural production would have been impossible in Finland. (Laurila 2004, 363-365) These subsidies meant, that the farmer's revenue structure changed. In certain sectors the amount of subsidy is even more than the actual sales proceeds. In addition, European Union membership meant that now all essential decisions were made in the EU. (Jäntti 2010) In other words, the new EU regulations took the independency from the farmers, who still own their own farms, lands and animals. These farmers are now accountable to outside officials for basically everything; every square meter of their land, every pound of their hog or other animal, and every millimeter of their barn (Rasila 2004, 506-507; Maaseutumedia 2015).

2.2 The Finnish meat sector today

The European Union and its policies are not the only new phenomenon in Finnish agriculture. The Finnish agricultural sector has gone through many different changes in the 21st century; increased concentration in retailers, enlargement of the European Union, changes in demand and supply, Russian sanctions, and increased concentration in meat sector companies.

2.2.1 Increased concentration in retailers

Chain stores and centralized sourcing and logistics are very usual in daily consumer goods trade in Nordic countries. The reason for this is that Nordic countries are vast and sparsely populated, and therefore large trade volumes are necessity in order to be profitable (Finnish Food Marketing Association, 2005). In Finland, the combined market share of three largest Finnish grocery trade groups in 2000 was over 75 percent (see Figure 3). Even though this number seems to be quite high, it is the smallest combined market share of these three largest Finnish grocery trade groups in the 21st century. Years 2005 and 2006 were radical in consumer goods trade; K Group used to have the largest market share of Finnish grocery trade groups, but in 2005 the S Group had first time larger market share than the K Group. Moreover, in 2006 no other company's market share exceeded 15 percent except the S and K Groups. There was no question whether the S and K Groups were the largest grocery trade groups in Finland. S Group's market share was around 40 percent, and K Group's 33 percent, their combined market share being over 70 percent for the first time.

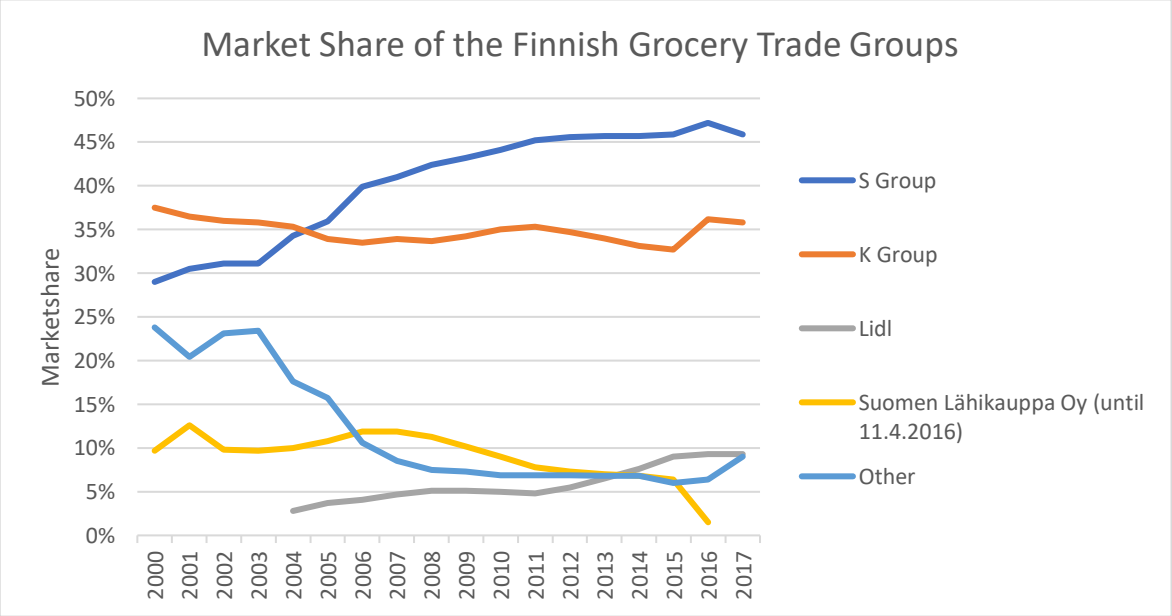

Figure 3 Development of market shares of the Finnish Grocery Trade Groups.

(All information on the table from Finnish Food Marketing Association, 2005-2018. Tradeka until year 2007, from then on Suomen Lähikauppa Oy.)

Only five years later, in 2011, the combined market share of the S and K Groups was already over 80 percent. This is the same level where the combined market share was also at the end of year 2017. This increase in a combined market share has given cause to suspect that retailers have too large purchasing power, which reduces competition and can also affect the performance of the Finnish agricultural sector (Piipponen et al. 2018). However, a large market share does not directly mean large market power, even though various studies have found a positive correlation between increased market share in retail and food prices (Kuosmanen and Niemi 2009). Nonetheless, retailers' increased concentration is not the only factor that has given a cause to suspect the S and K Groups for increased market power; producer prices have not increased in the same proportion with expenses, and at the same time the gap between retail and producer prices of food has widened (YLE 2011a; Kuosmanen and Niemi 2009).

2.2.2 Widened gap between retail and producer prices of food

There is a long-term evidence for a widened gap between retail and producer prices of food in Finland. However, when looking at only recent years, one can see the gap between retail and producer prices is narrowing in the case of beef and poultry meat. On the other hand, the gap between retail and producer prices of pork has widened even more in recent years. (Piipponen et al. 2018)

Kuosmanen and Niemi (2009) investigated reasons for the widened gap between retail and producer prices of food in Finland during the 30-year period 1975-2005. Imperfect competition was one of the potential reasons for the increased gap, but also other possible reasons were considered, such as increased degree of processing, better food hygiene, differences in productivity growth across sectors, agricultural policy reforms, and international trade. Increased degree of processing is not an unambiguous reason for increased gap between retail and producer prices. While the food processing has indeed increased, the price margins for low-processed food have also increased. On the other hand, this can still be explained by economies of scale; as the demand for low-processed food has decreased, the price has increased in turn. Secondly, food processing companies might also try to

influence consumer behavior by simply keeping processed food margins low and increasing the margins for low-processed foods. Kuosmanen and Niemi (2009) have ignored this by examining light milk and minced meat beef steak, which are both low-processed and their production has remained approximately at the same level as previously.

Kuosmanen and Niemi (2009) show, with an example, how different agricultural policy reforms may affect the calculated price margin, even though a farmers' total income might still approximately stay the same. The secret lies in the relationship between agricultural price support and direct payments. As a result, Kuosmanen and Niemi (2009) do not see increased processing of food, agricultural policy reforms or imperfect competition as explanatory factors for increased gap between retail and producer prices of food. Instead, international trade, productivity growth and improved food hygiene are seen as main reasons. However, as the study period is from 1975-2005, it includes both time before and after EU, but misses current changes in the Finnish meat industry, such as even more concentrated retail sector, time after enlargement of the European Union in 2004, changes in supply and demand, and Russian sanctions.

Even though the study period is years 1975-2005, international trade is already seen one of the reasons for widened gap between retail and producer prices of food. The reason for that lies in competition: international markets are highly competitive, while consumer markets are locally confined. Retail firms can take advantage of this highly competitive international market when buying their inputs, and further take advantage of locally confined consumer market when supplying. All this leads retail trade to have a stronger position in the food chain relative to meat producers and the meat processing companies (Kuosmanen and Niemi 2009). Piipponen et al. (2018) argue even that retailers are the only operator in the food chain who can take advantage of increased competition from abroad.

2.2.3 Enlargement of the European Union in 2004

Another change that has most obviously affected the Finnish agricultural sector, is the enlargement of the European Union in 2004. On 1 May 2004 the number of European Union member states increased by ten; Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia (Monnier and Rogers 2004). Three most significant agricultural countries out of these ten countries were Poland, Hungary and Czech Republic (Mäkimattila 1999; Peltoniemi and Teivonen 2002). Enlargement of the EU meant an increase in competition in the agricultural sector and even more complex common agricultural policy (Mäkimattila 1999). As stated earlier, international markets are highly competitive, and this increased competition was seen already in the study period of 1975-2005 to be one of the reasons for increased gap between retail and producer prices of food. According to Peltoniemi and Teivonen (2002), there was hardly any meat importing from Central and Eastern European countries (CEEC). This is because only few companies had had export permit, the reason being poor quality and hygiene criteria.

On the other hand, even though farmers are tied to the country where they farm and therefore increased competition due to enlargement of the EU might seem threat for farmers and meat sector, meat processing companies are not tied only to a single country. Atria and HKScan were already international before the enlargement of the EU, and therefore this change might have been a great possibility for Finnish meat sector companies to take advantage of the enlargement of the EU. For example, HKScan became a minor owner of Polish Sokolow in 2002 and finally in 2004 HKScan bought a half of Sokolow (Turun Sanomat 2004) On the other hand, HKScan sold Sokolow in 2014 in order to concentrate on its other home markets (HKScan 2014a).

2.2.4 Changes in demand and supply

As a result of many different events, the Finnish meat sector has gone through different demand and supply problems. For example, Finnish meat sector has suffered from overproduction of piglets in the 2010s. There were many different

reasons for that, but in the worst case one of the meat processing companies ended up burning its hogs because they could not be slaughtered.

In the beginning on 2000s, there was a shortage of piglets due to a collapse of producer prices of piglets. On the contrary, the 2010s seems to be period of overproduction of piglets. (Turun Sanomat 2011) In 2013, HKScan had exported some thousands of piglets from Finland to Sweden. According to the CEO of HKScan Hannu Kottonen, the reason for that was seasonal differences in demand. Atria had similar problems as well in 2013, and therefore Atria started to ship its piglets from Finland to Poland. (Lundell 2013) Two years later, in 2015, HKScan again had overproduction problems. At the same time, there were no news of Atria's overproduction. Problems were both in strikes in slaughterhouses and Russian sanctions. As a result, hogs that could not be slaughtered were killed and transported to Honkajoki Oy were they were "recycled", meaning they were burnt and converted into energy. (Talouselämä 2015)

On the other hand, HKScan had been criticized for their management over the number of hogs, as earlier (before strikes and sanctions) HKScan had simply too many sows, and therefore also too many hogs (Talouselämä 2015). The year 2015 -case was unusual and very extreme and therefore there were many news items about HKScan burning its animals. It is a miracle if this has not affected the brand image of the company.

2.2.5 Russian sanctions

There is currently a conflict in Ukraine where Russia has provided rebel forces in Ukraine. This conflict results from the events from the past, starting from 1988 when the Soviet Union went through a series of progressive political and economic changes. To reduce the support for the rebel forces provided by Russia in Ukraine, the United States and the European Union introduced political and economic sanctions. In response to these sanctions imposed by the United States and the European Union, Russia introduced a ban on imports of fruit, vegetables, meat, poultry fish, milk and dairy products from the USA, European Union, Canada,

Austria and Norway on the 7 August 2014. From all 28 European Union member states Finland was estimated to suffer eighth largest financial losses due to sanctions. (Przygoda 2014) Russian counter sanctions against European Union are one of the latest adversities for the Finnish agricultural sector. The Finnish meat sector lost one of its markets and potential future cash flows.

2.2.6 Increased concentration in meat sector companies

The meat sector companies consist of meat sourcing companies and meat processing companies (see Figure 4). Previously, there used to be many meat sourcing and processing companies in Finland. However, nowadays 90 percent of meat sourcing in Finland has concentrated into two companies: Atria and HKScan (Hämeen Sanomat 2013). This has happened gradually, as Atria and HKScan have both acquired smaller meat sourcing and processing companies in Finland. Moreover, if we distinct different meats from each other, there have been only two poultry meat sourcing companies in Finland since 2013; Atria and HKScan. This is because Atria acquired Saarioinen in 2013 (Talouselämä 2013).

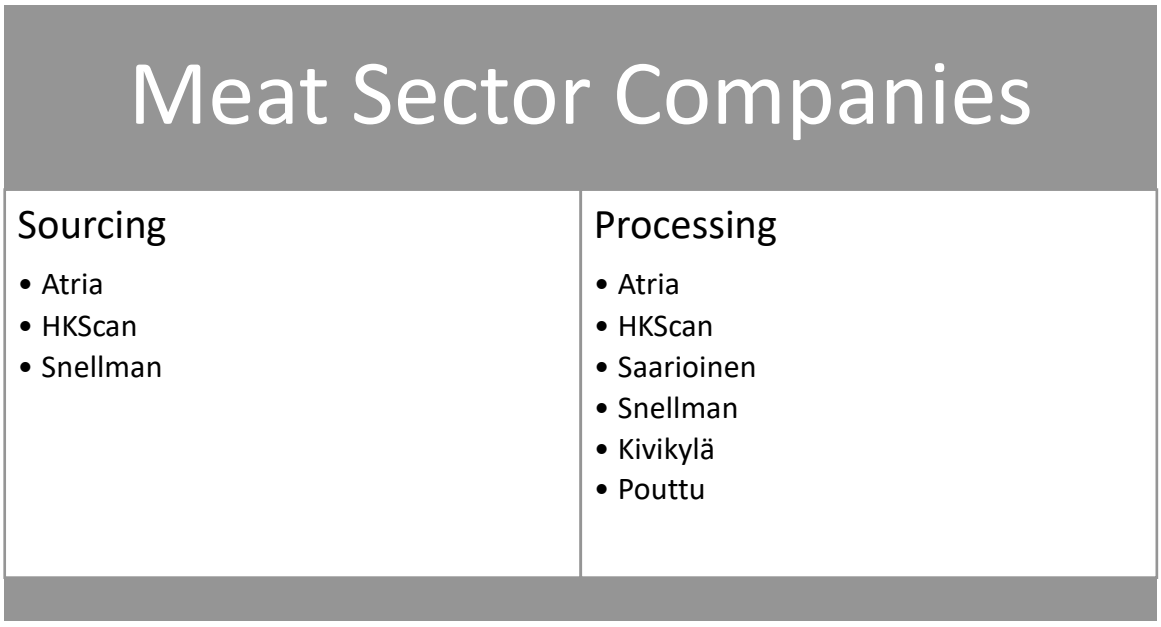

Figure 4 Meat sector structure in Finland

This concentration in meat sector companies means, that there are less options for farmers with whom to make a contract with. Two large international companies in

the industry makes it also more difficult for smaller ones to enter the market. Moreover, in comparison to Finland, there are ten large slaughterhouses in Germany acquiring 79 percent of the market share (ISN 2018).

2.3 Atria

Atria is one of the leading meat- and food industry companies in the Nordics, Russia and Estonia. Its turnover was EUR 1.44 billion in 2018 and it employs around 4 460 persons in Finland, Sweden, Denmark, Russia and Estonia. (Atria, n.d. a) The timeline of Atria's expansion into new countries can be seen from Figure 5. Atria is over 110-year old company. Its roots go back to 1903, when the first co-operative meat company Kuopion Karjanmyyntiosuuskunta (Kuopio Livestock Sales Co-operative, KKO) was founded in Kuopio, Finland. The purpose of the cooperative meat company was to guarantee a fair price for the farmer and to provide better quality meat for the consumer. The meat processing operation started from sausages, as KKO bought its first sausage factory from the city center of Kuopio in 1910. (Atria n.d. b)

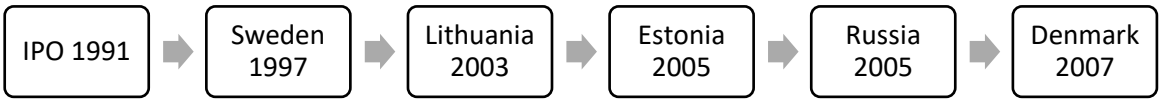

Figure 5 Atria's expansion into new countries

The roots of Atria extend also to Itikka Co-operative, which was founded in 1914 in Seinäjoki, Finland. Itikka's first activities already included foreign trade, as Itikka started to export slaughter cattle to Sweden. A couple years later, in 1917, Itikka built its first factory and started to produce sausages in Seinäjoki. The same factory functioned as sausage factory for the following 20 years, after which a new sausage factory was built, and the old one started to produce convenience food. In 1938, KKO expanded to North Karelia and the name was changed to Savo-Karjalan Osuusteurastamo (SKO). A slaughterhouse, meat processing plant and couple factories were built and opened right before the Russo-Finnish War, also known as

the Winter War. 1940s and 1950s were decades when Itikka built many new factories and plants. (Atria n.d. b)

The Atria brand was first established in order to advertise on TV in 1963. At that time, provincial co-operative slaughterhouses could not be advertised with their own brand on TV. Therefore, the Atria brand itself was not established only by SKO or Itikka. In fact, it was established as the joint brand of the central organization of the co-operative slaughterhouses, Tuottajain Lihakeskuskunta (TLK), which is also part of HKScan's history. (Atria n.d. b)

Finnish co-operative slaughterhouses had financial problems in 1960s and 1970s. This led to mergers of many slaughterhouses, one of the most significant being a merger of Lihakunta and Karjapohjola in 1972. After this, Lihakunta's area of operation covered around 60 per cent of the whole of Finland. The aim was to beat financial difficulties by being more efficient and more profitable, which was well achieved. In 1970s 1700 employees were needed to produce 80 million kilos, whereas in 1980s only 1400 employees were needed to produce 106 million kilos. (Atria n.d. b)

In 1982 Itikka built a new modern pork line in Nurmo. Five years later (1987), the Itikka Co-operative got a new managing director Seppo Paatelainen, which meant a wind of change. In the late 1980s, competition was opening up in Europe. In order to succeed in international markets, co-operative slaughterhouses had to become even more productive and efficient. All this required money, and the solution was an initial public offering. Both Itikka and Lihakunta became listed companies in 1988, despite intense opposition. (Atria n.d. b)

In order to cope with new international competition, Itikka and Lihakunta decided to merge. The result was the biggest meat sector company in Finland in 1990 called Itikka-Lihapolar Oy. The new company purchased over 40 per cent of the meat produced by co-operative slaughterhouses and its market share of the meat products sold was about 20 per cent. Itikka Co-operative's CEO Seppo Paatelainen was elected as the CEO of Itikka-Lihapolar Oy. The company went public in

1991.The same year, the central organization TLK was dismantled. As a result, a common path with HK Oy and Itikka-Lihapolar ended. TLK was converted into HK Oy and sold to Lounais-Suomen Osuusteurastamo (LSO). Itikka-Lihapolar was granted an exclusive right to Atria brand, and in 1994 the Atria brand became the name of the entire Group. (Atria n.d. b)

In 1992, Atria had heavy debts and the future of Finnish meat market was seen very uncertain due to the Finnish membership in the European Union. There was a lot of fear about the time after joining the European Union. Fears that foreign meat would take Finnish meat's place in the grocery stores. However, this fear never fully realized, as Finnish consumers favored Finnish meat. Even though international competition lowered the price of meat in grocery stores, Atria was able to take advantage of the situation and keep its position as a leading meat sector company in Finland. Overlapping functions were discontinued; out of eleven factories, only three got permission to continue. (Atria n.d. b)

In the late 1990s and early 2000s Atria expanded into four new markets. Atria took a big step into international markets by acquiring Lithells, which was the biggest private meat producing company in Sweden. Thanks to this, Atria became the biggest Nordic meat producing company in 1997. Five years later, in 2002, Atria continued its growth in Sweden, as it acquired Samfood. One year later, in 2003 Atria acquired a Lithuanian meat producing company Vilniaus Mesa. In 2005, Atria acquired an Estonian meat producing company Valga Lihatööstus, which had also its own piggeries. The same year, Atria acquired also a Russian meat producing company Pit-Product. (Atria n.d. b)

In 2006 Seppo Paatelainen retired, and Matti Tikkakoski took the position of CEO. One year later, in 2007, Atria decided to close its factor in Lithuania and concentrate its production into Estonian factory in Valga. The same year, Atria acquired its third company in Sweden; Sardus. This acquisition yielded 14 new brands into Atria, including Danish brands. Hence, Atria established a new business area in Sweden and Denmark in 2007, called Atria Scandinavia. (Atria n.d. b)

In 2008 Atria became the second largest meat producing company in Estonia by acquiring Wõro Kommerts and Vastse-Kuuste Lihatööstus. In addition, Atria acquired a Russian meat producing company Campomos and in that way doubled its facilities in Russia. One year later, in 2009, Atria doubled its capacity in St. Petersburg by building a new factory. Soon after these acquisitions, Atria started to restructure its activities in Estonia, Sweden and Russia in order to improve its productivity and competitiveness. First, in 2010, Atria concentrated its Estonian operations from three factories into two factories, Valga and Vastse-Kuuste. One year later, in 2011, Atria Scandinavia concentrated some of its operations from Halmstad to Malmö. In 2013 Atria abandoned primary production of pork in Russia and concentrated its operations in St. Petersburg. (Atria n.d. b)

The reasons for Atria's reorganizations in Russia were obvious: Atria had not been profitable in Russia since the year 2008. After Atria reorganized its operations in Russia in 2013, it still took time to enhance the profitability in Russia. The reason for this is Russian economy and sanctions. These struggles in Russia reflected also into Atria Baltic, the Baltic operations being negative by 9 million euros in 2015 (Atria 2016). After Atria enhanced its productivity in Russian operations, Atria Russia became weakly profitable in the year 2017.

Reorganizations in Estonia, Sweden and Russia are not the only big changes in the early 2010s in Atria. In 2011, Matti Tikkakoski was fired after being five years as the CEO at Atria concern. According to Chairman of the Board of Directors Martti Selin, Matti Tikkakoski was fired for not achieving his targets (Yle 2011 b). Juha Gröhn was nominated as new CEO of Atria (Atria n.d. b).

In 2013 Atria opened a new poultry feed factory in Koskenkorva and a new cattle slaughterhouse in Kauhajoki. In 2014, Atria acquired Saarioinen's meat operations, which meant that Atria strengthened its position in the Finnish meat sector. Moreover, in the 2015 Atria acquired a Danish company that manufactures cold cuts, and in 2016 Atria expanded in Sweden. (Atria n.d. b)

Russian sanctions, Brexit, African swine fever and the economic and political uncertainty has in overall affected the meat sector in the whole of Europe. Because of these changes, there has been a decrease in sales prices and a shift in demand towards lower-priced products. Moreover, meat export prices have been historically low. (Atria 2016) However, in the year 2016, Atria announced its first steps into a whole new market, as it got a permission to start to export pork meat from its Finnish slaughterhouse into China. This was very good news for Atria, as there had been over supply of pork meat in the European market. (Atria 2017). Next year, in 2017, Atria exported first time pork meat into China (Atria 2018).

2.4 HKScan

Like Atria, also HKScan is one of the leading meat- and food industry companies in the Nordics. In addition to Finland, Sweden and Denmark, HKScan's home market comprise also the Baltics. The timeline of HKScan's expansion into new countries is presented in Figure 6. HKScan's turnover was EUR 1.72 billion in 2018 and it employs around 7.200 persons. (HKScan 2019 a) HKScan is over 100 years old. Its roots go back to 1913 when cooperative meat company called Lounais-Suomen Osuusteurastamo (LSO, nowadays LSO Osuuskunta) was founded by twenty stockbreeders. In couple years, LSO grew to be the biggest cooperative meat company in Finland, one big step being an acquisition of a factory in Turku. LSO took its first steps into foreign trade in 1919 as it started to export poultry meat into Sweden. Later on, in 1930s LSO exported meat also to Germany and Great Britain. The amount of LSO exported meat was more than other meat companies exported in total. Exporting was profitable and it enabled expanding store network at homeland.

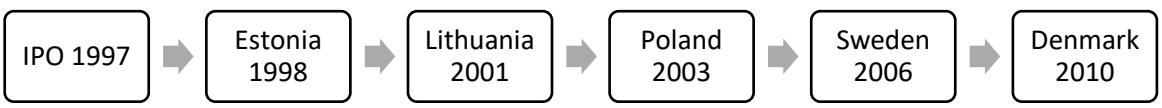

Figure 6 HKScan's expansion into new countries

As Atria, also HKScan's meat processing operation has first started from sausages, and later on in 1933 the company started to produce also convenience food. The Second World War affected operation of meat processing companies and as the price level of meat collapsed across the world in the late 1940s, exporting became unprofitable. LSO had to concentrate on its home market in Finland, especially because the global price level of meat remained lower than price level in Finland. LSO widened its store network in Finland, which consisted up to 74 stores in 1952. (LSO-Osuuskunta 2002)

As mentioned earlier, Atria was established in 1963 as the joint brand of the central organization of the co-operative slaughterhouse TLK, and this is also part of HKScan's history, as LSO was a member of TLK. Like in the case of Atria's history, also LSO faced same limitations and problems in 1960s. This decade was time of structural changes in LSO; regional organizations were changed into centralized organization, small factories were closed down and production was concentrated to Turku, where new capacity was built. Länsi-Uudenmaan Osuusteurastamo merged with LSO in 1964 and later on Etelä-Suomen Osuusteurastamo became also part of LSO in 1971. LSO acquired Oy Kassler Ab and Marchan in 1974. Also Helsingin Kauppiaat was acquired together with other co-operatives being part of TLK. (LSO-Osuuskunta 2002)

In 1988, LSO had similar thoughts as Atria; co-operative would need external money in order to cope with liberalized competition in Europe (LSO-Osuuskunta 2002). LSO incorporated its business in 1988, the result being limited company called LSO Food Oy; this enabled faster decision making and raising external money (HKScan 2019 b). As mentioned earlier, in 1991 the central organization TLK was dismantled and converted into HK Oy, which was sold to LSO. In fact, Itikka was originally also interested in HK brand. HK was one of the well-known food brands in Finland. In comparison to Atria, HK was perceived more high-quality and "townie". This was noticeable also in prices. (Puro and Åberg 2012, 152-153) Due to dismantlement of TLK and other changes, LSO was not in its best financial position for the initial public offering (Puro and Åberg 2012, 202).

In 1994, Simo Palokangas was appointed as the new CEO in LSO and it started a broad restructuring program. In 1995 LSO cooperated a lot with Pouttu and finally LSO and Pouttu founded a joint venture Pouttu Foods Oy in Outokumpu. In 1997, HK Ruokatalo became an official name of the company and it went public. The old name LSO Food Oy was given to HK Ruokatalo's sourcing company. (LSO-osuuskunta 2002) The reason why the company was renamed, was HK's strong company image compared to LSO Food Oy (Puro & Åberg 2012, 199). In 1998, after issuing new shares, HK Ruokatalo acquires majority of Estonian largest meat company AS Rakvere Lihakombinaat's shares (LSO-Osuuskunta 2002). The timing of issuance of new shares and acquisition of AS Rakvere lihakombinaat was first seen as optimal. The acquisition seemed to open up new export opportunities in fast growing Eastern-European markets. However, two weeks after the acquisition, the Russian economy collapsed, and the ruble was devalued. Rakvere (neither HK Ruokatalo) did not export into Russia due to high tariffs. The Russian economic situation affected also Eastern-Europe and new potential export opportunities did not exist anymore. This affected the profitability of the group and the share price. (Puro and Åberg 2012, 207)

In 2001 HK Ruokatalo had recovered from the Russian crisis and acquired another Estonian based company, this time Estonia's largest poultry meat company, AS Tallegg. This acquisition was made together with one Swedish company. Between these acquisitions, HK Ruokatalo acquired also a Finnish slaughterhouse located in Loimaa, called Helanderin Teurastamo, and a year after another Finnish slaughterhouse near Loimaa called Koiviston Teurastamo Oy. (LSO-Osuuskunta 2002) In addition, HK Ruokatalo acquired a Lithuanian leading processed meat brand in 2001 (HKScan 2001).

HK Ruokatalo started its expansion into Poland gradually in 2003 by increasing its ownership in Polish meat company called Sokolow (HKScan 2003). The year after HK Ruokatalo formed a strategic cooperation with Danish Crown; jointly owned Saturn Nordic Holding AB was founded (HKScan 2004). In 2006, Sokolow was fully owned by Saturn Nordic Holding AB (HKScan 2006 a). Only six months later HK Ruokatalo acquired Swedish meat processing company Scan AB, which doubled

the size of the group (HKScan 2019 b). In 2007 the name of the group was changed from HK Ruokatalo into HKScan (HKScan 2008).

In 2010 HKScan expanded into Denmark by acquiring a leading Danish poultry company called Rose Poultry A/S (HKScan 2010). However, expansion into Denmark has not been successful, as HKScan Denmark has been unprofitable since 2013 (HKScan 2014 b; HKScan 2016; HKScan 2018). As Atria has not been profitable in Russia, HKScan has had similar problems in Denmark.

After being active for over 10 years in Poland, HKScan decided to sell its 50 per cent stake in Saturn Nordic Holding AB in the beginning of year 2014 (HKScan 2014 a). In 2013, the Polish market had greatest operating profit margin (5.0 %) compared to other markets (Finland 0.8 %, The Baltics 4.8 %, Sweden 1.1 %, Denmark -0.7 %) (HKScan 2014 b). Therefore, it is surprising that the most profitable part was sold out. On the other hand, as the capital gain from the sale was over 67 million euro, the sale decreased the net gearing.

In the last years, HKScan has not acquired new companies the same pace as in the 2000s, but it has expanded into new markets. In 2015, HKScan announced first time its intention to start to export pork to China (HKScan 2015). Two years later HKScan announced other export intentions; this time poultry meat exportation into Japan (HKScan 2017). Moreover, HKScan has invested over 80 million euros in Rauma. HKScan built a new production facility specializing in poultry products in 2017. However, the launch of this new production facility proved to be more challenging than anticipated, which affected negatively to HKScan’s profitability. (HKScan 2018)

3 THEORETICAL BACKGROUND

This chapter first introduces previous studies on public Finnish meat industry companies. This is followed by previous studies on investment and efficiency improvement announcements.

3.1 Previous studies of public Finnish meat industry companies

Even though Atria and HKScan account for 90 per cent of the meat sourcing in Finland, there is a limited number of previous comparative studies on these two companies. However, there is wide range of studies where either one is studied. For example, Nisso (2012) studied HK Ruokatalo and the effect the acquisition of AS Rakvere Lihakombinaat in 1998 had on the company. The acquisition of AS Rakvere Lihakombinaat was strategically an important investment for HK Ruokatalo, being the first step into internationalization. One of the reasons for the need for internationalization was changes in the operational environment in 1995 when Finland became a member of the EU. Estonia was a favourable country for the first step into internationalization because its business environment, culture and operations were not seen as a threat. For example, Russia would have not been as optimal a country when compared to Estonia. All in all, Nisso (2012) estimate that the acquisition of AS Rakvere Lihakombinaat has been successful until today, even though the Russian economy collapsed only two weeks after the acquisition, which affected also Eastern-Europe and therefore also the operation of AS Rakvere Lihakombinaat.

Similarly, Ikäheimo (2011) investigated the effects of internationalization on the economy of HKScan, how the economic situation and changes to that were communicated to key stakeholders, and how the internationalization was handled in written media. Ikäheimo did not examine all HKScan's acquisitions, as the focus was specifically on the acquisition of Swedish Meats. Ikäheimo found that before acquiring Swedish Meats, HKScan was solvent and a profitable company. The acquisition of Swedish Meats has affected HKScan's relative profitability and

solvency remarkably, as the Swedish business has been weakly profitable. Ikäheimo also pointed out that some media had also questioned whether the acquisition was too expensive for HKScan and if HKScan has the capabilities to turn the Swedish business profitable.

Also, Heyder et al. (2011) investigated internationalization. Their broad study considered not only Atria and HKScan, but also 19 other leading European cooperatives operating in the dairy and meat sectors. Heyder et al. (2011) found a positive relationship between firm performance and internationalization. However, there is no information whether direct investments in foreign countries or exporting leads to higher gains.

Aaltonen (2017) studied the financial performance of four biggest Finnish food companies during ten-year period of 2007-2016 in his bachelor's thesis. These four companies were Atria, HKScan, Karl Fazer and Valio. Aaltonen conducted a financial ratio study by creating column charts of all four company's profitability, capital structure and liquidity ratios. Companies were then compared individually but also with the whole Finnish food sector. Aaltonen found that Fazer was the only company that did not make any loss in the study period. Moreover, Fazer seemed to be on the top in all areas, while HKScan seemed to have problems in all areas.

In addition to previously mentioned studies of public Finnish meat industry companies, there does exist previous studies of the Finnish meat industry itself. Jalonoja, Liu and Pietola (2006) studied signals of Finnish retail stores exploiting their strong market position. The hypothesis was that Finnish retail stores pursue to decrease the domestic price level of pork as quickly as possible when there is a decrease in foreign prices, but pursue to postpone price increases, even though the prices have increased abroad. The study concentrated on the producer prices of pork in Finland and Germany. The results show that there is a relationship between Finnish and German pork prices. Changes in German producer price of pork affects the price of Finnish producer price of pork but not the other way around. However, a large positive shock in the German price is transmitted faster to Finland than a

large negative price shock. Therefore, the hypothesis of Finnish retail stores exploiting their strong market position was rejected.

A similar study was conducted later in the case of poultry price. Liu (2008) examined the relationship between Finnish, German, Danish and French poultry prices. The results show that the Finnish poultry price is stationary, while other EU countries' poultry price is inconclusive. Because of this, there is no relationship between Finnish poultry price and other EU countries included in the study. However, Liu (2008) pointed out, that there had been a two-year ban on importing poultry from Asia due to avian flu. Therefore, at the time of the study, Finland was not importing poultry from Asia, but from other EU countries. Today, as there is no ban anymore, the situation is most probably different.

3.2 Company events

This chapter introduces previous studies of investment and efficiency improvement announcements and how these types of announcements usually change the value of a public company in the short run.

3.2.1 Investments

There are different types of investments: mergers, acquisitions, joint ventures, building a new factory or office, research and development projects, and diversification into new products or markets. As Woolridge and Snow (1990) state, there is always an outflow of current resources and no certainty of future payoffs in the case of any investment. There is a possibility that future payoffs have been overestimated or something unexpected happens in the industry or in the company, and therefore future cashflows are at risk. Even though the net present value of an investment is positive, there is no certainty of future payoffs. The bigger the investment, the greater the risk that everything does not go well.

Woolridge and Snow (1990) tested three different hypotheses while studying stock market reaction to strategic investment decisions: shareholder value maximization

(SVM) hypothesis, the rational expectations hypothesis and the institutional investors hypothesis. The first one is a standard assumption in economics and finance; the main purpose of a limited company is to generate profit for its shareholders and therefore every investment decision the company does, should increase the value of a limited company. While SVM hypothesis predicts a positive market reaction to investment announcements, the rational expectations hypothesis predicts no market reaction. Investments are rather seen as acts to maintain company's competitive fitness. The final hypothesis in turn predicts negative stock market reaction. In that case, investors look down on long-term investments, because they cut short-term earnings and preclude superior quarterly performance.

Berkovitch and Narayanan (1993) identify three different motives for acquisitions; synergy motive, agency motive and hubris hypothesis. The synergy motive theory assumes that the acquisition takes place only if both parties benefit from the acquisition. In other words, both acquirer's and the target's gain should be positive. Agency motive differs from synergy motive by benefitting parties; shareholders wealth of the acquiring firm is not the primary interest, but management's benefit is. The target usually benefits from the acquisition, otherwise they would not accept the bid. Unlike two first motives, hubris hypothesis is about managers overestimations. Managers overestimate their skills and the synergy, which leads to smaller benefit than first anticipated. In the worst-case scenario, there is no positive benefit.

There is a large amount of previous studies how different types of investment announcements affect the market value of a firm. McConnell and Nantell (1985) investigated 136 joint ventures during 1792-1979 in U.S, the number of companies involved in the study being 210. The finding was that there are significant positive gains from joint ventures and the result was consistent with SVM theory.

McConnell and Muscaralla (1985) investigated how 658 corporate capital expenditure announcements during 1975-1981 affect the market value of the firm. The sample was further divided into industrial firms and public utility firms. All firms included in the study were listed either on the New York Stock Exchange (NYSE) or the American Stock Exchange (AMEX). The results differed between industrial and

public utility firms; for industrial firms both results for increase and decrease in planned capital expenditure were statistically significant. Increase (decrease) in expenditures increased (decreased) the market value of a firm. For public utility firms the results were not significant. The study supports SVM theory in the case of industrial firms.

Woolridge and Snow (1990) investigated stock market reaction to strategic investment decisions, such as formation of joint ventures, research and development projects, major capital expenditures, and diversification into new products and/or markets. The final sample consisted of 767 announcements that all appeared in the *Wall Street Journal* during June 1972-December 1987. As a result, the findings support strongly SVM hypothesis. However, in some cases reaction was negative. Woolridge and Snow (1990) consider this to indicate that the market has lacked confidence in the company's strategy, prospects, ability or timing.

Bruner (2002) gathered together 44 studies to find out how mergers and acquisitions affect the market value of a buyer firm. The timeline of these studies varies, the earliest year being 1919 and latest 1999. Even though majority of these studies used daily data, some of the studies used only monthly data. Result of these 44 studies were mixed; 24 studies report positive returns (which of 17 were significant) and 20 studies report negative returns (which of 13 significant). In other words, 17 studies show value increase, 13 value decrease and 14 value conservation.

Goergen and Renneboog (2004) studied also M&A announcements. Criterion for the sample was minimum deal value of USD 100 million and European deals between years 1993 and 2000. The final sample consisted of 187 M&A deals. The result was statistically significant at the 1% level but small; M&A announcement generate an abnormal return of 0.7 per cent for shareholders of the acquiring firm. The sample was also divided into hostile acquisitions and mergers or friendly acquisitions. Goergen and Renneboog found that hostile acquisitions cause a negative abnormal return of 2.5 per cent and a mergers or friendly acquisitions produce a positive abnormal return of 2.5 per cent. The conclusion of the study was

that acquiring firms are motivated by the synergies and the cake is divided with the target. However, for a third of firms there exist over optimism and managerial hubris.

Similar to the study of Goergen and Renneboog (2005), also Yilmaz and Tanyeri (2015) found a positive but small abnormal return for shareholders of acquiring firm. Yilmaz and Tanyeri (2015) carried out a comprehensive study of global mergers and acquisitions. The study included altogether 263 461 acquisitions and partial sales in 47 countries. There was no minimum deal size. The outcome was that for an acquirer the 3-day cumulative abnormal average return was 1.4 per cent.

But why do the results differ so much? One reason might be diversification. Berger and Ofek (1995) found that diversification destroys market value, while distinctive synergy conserves market value. The companies were counted to operate in the same industry if they had same two-digit SIC code. Similar results are found by DeLong (2001); when the activities and geography are similar for acquiring and target company, the shareholders of acquiring company are rewarded usually 2.0 to 3.0 per cent more. Moreover, the market might lack confidence in some companies' strategy, prospects, ability or timing, which results negative reaction to investment decisions, as mentioned earlier.

3.2.2 Efficiency improvements

The second group of company events is named efficiency improvements. This group includes all events where the company in concern announces intended layoffs, decentralization of its operations from one place to another, integration of operations, closing production plants, carrying out efficiency improvement programs, or restructuring operations (see Figure 7). All these above-mentioned events include most often lay-off announcements. That is why we look at this point more in detail previous studies of lay-off announcements.

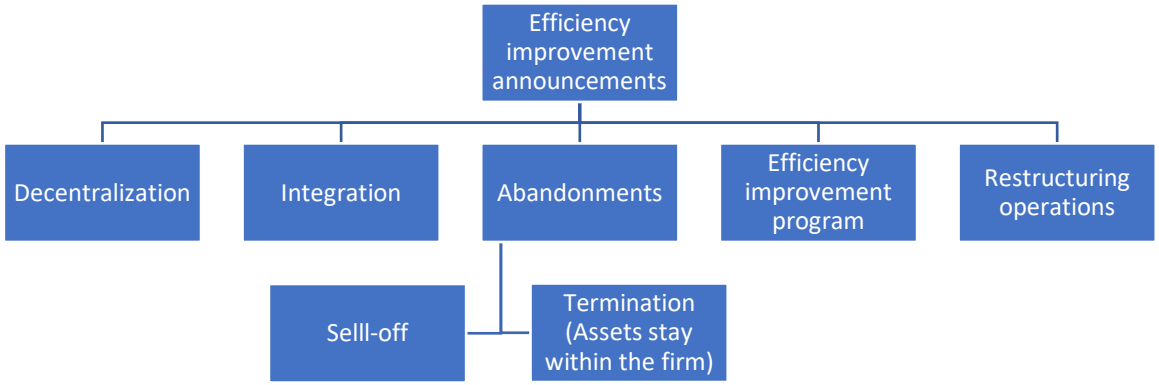

Figure 7 The classification of efficiency improvement announcements

Statman and Sepe (1989) researched how the announcement of termination of project with a history of remarkable loss affects a firm's share price. The sample consisted of firms whose losses from discontinued operations exceeded 10 per cent of the operating earnings of that year. All the 70 announcements were made during 1969-1983 in the *Wall Street Journal*. The results imply that market reacts positively to termination announcements. Statman and Sepe (1989) explain this result by behavioral hypothesis: in the case of project with a history of remarkable loss, the market already knows that the project is making loss and all the money put in the project, will be lost in the end. Because of this knowledge, market includes this "lost money" in the market value of the firm. When there is an announcement of termination of this particular project, market reacts positively, since no more money is lost in this project. Alternative hypothesis would have been normative hypothesis, which predicts that all continuing projects with net present value (NPV) less than the NPV of terminated project will be terminated.

Similarly, also Blackwell et al. (1990) studied stock market reaction to announcement of termination of project, more specifically closing a plant permanently. All 244 plant closing announcements included in the study were

published in the *Wall Street Journal* during 1980-1984. Blackwell et al. (1990) do not mention behavioural finance and normative hypothesis, but the possible increase in share price is explained similarly to Statman and Sepe (1989). Blackwell at al. (1990) mention an additional factor that affects the market reaction, namely, the information content of the announcement itself. If the market does not know the current situation of the plant and therefore does not understand the decision to close the plant, the result might be a decrease in share price, although the NPV of the decision to close the plant is positive. This type of lack of understanding from the market might also shake faith in managers. In addition, the market might also draw a conclusion of adverse market conditions, which also leads to a decrease in share price.

The sample was divided into three different categories based on the reason for plant closing; operation not profitable, consolidation of facilities and labor-management dispute. However, despite this division, the cumulative abnormal return for all categories was negative. On the other hand, only “operation not profitable” was significant at 5 per cent level. This lack of significance in other groups may be due to small number of observations. Blackwell et al. (1990) do not believe that the stock market reacts only to closing itself, but the possible reasons behind that, such as declining profitability or demand for firm’s products. An indication of this is that groups “operation not profitable” and “consolidation of facilities” have more negative abnormal returns compared to group “labor-management dispute”. Blackwell et al. found also that the profitability of a firm decreases after a plant closing announcement.

Worrell at al. (1991) divided their sample into two groups; financial distress (87 layoff announcements) and restructuring or consolidation (30 announcements). The announcements were gathered from the *Wall Street Journal* 1979-1987 and they all concerned large firms. The results imply that market reacts generally negatively to layoff announcements. There is still a difference between two above mentioned groups; the market reacts significantly more negatively to layoffs attributable to financial distress compared to layoffs attributable to restructuring or consolidation, whether the interval was from day -90 to -5, from day -1 to +1 or day -1. Worrell et

al. keep this as a sign that “the firm’s financial troubles are real”. Moreover, the market reacted more negatively to large layoffs compared to small layoffs. In addition, as the market reacted immediately after the announcement, the result is consisted with the efficient market hypothesis.

Gombola and Tsetsekos (1992) investigated announcements of permanent plant closings (excluding voluntary plant closings, concerning i.e. environmental cases), the timeline being 1980-1986. The data was gathered from the Wall Street Journal Index and consisted of 282 announcements, all companies’ stocks were traded either on NYSE or Amex. Gombola and Tsetsekos recognize that the action is taken when the NPV of plant closing is positive. Moreover, they pointed out that the information content of the plant closing announcements not only announces the closing of the plant, but also the company’s other operations and the situation of the company as a whole. The market reaction depends on the previous knowledge of the market. If the market did not know about firm’s problems with product demand or cost of production, the market has to re-estimate firm’s future cash flows downward. As Blackwell et al. (1990), also Gombola and Tsetsekos found that firms announcing plant closing, suffer from decreased profitability the announcement year and the year after. The stock market reaction for larger-size plant closings is statistically significant and strongly negative. However, the result is insignificant in the case of plants that comprise only small part of the firm’s operations (such as foreign plants and subsidiaries). Also, Ursel and Armstrong-Stassen (1995) have made similar conclusions.

Lin and Rozeff (1993) investigated stock price reaction to layoff announcements by dividing 1038 announcements into three categories, and them further into three subcategories; layoffs (temporary, permanent layoffs of hourly labor and permanent layoff of salaried labor), operation closings (temporary, permanent, permanent operation closings with production reassigned to other facilities) and a miscellaneous category (announcements of general cost cutting, re-organization and early retirement announcements). All these announcements appeared in the *Wall Street Journal* during 1978-1985. The preannouncement period abnormal returns from day -200 to day -2 are significantly negative in all categories, except

“permanent plant closings with realignment of production”. The findings propose that the market learns from the decreased demand and can anticipate that there is layoffs or temporary operation closings ahead. Therefore, announcements of permanent operation closings or abandonments do not cause a significant market reaction.

Iqbal and Shetty (1995) found that stock market reacts negatively both financially healthy and financially weak companies’ layoff announcements. Moreover, the stock market reaction is deeper in the case of financially healthy firms than financially weak firms. This implies that the market sees layoffs as more beneficiary for the weak firm than to healthy firms, as the financially healthy company is doing well already.

All in all, the stock market reaction to efficiency improvement announcements seems to be mixed; there is reported both negative and positive market reactions, and also no significant market reactions. One aspect seems to appear often; the result depends on the previous knowledge of the market. In some cases, there is no significant market reaction because the market has already learnt the current situation from decreased demand. On the contrary, the stock market reaction is positive, when the project has already made loss for a long time and the announcement signals that no more money is lost due to this particular project. Finally, the reaction seems to be negative when the stock market does not have enough knowledge of the current situation of the project and learns only from the announcements itself.

4 DATA AND METHODOLOGY

This chapter introduces the two methodologies applied in this study. The first one is the event study, which was used to investigate how investment and efficiency improvement announcements have changed the value of Finnish meat producing public companies in the short run and whether there is a difference in stock market reactions among these companies. The other methodology is an accounting study, which was used to investigate how the companies under study have succeed during the period of high uncertainty in the meat industry. In addition, the data used in each methodology and steps needed to conduct these studies are introduced after each methodology.

4.1 Event study methodology

The purpose of an event study is to examine the impact of an identifiable event on a financial variable, most often stock returns. If the financial market is informationally efficient, there should not be possibility to gain abnormal return before the announcement of an event. After the event is announced in public, the stock price should immediately react to the event and include all information available on the market.

The event study methodology was first introduced in 1969 by Fama, Fisher, Jensen and Roll. In their widely referred research, Fama et al. (1969) investigated stock splits' effect on stock price, and stock market efficiency around stock split announcements by using monthly data. Later on this specific method has become widely used in different fields of study. Common applications of an event study in economics and finance research is for example announcements of macroeconomic variables, earnings announcements, issues of new debt or equity and mergers and acquisitions (MacKinlay 1997). In addition to different applications of an event study, there are two different reasons for the use of this method. The first one is to test market efficiency and second one is to test the announcement's effect on company's value (Binder 1998). This study focused on testing investment and efficiency

improvement announcements' effect on Atria's and HKScan's values. Based on previous studies, the first hypothesis was formed:

1. Both investment and efficiency improvement announcements cause a stock price reaction on the event day.

As both companies under study operate in the same industry, the second hypothesis is as follows:

2. The stock market reaction is similar for both companies under study.

4.1.1 Data used in the event study

The data used in the event study consisted of the events under study and both companies' stock prices. Both companies daily stock prices were available on Nasdaq Historical Prices Database. Using daily data increases the power of an event study to detect abnormal performance, and that is also why it was beneficial to use daily data (Brooks 2014, 635). As both companies are traded in OMX Helsinki, the OMX Helsinki All-Share Index was used as a proxy for market in the case of both companies. This particular index contains all the shares listed on Helsinki Stock Exchange. We used closing price from the OMX Helsinki All-Share Index and adjusted closing prices from HKScan and Atria to account for cash dividends and possible stock splits.

Events under study were gathered from both companies' own websites, where they have both listed their company releases. Atria's company releases are listed from 06/06/2002 and HKScan's from 11/1/2001. Based on this, the study was decided to concentrate on 21st century, timeline being 2001-2017. In order to make sure that also Atria's events were included in the study already from year 2001, possible events were searched from different timelines including Atria's most significant phases. There were no events in 2001. Events were categorized into investments- and efficiency improvement announcements. All events had to be unexpected in order to be included in the study. If the announcement included new unexpected

information about parent company's or subsidiary's new investment, merger or acquisition, the event was categorized into investments category. In turn, if the announcement included new unexpected information about new layoffs, closing or selling a factory, the event was categorized into efficiency improvements category. When conducting an event study, it is very important that there are no other events on the announcement day. Therefore, if there was for example an earnings announcement the same day the company announced of its intention to close one of its factories for the first time, the event was excluded from the study.

The final sample size consisted of 95 events (see Appendix 1. List of company announcements), of which 26 were Atria's efficiency improvement announcements, 18 Atria's investment announcements, 25 HKScan's efficiency improvement announcements and 26 HKScan's investment announcements (see Figure 8). Efficiency improvement announcements by each company per different year can be seen from Figure 9. None of the companies had efficiency improvement announcements between 2001 and 2003. However, there were no efficiency improvement announcements by Atria neither in 2004, 2016 nor 2017. Investment announcements by each company per different year can be seen from Figure 10.

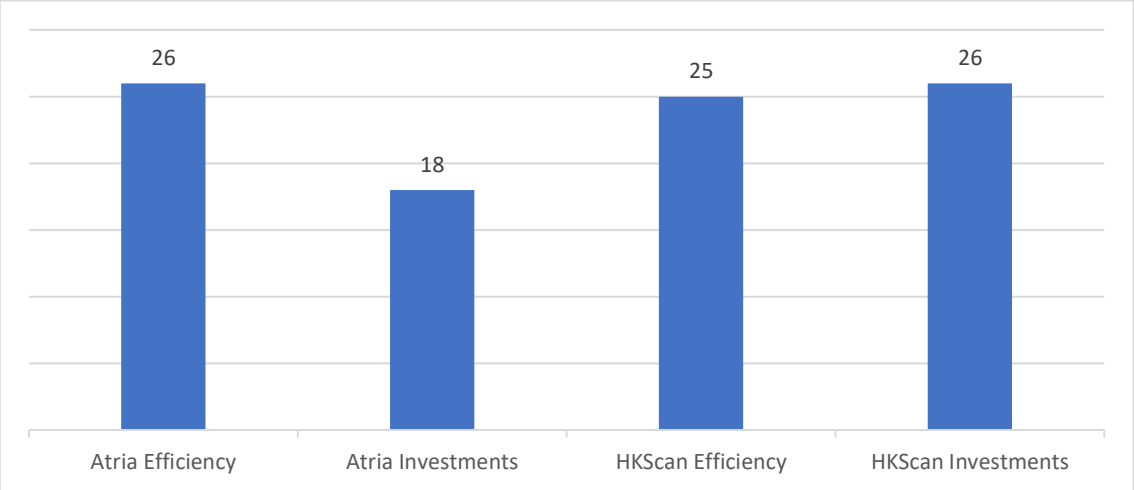

Figure 8 Number of announcement types per company

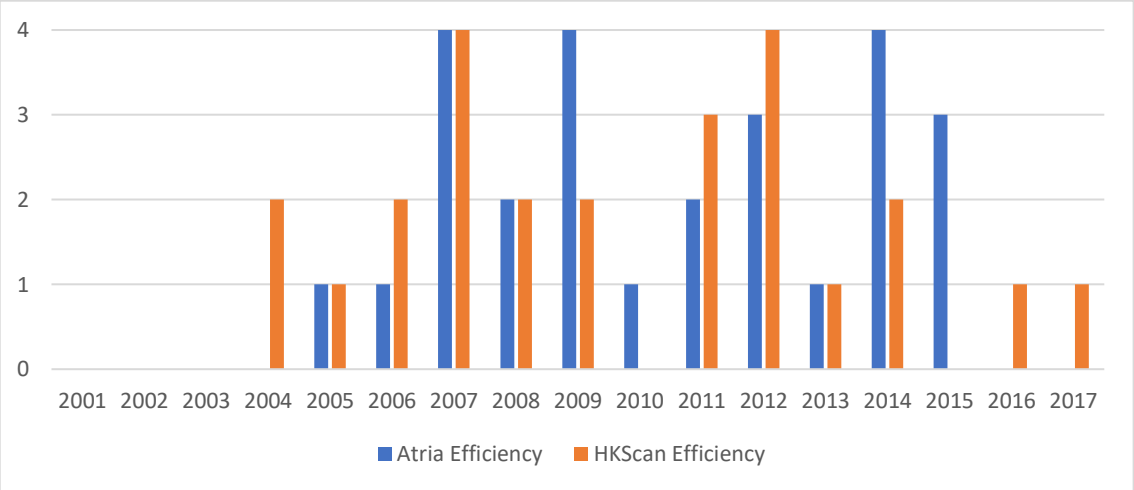

Figure 9 Number of efficiency improvement announcements by year

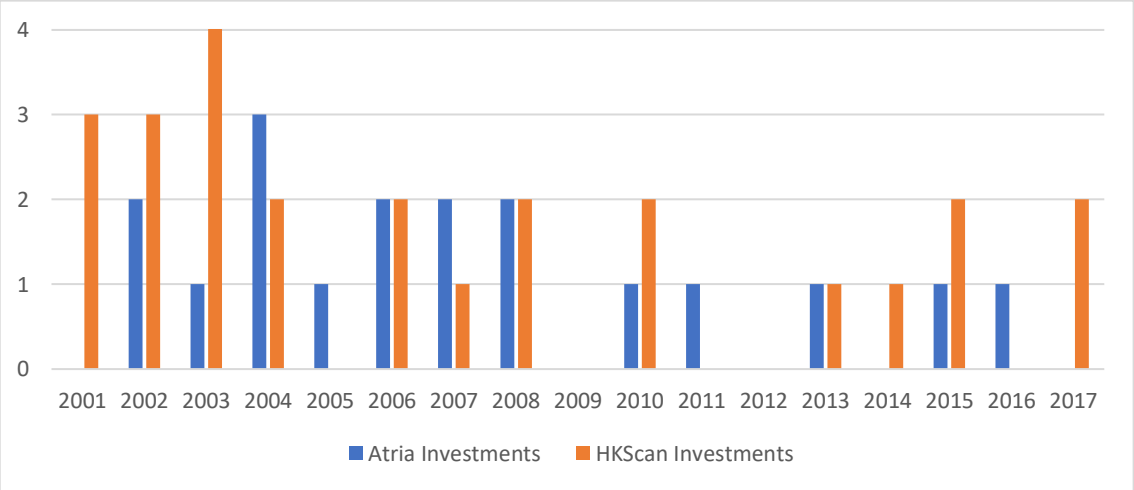

Figure 10 Number of investment announcements by year

4.1.2 Conducting an event study

Conducting an event study requires many different steps. The first step was to calculate daily returns for both stocks. In order to have normally distributed data, we used log returns. The following formula was used:

$$r_t = \ln \frac{P_t}{P_{t-1}} \quad (1)$$

r_t = logarithmic return of a stock at time *t*

P_t = value of a stock at time t

P_{t-1} = value of a stock at time t-1

Next step was to calculate expected returns, which were used later on to calculate abnormal returns. Expected return is the return that the stock would have most possibly generate, if the particular event did not happen (Brooks 2014, 636). There are many ways to calculate expected return, but the market model is the most widely used and better than other options so far (Armitage 1995). That is why expected return was calculated here by utilizing market model (equation 2). For this, an estimation window of 200 days before the event window was used (see Figure 11). According to Armitage (1995), estimation windows usually range between 100 and 300 observations when using daily data. Sample size of this size is large enough to make precise parameter estimations, but not too broad to increase the probability of a structural break. Moreover, as the event study was used here to research short-run effect of investments and efficiency improvement announcements, the event window comprised of 21 days; 10 days before and 10 days after the event, which is also illustrated in Figure 11.

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon \quad (2)$$

R_{it} = return on stock i at time t
α_i = alpha/intercept coefficient of the stock *i* estimated with linear regression
β_i = beta/slope coefficient of the stock *i* estimated with linear regression
R_{mt} = market return at time t
ε = error term

The market model gives us the estimated coefficients of alpha and beta, which are used to calculate estimated returns (see equation 3).

$$E(R_{it}) = \hat{\alpha}_i + \hat{\beta}_i R_{mt} \quad (3)$$

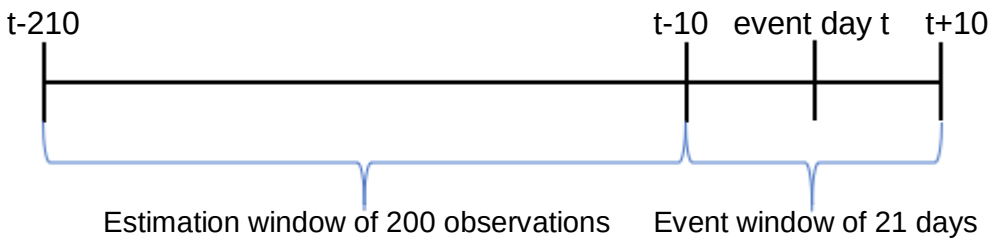

Figure 11 Estimation- and event window

In order to know how much the value of a stock has changed due to specific event, the abnormal return was calculated.

$$AR_{it} = R_{it} - E(R_{it}) \quad (3)$$

AR_{it}= abnormal return of stock *i* at time *t*

R_{it} = actual return of a stock

$E(R_{it})$ = expected return of a stock

After calculating abnormal returns for the event window, these abnormal returns were combined to get cumulative abnormal returns (CAR). This shows the event's total effect on a company's share price. CAR was calculated for each day in the event window by using equation 4.

$$CAR_i = \sum_{i=t}^{N} AR_{it} \quad (4)$$

As the CAR is only for one event, we needed to sum all CARs and calculate their average in order to have cumulative average abnormal return (CAAR). This value was used to calculate test statistic J_1 (see equation 5).

$$J_1 = \frac{CAAR\ (t_1, t_2)}{\sqrt{\sigma^2(t_1, t_2)}} \quad (5)$$

J_1= test statistic

$CAAR\ (t_1, t_2)$= cumulative average abnormal return between time t_1 and t_2

$\sigma^2(t_1, t_2)$= variance between time t_1 and t_2

4.2 Financial ratio analysis technique

The long-term performance of Atria and HKScan was studied here by conducting a financial ratio analysis. As the name of the method indicates, the method utilizes financial ratios which are usually formed by using two or more variables from accounting statements (Beaver 1966). The reason why ratios are used instead of raw numbers from the balance sheet, income statement or cash flow statement, is the comparability. When using ratios, the size of a company or a raw number does not matter, but the relationship between the nominator and the denominator. This makes the numbers more comparable with company's own historical numbers, but also with its peers. However, when doing the comparison, one must remember that the ratios are usually comparable only across sectoral peers, not companies in a different sector or industry (Sanghani 2016). The reason for this is differences across sectors. For example, in the banking industry the profit is made by making loans with borrowed money. This leads to high levels of debt to equity ratio, which is very normal in banking industry. This ratio cannot be compared with a company from different sector where debt to equity ratio is typically very low, such as in a service industry.

Financial ratios are widely used for different types of studies. According to Horrigan (1968), the use of financial ratios originates from the last half of the nineteenth century. At that time, ratio analyses were used both for measuring the ability to pay (credit purposes) and for profitability measures (managerial purposes). The use of financial ratios for forecasting companies' financial difficulties began in the early 1930's. Since then, there has been many different models for predicting failure or bankruptcy, one of them being Altman's Z-score (Altman 1986). Ratio analysis is also suitable for long-term studies, when one wants to find out, how certain event has affected the firm performance in the long-term (Bruner 2002). This method is especially widely used when studying long-term impact of mergers and acquisitions on company's performance.

Financial ratios can be divided into different categories based on the information they comprise. However, these categories differ in different studies. For example, Delen et al. (2013) refer to four classes that are often used by finance textbooks; liquidity, profitability, long-term solvency and asset utilization or turnover ratios. Luckham (1982) divides financial ratios also the same way as Delen et al. (2013), but instead of using name “asset utilization or turnover ratios”, Luckham (1982) uses name “efficiency ratios”. Also, Ying Lai et al. (2014) recognize the three above-mentioned categories; profitability, liquidity and leverage. In addition to these, Ying Lai et al. (2014) mention two other categories; cash flow and market ratios.

The first mentioned category, liquidity ratio, is concerned with firm’s ability to pay its bills on time (Luckham 1982). These ratios are for example the quick ratio, liquidity ratio, cash ratio and debt to equity ratio (Delen et al. 2013; Ying Lai 2014). In contrast, the solvency ratio category is related to a firm’s ability to meet its long-term debts and represent the longer run survival of a company. This category includes ratios such as the debt ratio and leverage ratio (Luckham 1982; Delen et al. 2013). Profitability ratios are measures of profit (before or after tax) to some other measure, such as sales, total assets or owners’ investment (Luckham 1982). Efficiency ratios, i.e. receivable turnover rate and asset turnover rate, measure how well the company utilize its resources (Luckham 1982; Delen et al. 2013). Cash-flow ratios compare cash flow to other financial values. Cash flow itself measures firm’s ability to generate cash, and therefore it is an essential measure of a firm’s financial health. The last category, market (value) ratios, compares current share price to other financial values. Examples of market ratios are the earnings per share and price to earnings ratio. (Ying Lai 2014)

Not all possible financial ratio categories are included in every study. Instead, the selection depends on what is studied, and which categories contain the information needed. As every category includes many different ratios, not all of them are usually included in the sample. The usual problem is which ratios to include. Barnes (1987) states that it is unquestionable that financial ratios are good indicators of firm’s performance. However, Horrigan (1968) mentions various times in his review of the history of financial ratio analysis, how there is no clear consensus of the most

important, efficient or useful financial ratios. The same thing is reported as a shortcoming of financial ratio analysis in research by Ying Lai et al. (2014).

As all companies under study operate in the same industry, the following hypotheses were tested:

1. There is no difference in book performance of two companies under study.
2. There is no difference in book performance between Finnish companies and foreign companies.

4.2.1 Data used in the ratio analysis

In order to be able to compare Atria's and HKScan's financial ratios with industry peers, two competitors within European Union were chosen by utilizing database called Amadeus. Atria and HKScan have both same NACE code (Nomenclature of Economic Activities, which groups organizations based on their business activities) 1013, which refers to production of meat and poultry meat products. Initially, large and very large listed companies in European Union region with the same NACE code were looked for on the Amadeus database. However, the search resulted only one potential competitor for Atria and HKScan, as other companies either missed data or they were relatively small compared to Atria and HKScan. That is why the search was expanded to include also companies with NACE code 101, which refers to processing and preserving of meat and production of meat products

This new search resulted in better options for Atria's and HKScan's competitors. After going through the results, the following companies were selected: Ter Beke and Gobarto. Ter Beke is a Belgian company, which produces, and sells sliced pre-packed processed meat and ready-to-eat meals, therefore being very similar to Atria and HKScan. However, as Atria and HKScan operate largely in Nordic and Baltic countries, Ter Beke is concentrated in Belgium, The Netherlands, Denmark, France, Switzerland, Spain, United Kingdom and Ireland. (Ter Beke 2018) The other company Gobarto is one of the largest pork producers and cutters in Poland. Moreover, they also operate in a cattle farm and therefore produce also beef. In addition to the Polish market, the company's products are also in European, Asian,

South American, North American and African markets. (Gobarto S.A. 2017) Gobarto and the Polish market differ from Atria and HKScan and the Finnish market, as in Finland meat processing companies do not usually own a farm like in Poland.

For the financial ratio analysis, the data was collected from the Thomson One database. For the financial ratio analysis to be comparable, all companies should follow the same accounting standards. All listed companies in European Union countries have been obligated to follow International Financial Reporting Standards (IFRS) since 2005. In addition, comparable financial values were also available for year 2004. Therefore, the timeline in financial ratio analysis was decided to begin from 2004 until the most recent annual financial information, which was the year 2017.

As the purpose of this financial ratio analysis was to analyze firm performance, three financial ratio categories were included: cash flow, profitability and market-based ratios. As mentioned previously, there is no consensus of the most important, efficient or useful financial ratios (Horrigan 1968; Ying Lai et al. 2014). The financial ratios used in this specific study were all also included in the study of Sharma and Ho (2002).

Sharma and Ho (2002) found an interesting pattern of previous accounting studies on a firms operating performance. Studies that used earnings based measures (such as earnings per share (EPS) and return on equity (ROE)) reported losses, while studies that used cash flow based performance measures (operating cash flow returns on assets and stock returns measured at acquisition announcement) reported gains on firm operating performance. Sharma and Ho (2002) found only one study that considers both cash- and earnings-based performance measures. In order for the results to be as unbiased as possible, both of these performance measures were used.

Figure 12 lists all the performance ratios used in this financial ratio analysis. As mentioned previously, the ratios were divided into three categories; cash flow, profitability, and valuation ratios. The cash flow ratio category included both

operating cash flow to sales -ratio and operating cash flow to assets -ratio. Healy et al. (1992) clarify the reasons for using operating cash flow instead of accounting income when conducting an accounting study. Accounting income considers also the cost of debt as the interest expenses are deducted. However, the cost of equity is not deducted from accounting income, which means that use of accounting income would lead to erroneous results when the sample consists of companies issuing debt but also equity. On the contrary, operating cash flow does not include either interest expenses or cost of debt. In other words, the ratio is not affected by the choice of financing and therefore the numbers are better comparable. In this study, operating cash flow is calculated by using top down formula; CFO = EBIT – taxes + depreciation.

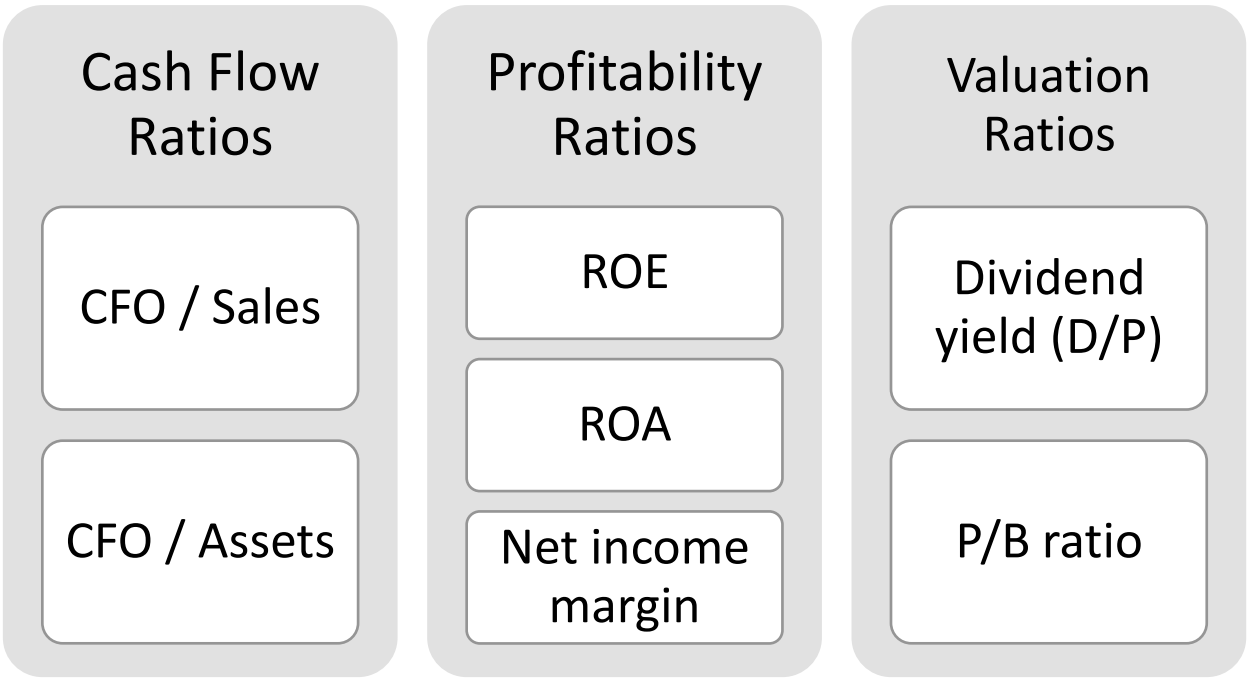

Figure 12 Performance ratios used to measure firm performance.

The profitability ratios used in this study are return on equity (ROE), return on assets (ROA) and the net income margin. Both ROE and ROA are calculated by using net income. ROE is a useful profitability measure as it reveals how much profit a company has generated with the money invested by shareholders. Similarly, ROA ratio reveals how much money the company has generated with the money invested in assets. The greater the percentage, the more efficiently the management has

used company's assets to generate profit.

Valuation ratios signify returns to shareholders. Inclusion of both the dividend yield (D/P) and price to book (P/B) -ratios enable easy analysis of the change in market valuation. When the price to book ratio increases and dividend yield decreases, the firm's market valuation increases, and vice versa.

4.2.2 Conducting a ratio analysis

Ratio analysis was conducted utilizing both the one-sample t-test and Welch's t-test. For both tests the assumption is that the data must be normally distributed (Ruxton 2016). For this, skewness and kurtosis of each data samples were calculated. For normally distributed data, both skewness and kurtosis are 0. Standard error of skewness (SES) and standard error of kurtosis (SEK) were calculated (see Equations 6 and 7) to see whether significant skewness and kurtosis problems exist that might result in a non-normal distribution. In order for the data sample to be normally distributed, skewness and kurtosis have to be less than two times SES or SEK, otherwise the data sample is not normally distributed (Čisar & Čisar 2010). Not all data samples were normally distributed at first. If skewness and kurtosis were not within the boundaries, there was need for considering the data sample in more detail and possibly removing outliers.

$$SES = \sqrt{\frac{6}{n}} \tag{6}$$

$$SEK = \sqrt{\frac{24}{n}} \tag{7}$$

n = sample size

There are separate t-tests for groups with equal and unequal variances. The latter one is used here, since the variances differ between each group. Moreover, according to Ruxton (2006) unequal variance t-test performs as efficiently in the case of Type I error as equal variance t-test, even though variances were identical. The same applies to Type II error as long as both data sets are normally distributed.

The ratio analysis was first conducted for Atria. The first phase was to conduct a one-sample t-test in order to see, how Atria has performed compared to its own historical average. For this, Atria's abnormal performance was calculated. A 5-year moving average of Atria's performance ratios was taken in order to form a time series of historical average performance measures. 5 years were used because of the high volatility in the meat industry. Since the 5-year moving average was used, the calculation of abnormal returns began only from year 2009. The abnormal return was calculated by deducting the 5-year moving average from an actual performance measure. All variables were normally distributed excluding dividend yield, which became also normally distributed after deleting outlier year 2014.

The next step was to compare Atria's performance with the industry average performance by using Welch's t-test. The hypothesis was that there is no difference in means. Industry average was calculated by taking average of both competitors' (Ter Beke and Gobarto) ratios. This ratio was then compared with Atria's actual performance. All other Atria's financial ratio data samples were normally distributed except for CFO/Sales. However, from industry data samples only dividend yield and P/B ratio were normally distributed. Therefore, a t-test was conducted only for dividend yield and P/B ratio with whole sample from year 2004 to 2017, the number of observations being 14. After deleting the year 2009 from the industry sample, the other variables became normally distributed. However, Atria's CFO/Sales ratio became normally distributed only after deleting the year 2007 outlier as well.

Atria's abnormal performance was also calculated by using an industry average. For this, the industry average performance ratio was deducted from Atria's actual performance. One-sample t-test was used to see whether Atria performed better from its competitors. From this data sample, only dividend yield was normally distributed. After deleting the year 2009 from the data sample, the rest of the variables became normally distributed excluding the P/B ratio.

After all these steps were taken in the case of Atria, the same analysis was done for HKScan. One-sample t-test of abnormal performance based on historical average

measures was mainly done with whole sample size of 9 observations. However, dividend yield was not normally distributed, even though an outlier year of 2014 was removed from the data sample. That is why the variable was left outside the study, as the sample size would have got very small after deleting even more variables.

Comparison between HKScan's actual performance and the industry average performance was done with the whole sample from 2004 to 2017 in the case of the P/B ratio. After deleting year 2009 from the data sample, all other financial ratios became also normally distributed, excluding HKScan's dividend yield. The latter one became normally distributed after excluding the outlier year of 2014. HKScan's abnormal performance data samples using industry averages were mainly not normally distributed, as only the P/B ratio was normally distributed without any modifications. For other variables, removal of the outlier year of 2009 made all other variables normally distributed except for dividend yield.

Finally, the comparison between Atria and HKScan was conducted. Atria's financial ratios from 2004 to 2017 were all normally distributed except for CFO/sales. For HKScan, all variables were also normally distributed except for Dividend yield. After deleting the outlier year 2007 from Atria's CFO/sales data sample, the distribution became normal. HKScan's CFO/sales ratio was still normally distributed even after this removal. After deleting the outlier year 2014 from HKScan's dividend yield data sample, the distribution became close to normal. The removal of year 2014 did not affect Atria's dividend yield variable's distribution.

5 RESULTS

5.1 Event study

A sectoral analysis was conducted using the event study methodology. The event study was divided into two categories: category-wise and company-wise (see Table 1 and Table 2). The former category delved into comparison between efficiency improvement announcements and investment announcements. First, these categories were compared with the combined data of Atria and HKScan. Next, the comparison was made for each company separately. The latter category of the event study concentrated on comparing results between Atria and HKScan. First, the categories were studied separately; Atria's efficiency improvement category versus HKScan's efficiency improvement category, and similarly for investment announcements. Finally, Atria's whole sample was compared with HKScan's whole sample.

Table 1 Category-wise comparison

Category-wise		
All efficiency improvement ann.	vs.	All investment announcements
Atria efficiency improvement ann.	vs.	Atria investment announcements
HKScan efficiency imp. ann.	vs.	HKScan investment announcements

Table 2 Company-wise comparison

Company-wise		
Atria efficiency imp. ann.	vs.	HKScan efficiency imp. ann.
Atria investment announcements	vs.	HKScan investment announcements
Atria full sample	vs.	HKScan full sample

5.1.1 Category-wise comparison

The first comparison in the category-wise comparison included all efficiency improvement announcements (see Table 3) and all investment announcements (see Table 4). The upper part of the table presents cumulative average abnormal returns, whereas the lower part presents average abnormal returns. One can

immediately notice that the results for efficiency improvement announcements are significant, while the results for investment announcements are not. Moreover, the stock market reaction is more intense in the case of efficiency improvement announcements, the maximum abnormal return on the event day being +10.46 % and minimum -12.24 %, while corresponding numbers for investment announcements are +4.99 % and -4.05 %. Cumulative average abnormal returns for efficiency improvement announcements are all significant apart from days one to five and minus one to one. Also, average abnormal returns are all statistically significant except for the event day and day five. It is strange that the event day is not statistically significant, but the following two days are. Moreover, the event day AAR is closer to zero than AAR (1) and AAR (2). Nonetheless, the results on the event day and days after appear to be slightly negative, which indicates that investors consider efficiency improvement announcements as an unfavourable event.

Table 3 Results: AARs and CAARs of all efficiency improvement announcements during 2001-2017

Stock price reaction – All efficiency improvement announcements					
	CAAR (0,0)	CAAR (0,1)	CAAR (0,2)	CAAR (1,5)	CAAR (-1, 1)
	-0,36%**	-1,12%**	-1,84%**	-0,43 %	-0,43 %
Min	-12,24 %	-10,47 %	-19,86 %	-11,01 %	-9,22 %
Max	10,46 %	8,30 %	7,68 %	9,91 %	11,07 %
Probability test					
N	47	47	47	47	47
J1 statistic / t-ratio	-1,258	-2,799	-3,742	-0,680	-0,876
p-ratio	0,003	0,003	0,000	0,248	0,191
**=Statistically significant at 99% confidence level					
*=Statistically significant at 95% confidence level					
	AAR (0)	AAR (1)	AAR (2)	AAR (5)	AAR (-1)
	-0,36 %	-0,76%**	-0,71%*	0,24 %	0,69%*
Min	-12,24 %	-6,94 %	-14,14 %	-4,51 %	-3,35 %
Max	10,46 %	2,51 %	2,98 %	3,27 %	8,71 %
Probability test					
N	47	47	47	47	47
J1 statistic / t-ratio	-1,258	-2,701	-2,524	0,860	2,442
p-ratio	0,215	0,010	0,015	0,394	0,018

For the investment announcements, none of the results are significant at 95 % confidence level. The event day average abnormal return is very close to zero (0.02), similar to other days on the event window. Therefore, we can conclude that investment announcements do not cause a stock market reaction on the event day. In turn, efficiency improvement announcements seem to cause a stock market reaction. Therefore, we reject the first hypothesis that investment announcements cause a stock price reaction on the event day, but we do not reject the hypothesis in the case of efficiency improvement announcements.

Table 4 Results: AARs and CAARs of all investment announcements during 2001-2017

Stock price reaction – All investment announcements					
	CAAR (0,0)	CAAR (0,1)	CAAR (0,2)	CAAR (1,5)	CAAR (-1, 1)
	0,02 %	0,17 %	-0,07 %	0,11 %	-0,27 %
Min	-4,05 %	-5,45 %	-7,49 %	-15,53 %	-7,98 %
Max	4,99 %	7,00 %	8,50 %	13,19 %	8,88 %
Probability test					
N	44	44	44	44	44
J1 statistic / t-ratio	0,063	0,391	-0,129	0,163	-0,501
p-ratio	0,475	0,348	0,449	0,435	0,308
**=Statistically significant at 99% confidence level *=Statistically significant at 95% confidence level					
	AAR (0)	AAR (1)	AAR (2)	AAR (5)	AAR (-1)
	0,02 %	0,15 %	-0,24 %	-0,33 %	-0,44 %
Min	-4,05 %	-3,12 %	-5,73 %	-10,09 %	-7,79 %
Max	4,99 %	5,66 %	3,19 %	3,95 %	2,91 %
Probability test					
N	44	44	44	44	44
J1 statistic / t-ratio	0,063	0,490	-0,777	-1,064	-1,421
p-ratio	0,950	0,627	0,442	0,293	0,162

Comparison between Atria's efficiency improvement and investment announcements (Table 5 and Table 6) show similar results to the comparison where both companies were included. The cumulative average abnormal returns for Atria's efficiency improvement announcements are all significant but CAAR (1,5) and CAAR (-1,1). The cumulative average abnormal return seems to grow in absolute

value; CAAR (0,0) < CAAR (0,1) < CAAR (0,2). However, CAAR (1,5) is already smaller in absolute value than CAAR (0,0). In other words, the stock market reaction does not extend into fifth day after the event. The event day AAR and day two AAR are significant at 95 % confidence level, the others are not. The event day AAR is negative but small (-0.89 %). However, this is greater in absolute value than event day AAR for the whole sample of efficiency improvement announcements.

Table 5 Results: AARs and CAARs of Atria's efficiency improvement announcements

Stock price reaction - Atria Efficiency improvement announcements					
	CAAR (0,0)	CAAR (0,1)	CAAR (0,2)	CAAR (1,5)	CAAR (-1, 1)
	-0,89%*	-1,60%**	-2,70%**	-0,35 %	-1,09 %
Min	-6,21 %	-10,47 %	-19,86 %	-8,85 %	-9,22 %
Max	2,26 %	2,20 %	2,15 %	3,68 %	3,10 %
Probability test					
N	22	22	22	22	22
J1 statistic / t-ratio	-2,125	-2,724	-3,747	-0,375	-1,505
p-ratio	0,017	0,003	0,000	0,354	0,066
**=Statistically significant at 99% confidence level					
*=Statistically significant at 95% confidence level					
	AAR (0)	AAR (1)	AAR (2)	AAR (5)	AAR (-1)
	-0,89%*	-0,72 %	-1,1%*	0,51 %	0,52 %
Min	-6,21 %	-4,26 %	-14,14 %	-2,15 %	-3,35 %
Max	2,26 %	2,51 %	2,98 %	2,89 %	8,71 %
Probability test					
N	22	22	22	22	22
J1 statistic / t-ratio	-2,125	-1,727	-2,639	1,230	1,246
p-ratio	0,045	0,098	0,015	0,232	0,226

None of the results for Atria's investment announcements are significant. Event day AAR is positive and small (0.22 %), but day one and two are negative. As the results are not significant, we cannot draw any wide conclusions from the results. On the other hand, according the shareholder value maximization theory, all decisions made by the company should increase the shareholder value. However, here the minimum AAR (0) is -1.56 %. This return is for the event when Atria announced that it has signed a preliminary agreement on the purchase of Saarioinen's slaughtering,

meet cutting and meat procurement operations. One could think that market would have reacted positively to this type of event, but the AAR (0) was negative. In order to find out why these results were negative, more in-depth study should be done. Moreover, another reason why the investment announcements do not cause a stock market reaction in this study might be the sample. The size of the investments was not defined, and therefore the sample size can include also investments that do not have substantial effect on the value of the firm.

In any case, the stock market reaction to Atria's efficiency improvement announcements is negative and significant, and for investment announcements positive and not significant. Therefore, we do not reject our first hypothesis in the case of efficiency improvement announcements, but we reject it in the case of investment announcements.

Table 6 Results: AARs and CAARs of Atria's investment announcements during 2001-2017

Stock price reaction – Atria's investment announcements					
	CAAR (0,0)	CAAR (0,1)	CAAR (0,2)	CAAR (1,5)	CAAR (-1, 1)
	0,22 %	0,09 %	-0,28 %	-0,01 %	-0,39 %
Min	-1,56 %	-4,08 %	-7,22 %	-15,53 %	-4,27 %
Max	4,99 %	4,43 %	4,92 %	3,89 %	5,40 %
Probability test					
N	18	18	18	18	18
J1 statistic / t-ratio	0,499	0,150	-0,370	-0,015	-0,510
p-ratio	0,309	0,440	0,356	0,494	0,305
**=Statistically significant at 99% confidence level *=Statistically significant at 95% confidence level					
	AAR (0)	AAR (1)	AAR (2)	AAR (5)	AAR (-1)
	0,22 %	-0,12 %	-0,37 %	0,36 %	-0,48 %
Min	-1,56 %	-2,56 %	-5,73 %	-1,95 %	-7,79 %
Max	4,99 %	3,18 %	3,19 %	3,95 %	1,34 %
Probability test					
N	18	18	18	18	18
J1 statistic / t-ratio	0,499	-0,287	-0,854	0,815	-1,096
p-ratio	0,624	0,778	0,404	0,426	0,288

The results of HKScan's efficiency improvement announcements are presented in Table 7 and investment announcements in Table 8. For the efficiency improvement announcements none of the CAARs are significant at 95 % confidence level, whereas AARs are significant for one day before and after the event day. For the investment announcements, none of the results are significant at 95 % confidence level. In other words, the event day is not significant in either case. Moreover, there is a fiercer stock market reaction to efficiency improvement announcements when compared to investment announcements, as the maximum and minimum abnormal returns for efficiency improvement announcements are 10.46 % and -12.24 %, and for investment announcements 4.32 % and -4.05 %.

Table 7 Results: AARs and CAARs of HKScan's efficiency improvement announcements

Stock price reaction – HKScan's efficiency improvement announcements					
	CAAR (0,0)	CAAR (0,1)	CAAR (0,2)	CAAR (1,5)	CAAR (-1, 1)
	0,11 %	-0,70 %	-1,07 %	-0,50 %	0,15 %
Min	-12,24 %	-10,10 %	-12,82 %	-11,01 %	-9,08 %
Max	10,46 %	8,30 %	7,68 %	9,91 %	11,07 %
Probability test					
N	25	25	25	25	25
J1 statistic / t-ratio	0,284	-1,274	-1,602	-0,582	0,221
p-ratio	0,388	0,101	0,055	0,280	0,412
**=Statistically significant at 99% confidence level *=Statistically significant at 95% confidence level					
	AAR (0)	AAR (1)	AAR (2)	AAR (5)	AAR (-1)
	0,11 %	-0,80%*	-0,38 %	0,01 %	0,84%*
Min	-12,24 %	-6,94 %	-4,85 %	-4,51 %	-2,11 %
Max	10,46 %	2,15 %	2,58 %	3,27 %	5,60 %
Probability test					
N	25	25	25	25	25
J1 statistic / t-ratio	0,284	-2,085	-0,974	0,017	2,184
p-ratio	0,779	0,047	0,339	0,986	0,039

Some of the investment announcements also yield negative market reactions in the case of HKScan. The minimum AAR (0) of -4.05 % is for the announcement, where HKScan announced that AS Baltic Poultry increases its ownership in AS Tallegg on

the 4th of September 2001. A similar decrease in share price happened when HKScan announced that Scan AB proposed an acquisition in Sweden on 15th of November 2007. For that day, the AAR was -4.00 %.

Overall, in both cases, the event day AAR is close to zero; for efficiency improvement announcements it was 0.11 % and for investment announcements it was -0.12 %. Moreover, the signs of these returns are different; efficiency improvement announcements cause a small positive stock market reaction, while investment announcements small negative market reaction. As these returns are very close to zero and not significant, we reject the null hypothesis that there is stock market reaction in both announcement types.

Table 8 Results: AAR's and CAAR's of HKScan's investment announcements

Stock price reaction – HKScan's investment announcements					
	CAAR (0,0)	CAAR (0,1)	CAAR (0,2)	CAAR (1,5)	CAAR (-1, 1)
	-0,12 %	0,23 %	0,07 %	0,20 %	-0,19 %
Min	-4,05 %	-5,45 %	-7,49 %	-8,05 %	-7,98 %
Max	4,32 %	7,00 %	8,50 %	13,19 %	8,88 %
Probability test					
N	26	26	26	26	26
J1 statistic / t-ratio	-0,269	0,367	0,100	0,207	-0,251
p-ratio	0,394	0,357	0,460	0,418	0,401
**=Statistically significant at 99% confidence level					
*=Statistically significant at 95% confidence level					
	AAR (0)	AAR (1)	AAR (2)	AAR (5)	AAR (-1)
	-0,12 %	0,34 %	-0,15 %	-0,81 %	-0,42 %
Min	-4,05 %	-3,12 %	-2,17 %	-10,09 %	-5,87 %
Max	4,32 %	5,66 %	2,70 %	2,06 %	2,91 %
Probability test					
N	26	26	26	26	26
J1 statistic / t-ratio	-0,269	0,789	-0,346	-1,846	-0,955
p-ratio	0,790	0,437	0,732	0,076	0,348

Finally, the comparison between efficiency improvement and investment categories propose that there is a clear difference between the market reaction for efficiency

improvement announcements and investment announcements. The results of the event study including both Atria's and HKScan's efficiency improvement announcements implies that investors consider efficiency improvement announcements as unfavorable events. Blackwell et al. (1990) propose the following potential explanations for a negative market reaction: the market does not have enough knowledge of the project and learns about it only from the announcements itself. Another potential explanation is that market draws a conclusion of adverse market conditions, which leads to a decrease in the share price.

Different to efficiency improvement announcements, investment announcements do not cause a stock market reaction on the event day nor during the event window. The event day average abnormal return is very close to zero (0.02) and not statistically significant. The result therefore supports the rational expectations hypothesis, where investments are rather seen as acts to maintain company's competitive fitness. On the other hand, another possible explanation for non-significant results might be the sample. The size of the investment was not defined, and therefore the sample size can include also investments that do not have substantial effect on the value of either firm. Moreover, some of the investments yield a negative average abnormal return on the event day, although one could have though them to be positive news for the market.

5.1.2 Company-wise comparison

The company-wise comparison included first comparison between both companies' efficiency improvement announcements results. Atria's results for efficiency improvement announcements were presented in Table 5, and HKScan's results in Table 7. The results for Atria are significant; AAR (0) and AAR (2) are significant, and for CAAR's only (1,5) and (-1,1) are not. On the contrary, the results for HKScan are mainly insignificant; none of the CAARs are significant, only AAR (1) and AAR (-1) are significant. Moreover, the results are opposite; Atria's efficiency improvement announcements yield significant negative AAR of -0.89 % on the event day, while for HKScan the corresponding number is positive (+0.11 %) but not significant. For Atria the maximum AAR on the event day was +2.26 % and minimum -6.21 %. For HKScan corresponding numbers were +10.46 % and -12.24 %. In

other words, stock market reaction was more intense in the case of HKScan when compared to Atria.

The first hypothesis that announcements cause a stock market reaction can be accepted in the case of Atria, but not in the case of HKScan. The second hypothesis of similar stock market reaction for both companies under study is rejected. The stock market reaction to Atria's efficiency improvement announcements was negative, and for HKScan there is no stock market reaction. The potential reasons for the negative market reaction are the same as mentioned previously: the market has not had enough knowledge of Atria's projects and has learnt about them only from Atria's announcements, the reaction being therefore negative. Another potential explanation is that market has drawn a conclusion of adverse market conditions, which has led to a decrease in Atria's share price.

The second company wise comparison included investment announcements (see Table 6 and Table 8 for Atria's and HKScan's respective results). This time none of the results were significant, neither in the case of Atria nor HKScan. Moreover, the maximum and minimum do not differ as much as in the case of efficiency improvement announcements. The maximum and minimum for Atria were +4.99 % and -1.56 % and for HKScan +4.32 % and -4.05%. The event day AAR for Atria was positive (0.22 %), and once again the results were contrary for HKScan; the event day AAR was negative (-0.12 %). As these results are both non-significant in the 95 percent confidence level and the abnormal returns are close to zero, the first hypothesis that there is stock market reaction on the event day is rejected. Therefore, the second hypothesis that these companies under study react similarly is not rejected, as there were no statistically significant results and stock market reactions were close to zero for both companies. On the other hand, it must be noted that even though these results were not significant, Atria's stock market reaction was positive and HKScan's negative.

The final comparison in the category-wise comparison is the comparison between Atria's full sample results (see Table 9) with HKScan's full sample results (see Table 10). One can see that investors' reaction to HKScan's announcements is more

volatile than to Atria's announcements; the minimum and maximum abnormal returns in the case of Atria are -6.21 % and +5.40 %, whereas the corresponding numbers for HKScan are -12.24 % and 10.46 %. In addition, the event day AAR is negative for both companies, although Atria's event day AAR of -0.39 % is more negative than HKScan's event day AAR, which is very close to zero, only -0.01 %. However, in both cases the result is not statistically significant, meaning there is no stock market reaction in either case.

Table 9 Results: AARs and CAARs of Atria's full sample during 2001-2017

Stock price reaction – Atria's full sample					
	CAAR (0,0)	CAAR (0,1)	CAAR (0,2)	CAAR (1,5)	CAAR (-1, 1)
	-0,39 %	-0,84%*	-1,61%**	-0,20 %	-0,77 %
Min	-6,21 %	-10,47 %	-19,86 %	-15,53 %	-9,22 %
Max	5,40 %	4,99 %	4,43 %	4,92 %	3,89 %
Probability test					
N	40	40	40	40	40
J1 statistic / t-ratio	-1,304	-1,993	-11,752	-0,298	-1,491
p-ratio	0,096	0,023	0,000	0,383	0,068
**=Statistically significant at 99% confidence level *=Statistically significant at 95% confidence level					
	AAR (0)	AAR (1)	AAR (2)	AAR (5)	AAR (-1)
	-0,39 %	-0,45 %	-0,77%*	0,44 %	0,07 %
Min	-6,21 %	-4,26 %	-14,14 %	-2,15 %	-7,79 %
Max	4,99 %	3,18 %	3,19 %	3,95 %	8,71 %
Probability test					
N	40	40	40	40	40
J1 statistic / t-ratio	-1,304	-1,515	-2,589	1,481	0,236
p-ratio	0,200	0,138	0,013	0,146	0,815

The only results that are significant in the case of Atria are CAAR (0,1) and AAR (2). For HKScan, none of the results are significant at the 95 per cent confidence level. Therefore, the first hypothesis that announcements cause a stock market reaction should be rejected, as neither of the results were statistically significant. Moreover, the second hypothesis of similar stock market reaction for both companies under study should be accepted, as neither of the results were statistically significant.

Although, is must be pointed out that stock market reaction on Atria's announcements is slightly more negative than stock market reaction on HKScan's announcements. The possible reason why there is no stock market reaction, is the sample itself. As the full sample includes both efficiency improvement and investment announcements, and the stock market reactions have been opposite, they exclude each other.

Table 10 Results: AARs and CAARs of HKScan's full sample during 2001-2017

Stock price reaction – HKScan's full sample					
	CAAR (0,0)	CAAR (0,1)	CAAR (0,2)	CAAR (1,5)	CAAR (-1, 1)
	-0,01 %	-0,23 %	-0,49 %	-0,14 %	-0,02 %
Min	-12,24 %	-10,10 %	-12,82 %	-11,01 %	-9,08 %
Max	10,46 %	8,30 %	8,50 %	13,19 %	11,07 %
Probability test					
N	51	51	51	51	51
J1 statistic / t-ratio	-0,021	-0,545	-0,962	-0,220	-0,048
p-ratio	0,492	0,293	0,168	0,413	0,481
**=Statistically significant at 99% confidence level *=Statistically significant at 95% confidence level					
	AAR (0)	AAR (1)	AAR (2)	AAR (5)	AAR (-1)
	-0,01 %	-0,22 %	-0,26 %	-0,41 %	0,20 %
Min	-12,24 %	-6,94 %	-4,85 %	-10,09 %	-5,87 %
Max	10,46 %	5,66 %	2,70 %	3,27 %	5,60 %
Probability test					
N	51	51	51	51	51
J1 statistic / t-ratio	-0,021	-0,75	-0,895	-1,395	0,688
p-ratio	0,983	0,457	0,375	0,169	0,495

5.2 Ratio analysis

The aim of the ratio analysis was to study the Finnish meat sector and how it has performed during high uncertainty in the industry. The comparison was made both with Finnish meat sector historical averages and with industrial peers outside

Finland. The development of financial ratios of Atria, HKScan and industrial peers outside Finland is first investigated, which after the focus will be on the statistical tests done.

5.2.1 Development of financial ratios

The development of CFO/sales -ratio of Atria, HKScan and Industrial peers outside Finland is presented in Figure 13. CFO/sales of industrial peers outside Finland has mainly been greater than Atria's and HKScan's, except for a radical change in 2009. Nonetheless, year 2009 seems to be just one exception. However, the gap between Finnish companies' and industrial peers' outside Finland seems to shrink from 2004 until 2012. Despite that, in 2016, the gap seems to be almost as wide as in 2004. In other words, it seems that Atria's and HKScan's industrial peers outside Finland have more ability to generate cash flow in relation to their sales volume when compared to Atria and HKScan.

The changes in CFO/sales ratio of Atria and HKScan seem to go hand in hand from 2004 to 2014. However, after this, there seems to be widening gap; Atria's CFO/sales ratio stayed at a similar level as previously, but HKScan's ratio decreased close to 1 % from 2014 to 2017. In other words, HKScan's ability to generate cash flow in relation to its sales volume has decreased year by year after 2014. This is the same year when HKScan decided to sell its stake in Sokolow and Russia introduced its sanctions. Moreover, the year 2015 was very unusual and extreme for HKScan, as there were many news items about HKScan burning its animals, as mentioned previously.

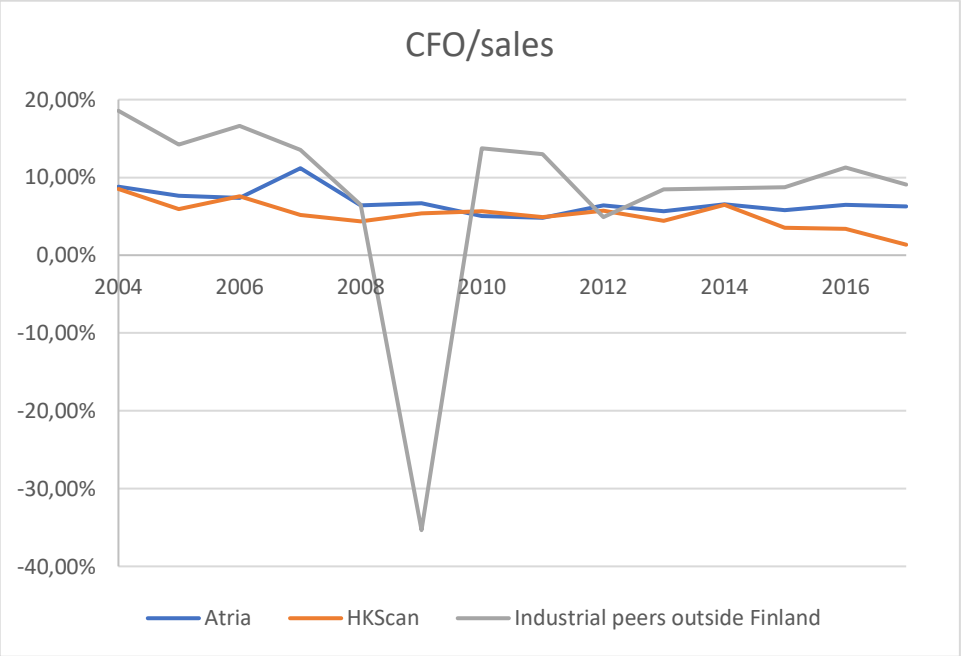

Figure 13 Companies' CFO/sales -ratios during 2004-2017

The graph of CFO/assets (see Figure 14) is similar to the graph of CFO/sales, although the gap between Atria's and HKScan's ratios start widening after year 2015 instead of 201. Moreover, HKScan's CFO/assets ratio is larger than Atria's ratio in 2014, while in 2015 they are about the same size. All in all, industrial peers outside Finland seem to generate more cash flow in relation to their assets, when compared to Atria and HKScan. Atria and HKScan have been somewhat alike until the year 2015, which after HKScan has lost its ability to generate cash flow from operations in relation to assets, while Atria's ability has remained approximately the same. The reason for this is most probably the sale of HKScan's 50 per cent stake in Saturn Nordic Holding AB in the beginning of year 2014, which had the greatest operating profit margin compared to other divisions of HKScan.

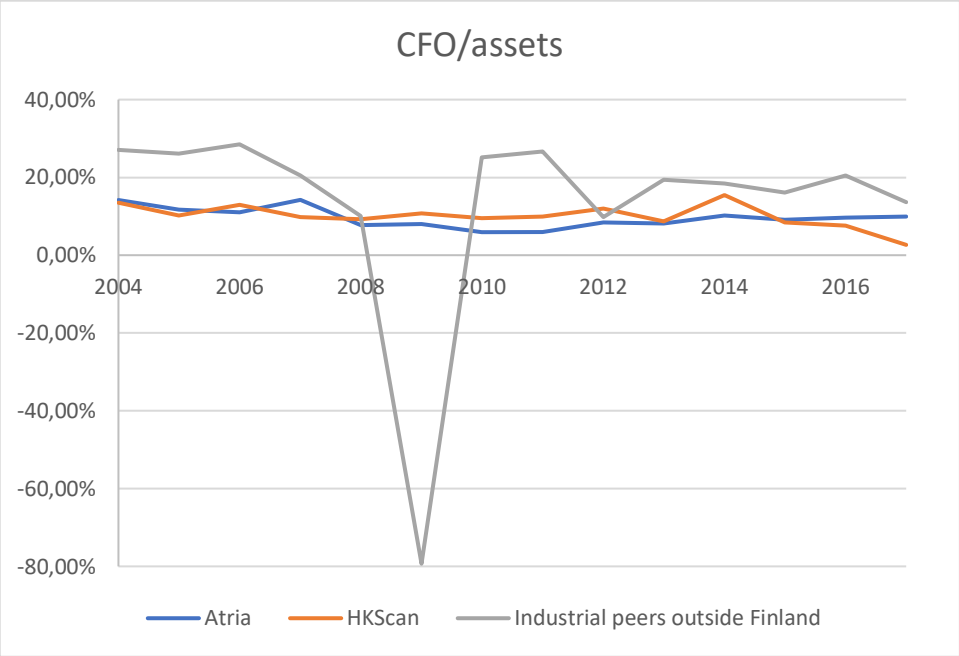

Figure 14 Companies' CFO/assets -ratios during 2004-2017

The first profitability ratio, return on assets (ROA), is presented in Figure 15. If ROA is greater than 10 %, it is perceived to be good. ROA between 5 and 10 % is perceived to be satisfying, while ROA under 5 % is weak. (Yritystutkimus 2011, 64) In the beginning of the study period, Finnish companies' ROAs (Atria 6.5 % and HKScan 7.3 %) are greater than industrial peers' outside Finland (5.2 %), although the difference is not remarkable. All companies ROAs are between 5-10 % and are therefore satisfying. However, the following year the situation is reversed. The ROA of industrial peers outside Finland (7.0 %) is greater than ROA of Finnish companies (Atria 4.2 % and HKScan 4.7 %). As Finnish companies ROAs are under 5 %, they are weak.

There seems to be no clear difference or division between ROA of Finnish meat industry companies and industrial peers outside Finland; both Finnish companies and companies outside Finland had the highest and lowest ROAs at some point in time. On the other hand, Atria's ROA is mainly smaller than HKScan's ROA until year 2014, which after Atria has bigger ROA than HKScan. In fact, there seems to be a steep decline in HKScan's ROA after year 2014. One possible reason for this is the sale of HKScan's 50 per cent stake in Saturn Nordic Holding AB in the

beginning of year 2014, which had the greatest operating profit margin compared to other divisions of HKScan. Moreover, HKScan has had problems with its new production facility specializing in poultry products, as the launch of this new production facility proved to be more challenging than anticipated. These problems have affected HKScan's profitability negatively. In fact, HKScan's ROA is negative both in 2016 and 2017. On the other hand, Atria's ROA is negative in 2010, 2011 and 2013. The reason for Atria's negative profitability ratios in 2010 was the economic situation in Russia, which was followed by an imbalance in demand and supply in the meat raw material the next year (Atria 2011; Atria 2012). None of the companies exceed 10 % limit value during the study period.

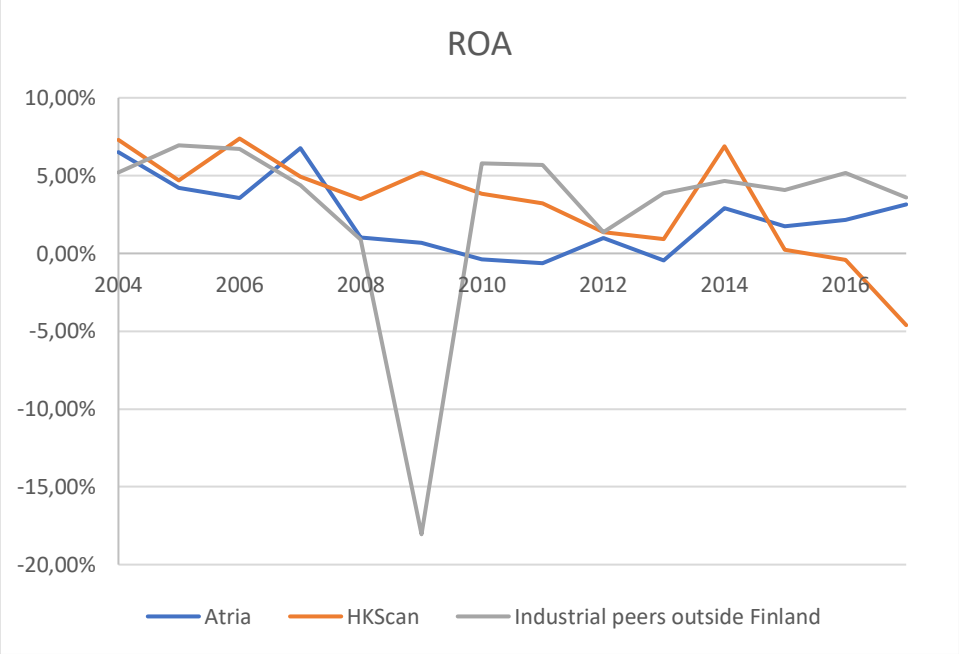

Figure 15 Companies' ROA -ratios during 2004-2017

There are no major differences between graphs of ROA (Figure 15), ROE (Figure 16) and net income margin (Figure 17), as they are all profitability ratios.

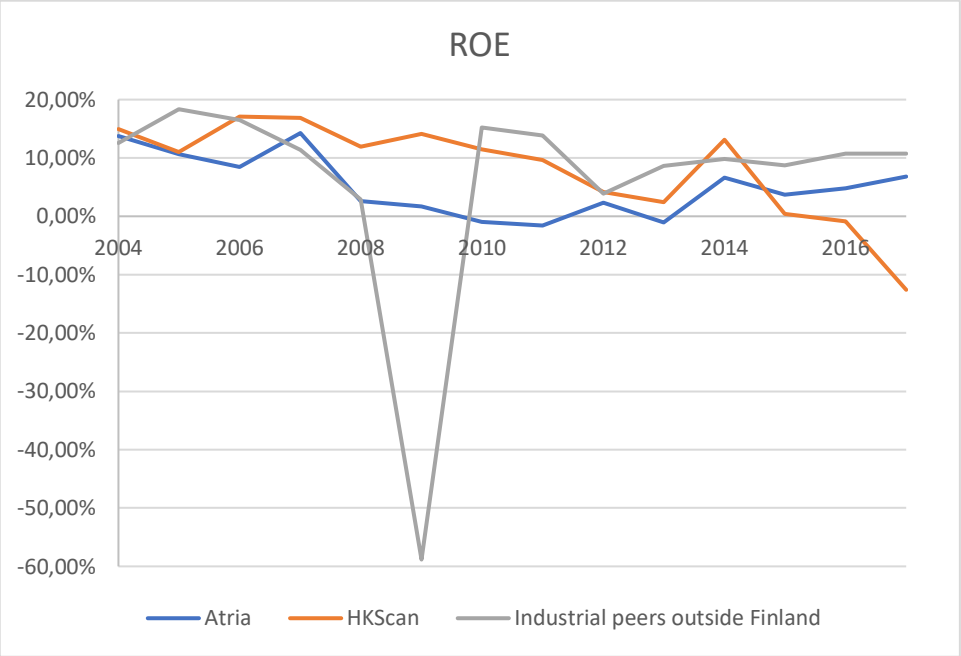

Figure 16 Companies' ROE -ratios during 2004-2017

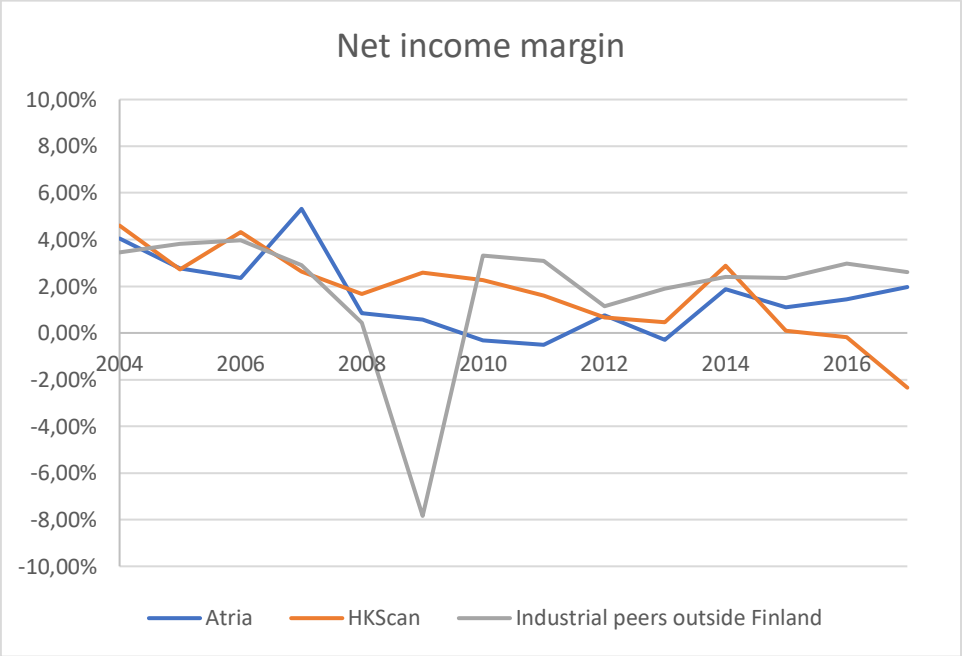

Figure 17 Companies' net income margins during 2004-2017

The companies' dividend yields from 2004 until 2017 are presented in Figure 18. There seems to be no clear difference which company pays better dividends in relation to the share price. HKScan has a very high dividend yield compared to other companies once during the study period, in the year 2014. This is explained by the

sale of Sokolow, which after HKScan decided to pay an extra dividend. Otherwise, the dividend yield seems to be mainly between two and six per cent.

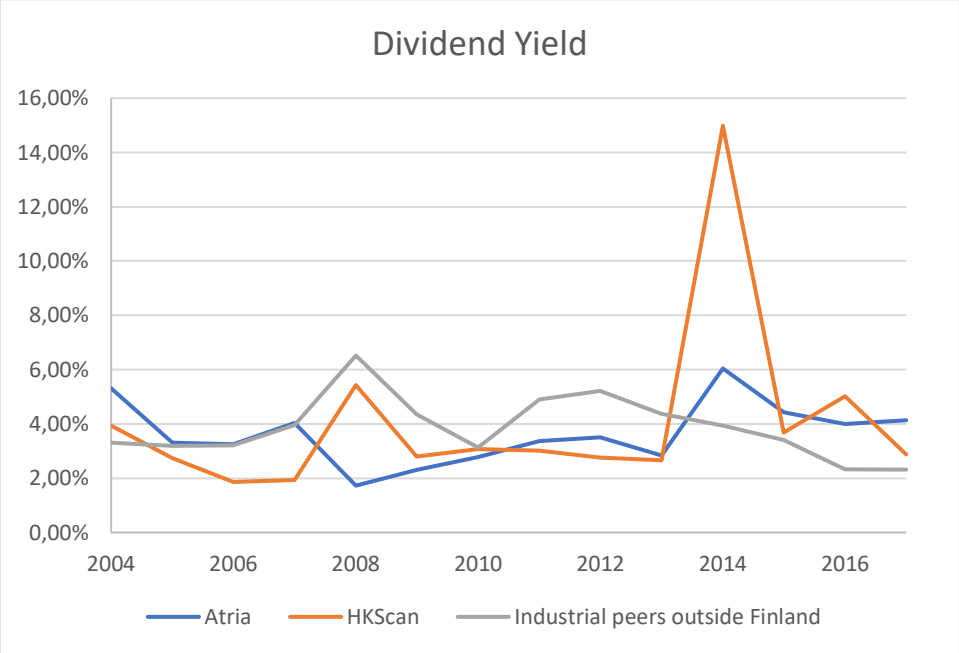

Figure 18 Companies' dividend yields during 2004-2017

The final financial ratio is P/B ratio, which is presented in Figure 19. There is a wide gap between the Finnish companies and companies outside of Finland in the first year of the study period. However, after that, the gap narrows and there seems to be no remarkable gap between these companies. However, after 2011, the gap seems to exist again and even widens as time goes by. In other words, the market perceives the stocks of companies outside of Finland more valuable compared to stocks of the Finnish companies. Moreover, in the beginning of the study period, Atria seems to have smaller P/B ratio when compared to HKScan. However, after year 2013 the tables are turned; Atria has had greater P/B ratio than HKScan. This means that Atria's stock is perceived to be more valuable in the market than HKScan's stock.

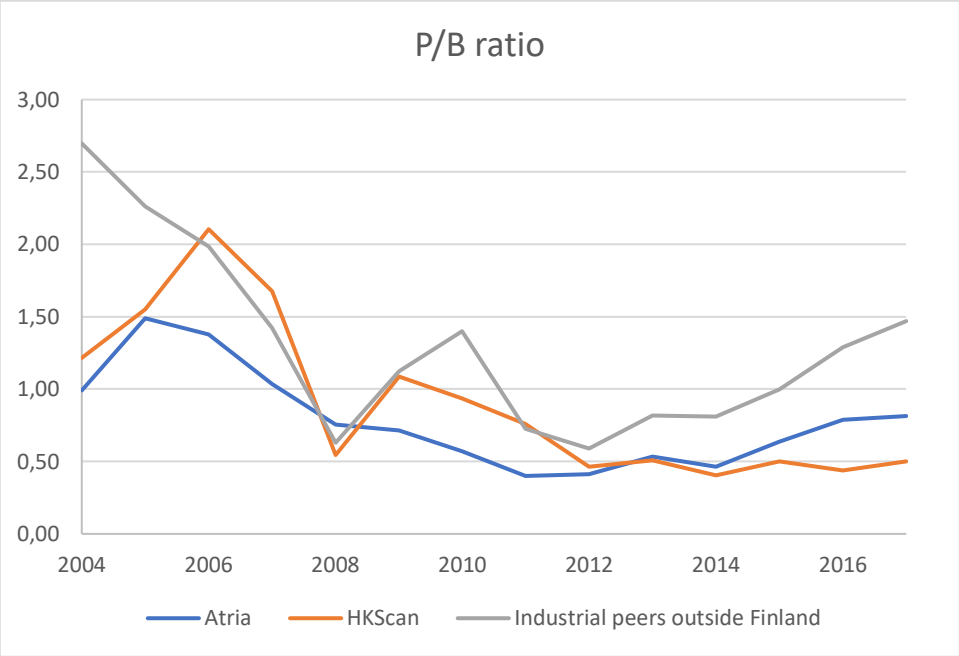

Figure 19 Companies' P/B ratio during 2004-2017

5.2.2 Significance tests

Significance tests were first conducted for Atria. A one-sample t-test was conducted to see how Atria has performed in comparison with its own historical average. In normal circumstances, Atria and HKScan should have performed similarly to their history and peers. Therefore, the following hypothesis are tested:

H0: The mean is equal to zero.
H1: The mean is not equal to zero.

The results for Atria's abnormal performance based on historical average are presented in Table 11. As can be seen from the table, none of the results are statistically significant at the 5 percent level. Therefore, the null hypothesis of mean equal to zero is not rejected. In other words, Atria has performed similarly to its history. However, all financial ratios' means are negative apart from dividend yield, which means that Atria has, on average, performed worse than its historical average. However, this can also be explained by normal variation. A closer look reveals that the mean difference is near to zero in almost every case. Only ROE (1.2 %) and P/B ratio (12.0 %) differ more than one per cent. The difference in P/B

ratio implies that Atria's growth prospects have declined during the study period, although the difference is not statistically significant.

Table 11 Atria's abnormal performance based on historical average (one sample t-test)

	CFO / sales	*CFO / assets*	*ROA*	*ROE*	*Net margin*	*Dividend yield*	*P/B ratio*
Mean	-0,007	-0,005	-0,005	-0,012	-0,004	0,001	-0,120
Variance	0,000	0,001	0,001	0,003	0,000	0,000	0,100
Observations	9	9	9	9	9	8	9
df	8	8	8	8	8	7	8
t Stat	-1,467	-0,529	-0,616	-0,653	-0,772	0,338	-1,143
P(T<=t) one-tail	0,090	0,306	0,278	0,266	0,231	0,373	0,143
t Critical one-tail	1,860	1,860	1,860	1,860	1,860	1,895	1,860
P(T<=t) two-tail	0,181	0,612	0,555	0,532	0,462	0,746	0,286
t Critical two-tail	2,306	2,306	2,306	2,306	2,306	2,365	2,306
** = Statistically significant at 99 % confidence level							
* = Statistically significant at 95 % confidence level							

Next Atria's abnormal performance was calculated by using the industry average. For this, the industry average performance ratio was deducted from Atria's actual performance. A one-sample t-test was used to see how Atria has performed in comparison to its industrial peers outside Finland. The results are presented in Table 12. This time almost all financial ratios are statistically significant, only dividend yield is not statistically significant at the 95 % confidence level. Therefore, the null hypothesis of mean equal to zero is rejected in all cases except for dividend yield. The means are negative in all cases. This means that Atria has performed worse than its industrial peers outside Finland in case of profitability, valuation and generating cashflow. The greatest difference is in the price to book ratio, where the mean difference is -42.7 per cent. This means that Atria's P/B ratio is on average -42.7 percent smaller than industry P/B ratio. This can either imply that Atria's stock is undervalued, or that there is limited growth potential in the case of Atria compared to its industry competitors outside Finland. Moreover, the difference is huge also in the case of CFO/assets (-10.4 %) and ROE (-5.6 %). This means that competitors outside Finland have better managed to generate cashflow from their assets and profit from their equity than Atria.

Table 12 Atria's abnormal performance based on industrial competitors' average (one sample t-test)

	CFO / sales	*CFO / assets*	*ROA*	*ROE*	*Net margin*	*Dividend yield*	*P/B ratio*
Mean	-0,045**	-0,104**	-0,021*	-0,056**	-0,010*	-0,002	-0,427**
Variance	0,001	0,004	0,001	0,003	0,001	0,000	0,071
Observations	13	13	13	13	13	14	12
df	12	12	12	12	12	13	11
t Stat	-4,449	-5,930	-2,814	-3,471	-2,191	-0,430	-5,555
P(T<=t) one-tail	0,000	0,000	0,008	0,002	0,025	0,337	0,000
t Critical one-tail	1,782	1,782	1,782	1,782	1,782	1,771	1,796
P(T<=t) two-tail	0,001	0,000	0,016	0,005	0,049	0,675	0,000
t Critical two-tail	2,179	2,179	2,179	2,179	2,179	2,160	2,201
** = Statistically significant at 99 % confidence level * = Statistically significant at 95 % confidence level Dividend yield includes only information from Ter Beke							

The next step was to compare Atria's performance with the industry average performance by using Welch's t-test (see Table 13). The hypothesis was that there is no difference in the means. When comparing means of these two populations, we can see that the difference between these means is negative in every case. Moreover, all but net margin and dividend yield are statistically significant. This means that in those cases we can conclude that Atria has performed worse than its industry competitors outside Finland. The change is remarkable in the case of the P/B ratio (-51.1 %), CFO/assets (-10.4 %) and ROE (-5.6 %). These are the same financial ratios that stand out also in the one sample t-test.

Table 13 Atria's financial ratios vs. industry average financial ratios (Welch's t-test)

	CFO/ sales	*CFO/ assets*	*ROA*	*ROE*	*Net margin*	*Dividend yield*	*P/B ratio*
Atria mean	0,064	0,097	0,024	0,054	0,016	0,036	0,784
Atria Variance	0,000	0,001	0,001	0,003	0,000	0,000	0,114
Industry Mean	0,111	0,201	0,045	0,110	0,026	0,039	1,302
Industry Variance	0,002	0,004	0,000	0,002	0,000	0,000	0,406
Difference	**-0,047****	**-0,104****	**-0,021***	**-0,056****	**-0,010**	**-0,002**	**-0,517***
Observations	12	13	13	13	13	14	14
df	13	16	22	23	20	26	20
t Stat	-3,792	-5,432	-2,456	-2,903	-1,815	-0,519	-2,683
P(T<=t) one-tail	0,001	0,000	0,011	0,004	0,042	0,304	0,007
t Critical one-tail	1,771	1,746	1,717	1,714	1,725	1,706	1,725
P(T<=t) two-tail	0,002	0,000	0,022	0,008	0,085	0,608	0,014
t Critical two-tail	2,160	2,120	2,074	2,069	2,086	2,056	2,086
** = Statistically significant at 99 % confidence level							
* = Statistically significant at 95 % confidence level							
Div. Yield includes only Ter Beke							

After all these steps were taken in the case of Atria, the same analysis was done for HKScan. The results for HKScan abnormal performance based on historical average are presented in Table 14. While all financial ratios' means are negative, only ROE, net margin and P/B ratio are statistically significant. This means that HKScan has performed worse than its historical average, but the results are significant only in the case of ROE, net margin and P/B ratio. Therefore, neither of the cash flow ratios differ statistically from the historical average. This means that HKScan has been able to generate cash flow similarly to its past. HKScan's results are different to Atria's results, as in Atria's case none of the results were significant.

The P/B ratio has the greatest mean difference; -28.9%. This implies that HKScan's growth prospects have declined from the stock market point of view. This difference is greater in the case of HKScan than Atria, as for Atria the mean difference of P/B ratio was 12.0 %. Moreover, as both ROE and net margin are statistically significant and negative, HKScan's profitability has weakened during the study period.

Table 14 HKScan's abnormal performance based on historical average (one sample t-test)

	CFO / sales	*CFO / assets*	*ROA*	*ROE*	*Net margin*	*Dividend yield*	*P/B ratio*
Mean	-0,008	-0,011	-0,019	-0,056*	-0,011*	-0,008	-0,289**
Variance	0,000	0,001	0,001	0,004	0,000	0,000	0,041
Observations	9	9	9	9	9	8	9
df	8	8	8	8	8	7	8
t Stat	-1,819	-0,912	-2,065	-2,825	-2,7033	-2,258	-4,294
P(T<=t) one-tail	0,053	0,194	0,036	0,011	0,014	0,029	0,001
t Critical one-tail	1,860	1,860	1,860	1,860	1,860	1,895	1,860
P(T<=t) two-tail	0,106	0,389	0,073	0,022	0,027	0,058	0,003
t Critical two-tail	2,306	2,306	2,306	2,306	2,306	2,365	2,306
** = Statistically significant at 99 % confidence level							
* = Statistically significant at 95 % confidence level							

The results for HKScan's abnormal return based on its industrial competitors' average are presented in Table 15. The mean of all financial ratios is negative. However, only CFO/sales, CFO/assets and P/B ratio are statistically significant at the 5 % level. This means that HKScan has performed worse than its peers outside Finland in the case of valuation and generating cash flow. The difference is not statistically significant in the case of profitability, and therefore the difference might in that case be explained by natural variability. As in previous results presented, also here the P/B ratio stands out; the mean difference is 39.5 %. These results differ from those of Atria, where all financial ratios apart from dividend yield were statistically significant at the 5 % level. All in all, HKScan differs from its peers outside Finland in valuation and generating cash flow, whereas Atria differs also in profitability.

Table 15 HKScan abnormal return performance based on industrial competitors' average (one-sample t-test)

	CFO / sales	*CFO / assets*	*ROA*	*ROE*	*Net margin*	*Dividend yield*	*P/B ratio*
Mean	-0,062**	-0,102**	-0,015	-0,034	-0,010	-0,007	-0,395**
Variance	0,001	0,004	0,001	0,007	0,000	0,000	0,231
Observations	13	13	13	13	13	13	14
df	12	12	12	12	12	12	13
t Stat	-6,693	-5,960	-1,639	-1,435	-2,063	-1,632	-3,077
P(T<=t) one-tail	0,000	0,000	0,064	0,088	0,031	0,064	0,004
t Critical one-tail	1,782	1,782	1,782	1,782	1,782	1,782	1,771
P(T<=t) two-tail	0,000	0,000	0,127	0,177	0,061	0,129	0,009
t Critical two-tail	2,179	2,179	2,179	2,179	2,179	2,179	2,160
** = Statistically significant at 99 % confidence level							
* = Statistically significant at 95 % confidence level							
Dividend yield includes only Ter Beke							

Next Welch's t-test including HKScan and industry average was conducted (see Table 16 for the results). All differences in means are negative, but only CFO/sales and CFO/assets are statistically significant. In other words, here HKScan differs from its peers outside Finland only in the case of generating cash flow. There is no statistically significant difference in profitability or valuation. On the other hand, as the means of all ratios are negative, HKScan has performed worse than its peers outside Finland, but this difference can be explained by natural variability. The P/B ratio stands out again, but this time it is not statistically significant.

Table 16 HKScan's financial ratios vs. industry average financial ratios (Welch's t-test)

	CFO/ sales	*CFO/ assets*	*ROA*	*ROE*	*Net margin*	*Div. Yield*	*P/B ratio*
HKScan Mean	0,052	0,100	0,030	0,077	0,016	0,030	0,906
HKScan Variance	0,000	0,001	0,001	0,007	0,000	0,000	0,299
Industry Mean	0,113	0,201	0,045	0,110	0,026	0,036	1,302
Industry Variance	0,002	0,004	0,000	0,002	0,000	0,000	0,406
Difference	**-0,062****	**-0,102****	**-0,015**	**-0,034**	**-0,010**	**-0,006**	**-0,395**
Observations	13	13	13	13	13	12	14
df	17	20	18	18	18	22	25
t Stat	-5,008	4,208	-1,356	-1,255	-1,665	-1,681	-1,761
P(T<=t) one-tail	0,000	0,000	0,096	0,113	0,057	0,053	0,045
t Critical one-tail	1,740	1,725	1,734	1,734	1,734	1,717	1,708
P(T<=t) two-tail	0,000	0,000	0,192	0,225	0,113	0,107	0,091
t Critical two-tail	2,110	2,086	2,101	2,101	2,101	2,074	2,060

** = Statistically significant at 99 % confidence level
* = Statistically significant at 95 % confidence level

The final comparison is made between Atria and HKScan (see Table 17). The results show that the mean of Atria's financial variables is greater than HKScan in the case of CFO/sales and dividend yield. In all other cases the mean of financial ratio of HKScan is greater. However, the difference in means is significantly different from zero only in the case of CFO/sales. In other words, there is no statistical difference between Atria's and HKScan's profitability and valuation. However, there is a difference in the ability to generate cash flow, Atria having better ability.

Table 17 Atria's financial ratios and HKScan financial ratios (Welch's t-test)

	CFO/ sales	*CFO/ assets*	*ROA*	*ROE*	*Net margin*	*Dividend yield*	*P/B ratio*
Atria Mean	0,064	0,096	0,023	0,052	0,016	0,035	0,784
Atria Variance	0,000	0,001	0,001	0,003	0,000	0,000	0,114
HKScan Mean	0,052	0,100	0,032	0,081	0,017	0,032	0,906
HKScan Variance	0,000	0,001	0,001	0,007	0,000	0,000	0,299
Difference	**0,013***	**-0,005**	**-0,009**	**-0,030**	**-0,001**	**0,002**	**-0,122**
Observations	13	14	14	14	14	13	14
df	19	25	23	22	26	24	22
t Stat	2,1464	-0,4338	-0,7867	-1,1240	-0,2193	0,6284	-0,7103
P(T<=t) one-tail	0,0225	0,3341	0,2197	0,1366	0,4141	0,2678	0,2425
t Critical one-tail	1,7291	1,7081	1,7139	1,7171	1,7056	1,7109	1,7171
P(T<=t) two-tail	0,0450	0,6681	0,4395	0,2731	0,8282	0,5356	0,4850
t Critical two-tail	2,0930	2,0595	2,0687	2,0739	2,0555	2,0639	2,0739

** = Statistically significant at 99 % confidence level
* = Statistically significant at 95 % confidence level

6 CONCLUSION

The purpose of this study was to conduct a comparative analysis of the market and book performance of public Finnish meat sector companies. This study aimed to clarify how the market performance of public Finnish meat sector companies differ in stock market announcements during 2001-2017. Additionally, the study set to find out how the Finnish meat sector has performed during high uncertainty in the industry, 2004-2017.

Three different research questions and their sub questions were examined in this study:

1. Do efficiency improvement and investment announcements cause a market reaction for Finnish meat sector companies? (category-wise)
2. How does the market performance of two Finnish meat sector companies differ in the case of efficiency improvement and investment announcements? (company-wise)
3. How has the Finnish meat sector performed during high uncertainty in the industry?
    a. How does the book performance of two Finnish meat sector companies differ?
    b. How does the book performance of two Finnish meat sector companies differ compared to industry competitors outside Finland?

To answer the first question, a short-term event study was conducted. The same method was applied to figure out also, how the market performance of two Finnish meat sector companies differ in the case of efficiency improvement and investment announcements (the second question). The data consisted of 95 stock market announcements, of which 26 were Atria's efficiency improvement announcements, 18 Atria's investment announcements, 25 HKScan's efficiency improvement announcements, and 26 HKScan's investment announcements.

The comparison between efficiency improvement and investment categories propose that there is a clear difference between the market reaction for efficiency improvement announcements and investment announcements. The results of the event study including both Atria's and HKScan's efficiency improvement announcements implies that investors consider efficiency improvement announcements as unfavourable events. Blackwell et al. (1990) propose the following potential explanations for a negative market reaction: the market does not have enough knowledge of the project and learns about it only from the announcements itself. Another potential explanation is that market draws a conclusion of adverse market conditions, which leads to a decrease in the share price.

This study found, in contrast to efficiency improvement announcements, that investment announcements do not cause a stock market reaction on the event day nor during the event window. The event day average abnormal return is very close to zero (0.02) and not statistically significant. The result therefore supports the rational expectations hypothesis, where investments are rather seen as acts to maintain company's competitive fitness. On the other hand, another possible explanation for non-significant results might be the sample. The size of the investment was not defined, and therefore the sample size can include also investments that do not have a substantial effect on the value of either firm. Moreover, some of the investments yield a negative average abnormal return on the event day, although one could have though them to be positive news for the market.

In order to find out how the market performance of two Finnish meat sector companies differ in the case of efficiency improvement and investment announcements, the categories were studied separately; Atria's efficiency improvement category versus HKScan's efficiency improvement category, and similarly for the investment announcements. There is a difference between stock market reactions to Atria's and HKScan's efficiency improvement announcements. The stock market reaction to Atria's efficiency improvement announcements was negative, and for HKScan there was no stock market reaction. The potential reasons for the negative market reaction are the same as mentioned previously: the market

has not had enough knowledge of Atria's projects and has learnt about them only from Atria's announcements, the reaction being therefore negative. Another potential explanation is that market has drawn a conclusion of adverse market conditions, which has led to a decrease in Atria's share price.

The second company wise comparison included investment announcements. This time none of the results were statistically significant, neither in the case of Atria nor HKScan. The event day AAR for Atria was positive (0.22 %), and for HKScan negative (-0.12 %). As these results were both non-significant in the 95 percent confidence level and the abnormal returns were close to zero, there was no stock market reaction in either case. Moreover, the results were not significant in the case of comparison between Atria's and HKScan's full samples. However, the possible reason why there is no stock market reaction, is the sample itself. As the full sample includes both efficiency improvement and investment announcements, and the stock market reactions have been opposite, they exclude each other.

To answer the third research question, on how the Finnish meat sector has performed during high uncertainty in the industry, financial ratio analysis was conducted utilizing Welch's t-test and the one sample t-test. The comparison was made between Atria's and HKScan's actual returns, and between both company's actual return and industry peers outside of Finland. Additionally, two different abnormal performance values were calculated, first using the industry average and then the company's own historical average. The cash flow ratios used included CFO/sales and CFO/assets ratios, whereas profitability ratios included ROE, ROA and net income, and valuation ratios included dividend yield and P/B ratio.

The results suggest that Atria has performed similarly to its history, as the mean difference of one-sample t-test was near to zero in almost every case. In contrast, Atria has performed worse than its industrial peers outside Finland in case of profitability, valuation and generating cash flow.

HKScan's results are different to Atria's results, as HKScan has performed worse than its historical average in the case of profitability and valuation. Similar to Atria,

HKScan has been able to generate cash flow similarly to its past. When comparing HKScan's financial ratios with industrial peers outside of Finland, HKScan has performed worse than its peers in the case of valuation and generating cash flow. The difference is not statistically different in the case of profitability.

As can be seen from the discussion above, there were some differences between the companies and their results. This could be due to the differences between the companies, but there could also have been some methodological and data issues affecting the results. The events under study should have been limited to a certain size. In this study, every investment was considered, even though it might not have been that remarkable when considering the whole business. For example, a minimum deal value would have ranked out some non-relevant events and made the study and the results possibly more reliable. In addition, more attention should have been given to specific events. The events should have not been treated only as a group, but also concentrate on every event one by one. However, this type of analysis demands a lot of time and effort, and therefore as this study was already broad, deeper analysis was not possible in this study. Therefore, further research could concentrate more on the events separately.

In addition, the motivations behind conducting this study was data and methodology driven instead of theory driven. The enthusiasm to study public listed companies in the Finnish agricultural sector and for conducting an event study lead to an event study focusing on Atria and HKScan. Starting out the project in this way meant that there was no clear research gap to be examined, creating a broad study. A proper literature review should have been made before getting too excited about using a certain data set or methodology.

Despite these challenges, this study gives valuable insight into the Finnish public agricultural sector. The results suggest that efficiency improvement news is of more interest to investors than investment announcements in the Finnish market, as the efficiency improvement news created a market reaction when investment announcements did not. However, the reaction for efficiency announcements was negative. If the reason for this is as Blackwell et al. (1990) suggest (i.e. the market

does not get enough knowledge about the project), the companies could try to be more open in communicating about the project and focus its potential positive effects. Since in this study the announcements were not looked at in more detail, maybe the information content of the announcements could be studied in more depth, and the larger groups could be categorised into how much information or what kind of information is available, to see if it has an effect. It could also be interesting to replicate this study using foreign companies and comparing the reactions.

From the answer to the third research question, it was found that the Finnish companies seem to be doing fine with respect to their own past and each other. However, it does seem like there is not much development happening, and that both are performing worse than their international peers. Although it is important for these companies to focus on the domestic market, the world is becoming increasingly global and connected. Future studies could look at this difference in more depth, to find out what the Finnish companies can do to improve their position in the global marketplace in order to stay competitive and survive in the long-run.

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APPENDICIES

Appendix 1. List of company announcements

Atria's efficiency improvement announcements

30.9.2005 Atria to centralise pig slaughtering operation in Nurmo

31.7.2006 Liha ja Säilyke Oy and Atria Oy operations integrated

21.3.2007 Atria production capacities in St. Petersburg will be concentrated in Sinyavino

27.4.2007 Atria sells Svesk Snabbmat För Storkök AB to Euro Cater A/S

26.6.2007 Atria centralises its Baltic countries production in Estonia, production plant in Lithuania will be closed

8.10.2007 Atria carries out significant streamlining within Sardus Lätta Måltider

31.3.2008 Atria to restructure operations in Finland

18.9.2008 Atria Scandinavia to restructure its operations

11.2.2009 Atria Baltic concentrates meat-processing activities to Valga and Ahja factories

2.4.2009 Atria discontinues Lätta Måltider business operations in Sweden

14.9.2009 Atria invests EUR 5 million in streamlining production and logistics in Sweden

28.9.2009 Atria to launch an extensive efficiency improvement program in Finland

26.11.2010 Atria Russia to centralise production of meat products in St Petersburg

7.2.2011 Atria is investing in improving the efficiency of production in Sweden

17.3.2011 Atria to launch an efficiency improvement program in Finland

12.1.2012 Atria to improve meat product production processes in Sweden

1.10.2012 Atria to improve productivity in cured sausage production

20.12.2012 Atria to centralise production of cured sausages

21.10.2013 Atria will discontinue primary pork production in Russia and all production operations in Moscow - investments in the operations in St Petersburg will continue

24.2.2014 Atria Finland to boost beef and pork production efficiency at the Jyväskylä plant

22.5.2014 Atria to reshape its operations at the Jyväskylä production plant

25.9.2014 Atria has initiated negotiations regarding the sale of its cheese business in Sweden

8.10.2014 Atria sells its industrial and logistics centre in Moscow

24.6.2015 Atria to sell the Campofarm piggery real estate in Russia

1.9.2015 Atria Finland to increase efficiency of chicken production at its Sahalahti plant

21.9.2015 Atria to adjust its activities in Sweden

Atria's investment announcements

18.4.2002 Atria negotiating of a cooperation with Swedish agricultural producers' organization LRF

26.6.2002 Atria purchases significant meat company

9.7.2003 Atria to acquire a company in Lithuania

17.3.2004 Atria's Swedish subsidiary Lithells AB completes the merger of the business fuctions of Samfood AB and Atria Lithells AB

16.4.2004 Atria Group Plc invests in a pig slaughterhouse extension in Nurmo

8.10.2004 Atria signs letter of intent acquire majority stake in the Estonian company Valga Meat Industry Ltd

9.11.2005 Atria-owned Valga Lihatööstus acquires pig farm

28.11.2006 Atria offers Swedish Meats a true partnership

22.12.2006 Atria to acquire A-Farmers LTD - Atria's hold of the value chain strengthens

19.2.2007 Atria announces unconditional cash mandatory offer for the shares in Sardus

21.8.2007 Atria to acquire the procurement, slaughtering and meat cutting operations of Liha-Pouttu Oy

2.6.2008 Atria to acquire Ridderheims - specialist in delicatessen

26.6.2008 Atria to expand in Estonia through acquisition of two meat processing companies

20.5.2010 Atria invests in production automation in Sweden

26.1.2011 Atria invests in the Kauhajoki bovine slaughterhouse and begins co-operation in bovine slaughtering in Eastern Finland with Saarioinen

11.7.2013 Atria has signed a preliminary agreement on the purchase of Saarioinen's slaughtering, meet cutting and meat procurement operations

9.1.2015 Atria to improve its competitiveness through investment in Nurmo pig cutting plant

27.6.2016 Atria to invest EUR 14 million in developing Lagerbergs' chicken production in Sweden

HKScan's efficiency improvement announcements

11.2.2004 HK Ruokatalo considers changes in the factory in Riihimäki

15.3.2004 HK Ruokatalo makes further progress with networking

23.8.2005 Forssa slaughterhouse project progresses as planned

10.1.2006 HK Ruokatalo to streamline its Finnish production structure

12.9.2006 HK Ruokatalo to rationalise raw material supplies in Finland

6.3.2007 Scan enhances operations in Southern Sweden

31.5.2007 HKScan to rationalize operations in Sweden

3.7.2007 HK Ruokatalo plans cooperation to rationalise the use of slaughtering and cutting capacity

3.12.2007 HKScan to streamline and standardise purchasing

21.4.2008 Scan to streamline slaughtering business in Sweden

27.10.2008 Scan to improve efficiency in Uppsala, Sweden

4.9.2009 Scan AB's streamlining programme proceeds in Sweden

15.9.2009 HKScan announces road map seeking development benefits of EUR 30 million in Sweden

20.1.2011 HKScan Group’s productivity programme at HK Ruokatalo ready

30.6.2011 Järvi-Suomen Portti käynnistää kehittämisohjelman vuosille 2011-2012

5.9.2011 HK Ruokatalossa on kutsuttu koolle toimihenkilöitä ja ylempiä toimihenkilöitä koskevat yt-neuvottelut

5.4.2012 Difficult first months for HKScan in Sweden – Group-wide development programme to be launched

20.8.2012 Järvi-Suomen Portti adapts

8.10.2012 HKScan continues efficiency measures in Sweden and Denmark

21.12.2012 HKScan Finland to sell its share in Best-In Oy

7.1.2013 HKScan to launch labour negotiations in Finland

3.1.2014 HKScan to sell its share in Nyhléns & Hugosons Chark AB

19.12.2014 HKScan’s strategy implementation continues – Estonian egg business to be divested, HKScan to become a minority shareholder in Finnish hatchery joint venture

29.11.2016 HKScan to initiate statutory negotiations at Eura plant

11.1.2017 HKScan Finland to initiate statutory negotiations concerning production personnel at Forssa pig cutting department and Outokumpu production facility

HKScan's investment announcements

11.1.2001 HK Ruokatalo Oyj has purchased 24% of AS Linnulihatootede. (deal no. 81463)

26.6.2001 HK Ruokatalo and LRF to buy majority holding in Estonia's largest poultry company

4.9.2001 AS Baltic Poultry increases its ownership in AS Tallegg

18.6.2002 HK Ruokatalo signs letter of intent to acquire Koiviston Teurastamo

18.11.2002 HK Ruokatalo plans to acquire a stake in leading Polish meat company

10.12.2002 HK Ruokatalo's ownership in Sokolow is now 11 per cent

31.1.2003 HK Ruokatalo to increase its ownership in Helanderin Teurastamo

21.5.2003 HK Ruokatalo's ownership in Pouttu Foods from 50% to 90%

22.9.2003 HK Ruokatalo to increase its ownership in Sokolów of Poland

7.10.2003 Pouttu Foods entirely to HK Ruokatalo's ownership

22.12.2003 HK Ruokatalo to increase its ownership in Tallegg of Estonia

13.4.2004 Pakastuslaitos HK Ruokatalon tontille Forssassa

26.8.2004 HK Ruokatalo to modernise and improve its Forssa production facilities

21.6.2006 HK Ruokatalo redeems remaining shares in Rakvere Lihakombinaat

22.9.2006 Sokolów to acquire additional capacity in Poland

15.11.2007 Scan AB proposes acquisition in Sweden

1.10.2008 Scan acquires interest in Swedish convenience food company

9.10.2008 Scan acquires holding in Swedish slaughterhouse

11.3.2010 Subsidiary of Rakvere-concern (which is part of HKScan concern) is acquiring Lithuanian firm named AS Jelgavas Galas Kombinats

9.9.2010 HKScan has signed an agreement to acquire the leading Danish poultry company, Rose Poultry A/S

3.12.2013 HKScan acquires its associate company Höglandsprodukter AB

13.10.2014 HKScan plans major production investments in western Finland and Rakvere, Estonia

1.4.2015 HKScan invests in Mikkeli

2.7.2015 HKScan acquires 50 per cent stake in Paimion Teurastamo slaughterhouse

19.1.2017 HKScan strengthens its foothold on the Finnish beef market by acquiring full ownership of Paimio Slaughterhouse

14.12.2017 HKScan strengthens its meals offering and invests in the Group's Rakvere unit in Estonia