

WORKING CAPITAL MANAGEMENT AND PROFITABILITY IN THE UK FOOD INDUSTRY

(A study of data covered the period 2013-2016)

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L0004KGSKGS0916

Submitted in fulfilment of the requirement of the Taught Masters dissertation of the
University of Anglia Ruskin for the degree of Master in Business Administration
(MBA)

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December 2017

Abstract

Working capital management is extremely important for the businesses, as the primary motive of businesses is to make a profit. On the other hand, efficient use of working capital management causes an increase in profitability and shareholders' incomes. For this reason, business assets should be used effectively to obtain profitability in the sector. Moreover, managers should strive to retain their working capital at a relevant level. If the working capital is more than necessary, the firm's profitability will decrease. On the other hand, less working capital would cause cost of borrowing for companies. Accordingly, keeping working capital at an optimum level plays a key role in the achievement of profitability.

This dissertation analyses the relationship between working capital management and profitability in the UK food industry. To this end the financial statement data for the period 2013 to 2016 of 5 companies which are listed on the London Stock Exchange, is examined. In analysing the relationship, this dissertation examines the following independent Working capital management variables: current ratio, stock days, data days, creditor days, cash conversion cycle, assets turnover and gear. Profitability is measured by return on assets and which is a dependent variable. Pearson's correlation analysis is utilized in this analysis.

The analysis of this dissertation concludes that there is no significant relationship between working capital management and a firm's profitability in food industry in the UK.

Keywords: Working capital management, profitability, cash conversion cycle, stock exchange, Pearson's Correlation Analysis.

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Chapter 1

Introduction

Fluctuation of currency rates, uncertain political state, uncertain circumstances of global economy, demand and management of raising shareholder`s revenue increasingly emphasize the importance of Working Capital Management (WCM) for businesses. The global economy and market conditions after Brexit demonstrate that companies should re-examine their operating factors in the UK. This fact is well recognized in the food industry business as the food sector is an important sector of the UK economy. For this reason, businesses are forced to take precautions and adapt to all these challenges. One of these precaution lies in achieving optimum working capital for business, in order to increase profitability.

Working Capital refers to a business`s liquidly or its current assets which constitute the amount of cash and expectancy to convert to cash in a year. In brief working capital is a total of current assets. successful of working capital management allows businesses to carry out day to day business activities, make payments of debts on time and provide the liquidity.

In this study, 5 of businesses that trade in food industry and are listed on the London Stock Exchange are analysed in order to assess the relationship between working capital management and profitability between the periods of 2013 to 2016. The first part of the study, will focus on the purpose of the study and the background. In the second part of the study, the previous studies in the relevant literature will be examined. The third section, describe the topic given by general information about UK economic history and general circumstances and structure of the food industry in the UK. The forth part will contain the methods used in the analysis of the study, data sources and research questions. The fifth section will analyse the data obtained. In the sixth section of the study will discuss the result of the study. The last part is a conclusion that will provide a general review of the content and recommendations for further research.

In this study, dependent and independent variable have been utilized and the data has consulted and commentate with Pearson`s Correlation analysis.



Chapter 2

Literature Review

Working capital affects many factors in a business. Finance managers can reach the correlation and interaction of working capital on the economic structure of profitability.

A lot of research has been done on the issue of the relationship between WCM and profitability, with differing conclusions. While some studies have focused only on a part of WCM, some researchers have analysed whether WCM affects profitability. Majority of the research carried out on the issue has concluded that there is indeed a relationship between the two: WCM can positively or negatively affect profitability. In this section, the results of various researches in the literature will be discussed.

Sharma and Kumar (2011), analysed the correlation between WCM and a company's profitability by examining the data from 2000 to 2008 of 263 businesses within the top 500 firms listed on Bombay Stock Exchange. They conclude that there is a positive relationship between WCM and profitability in Indian companies. In particular, they demonstrate that there is a negative relationship between inventory turnover and accounts receivable days, and that there is positive interrelation between accounts receivable days and cash conversion cycle on the profitability.

In a related research, Lazaridis and Tryfonidis (2006) studied the influence of WCM on the profitability of 131 firms listed on the Athens Stock Exchange between 2001 and 2004. They focused on the gross operating profit and cash conversion cycle with regression analysis. The result of the survey indicated that there is a significantly negative relationship between cash conversion cycle, inventory turnover and accounts receivable days.

Similarly, Dursun and Ayricay (20013) investigated the effects of WCM on the profitability of 120 manufacturing and trade companies listed on the Istanbul Stock Exchange. The result showed an inverse relationship between profitability and WCM. Salawu, (2007) looked at 42 Nigerian firms with significantly different WCM policies between the period of 1994-2006. This proved that companies using an aggressive

WCM policy need to leave prudent WCM policy to attain the optimum policy for their businesses.

Khan (2012) investigated the impact of MCM on profitability in several sectors for the period 2004 to 2009 in Pakistan. These sectors include firms operating in chemical, engineering, textile and sugar industries. The variable used in the research is data analysed by regression analysis using net operating profit, stock days, current ratio, accounts payable days, accounts receivable days, cash conversion period and debt ratio. Findings of the research are in different proportions vis-à-vis the effect of WCM on profitability because each sector has different dynamics. The author argues that there is a positive relation between the working capital and the profit and makes a general comment that all managers will increase their profits in the event of more effective management of operating capital.

Kesseven Padachi (2006) investigated the relationship between WCM and profitability by using return on total assets. The author examined the survey by using panel data analysis and the data of 58 small manufacturing companies between the period 1998 to 2003. The variables used in the survey are data days, creditor days, cash conversion cycles and stock days. The survey results show that higher stock days and accounts receivable days affect profitability negatively. The profitability, liquidity and operational efficiency ratios obtained in the research have changed considerably according the industries type and also, short-term components increase in financing working capital.

Kithii (2008), investigated the relationship between WCM and profitability of 28 companies listed on Nairobi Stock Exchange using data from 2001 to 2006. In the research, variables such as current ratio, cash conversion cycle, inventory days, accounts receivable days, accounts payable days have been used. Pearson`s correlation analysis and regression analysis have been used in the research. The results of the study show that there is a significant negative relationship between WCM and a firm`s profitability. Another result of this research shows that optimization of cash conversion cycle and the existence managers with appropriate WCM skills leads to an increase in a firm's profitability.

In another study, Afza and Nazir (2007) attempted to examine how aggressive working capital investment and financing policy impact profitability. The investigation

examines a sample of 204 companies listed on Karachi Stock Exchange. The data examined in from 1998 to 2007. The study finds a negative correlation between profitability and the degree of aggressiveness on working capital, and highlights the fact that a conservative working capital approach is more suitable than aggressive working capital approach to acquire value for the business.

Vahid (2012) set out the investigate the traditional relationship between WCM and the corporate performance of 50 Iranian firms listed on the Iranian Stock Exchange for the period 2006-2009. A multi-regression model was used for the analysis. The survey found evidence that there is no relationship between WCM and the corporate performance. It however, argued that finance managers can increase profitability by decreasing inventory days, accounts payable days and accounts receivable days.

Jose (2003) investigated the relationship between profitability and cash conversion cycle on the basis of the data of 2178 firms for the period 1974-1993. Multiple regression analysis was used in this research. It concluded that there is a negative relationship between cash conversion cycle and a firm's profitability and these evidences show similarities in many sectors.

Deloof (2003), analysed the effects of working capital management on profitability using a ordinary least squares regression analysis to receive the variables in Belgian firms. The result of the research showed an inverse correlation between gross operating income and accounts receivable days, accounts payable days and inventory days. The study recommend that business can reduce the accounts receivable days and inventory days to capture and create value.

In addition to the above, Melita, Maria and Petros (2010) examined the impact of the ECM on business performance using multivariate regression using data of firms listed in the Cyprus Stock Exchange between the period 1998-2007. The findings of this survey confirmed that all WCM elements have n impact upon a company's profitability.

Ashraf (2012) investigated traditional relationship between WCM and profitability of 16 firms listed on Bombay Stock Exchange using data of the period from 2006 to 2011. He investigated the relationship by using data days, inventory days, creditor days, current ratio, and cash conversion cycle. He used both descriptive analysis and regression analysis. The result of the study shows that there is a strong negative

relationship between WCM and a firm's profitability. On the other hand, there is a positive relationship between firm size and profitability.

Shin and Soenen (1998) examined correlation between corporate profitability and business's net trade cycle using data from 1975-1994, they used the correlation and regression analysis. The research indicated that there is a negative relationship between the length of a company's net trade cycle and corporate profitability. Thus, to achieve maximum value finance managers should keep the firm's net trade cycle to optimum rates.

Mohamad and Saad (2010) studied the influence of WCM on profitability in Malaysian firms. They analysed 172 companies that were selected randomly and data covering the period from 2003- 2007. In this study, correlation and multiple regression analysis was used. The result indicated that there is a negative relationship between WCM and firm's performance.

Karabay (2013) examined firms operating in the textile industry in Turkey between 1996 and 2011 and relies on the data published by the Central Bank of Turkey. According to the results obtained, if the accounts receivable days and cash conversion cycle are shortened to create a balance between liquidity and profitability, a company's profitability can be increased.

Falope and Ajilore examined the data from 1996 to 2005 of 50 Nigerian firms listed on the Nigerian Stock Exchange. The result of the study showed that a negative relationship between profitability accounts receivable days, cash conversion cycle and accounts payable days. It also argued that there is no evidence of WCM effects on the company's size.

Charitou, Elfani and Lois (2010) examined the data of 43 companies listed in the Cyprus Stock Exchange between 1998 and 2007. They found a positive relationship between WCM and profitability. In a related study, Nobanee, Abdullatif and Al Hajjar (2011) investigated the relationship between WCM and profitability of 2123 Japanese firms listed on the Tokyo Stock Exchange. Using data period from 1990 to 2004, the authors indicate that there is a positive relationship between WCM and firm's performance. If working capital is managed effectively, company's profitability will increase. The study further concluded that financial managers should give due

consideration to accounts payable days, because lengthening of accounts payable days affects a firm's performance negatively.

Kulkanya Napompech examined the relationship WCM and the profitability of 255 companies listed Thailand Stock Exchange using data from 2007 to 2009. The author used the regression analysis for the survey. The research showed that gross operating profit, inventory days and accounts receivable days had a negative relationship. Thus, a company's performance could be improved by shortening of the period of cash conversion cycle, inventory days and accounts receivable days. On the other hand, the study found no evidence of the effects on profitability of lengthening the days of accounts payable.

Gilla, Biger and Mathur (2010) analysed the relationship between WCM and profitability for a sample of 88 firms listed on the New York Stock Exchange and they selected data from 2005 to 2007. They conclude that if financial managers maintain accounts receivables day and cash conversion cycle at the optimum levels, profitability will increase.

Ademola (2014) studied the impact of WCM component on profitability of 120 firms in the food and beverages industry listed on the Nigerian Stock Exchange. He used correlation analysis, multiple regression analysis and descriptive statics using the data period from 2002-2011. The result of the study indicated that there is a significant and positive relationship between WCM and a company's profit. However, the relationship between accounts receivable days and net operating profit is negative. Similarly, inventory days and account payable days are negatively related to each other as well. Cote and Latham (1999) asserted the relationship between inventory, accounts receivable and account payable to create value for the firm.

Quayyum (2011) selected firms in manufacturing industry listed on the Dhaka Stock Exchange. Using data from 2005-2009 the author shows evidence of a relationship between WCM strategies and a company's performance.

Akbulut (2011) studied the relationship between WCM and profitability of certain firms listed on the Istanbul Stock Exchange. Using regression analysis, ANOVA analysis and period of data from 2000-2008. The research concludes that there is a negative relationship between WCM and profitability in the manufacture sector in

Turkey. The author suggested that managers can reduce cash conversion cycle to create value for shareholders.

Padachi (2006) investigated the trends of working capital and the influence on a company's profitability using survey's panel data from 1998-2003 of 58 manufacturing firms. The research showed that there is a significant positive relationship between WCM and a firm's performance.

Akoto, Vitor and Angmor (2013) researched the relationship between WCM and the performance of 13 manufacturing firms in Ghana. The data period was from 2005 to 2009. It argued that accounts receivable days and profitability have a negative association whereas, cash conversion cycle and profitability have a positive relationship. Therefore, companies can increase value and performance by decreasing accounts receivable days.

Ponsian, Chrispina, Tago and Mkiibi (2014) examined the effects of WCM on profitability by using Pearson's correlation and regression analysis. The sample of 30 firms listed on the Dares Salaam Stock Exchange (DSE) with a data period of 2002 to 2012 was used. They observed a positive relationship between cash conversion cycle and profitability, accounts payable days with profitability. On the other hand, they argued that there is an inverse association between profitability and liquidity, accounts receivable days with profitability and inventory turnover days with profitability of firms.

Chapter 3

Food Industry in the UK

3.1 History of Economy in the UK

Between the 16th and 17th century England had started to become a large empire, and in the 1900s it achieved the industrial revolution and dominated the European economy. Steam engine, railways, banking and trade developed and the economy grew faster compared to other European countries. In fact, by the end of the 1800's, Germany and the United States were behind the UK economically. In the 20th century, the UK economy began to regress in the manufacturing industry. The great depression in the 1930s alone led to the unemployment of around 3 million people.

After the Second World War, the British economy resurfaced as a leader in areas such as finance, aviation and computer software. In 1973, with the creation of European Economic Community the UK began free trade with other European countries. By the end of the twentieth century, the British economy has become a beacon of economic growth, prosperity and sustainable growth.

In the 21st century, the UK continued to pursue its open economy policy. In the 2000s, the focus was on developing free trade, investment in technology, migration and capital flows arrangements and investments. Consequently, the UK is one of the leading countries in the global economy at the present time.

In 2012, England ranked as 6th among the world's largest economies and it is ranked 3rd in the world in terms of gross domestic product. While the economy is primarily based on the services sector, other sector remain strong. The United Kingdom is the leading European country in terms of direct foreign investment, whereas it is the third in the world after America and China.

3.2 History of Food Industry in the UK

Food production and consumption diversity have greatly increased in the UK since 1945. Technological development, changes in eating habits and the 'restaurant and food' culture have all contributed to this increase. Moreover, migration to England has

increased the diversity of food in the country, and has been found to contribute to the development of this industry.

During the Second World War, food distribution and consumption was under the control of the government. For this reason, the government made limitations on food consumption in order to allocate the limited amount of foods to everyone. According to this information, in 1940s food industry reached in a limited amount of production and had less competitive conditions.

In 1950s the influence of the second world war was still remained, and the general trend was for people to eat at home. In the same decade however, chickens began to be genetically produced for human consumption and today chicken is the most popular meat in the UK food industry. In this period, some companies which are leaders in the UK food industry today appealed to diversity in taste and launched new products into the market.

In the 1960s, with an increase in living standards and improvements in technology, small cafes and restaurants began to open all over the country. As a consequence of the immigration to England, different cultures of food had been added to the menu of English cuisine. By the end of the 1960s, with the increasingly widespread use of refrigerators, new food products in the market began to rise and competition in the sector increased.

In the 1970s, the fast food industry began to enter the food sector and expanded rapidly in the country. On the other hand, in 1975 the global oil crisis affected the food industry deeply, and as result food prices increased by 26%. To counter this increase, firms in the food industry started to produce, market and sell processed food.

In 1980s the fast food industry continued to grow rapidly in the United Kingdom. The packaging sector was emerging as a result of demand from pizza stores that started to open up- which today amount for 4.5 billion pounds in the UK economy.

In 1990s, the coffee and wine industry grew substantially. Since then coffee shops have grown at a rate of 84% and over 70 million cups of coffee are consumed every day. The Nineties also witnessed the start of the healthy food approach to life.

In 2000s all international cuisines became available in the UK markets. Moreover, government institutions continued to encouraging consumers to eat healthy foods, and restaurants have begun to change according this approach. People in the UK were

conscious about organic food, and with the increase in demand the organic food industry has become to occupy an important place in the food industry.

In the last seven years, the habits of eating outside have continue to transform into a form of entertainment. Consumer preferences are gathered around fresh, local, organic and ethical elements and the industry is shaped in this way. Unsurprisingly then, food companies continue to develop their strategy in line with sustainable growth. Under this approach, firms attempt to operate with minimal damage of nature. In 2016 after Brexit vote the value of British pound decreased, and the prices of food increased slightly. British economy however, has not been seriously affected by this. The result of Brexit how will affect economy of UK and food industry is nonetheless a very hot topic in academic literature.

3.3 Food Industry in General

Vegetables and animal raw materials are the primary 'goods' for the food industry. The food industry manufactures to transform for getting long self-life products and ready to use products by using the vegetable and animal raw materials. United Nations Statics Division system (ISIC-4) has divided into 8 categories for food industry and these are preserve of meat, dairy products, vegetable and animal oils and fats, fruit and vegetables, cereal products, aquatics products, animal feeds and other food products.

Food is an important part of life, and for this reason, the food industry is one of the fundamental industrial branches with an important position in the world. Food sector has a complex structure which includes many operating activities and process such as agriculture, food processing, research and developing, manufacturing, regulations for food process, marketing, customer relations and distribution. In addition, the food industry employs many highly skilled and unskilled employees throughout the world. In 2006 alone the food industry created 4 million jobs in Europe.

There is a close relationship between the agricultural sector and the food industry, as agriculture provides the basic raw materials for the food industry's raw material. As the agricultural sector is prone to various uncontrollable variables such as the whether the constant supply of raw materials to the food sector can change year to year.

Competition is very wide in the food sector, so that it is necessary to carry out continuous research and development for achievement. Therefore, product and process management is an important issue in the food industry.

3.4 UK Food Industry

In the UK the food industry has continued to grow owing to development of strong product quality, branding, and investments in innovation. Although the agriculture rate in the sector is relatively low, it is a sub-sector with retail competitiveness and a steadily increasing rate of growth.

The UK's implementation of the European Agriculture Policy took place back in the 1970s. A large part of the food demand in the UK is provided by domestic products and according to 2015 economy data, agriculture contributed £24 billion to United Kingdom economy. The sector of agriculture provides 475,000 jobs and it supports 30,000 jobs through its procurement activity. The food and drink sector constitutes the building blocks of the UK manufacturing economy and this sector caters for 15% of the economy. The United Kingdom is the fourth largest food and beverage manufacturing industry in the world. In 2014, the food and beverages industry accounted for 26.5 billion Gross Value Added (GVA) and it created 419,000 jobs. In 2015 meat, alcohol and dairy products constituted 49% of British exports and the products were being exported to more than 200 countries around the world. In 2015, the weekly and monthly wages of food employees are on the average and temporary workers rates is 6% in the sector.

On the other hand, government of the UK has implemented policies for food sector vis-à-vis the reduction of ammonia gases, greenhouse gases, use of less water, efficient field areas, and social responsibility. The UK government has taken decisive steps and taken precautions on food in terms of high quality standards, healthy life prosperity and traceability. Consequently, England is in a very important position in the world in terms of food security.

The food sector offers a significant contribution to the British economy. However, the food sector's productivity is lagging behind the United States, and research and development is lagging behind Japan. In Britain, exports of the food sector are trending below the rate of imports, because of global competition. However, the UK's food

industry still retains its competitive advantage in the world through marketing, advertising, logistics and development of new products.

The food sector is also affected by political changes in the UK. In particular, after the Brexit, some policies have been changed by the government and new strategies have been identified. In 2016, the Department for International Trade (DIT) was established to arrange and increase trade between England with the world. According to the new resolution, the Great British Food Unit has been established to increase internal invest and improve to export in the food sector, so since 2016 and thereafter, the UK economy has been aiming to raise £ 2.9 billion from the new trade market, which aims to increase its export share in the food sector.

Firms which trade in the food industry need to consider the importance of profitability to get a competitive advantage because with the increase of raw material prices in the food sector, economic crises, changing exchange rates and other pressures are effecting the profitability of the food sector. For this reason, it is crucial for the firms to evaluate their strategies towards the utilization capital efficiently and optimally. The government too has recognized this and is lending a heling hand. For example, the government and multinational businesses are working together to reduce the amount of sugar, flour, salt and oil content in food, reduce waste, and provide training for research and development, and establishing organizations such as the National Centre for Excellence for Food Engineering In the UK.

Chapter 4

Research Methodology

This section explains how I carried out the research, as well as the methods that help the research to solve the problem and reach its goals. This section includes the sample form to be used to identify the relationship between WCM and profitability, the sample size, the variables and data used, and statistical models.

4.1 Research Strategy

4.1.2 Quantitative and Qualitative Data

Quantitative research methodology is a type of research that considers numerical data obtained from experiments, field research, experiments and existing statistical data. Qualitative approach examines observations and written documents as a source. Quantitative approach examines the numbers and percentage and is focussed on the result, but the qualitative data examines the verbal and non-verbal data and consider the process. The quantitative approach is based on the paradigm of positivism, realism and objectivism. The qualitative approach is based on the interpreting paradigm.

4.1.3 Research Paradigms

Interpretivism defends to use common sense during research and it can be evaluated through observation and interview in the natural of research data. For this reason, the researcher tries to improve the research by interpreting research data.

Positivism begins with the ancient Greek philosophy. Positivism advocates that only scientific knowledge is true and accepts knowledge based on facts supported only by facts. For this reason, the researcher deals with the findings in the context of objectivity.

4.2 Research Approach

4.2.1 Deductive and Inductive Approach

The research approach is divided of 2 types. The first is the deductive approach and the second is the inductive approach. Deductive approach is based on mathematics and logic and usually functions from general to specific. Inductive approach works from specific to general. Scientific knowledge tries to be reached through observation and experiments.

A deductive approach has been used to carry out the research aims, because the effect on profitability of WCM will be analysed using numerical data.

In this survey, data is obtained by using the philosophy of positivism, and the result is examined in objectivity. Secondary data is used to investigate the 5 year annual reports of 5 selected firms listed on the London Stock Exchange. Examination and data analysis will be assessed as a result of the secondary source and a conclusion will be reached. For this reason, it has been found that positivism is more appropriate than other philosophies for this research. Accordingly, positivism is often used as an ideology in research methodology.

WCM plays a vital role for every size of business to operate at full capacity, ensure continuous production, and to reduce risks. For business activity, companies are need to pay their expenses, such as energy, water, advertising, wages, insurance, raw materials, transportation and warehousing. To pay their expense groups, businesses need access to money or credits. For this reason, firms have to consider the importance of efficient WCM to survive in the market and create value for shareholders. Meanwhile, efficient WCM includes some functions other than managing of capability of payment to expense group.

For the purpose of this dissertation that is to measure the influence of WCM on profitability in food industry in the UK, the data of the 5 companies analysed is gathered in the form of each firm`s annual financial reports which were gathered from London Stock Exchange. The dissertation uses the correlation analysis technique. Moreover, for this study, variables are classified into two groups namely dependent variables and independent variables.

Inventory management for the possibility of selling products immediately and credit management for the receiving money from sales also constitutes important components of WCM. To measure the effects of WCM components on corporate performance, the firm's profitability rate is used as a dependent variable. In this study, the proxy of profitability is recognized as Return on Equity (ROE). This rate indicates how much income is generated by companies through the use of their assets in their operations. Return on equity formula is net profit divide by total assets.

4.3 Research Questions

The aim of this study is to analyse the association between WCM and a firm's profitability. Research question of this dissertation is based on revealing whether WCM can raise a firm's performance in the food sector in the UK. When researching on this subject, it is done in a methodological manner determined by the researchers' purposes and the research question I will be pursuing.

My research questions have been chosen with a need for further knowledge, examination or modification of a subject, and is shaped by the nature of the research and leads to the purpose of the research. At the same time, my research questions are ethical, obvious, and worth searching for.

The research questions of this dissertation are as follows:

- 1.) How does the working capital variables influence higher profitability in the food industry in the UK?

In this research, the data of firms which are operating in the UK food market has been analysed over a certain period of time to determine whether the effect of WCM on the firm's profitability was negative, positive, none at all. Moreover, it will provide a few recommendations to increase a firm's profitability in the food industry.

WCM variables are stocks, accounts receivables, accounts payables and cash conversion. In order to increase the profitability of the business, the variables of the working capital will be analysed well.

2.) What are the implications of question 1 above on producers' strategy to make more profit?

By focusing on the variables that affect the profitability of the firm, this study will evaluate how the business can become more profitable. At the same time, the advantages of the variables for the firms will be discussed.

4.4 Data Sources

The data used in the research is based on the criteria that these are firms need to operate in the food sector and they should operate in the UK. Moreover, the also data period is covers 5 years i.e. from 2012 to 2016.

In this research, all calculated ratios were obtained from the database, also all ratios were computed from the image in the database. Return on equity was chosen as dependent variables, however, current ratio, stock days, data days, creditor's days, cash conversion cycle and gear are independent variables.

The data of the research was obtained from the balance sheets of the companies.

4.3 Ethics issues

In this study, the data was collected by secondary sources. Authors use secondary data generally and routinely for their academic research. This method attributes information collected from previously published reports, journal articles and books by different institutions for different purpose. Secondary data has the advantage, from the researchers' perspective of saving time and lower cost.

Chapter 5

Analysis and Findings

5.1. The relationship between WCM and with profitability

5.1.1. Working Capital Management

Working capital refers to the amount of money that a business operator has in possession for the production of new products from the time of establishment to the time that income from the products and services offered to the market is received. Concisely, working capital indicates that the amount of cash or assets that can be converted to cash in order to continue operating activities. Thus, working capital is the assets that enables a business to measure its liquidity and fulfil obligations on time.

The finance of working capital consists of three factors. These are budget of working capital, structure of working capital and WCM. The budget and structure of working capital is related to long-term business management, so these are concerned with long-term assets and liabilities. On the other hand, WCM focuses on short term finance management. Therefore, WCM can divide gross working capital and net working capital in the literature. Gross working capital refers to total current assets whereas net working capital is the difference between current assets and short-term liabilities. Therefore, net working capital indicates the capability of liquidity to provide for the demand of cash during the business activity. Working capital constitutes of tangible assets, stock and receivables in the current assets. For this reason, WCM is based on a companies' short-term activities and short-term finance.

Working capital plays a vital role in ensuring that a business can: work profitably and efficiently, reduce failure of liability, work by full capacity, increase the volume of business, produce the product continuously and take precautions and presage for unexpected situations. For this reason, efficient WCM reduces the risk of financial crisis and bankrupt for the business.

5.1.2. Profitability

Profitability is a vital aim for firms in the sector. Many companies have been established with the sole aim to make a profit. For this reason, profitability is the primary goal for many companies. Profitability refers to the ability of a business to make profits and recover debts that must be returned to the companies at the same time. As the profit rate increases in a business, the company gains more profit with less investment.

The optimal WCM includes ensuring profit without increasing the risk level of the firm and to provide the timely payment of the borrowings. The effective use of the working capital can increase firm's profitability and improve income of the shareholders.

If businesses invest one of the elements of the working capital's stock extra, working capital will increase, however the policy of the receivable at the business be flexible, sales will rise up so that business will be more liquidate. Consequently, businesses can decrease the risk because of the liquidity. If the business postpones executing their liabilities, they could have a problem about the cash cycle. At the same time, extra investment of the stock and receivables can occur to decrease of the profit.

Problems that have arisen in the working capital are affecting the small and medium size companies in both developed and developing countries. Accounts payable and the other firm's profitability affects working capital in the company. Companies with an optimum level of working capital will not have difficulty to fulfil liabilities and it can execute short term obligations easily. Therefore, this situation will impact on every company in the sector.

If the companies take a risk regarding of higher profits or loss, the working capital will decrease, on the other hand if the companies would like to increase of liquidity, working capital will rise up in the same way. However, this approach might lead to reduction in sales and profitability. For this reason, business should have a defined preference between profitability and liquidity and they need to improve working capital according the preferences.

Working capital policies applied with high risk are called aggressive financing policy. The capital policy that is applied with a very low risk is prudent financing policy, and

the policy lying between these two on the spectrum is called normal working capital policy.

5.1.3 Aggressive management policy

With regards to working capital the aggressive management policy is based on low investment of the working capital. This approach also includes a minimum amount of cash, cash convertible asset and stocks. Aggressive management of working capital may cause a high profit, but if companies are unable to pay short-term liabilities, it will incur the risks and decrease of the business activity.

5.1.4 Prudent management policy

Prudent management policy with regards to working capital relates to high hedge of the working capital. Finance managers aim to keep the risk at the lowest level in this strategy. In this approach, maximum level of cash, cash convertible assets and stocks are held, also accounts receivable amounts are higher because sales are encouraged by the credit policy of the customer. Accordingly, this situation impacts the profitability on the negative, but it reduces the risk of inability to pay short term liabilities and disruption to business activity.

Additionally, when additional investment to working capital is made, profitability and sales will increase because investment of the stock leads to the reduction of the cost of purchase. On the other hand, the investment of the receivable can influence the revenue of the sales. They can invest the receivable for example by giving credit to customers, so that they can provide long term relationship between customers.

Conversely, over investment of working capital could negatively affect profitability, because it will lead to increase in the cost of higher finance, higher opportunity cost, also it may lead to bankruptcy.

The investment of the working capital has some advantages and disadvantages for the business. Extra investment can increase the profitability for insufficient working capital. Besides firms which already have sufficient working capital, an investment in the working capital will have negative effects of on profitability.

less investment in the capital of the operation will disrupt operations. Buying orders cannot be trained on the whole day, causing lower selling rates as less raw material is needed. Such factors affect the profitability of the enterprise and are important to the performance of the enterprise.

5.1.5 Insufficient working capital

At the same time, insufficient working capital will cause failure of the company's operations, which will reduce the credit worthiness of the company, which may reduce the company reputation. For this reason, other institutions will not be willing to give credit or discount easily to such companies, and such a firm's financial problems will increase and it may cause bankruptcy. Insufficient working capital will also lead to the use of the assets at low capacity, which will increase the fixed costs and make the product more expensive. Consequently, lower working capital has an adverse effect on operating profitability.

Among the causes of insufficient working capital are low prices of stock, decrease of capital, increase in loans from banks and credit institutions, increase in inventory days and accounts receivables days, postponement of short term debt, regulation of sales price, and increase of input prices.

5.1.6 Extra working capital

Like insufficient working capital, high level of working capital affects a firm's profitability negatively. High working capital increases liquidity, this situation has a negative impact on profitability of the operation even if the risk is reduced. The reasons for high working capital may include factors such as an increase accounts receivables days, an increase in investment in the assets converted to cash, a lack of short-term obligations, a higher level of current assets, and over investment of stock. Investing extra in working capital will increase interest costs. As a result, profitability will be negatively affected.

Thus, finance managers should focus on the optimum balance between risk and profitability. While the optimum strategy is being composed, all current assets should be identified in order to define the optimum amount of investment.

The main component of the WCM is the ability to stabilize the optimum level of profitability and factors of effecting profitability in order to provide intended level of liquidity. The optimum level of working capital increases the profitability of the company by increasing the credit worthiness of the business, distributing the profit more equitably to the partners, keeping the adequate level of stocks to meet the customer's needs, increasing the accounts payable days, increasing the profitability by keeping the liquidity in balance, keeping the liquidity optimum level to reduce the risk and increase the profitability and optimizing. In a nutshell, sales and profitability will be increased and the firm will achieve a competitive advantage in the industry.

To associate with capital management and profitability, if firms take a risk based only on considerations of profit and loss, the working capital will decrease because of the sales. On the other hand, if firms would increase their liquidity, their working capital will increase too, but firm's profitability will decrease. Therefore, finance executives need to develop their working capital by making a decision between profit and liquidity. If the working capital is not used efficiently, the profitability of the firms will reduce and it is possible that the level of operating capital will not allow them to pay their debts.

WCM should be thought of as liquidity management. Therefore, for optimum liquidity balance, the changes in liquidity in the current assets should be monitored together with the working capital. Current assets play an important role in WCM. Thus, before in taking the decision of investing in current assets, it is necessary to take into consideration the risk factors and the profitability.

Efficient WCM is an important factor and firms try to reach this aim to keep optimum level of working capital. Production, sales and receivables of credit are extremely important for the business and effective working capital management will assure to balance it.

If there is a possibility to sell the products as soon as produced, then stock management will not be necessary at the operation. Accounts receivables management will not be needed if the collection of payment occurs at the same time of sales made. However, the elements that constitute WCM are constantly changing and they are in relation to each other.

5.2. Working capital components

5.2.1. Cash conversion cycle

It is expected that the amount of the cash of the firms in the same sector will be similar to one another. The general agreement in literature is that if the firms tend to extend in the sector the risk of the firms will be increased too and cash amount will be raised at the same time. The relationship between cash conversion cycle and profitability is reversed. As the cash cycle increases, the profitability of the business will decrease. The longer a company's cash conversion cycle is affected, the number of investment of working capital is growing at the same level.

A long cash conversion cycle is expected to increase sales rates, on the other hand, if the cost of working capital will grow more than the benefit of customers credits and long inventory days, it will lead to a reduction in the profitability of the organization. Cash conversion cycle depends on inventory days, accounts receivable days and accounts payable days. When these variables increase, cash conversion cycle will increase too.

When cash conversion cycle increase that means firms need more finance and there might be a problem with accounts payable days and inventory days. However, accounts payable days are shortened. Moreover, if firms accept the long credit terms owing to extension of accounts receivables days it will lead to higher cash conversion cycle. This situation could lead to increase in profitability. Consequently, unlike the general approach, in some circumstances higher cash conversion period can play an increasing role on profitability.

5.2.2. Accounts Receivable days

Another variable of working capital is account receivable days and it is an effective factor on profitability. Accounts receivable days reveal how many times the receivables are converted into sales. According to this, higher data days affect the profitability of the operation positively.

Businesses apply deferred payment to increase their sales. They want to increase the volume of sales by selling goods with a long term of payment and increase the

competitive advantage in the sector. However, if the business cannot obtain their receivables within a certain period of time, they cannot reinvest. For this reason, credit sales are one of the important variables affecting the accounts payable days and profitability of the business. If the companies apply the strict policy for receivables days from customers, they will invest low for receivables and the commercial risk will be reduced. Due to decrease in receivables, it is expected to decrease the profit of the operation.

5.2.3. Accounts Payable Days

Accounts Payable days is a ratio that shows the ability of payment of obligations in a given period. If the creditor days are low, the firms won't have a problem with liquidity. Long term accounts payable days is an accepted positive for firms. As the account payable increase, firms have to pay more debts and this will increase the need for extra working capital. On the other hand, payment in time determines the relationship between firms and suppliers and credit institutions. Thus, payment in time effects a company's reputation and consolidate its status thereby encouraging it to be stronger in the sector. While accounts payable days are calculated, other companies in the sector are evaluated together and the analysis of past periods is taken into account for WCM.

5.2.4. Inventory Days

Stock days is also an important factor affecting firm's profitability. Stock days shows how many times stocks took to be converted into sales. High inventory turnover rate is assumed to be an advantage for firms that has a positive effect on profitability. The high inventory turnover rate indicates that the stocks in the company can be converted into cash in a short time. In addition, the liquidity of stocks is lower than other assets.

On the other hand, a high inventory turnover rate can suggest that the stock is used at the optimum level and that the company is using less working capital and increasing its profitability even more but at some point, the high inventory turnover rate cannot accurately reflect the use of the stocks by the firms, indicating that the company has not worked at full capacity. At the same time, the high inventory turnover affects a firm's liquidity negatively. However, low inventory days effects on sales and it will

decrease a firm's profitability. Meanwhile, the mistake made in the stock management will take time to fix.

5.3. Working Capital Determinants

If the working capital determinants are ignored, the cash amount of the operator will be ineffective or low, which will affect the profit of the operation. There is a need for working capital in order to finance purchases in an operation, to provide cash balance within the company and to provide stock in optimum level.

5.3.1. Nature of business and Size

Businesses are generally studied in three groups namely trade, service and manufacture.

In manufacturing firms, the largest part of the assets is the fixed assets. The level of fixed assets is more than the current assets in these companies. For this reason, the working capital of these firms is lower than the investment.

In general, service firms don't keep too much stocks and as a result of the service provided, money is usually received in cash, so accounts receivable days are low in this sector. On the other hand, they apply to working capital investment in order to retain their customers and increase sales according to competitive advantages.

In trade firms, current assets are very important, so stocks, cash cycle, accounts payable and accounts receivables are in constant conversion. The stock management, receivables and credit policies of businesses that are generally operating in the field, such as wholesalers, are extremely important and WCM plays a vital role in the business.

The most important factor in determining the requirement for working capital is the size of the business, because the volume of working capital is determined according to firm's size. The larger the size of the operation, the larger the volume of activity, and therefore the volume of sales and the volume of the transaction. Increased sales volume means additional production, additional stock, additional employees, machinery and equipment enhancement, all of which directly affect working capital.

5.3.2. Sales and Purchasing Conditions

There is a difference between the WCM requirement among business that trade with credit on sales between business that trade with cash on sale. For this reason, firm's that operate on a cash on sales policy need less working capital than those working on the credit on sales policy. At the same time, firms that make a trade with short-term loans require less working capital than firms that trade with long-term credits. Moreover, businesses that make purchases of goods frequently and in small quantities are less likely to need working capital than firms that make purchases of goods with long period of time and in large quantities to operate their businesses. It should be noted that many firms follow a long-term crediting policy for profit and a short-term policy for sales.

5.3.3. Policy of Credit

Credit of sales have an important place in the financing of businesses. The higher the number of sales credits, the more advantageous to the company, because businesses can benefit from sales credits until they sell the goods in their inventory and collect their receivables. The requirement of working capital is high for companies that provide credit for merchandise sales but cannot provide sufficient credit for their purchase of goods. Conversely, if the accounts payable days are often higher for goods purchases, and firms with less account receivable days for goods sales so, requirement of working capital will be less for companies.

5.3.4. Technology

The inclusion of technological tools in manufacturing has led to the reduction in the costs of processing and increases in profitability, because the volume of output has increased. As a result, the investments of a company with advanced technology are decreasing. The need to keep up with the increased output as a result of advances in technology however requires new investments. For this reason, the need for working capital for new investments will increase.

5.3.5. Manufacturing and Supplying Policy

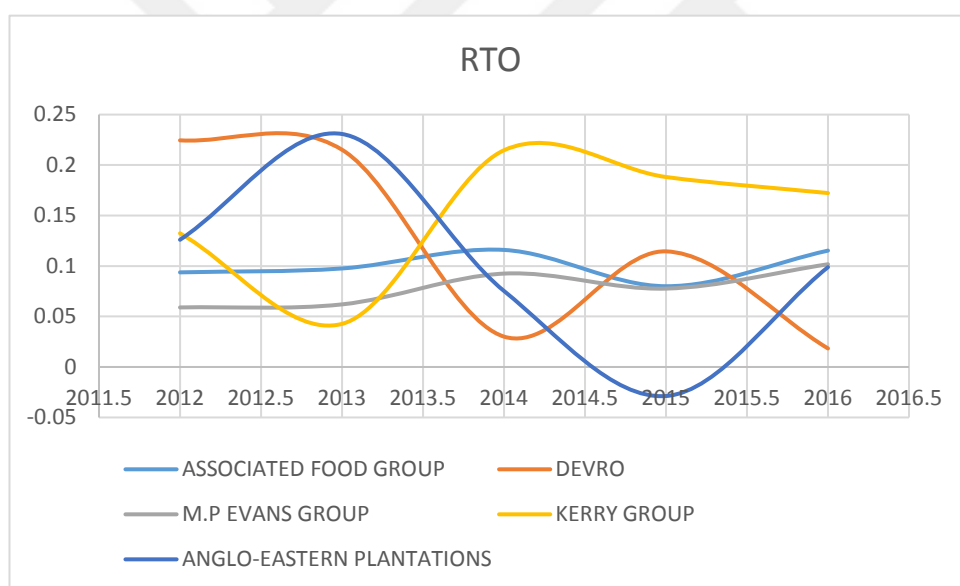
In companies, manufacturing date and firm's profitability has an inverse ratio, because a higher manufacturing time necessitates a high amount of stock and high level of stock effects liquidity structure in the business, hence the need for additional working capital for the financing of operating costs. Prolonged supply of supplies reveals the need for more working capital.

5.4. Data Analysis

5.4.1. Return on Equity

Return on equity is a measure of how profitable the entity is by effectively using it.

The increase in the RTO rate shows how effectively the company uses its assets in its profit-making. The formula is net profit divided by total assets.



Source: Author`s Work

	RETURN ON EQUITY (RTO)				
	ASSOCIATED FOOD GROUP	DEVRO	M.P EVANS GROUP	KERRY GROUP	ANGLO-EASTERN PLANTATIONS
2016	0.115276608	0.018348624	0.101744186	0.172268908	0.098876404
2015	0.079987788	0.114503817	0.077639752	0.188172043	-0.028761062
2014	0.115948467	0.030075188	0.0925	0.214669052	0.075289575
2013	0.0975835	0.215189873	0.061994609	0.042682927	0.230769231
2012	0.093714837	0.224489796	0.058981233	0.132374814	0.126

Source: Author`s Work

There is a significant relationship between ROE and working capital management. In previous researches, ROE was used to reach profitability. ROE is found by dividing net profit by net assets.

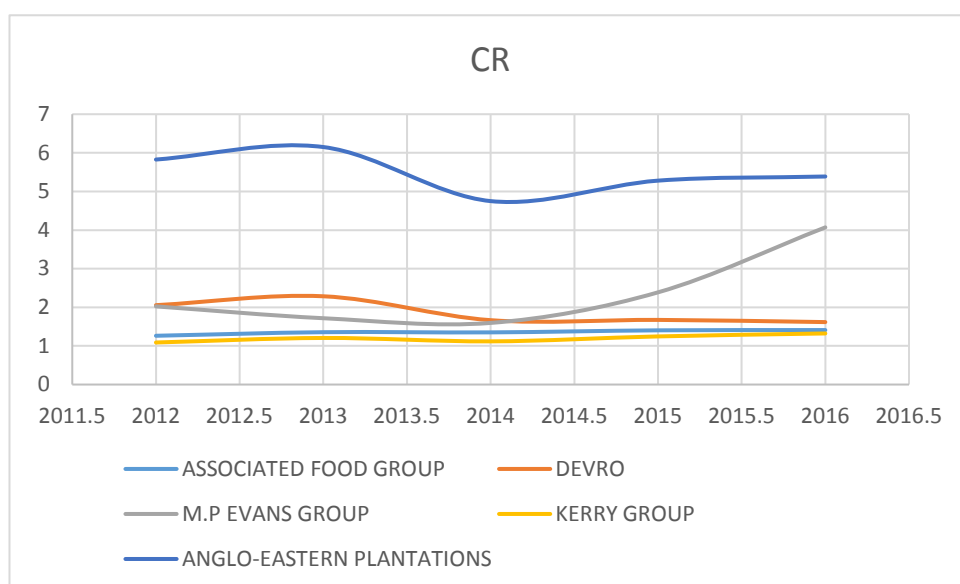
Variables in the table tend to fluctuate from year to year in general. Especially Associated Food Group, Devro and Anglo-Eastern Plantations shows undulate data in 2012 to 2016.

Overall, Anglo Eastern Plantations has the highest rate with 0.22 in 2014. The second highest rate is that of Devro with a rate of 0.22 in 2012. Kerry Group has an ROE rate of 0.21 in 2014. M.P Evans and Associated Food Group maintain fluttered model in the table. ROE shows us the degree of the profitability in the company.

The lowest level of ROE is observed by Anglo-Eastern in 2015 in the chart. It dropped sharply from 2013 to 2015 however, Anglo-Eastern started to rise up after this year and caught up to the level of M.P Evans Group.

5.4.2. Current Ratio

Current ratio refers to liquidity, so firms can measure their liquidity level with current ratio. Current ratio formula is obtained current assets divided by current liabilities.



Source: Author's Work

	CURRENT RATIO (CR)				
	ASSOCIATED FOOD GROUP	DEVRO	MP EVANS GROUP	KERRY GROUP	ANGLO-EASTERN PLANTATIONS
2016	1.410810811	1.617021277	4.069767442	1.323095097	5.387096774
2015	1.403719912	1.673913043	2.387096774	1.246278755	5.28
2014	1.350968703	1.666666667	1.595744681	1.118115055	4.75
2013	1.355502771	2.285714286	1.717391304	1.206291149	6.15
2012	1.263137558	2.055555556	2.023809524	1.088765603	5.826086957

Source: Author`s Work

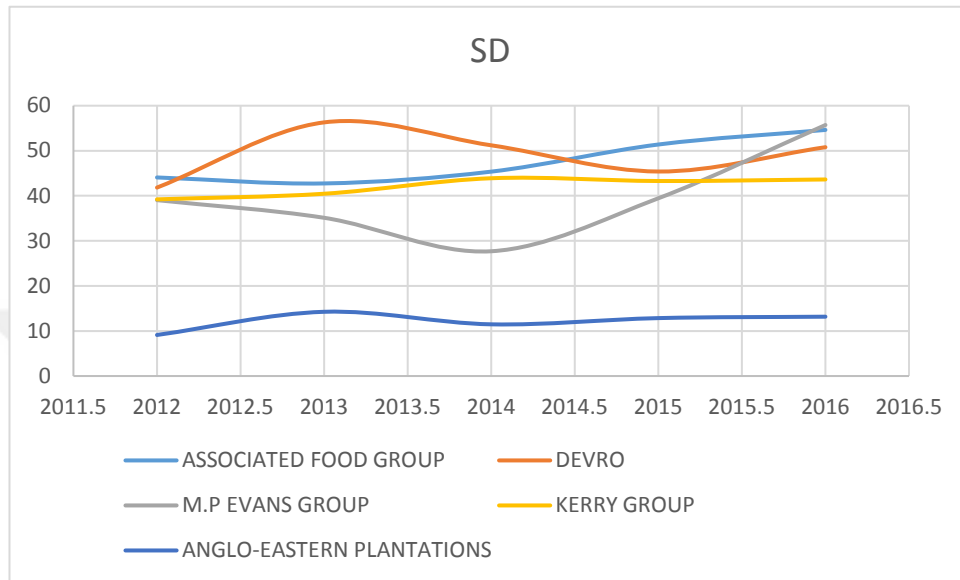
This ratio is used to determine whether the short-term obligations and the net working capital of the business are sufficient. It is desirable that the current assets remain greater than current liabilities. The high current ratio refers to the ability of the firm to pay the current liabilities in time, and it can be concluded that a high ratio shows a high level of liquidity.

In the 5 years examined, Anglo Eastern Plantations has the highest current ratio of the 4 companies. The other 4 have almost the same proportions of current ratio. Although M.P Evans rose after 2014, it did not manage to reach the ratio of Anglo eastern and the highest value remains at 4.06% in 2016.

The fact that Anglo eastern has a high current ratio means that the liquidity ratio of the company is high. This shows that firm can pay for current obligation on time.

5.4.3. Stock Days

Inventory days is a ratio that shows how many times stocks are converted to sales in the market in one year. As stock days rise, the business expects to increase its profitability. Stock days is obtained by dividing the cost of sales into average stocks.



Source: Author's Work

	STOCKDAYS (SD)				
	ASSOCIATED FOOD GROUP	DEVRO	M.P EVANS GROUP	KERRY GROUP	ANGLO-EASTERN PLANTATIONS
2016	54.62198672	50.78838174	55.71428571	43.62746697	13.17073171
2015	51.384375	45.39130435	39.45205479	43.28255528	12.85714286
2014	45.3650622	51.20689655	27.69230769	43.89786347	11.47410359
2013	42.74577544	56.2962963	35.12195122	40.45913997	14.25742574
2012	44.07443683	41.82572614	39.03614458	39.21340629	9.113924051

Source: Author's Work

Inventory is a liquid asset for a business, so companies aim to sell their inventory as soon as possible. At the same time, they do not want to have too much stock in their holdings, so they attempt to have optimum stock days. If the stock days extend, the firm's profitability will be decreased.

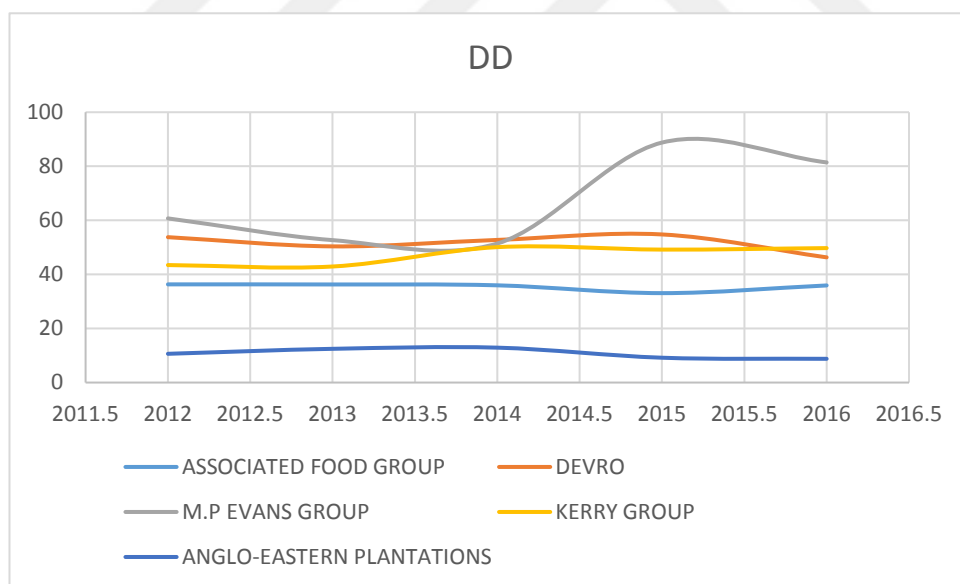
Even though the inventory days ratio is different from that of the firms surveyed in the year, the ration for the companies tended to increase after 2015 in general. The gradual and regular tendency to increase, which is seen after 2015, can be explained by steady

sales in the sector, successful stock management policies or the fact that the supply force in the sector is available and the stocks are not renewed.

In 2013 The Devro company has the highest rates of inventory days at 51.26. Anglo Eastern rate remains constant in all 5 years. The ratio of M. P Evans from 2012 to 2014 tended to decrease but rose up after 2014. In 2013 the ratios of Kerry Group and Associated Food Group are very close to each other. At the end of 2016 the inventory days of the M. P Evans company has the highest rate of 55.76.

5.4.4. Data Days

Accounts receivable days is a ratio that shows how many commercial receivables are converted to sales. The average sales receivables of the net sales are divided by 365 and are collapsed. Data Days increase is generally not favourable. A wrong strategy in this regard may lead to bankruptcy. Therefore, the credit policy should be handled in a realistic way.



Source: Author`s Work

	DATA DAYS (DD)				
	ASSOCIATED FOOD GROUP	DEVRO	M.P EVANS GROUP	KERRY GROUP	ANGLO-EASTERN PLANTATIONS
2016	35.92208374	46.30705394	81.42857143	49.73413799	8.780487805
2015	33.075	54.7826087	88.76712329	49.17936118	9.183673469
2014	35.96384146	52.75862069	51.42857143	50.08858781	12.90836653
2013	36.28389035	50.37037037	52.68292683	42.9261607	12.47524752
2012	36.31733595	53.77593361	60.72289157	43.46101231	10.63291139

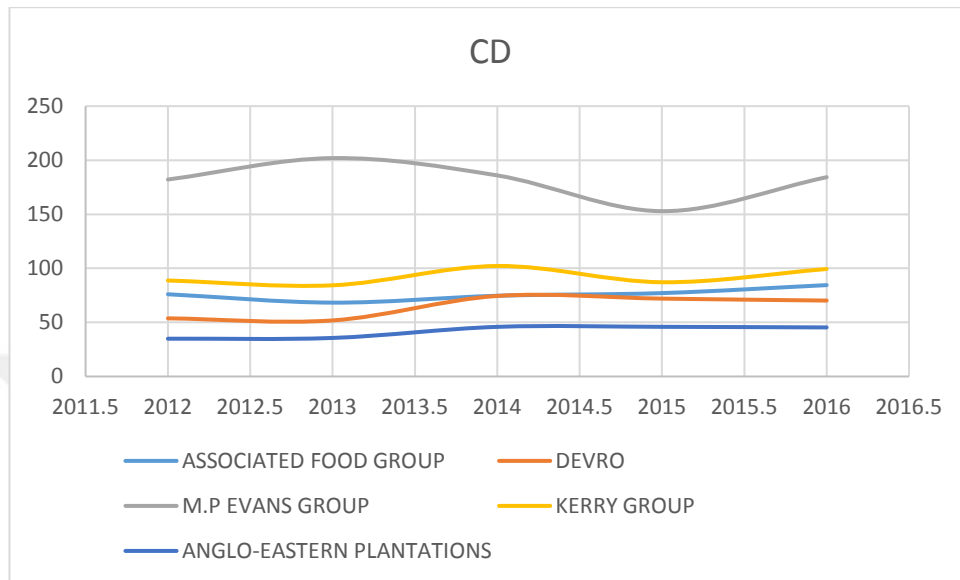
Source: Author`s Work

The chart shows that the highest data days rate of M.P Evans in 2015 reached 88.76. M.P Evans has a relatively fluctuating structure. After 2015, the rate began to decrease slightly and fell to 81.42 in 2016. Associated Food Groups, Anglo-Eastern Plantations, Devro and Kerry Group generally have a very stable group of data which does not have much increase or decrease.

The result of the improvement of the accounts receivable days shows that the accounts payable policy has started to improve, cash on sales have increased. Thus, we can reach the conclusion that M.P Evans has improved its policies with regards to these data in 2014.

5.4.5. Creditor Days

Creditor days refer to the capability of firm's vis-à-vis the number of days within which it can repay its short-term creditors.



Source: Author's Work

	CREDITOR DAYS (CD)				
	ASSOCIATED FOOD GROUP	DEVRO	M.P EVANS GROUP	KERRY GROUP	ANGLO-EASTERN PLANTATIONS
2016	84.4988432	70.20746888	184.2857143	99.40955798	45.36585366
2015	77.11875	72	152.8767123	87.15479115	45.91836735
2014	74.65348065	74.48275862	185.9340659	102.1782178	45.89641434
2013	68.29590687	51.85185185	201.9512195	84.31043344	35.64356436
2012	76.043095	53.77593361	182.1686747	88.76880985	34.93670886

Source: Author's Work

The low level of creditor days reveals that in this industry companies might not have a liquidity problem. As the accounts payable days increase, the business will need to pay more debt and will need more working capital.

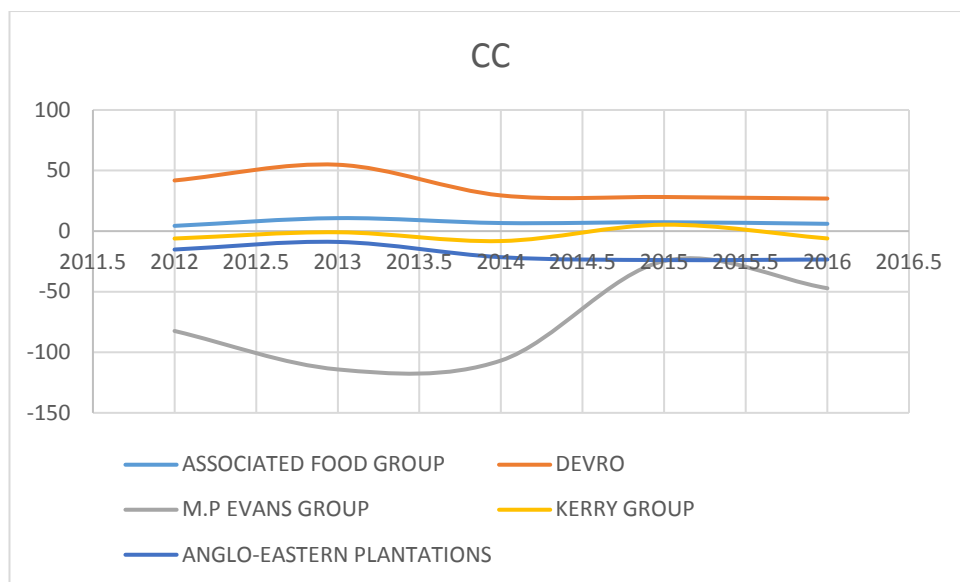
The formula is to divide creditor days with cost of sales and multiply with 365. Many authors argue that creditor days impacts a firm's profitability positively. Dong and Su (2010) and Karaduman (2010) proved this relationship in their research. Therefore, as

creditor days increase, the profit of the company will tend to rise up because the company will be able to make more investments to earn more revenue in its sales, and to take advantage of its assets in order to make deposits for a wider period.

The chart shows that creditor days did not fluctuate much. When a 5-year average is observed, the data of M.P Evans is higher than the average of the other 4 companies. The chart indicates that M.P Evans has the highest level of profitability at 4 companies. In general, Anglo-Eastern group's data remains below the value of 46%. This reveals that accounts payable day is considerably less than other companies and that will be riskier in relation to other companies.

5.4.6. Cash Cycle

Cash cycle or Operating cycle indicates the length of the period between company's purchase of stock to produce a good and the receipt of receivables from the sales of the produced goods. For this reason, cash conversion cycle is very important for companies. The aim is always to collect cash as soon as possible and to pay as late as possible.



Source: Author's Work

	CASH CYCLE(CC)				
	ASSOCIATED FOOD GROUP	DEVRO	M.P EVANS GROUP	KERRY GROUP	ANGLO-EASTERN PLANTATIONS
2016	6.045227256	26.8879668	-47.14285714	-6.047953026	-23.41463415
2015	7.340625	28.17391304	-24.65753425	5.307125307	-23.87755102
2014	6.675423009	29.48275862	-106.8131868	-8.191766545	-21.51394422
2013	10.73375892	54.81481481	-114.1463415	-0.925132774	-8.910891089
2012	4.348677767	41.82572614	-82.40963855	-6.094391245	-15.18987342

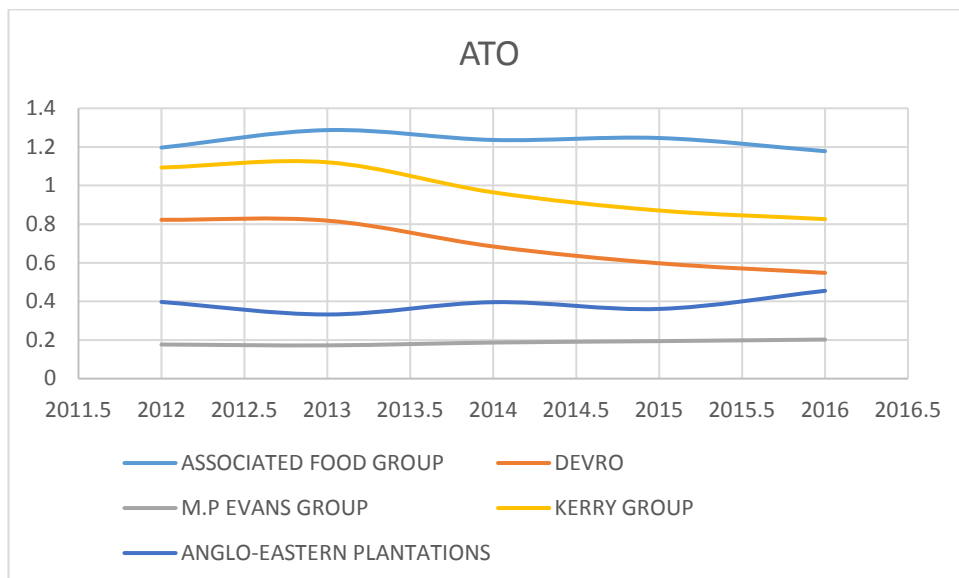
Source: Author`s Work

Cash conversion cycle is computed by adding accounts receivable days with stock days less accounts payable days. Shin (1998) argued that long cash period negatively effect on the firm`s profitability.

In the chart, Devro has the highest level of cash conversion cycle i.e. 54.81 in 2013. After 2014 the 4 companies tend to have the same value until 2016. M.P Evans data`s lean to undulated in the chart, so that company doesn`t have stable status for the cash cycle. Therefore, the highest level entails a risk situation for firm`s profitability.

5.4.7. Assets Turnover

Assets turnover is the ratio between the sales of a firm and the value of its assets. It is formulated by dividing the net assets or income assets into average assets.



Source: Author`s Work

	ATO				
	ASSOCIATED FOOD GROUP	DEVRO	M.P EVANS GROUP	KERRY GROUP	ANGLO-EASTERN PLANTATIONS
2016	1.17783052	0.547727273	0.202409639	0.826057666	0.454713494
2015	1.246105919	0.597402597	0.194148936	0.870526166	0.360957643
2014	1.235962567	0.684365782	0.186858316	0.964644772	0.395899054
2013	1.287095215	0.818181818	0.172268908	1.120345489	0.332236842
2012	1.196484375	0.822525597	0.176595745	1.093084112	0.396984925

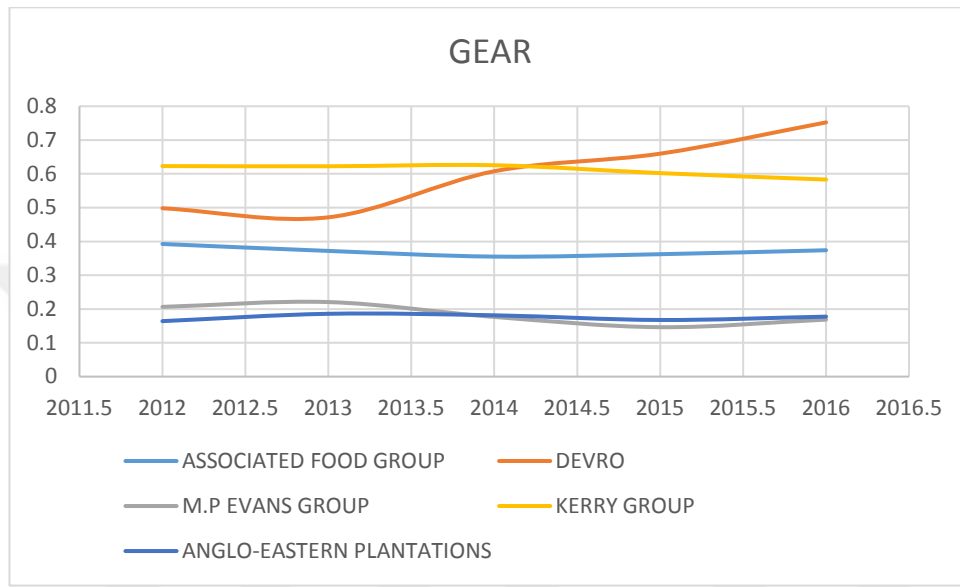
Source: Author`s Work

Assets turnover (ATO) is an effective ratio that reveals the performance of a company. If the company is high on ATO, it demonstrates that the performance of the business is good. Thus, the positive performance of the ATO is related to the performance of the business. In general, the increase in low-rate ATO production capacity may be due to problems such as bad stock management.

In the table and chart, Associated Food Group company has the highest ATO rate in the 5-year period. Devro and the Kerry Group have been showing a slight decline since 2013. Anglia Eastern Plantations has a relatively fluctuating structure and has been successful in increasing the ATO after 2015. Nevertheless, M. P Evans remains the same average for 5 years, and there is not much increase or decrease. In general, we can say that the lowest ATO rate is M.P Evans.

5.4.8. Gear

Gear Ratio shows that company's capital structure and company's financial risks. Thus this ratio is very useful and important in understanding a firm's capital framework.



Source: Author's Work

	GEAR				
	ASSOCIATED FOOD GROUP	DEVRO	M.P EVANS GROUP	KERRY GROUP	ANGLO-EASTERN PLANTATIONS
2016	0.373945148	0.752272727	0.168674699	0.583131231	0.177449168
2015	0.362246885	0.65974026	0.146276596	0.602167403	0.167587477
2014	0.35513751	0.607669617	0.176591376	0.625502681	0.181388013
2013	0.371967134	0.471380471	0.220588235	0.622456814	0.185855263
2012	0.392480469	0.498293515	0.206382979	0.622990654	0.164154104

Source: Author's Work

With this ratio, financial managers can compare and review the owner's equity with its borrowed funds. In theory, a higher level of gearing causes risk to firms.

If the gearing ratio is low, we can say that working capital is made from more common stocks, less fixed interest or dividend bearing funds. If gearing is higher, working capital made from less common stocks and more interests or dividend bearing funds.

The companies' data show that M.P Evans and Anglo-Eastern have the same ratios. Devro tended to increase its level of gearing after 2013 and it reached the highest level in the table in 2016 by the value of 0.75. However, Associated Group seems to have a stable trend during the 5 years. Kerry Group remains constant from 2012 to 2014, after 2014 it dropped slightly. Overall, all companies have a gearing ratio of more than zero.

Devro might however, be effected from risks because of the higher level of gearing.

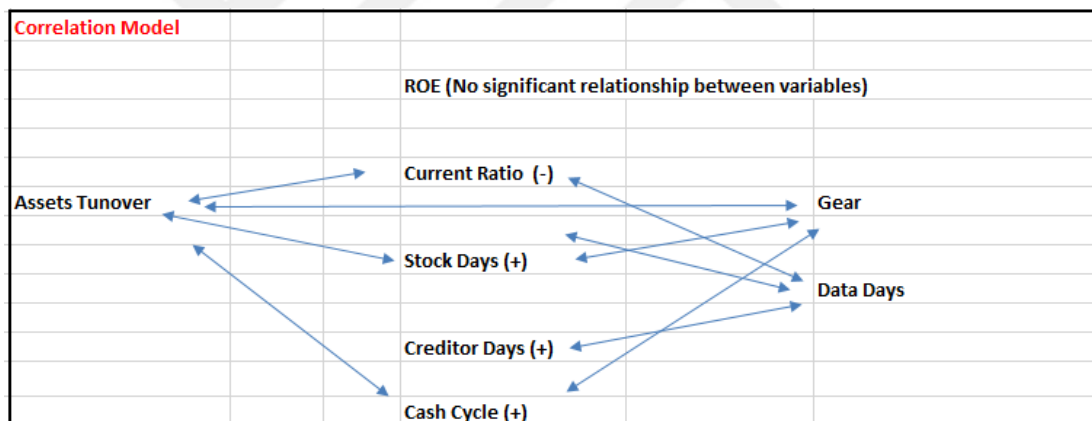
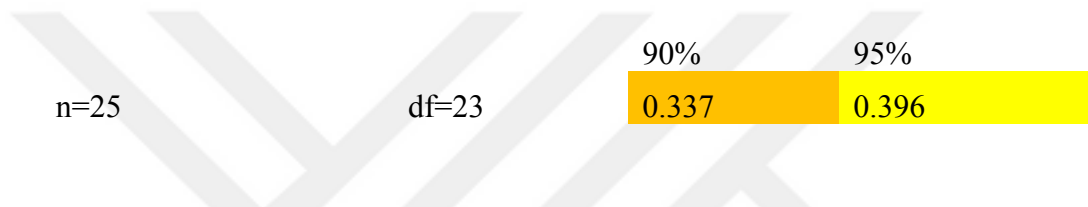
5.5 Correlation Analysis

The variables in the survey contained in the literature and describe the framework of the working capital and firm's performance. Many authors used similar ratios and methods when they researched their study to analyse the influence of WCM on the performance of a company, such as Deelof (2003), Shin and Soenen (1998) and Akbulut (2011).

In this study, correlation analysis is utilized to identify how a dependent variable mutates when the independent variables changes. Correlation analysis contributes to reveal the relationship between two variables, and if there is a relationship, the analysis helps to measure the level of association. If a positive relationship occurs, then it means that when a dependent variable rises, the independent variable will increase too. Moreover, when the value of an independent variable decreases, the value of a dependent variable reduces as well. Negative correlation implies when one variable value's decreases, the value of the other variable increases. If there is no correlation between the two variables or there is a zero correlation, it can be said that there is no relation between the two variables and they are not related to each other.

	ROE	CR	SD	DD	CD	CC	ATO	GEAR
ROE	1							
CR	-0.025592904	1						
SD	0.101752483	-0.778806942	1					
DD	0.049934503	-0.55876673	0.688570262	1				
CD	-0.202396079	-0.335927278	0.27827109	0.706617298	1			
CC	0.307092287	-0.148453729	0.362171069	-0.114443629	-0.763539528	1		
ATO	0.215977955	-0.568284264	0.476444149	-0.137263581	-0.421798306	0.614344479	1	
GEAR	0.180386335	-0.651161295	0.577397689	0.219031462	-0.245485551	0.613621216	0.559070267	1

Source: Author's Work



Source: Author's Work

When we look at the results of correlation analysis for main relationship, there is no significant relationship between return on equity and current ratio, stock days, data days, creditor days, cash cycle, asset turnover and gear. The increase or decrease in the ROE Return on equity does not have any meaningful effect on other dependent variables. Consequently, there is no significant relationship between profitability and other variables in the food industry.

When we look at other relationships between variables it becomes apparent that current ratio is negatively correlated with change in Data Days. Current ratio shows the firm's

liquidity performance. In this industry, high current ratio affects accounts receivable days negatively. For this reason, when the company increases its liquidity rates, accounts receivables days will decrease.

Another strong negative correlation is evidenced between current ratio and assets turnover ratio. When current ratio increases, the assets turnover will decrease in food industry in the UK. According to this relation, higher liquidity rates effect a firm's performance negatively. Because higher assets turnover shows that higher firm's performance and higher current ratio indicates that higher liquidity but in that case company performance and company liquidity affect each other negatively.

On the other hand, there is a strong positive linear relationship between stock days and data days (0.6885). In food industry when inventory days rise up, accounts receivables days increase too.

Therefore, the increase in stocks over the 5-year period causes that supply to customers and may have been increased in customer accounts receivables days. Inventory days were weekly and positively correlated with cash conversion cycle.

The influence of Stock days on assets turnover shows a strong and positive correlation in this industry.

As Inventory days increase, supply chain dynamics being well, stocks can be renewed, sales volume is increased and positive performance is increased. Among other things, according to the correlation result inventory days and gearing ratio have a strong positive correlation. On the other hand, higher stock days cause higher gearing ratio, so in these firms, risk increases at the same time, so this result show that positive relationship between stock days and gear might create some risks for firms and decrease company's profitability.

There is a strong linear relationship between data days and creditor days (0.7066). It can be said that the increase in the accounts receivable days in the food sector will improve the receivables collection policy, the increase in the sales of accounts and the increase in the accounts payable days. Thus, the more the cash in the firm and the increase in purchasing power will lead the business to move to new investments and thus increase their performance and profitability.

The correlation analysis indicates that the relationship between creditor days and cash cycle is strong and negative correlation. As the payable days increase, the cash cycle decreases. Increasing the creditor policy in the business and increasing the periods of payment show that the cash to the business is used for other investments.

The other strong and positive relationship is between cash cycle and assets turnover (0.6143). The increase in the cash rate in the business has led to an increase in the company's asset turnover, thus increasing the company performance in industry, which leads to the vitality of the industry. Increasing the sales volumes of the enterprises has affected the cash flow in a positive way and increased the performance of the industry

Cash conversion cycle and gear is strong positive correlated each other (0.6136). Increasing the gearing causes an increase in the risk ratios in the sector. Therefore, this linear relationship increases the cash conversion cycle, not enough cash to for the business, thus causing the increase of gear and increasing the risk in the industry and making it less common stocks and more interests or dividend bearing funds.

Another strong and positive relationship between assets turnover and gear in this sector (0.5590). A positive effect in the increase of the sales volume of the firms, but the increase in the interest or dividend bearing funds in the working capital that the risk will be occurred in the industry and stable structure will be destroyed.

Chapter 6

Discussion

In ideal companies, managers aim to maximize profit and have sufficient resources to increase their performance and to use these resources effectively. In this research, the sources of the 5 firms that received the data were used in different levels within 5 years, which is why the processing performance values different.

The aim of this study is to determine whether WCM has an effect on operating profitability based on the data of 5 companies operating in the food sector in the UK. In the analysis of the correlation, it was determined that return on equity had no effect on independent variable of current ratio, stock days, data days, creditor days, cash cycle, assets, but there is a negative strong relationship current ratio data days and assets turnover and creditor days with cash cycle. The other variables, stock days, data days, cash cycle, and asset turnover variables have a strong positive correlation with the other variables.

When it is compared with the previous researches, it is determined that the result obtained in the research is also found in other researches Torman and Sonmez (2015) but this research adds to them. The research results show that there is no significant correlation between working capital variables and firm`s profitability.

WCM has been found to have a different effect on different industry. For example, it found a negative correlation between cash conversion cycle and net trade cycle in machinery, retail and wood businesses has been established. Thus, every sector provides different results and processing characteristics.

Chapter 7

Conclusion

The incomplete use of the company's assets to maximize the assets of the partners reduces profitability, and in the case of insufficiency, it may result in the enterprise not being able to meet its obligations. For this reason, the optimum working capital is extremely important for the success of the company.

In studies investigating the effect of WCM on firm profitability, I have found that working capital has a negative or positive effect on the operating profitability but in the research the results of the correlation analysis on working capital are not statistically significant on operational profitability, there is no significant relationship cannot be obtained.

Therefore, statistically independent variables that express the study capital have no significant effects on the dependent variable. In other words, it can be said that firms operating in the food industry in the UK have no influence on the profitability also, profitability of the working capital policies unless they have any influence on the company's profits or fail to provide the necessary working capital to the necessary beneficiary companies or they don't use working capital efficiently or not renew, so that they cannot utilize their assets.

In businesses, WCM is a decision that only affects the performance of the financial department, because There are many variables that affect working capital management, and these variables are constantly related to other departments. Therefore, it will increase the performance of the company by working concurrently with other departments in the decisions to be made for working capital management and designing the necessary applications.

The limited study of this research is that only 5 companies operating in the food sector in the London Stock Exchange are recruited and the data from the years 2012-2016 are utilized and used 7 variables independently. For further study, the sub-sectors of the firms in the food sector can be determined and the effect of the working capital on the profitability can be examined and compared to the all sector. Additionally, the

relationship between financial ratio analysis and working capital investment and firm`s profitability can be dealt with in a more detailed manner with different analysis techniques and statistics.



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Appendix

Annual Reports of Firm`s

ASSOCIATED BRITISH FOODS					
Assets £(M)	2016	2015	2014	2013	2012
Reporting date	17-Sep-16	12-Sep-15	13-Sep-14	14-Sep-13	15-Sep-12
Tangible assets	5,145	4,488	4,665	4,552	4,541
Intangible assets and goodwill	1,348	1,367	1,467	1,581	1,769
Investments and other non-current assets	446	568	714	788	661
Total non-current assets	6,939	6,423	6,846	6,921	6,971
Inventory / Work in progress	2,033	1,827	1,631	1,581	1,500
Trade and other receivables	1,337	1,176	1,293	1,342	1,236
Cash and Equivalents	555	702	519	362	391
Other current assets and asset held for resale	512	144	183	139	142
Total of all ASSETS	11,376	10,272	10,472	10,345	10,240
Liabilities £(M)	2016	2015	2014	2013	2012
Short term liabilities	3,145	2,742	2,684	2,526	2,588
Long term liabilities	1,109	979	1,035	1,322	1,431
Other liabilities / pension etc	0	0	0	0	0
Total of all LIABILITIES	4,254	3,721	3,719	3,848	4,019

Net assets £(M)	2016	2015	2014	2013	2012
Net assets	7,122	6,551	6,753	6,497	6,221
Equity £(M)	2016	2015	2014	2013	2012
Share Capital	45	45	45	45	45
Minority Interests	68	215	316	364	387
Retained earnings	6,423	6,252	5,950	5,486	5,099
Share premium account	0	0	0	0	0
Other Equity	586	39	442	602	690
Total EQUITY	7,122	6,551	6,753	6,497	6,221
Cash Flow £(M)	2016	2015	2014	2013	2012
Cash from operating activities	1,310	1,166	1,439	1,276	1,240
Cashflow before financing	554	627	767	651	534
Increase / Decrease in Cash	-165	187	187	-7	-28
Income £(M)	2016	2015	2014	2013	2012
Turnover	13,399	12,800	12,943	13,315	12,252
Cost of sales	0	0	0	0	0
Gross Profit	0	0	0	0	0
Operating Profit	1,103	947	1,080	1,093	873
Pre-Tax profit	1,042	717	1,020	876	761
Profit / Loss for the year	821	524	783	634	583



DEVRO					
Assets £(M)	2016	2015	2014	2013	2012
Reporting date	31-Dec-16	31-Dec-15	31-Dec-14	31-Dec-13	31-Dec-12
Tangible assets	309	270	230	199	196
Intangible assets and goodwill	10	9	4	3	3
Investments and other non-current assets	45	29	25	15	20
Total non-current assets	364	308	259	217	219
Inventory / Work in progress	34	29	33	38	28
Trade and other receivables	31	35	34	34	36
Cash and Equivalents	10	10	11	6	6
Other current assets and asset held for resale	2	4	2	3	4
Total of all ASSETS	440	385	339	297	293
Liabilities £(M)	2016	2015	2014	2013	2012
Short term liabilities	47	46	48	35	36
Long term liabilities	284	208	158	105	110
Other liabilities / pension etc	0	0	0	0	0
Total of all LIABILITIES	331	254	206	139	146
Net assets £(M)	2016	2015	2014	2013	2012
Net assets	109	131	133	158	147
Equity £(M)	2016	2015	2014	2013	2012
Share Capital	17	17	17	17	17
Minority Interests	0	0	0	0	0
Retained earnings	12	52	51	67	42
Share premium account	9	9	9	9	8
Other Equity	71	53	57	65	81
Total EQUITY	109	131	133	158	147
Cash Flow £(M)	2016	2015	2014	2013	2012
Cash from operating activities	26	26	37	38	43
Cashflow before financing	2	-36	-18	1	9
Increase / Decrease in Cash	-1	-2	6	0	-2
Income £(M)	2016	2015	2014	2013	2012
Turnover	241	230	232	243	241
Cost of sales	0	0	0	0	0
Gross Profit	0	0	0	0	0
Operating Profit	15	19	6	41	43
Pre-Tax profit	6	15	2	38	41
Profit / Loss for the year	2	15	4	34	33

M.P EVANS GROUP					
Assets £(M)	2016	2015	2014	2013	2012
Reporting date	31-Dec-16	31-Dec-15	31-Dec-14	31-Dec-13	31-Dec-12
Tangible assets	202	186	112	109	107
Intangible assets and goodwill	1	1	165	150	140
Investments and other non-current assets	37	115	135	138	137
Total non-current assets	240	302	412	397	385
Inventory / Work in progress	13	8	7	8	9
Trade and other receivables	19	18	13	12	14
Cash and Equivalents	91	44	48	56	55
Other current assets and asset held for resale	51	4	6	3	6
Total of all ASSETS	415	376	487	476	470
Liabilities £(M)	2016	2015	2014	2013	2012
Short term liabilities	43	31	47	46	42
Long term liabilities	27	24	39	59	55
Other liabilities / pension etc	0	0	0	0	0
Total of all LIABILITIES	70	55	86	105	97
Net assets £(M)	2016	2015	2014	2013	2012
Net assets	344	322	400	371	373
Equity £(M)	2016	2015	2014	2013	2012
Share Capital	9	9	9	9	9
Minority Interests	23	22	28	24	22
Retained earnings	262	214	267	235	233
Share premium account	0	0	0	0	0
Other Equity	50	76	96	103	109
Total EQUITY	344	322	400	371	373
Cash Flow £(M)	2016	2015	2014	2013	2012
Cash from operating activities	23	20	28	19	34
Cashflow before financing	77	14	13	-4	7
Increase / Decrease in Cash	66	-3	-10	-7	2
Income £(M)	2016	2015	2014	2013	2012
Turnover	84	73	91	82	83
Cost of sales	59	57	55	57	60
Gross Profit	24	15	36	25	23
Operating Profit	20	7	37	15	19
Pre-Tax profit	19	7	35	12	17
Profit / Loss for the year	35	25	37	23	22

KERRY GROUP					
Assets £(M)	2016	2015	2014	2013	2012
Reporting date	31-Dec-16	31-Dec-15	31-Dec-14	31-Dec-13	31-Dec-12
Tangible assets	1,452	1,432	1,283	1,091	1,206
Intangible assets and goodwill	3,444	3,449	2,629	2,393	2,460
Investments and other non-current assets	286	291	229	77	115
Total non-current assets	5,182	5,171	4,141	3,561	3,780
Inventory / Work in progress	743	734	702	656	637
Trade and other receivables	847	834	801	696	706
Cash and Equivalents	565	236	284	246	215
Other current assets and asset held for resale	85	37	40	51	11
Total of all ASSETS	7,422	7,013	5,968	5,210	5,350
Liabilities £(M)	2016	2015	2014	2013	2012
Short term liabilities	1,693	1,478	1,634	1,367	1,442
Long term liabilities	2,635	2,745	2,099	1,876	1,891
Other liabilities / pension etc	0	0	0	0	0
Total of all LIABILITIES	4,328	4,223	3,732	3,242	3,333
Net assets £(M)	2016	2015	2014	2013	2012
Net assets	3,094	2,790	2,236	1,968	2,017
Equity £(M)	2016	2015	2014	2013	2012
Share Capital	22	22	22	22	22
Minority Interests	0	0	0	0	0
Retained earnings	2,771	2,473	1,916	1,719	1,685
Share premium account	399	399	399	399	399
Other Equity	-98	-104	-101	-173	-88
Total EQUITY	3,094	2,790	2,236	1,968	2,017
Cash Flow £(M)	2016	2015	2014	2013	2012
Cash from operating activities	683	721	469	459	463
Cashflow before financing	447	-281	55	176	125
Increase / Decrease in Cash	330	-47	25	39	-22
Income £(M)	2016	2015	2014	2013	2012
Turnover	6,131	6,105	5,757	5,837	5,848
Cost of sales	0	5,405	0	5,225	0
Gross Profit	0	700	0	611	0
Operating Profit	682	672	609	190	373
Pre-Tax profit	612	603	556	122	324
Profit / Loss for the year	533	525	480	84	267

ANGLO-EASTERN PLANTATIONS					
Assets £(M)	2016	2015	2014	2013	2012
Reporting date	31-Dec-16	31-Dec-15	31-Dec-14	31-Dec-13	31-Dec-12
Tangible assets	357	220	227	213	212
Intangible assets and goodwill	0	179	251	266	245
Investments and other non-current assets	17	12	3	6	5
Total non-current assets	374	411	482	485	463
Inventory / Work in progress	9	7	8	8	6
Trade and other receivables	6	5	9	7	7
Cash and Equivalents	118	105	126	99	116
Other current assets and asset held for resale	34	17	9	8	5
Total of all ASSETS	541	543	634	608	597
Liabilities £(M)	2016	2015	2014	2013	2012
Short term liabilities	31	25	32	20	23
Long term liabilities	65	66	83	93	75
Other liabilities / pension etc	0	0	0	0	0
Total of all LIABILITIES	96	91	116	114	97
Net assets £(M)	2016	2015	2014	2013	2012
Net assets	445	452	518	494	500
Equity £(M)	2016	2015	2014	2013	2012
Share Capital	16	16	16	16	16
Minority Interests	82	83	91	86	87
Retained earnings	482	505	521	493	427
Share premium account	24	24	24	24	24
Other Equity	-159	-175	-134	-124	-54
Total EQUITY	445	452	518	494	500
Cash Flow £(M)	2016	2015	2014	2013	2012
Cash from operating activities	39	25	74	42	58
Cashflow before financing	15	-6	32	-2	13
Increase / Decrease in Cash	11	-8	29	5	30
Income £(M)	2016	2015	2014	2013	2012
Turnover	246	196	251	202	237
Cost of sales	181	146	165	133	143
Gross Profit	65	51	87	69	95
Operating Profit	56	-21	45	153	81
Pre-Tax profit	61	-19	51	153	84
Profit / Loss for the year	44	-13	39	114	63

Correlation Analysis

	ROE	CR	SD	DD	CD	CC	ATO	GEAR
ROE	1							
CR	-0.025592904	1						
SD	0.101752483	-0.778806942	1					
DD	0.049934503	-0.55876673	0.688570262	1				
CD	-0.202396079	-0.335927278	0.27827109	0.706617298	1			
CC	0.307092287	-0.148453729	0.362171069	-0.114443629	-0.763539528	1		
ATO	0.215977955	-0.568284264	0.476444149	-0.137263581	-0.421798306	0.614344479	1	
GEAR	0.180386335	-0.651161295	0.577397689	0.219031462	-0.245485551	0.613621216	0.559070267	1

Pearson's Table

PEARSON'S CORRELATION COEFFICIENT r (Critical Values)

		Level of Significance for a One-Tailed Test										
		.05	.025	.01	.005	.0005	.05	.025	.01	.005	.0005	
		Level of Significance for a Two-Tailed Test										
df=(N-2)		.10	.05	.02	.01	.001	df=(N-2)	.10	.05	.02	.01	.001
1		0.988	0.997	0.9995	0.9999	0.99999	21	0.352	0.413	0.482	0.526	0.640
2		0.900	0.950	0.980	0.990	0.999	22	0.344	0.404	0.472	0.515	0.629
3		0.805	0.878	0.934	0.959	0.991	23	0.337	0.396	0.462	0.505	0.618
4		0.729	0.811	0.882	0.971	0.974	24	0.330	0.388	0.453	0.496	0.607
5		0.669	0.755	0.833	0.875	0.951	25	0.323	0.381	0.445	0.487	0.597
6		0.621	0.707	0.789	0.834	0.928	26	0.317	0.374	0.437	0.479	0.588
7		0.582	0.666	0.750	0.798	0.898	27	0.311	0.367	0.430	0.471	0.579
8		0.549	0.632	0.715	0.765	0.872	28	0.306	0.361	0.423	0.463	0.570
9		0.521	0.602	0.685	0.735	0.847	29	0.301	0.355	0.416	0.456	0.562
10		0.497	0.576	0.658	0.708	0.823	30	0.296	0.349	0.409	0.449	0.554
11		0.476	0.553	0.634	0.684	0.801	40	0.257	0.304	0.358	0.393	0.490
12		0.457	0.532	0.612	0.661	0.780	60	0.211	0.250	0.295	0.325	0.408
13		0.441	0.514	0.592	0.641	0.760	120	0.150	0.178	0.210	0.232	0.294
14		0.426	0.497	0.574	0.623	0.742	∞	0.073	0.087	0.103	0.114	0.146
15		0.412	0.482	0.558	0.606	0.725						
16		0.400	0.468	0.542	0.590	0.708						
17		0.389	0.456	0.529	0.575	0.693						
18		0.378	0.444	0.515	0.561	0.679						
19		0.369	0.433	0.503	0.549	0.665						
20		0.360	0.423	0.492	0.537	0.652						

