Strategic and Financial Valuation of Carlsberg A/S



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Executive summary

The main objective of this thesis was to determine the theoretical fair value of one Carlsberg A/S share on the 1st of March 2011.

Carlsberg A/S is the world's 4th largest brewery measured in sales volume and has acquired this position both through organic growth as well as acquisitions of its competitors as a part of the consolidation phase that the brewing industry has undergone in the past 10 years.

In order to obtain the necessary understanding of the company's business model, a strategic analysis was carried out both on an external as well as on an internal level. The strategic analysis showed that Carlsberg has a very strong product portfolio and one of its main strengths was innovation in regards to new products targeting new market segments. Being the 4th largest brewery in the world creates great economies of scale which are of importance. The strategic analysis also showed that the political and economical situation in Russia is of most threat to Carlsberg.

The strategic analysis was followed by a financial analysis which showed that all key financial drivers rose upon till 2008 when the recent economic crisis hit and Carlsberg at the same time acquired Scottish & Newcastle. From 2009 the key financial drivers showed improvements both due to Carlsberg being able to make use of the synergies created as a part of the acquisition along with an increase in revenue and lower borrowing costs.

The valuation was based on the DCF and EVA valuation models. Based on both models the theoretical fair price of one Carlsberg A/S share was determined to be DKK 649. This is 12.87% higher than the market price at the time indicating that the share is undervalued by the market participants.

As a valuation is bound with many assumptions and uncertainty a sensitivity analysis was conducted which showed that the theoretical share price was more sensitive to changes in the cost of capital than it was to changes in the growth factor.

As the valuation showed that the share was undervalued at the time the author therefore recommended investors to buy the share for long-term investments.

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1 Introduction

As the title of this paper indicates the theme for this Master Thesis is a strategic and financial valuation of Carlsberg A/S. Strategic and financial valuation has been a large part of what the author has focused on during his studies and therefore the author finds it very interesting to combine many of the theories studied during his studies in practice.

The reason why Carlsberg has been chosen as a case is that the author finds the industry that Carlsberg operates in, i.e. the brewing industry, very interesting.

The brewing industry has undergone a major consolidation phase during the last 10 years where the five largest breweries have increased their market share from 26.4% to 47.6% in 2010^{1} . Carlsberg was not a part of the top five breweries in 2000 but was the fourth largest brewery in the world in 2010, with a market share of $5.5\%^{2}$.

This they have achieved by a series of acquisitions, most notably by acquiring parts of Scottish & Newcastle and the acquisition of Baltic Beverage Holdings in 2008.

Carlsberg is a very dynamic company that operates in over 150 countries³. It is registered on the OMX Nordic, Copenhagen Stock Exchange, and is one of the largest companies in the OMX C20 index⁴. As a public company Carlsberg is obliged to publish all information that might influence their share price which makes it an ideal candidate for a thorough valuation.

And therefore the author would like to dig deeper into the knowledge and theory behind a strategic and financial valuation.

1.1. Problem formulation

Carlsberg's share price has undergone serious fluctuations in the last 3 years. From peaking in late 2007 at around 621.559 to dropping to a low of 151 in March 2009 to steadily rise again to 575 in March 2011^5 .

¹ Euromonitor (2011, p.12)

² Euromonitor (2011, p.11)

³ Annual Report (2009, p.1)

⁴ Bloomberg Professional, 2011

⁵ Bloomberg Professional, 2011

This is a decline of more than 75% followed by an increase of more than 380%. Not only has Carlsberg outdone the OMXC20 index, where it weighs around $7.58\%^6$ of the total index, but it has also outdone the MSCI index⁷ by more than 200% since 2009.



Figure 1: Indexed graph of the price development between Carlsberg, the OMXC20 index and the MSCI World Index

Source: Bloomberg - Daily closing prices 2005-2011, own production

Analysts strongly disagree as to why Carlsberg has managed to outdo the Indexes so much in the last 5 years.

One can assume that the sharp decline in 2008/9 was mostly caused by the global recession where commodity prices rose heavily and investors were afraid that the debt caused by the acquisition of Scottish & Newcastle and Baltic Beverages Holding would weigh them down.

However, as 2009 and 2010 passed commodity prices rose heavily⁸, which hit Carlsberg on the bottom line, Carlsberg managed to outdo the Indexes to such great extent.

⁶ www.nasdaqomxnordic.com

⁷ The MSCI World Index is a stock market index of over 6,000 stocks in developed markets.

⁸ Graph in section 3.1.2.4

Why is that?

This is one of the reasons why the author finds it interesting to do a strategic and financial valuation of the firm. What are the main value drivers that cause the company's share price to constantly rise?

According to Efficient Market Theory⁹ (EMT) all information is embedded into current prices and changes in prices are random, and will therefore not follow any patterns or trends. If this theory holds then there must be some significant value drivers driving the company's share price up.

Or could it be that the behavioral economists are right when they argue that markets are not perfectly efficient as EMT suggests?

Human errors and inabilities in interpreting market information devalue the EMT as studies have shown that regardless of the available information markets are not completely effective because investors many times do not behave rationally to given information.

This tells us that prices fluctuate more due to these human biases than if the market was completely efficient.

Given this information, the author wants to do his best in estimating Carlsberg's fair market value by analyzing all major factors that affect the company without any cognitive or any informative bias being included. If my own valuation differs a lot from the market price then some bias has occurred.

There will unfortunately always be some subjective assumptions when doing a fundamental analysis so if my own valuation differs a lot from the market price one might question whether the valuation has contributed to a more effective market or has been a victim of the behavioral economics.

The purpose of this thesis is to analyze Carlsberg's theoretical estimated fair value per share by analyzing the relevant conditions for the company's future growth and profitability prospects. In

⁹ Fama (1965, p.17)

order to be able to answer the problem statement the following sub questions need to be answered:

What have the trends been in the economy the last years and what will they be in the future?

What have the trends been in the industry the last years and what will they be in the future?

What effects will that have on Carlsberg's future growth and its profitability?

What are Carlsberg's internal strengths and weaknesses and how do these affect Carlsberg's future growth and profitability.

How has Carlsberg's accounting performance been over the last years? Have there been any significant value drivers?

What is the theoretical price of one Carlsberg share 01.03.2011?

When these questions have been answered it will be possible to draw a conclusion on the thesis overall purpose:

For the private investor, what is the theoretical fair value of one Carlsberg share 01.03.2011 and is it under- or overvalued in comparison with the traded price on the OMX Nordic Exchange?

1.2 Thesis Structure

This chapter will present the reader to how the thesis is structured and explain why the models used have been chosen in order to solve the problem formulation.



Source: Own production

The thesis is initiated with an introduction chapter and problem formulation. After the introduction a short introduction of Carlsberg A/S follows, where the author will describe different aspects of the company, its history, its business, the markets it operates in, ownership, management and economic situation as well as present some of its different products.

Hereafter a strategic analysis of Carlsberg will be performed. The strategic analysis aims at describing different non-financial future value drivers within growth and income in the three regions the company operates in. The analysis will be done using a "top-down" approach, where the author starts by looking at which macro effects will affect Carlsberg in the future, to looking at which micro effects will affect the company.

The macro analysis will be structured according to the PESTEL model. The PESTEL model aims at analyzing all the political, economical, sociological, technological, environmental and legal factors that might affect the market value of Carlsberg.

The reason for choosing the PESTEL model to analyze Carlsberg's Macro environment is that Carlsberg operates in over 150 countries divided into 3 regions with different Macro conditions that influence the company in many different ways.

In order to analyze the industry environment the author will use Porter's 5 forces model, which aims at analyzing the industry's competitiveness and attractiveness based on the following 5

parameters: threat of new entrants, threat of substitute products, bargaining power of suppliers, bargaining power of customers and the competitive rivalry within the industry.

The internal part of the strategic analysis will be based on discussions about which growth strategies Carlsberg should follow.

To sum up the strategic analysis the author will use SWOT analysis to analyze specific internal as well as external conditions, strengths, weaknesses, opportunities and threats that can affect Carlsberg.

Following the strategic analysis the author will perform a financial analysis (profitability analysis) of Carlsberg. In order to perform the analysis the author will reformulate Carlsberg's financial statements.

This is done in order to secure comparability between different statements. The author will use the financial analysis to identify key financial value drivers that impact Carlsberg as well as to calculate the company's profitability margin according to the DuPont model.

The results from the strategic and financial analysis will be used to create a budget for Carlsberg which will be used in the financial valuation.

The financial valuation will be based on the Discounted Cash Flow (DCF) model and the Economic Value Added (EVA) model. The DCF model is based on Carlsberg's future cash flows which are discounted to present. This model is one of the most used valuation models amongst professional analysts.

The EVA model will be used to estimate the company's economic profit. Thereafter the author will conduct a sensitivity analysis in order to test the calculated market value for changes in some of the key financial value drivers.

And finally the author will end with the overall conclusion.

1.3 Boundaries

As this is a valuation of Carlsberg no suggestion on future strategy improvements will be outlined. The sole purpose of the strategic analysis is to clarify Carlsberg's strategic position and direction with the purpose of their ability to execute the strategy in order to create value for their shareholders.

The author will only consider Carlsberg's Annual Reports since 2005 as the company changed its reporting standards in 2005 so that they would be in line with IFRS standards. Therefore Annual Reports from that time till today's date are easily comparable.

The valuation date is set to 1^{st} of March 2011. Information published after that date will not be considered even if they are assessed to have a significant impact on the valuation.

The thesis will only use the theories described above. Where applicable the author will give a short presentation of the models without going into detailed theoretical discussions.

The thesis will use the US standard instead of the European standard when expressing numbers, i.e. two point five is expressed 2.5 and one million is expressed 1,000,000.

The author will solely make use of secondary data in this thesis.

2 Carlsberg

In this chapter the author will present Carlsberg's history, ownership and management, its products and the markets the company operates in as well as its current economic situation.

2.1 History¹⁰

Carlsberg was founded in 1847 by the brewer J.C. Jacobsen, who was a pioneer within the brewing of lager beer, and was based on a small brewery he had inherited after his father had passed away in 1835.

Because of lack of space in Copenhagen he moved the brewery to the countryside into the top of a hill in Valby and renamed it Carlsberg, after his son Carl Jacobsen. In 1871 J.C. financed and built his son, Carl, a new brewery named New Carlsberg and at the same time renamed Carlsberg as Old Carlsberg.

In 1876 J.C. Carlsberg created The Carlsberg Foundation to manage the Carlsberg Laboratory and to support Danish scientific research. J.C. Jacobsen had the idea that his brewery ought not to be any larger than he himself could supervise and manage and therefore he gave his brewery to The Carlsberg Foundation.

In 1902 Carl Jacobsen founded The New Carlsberg Foundation which took full ownership of The New Carlsberg. The Old Carlsberg and New Carlsberg merged in 1906 under the name Carlsberg Breweries, just after The Old Carlsberg and Tuborg United Breweries had signed a formal agreement of cooperation in 1903, which was to last for 100 years, stating that the breweries were to still run independently and in competition but share all profits and losses and to participate equally in each other's investments in new installations.

Carlsberg had already in 1868 started exporting beer on a small scale which grew all up until the 1950s. The 1950s and the next two decades were characterized by a continuing growth in export of beer both in bottles and in bulk for local bottling.

In order to reduce the transport costs for shipment of bottled beer, agreements were signed with companies in Ireland, Gibraltar and Malta to bottle Carlsberg beer for their local markets. In 1966 Carlsberg beer was brewed for the first time outside Denmark in Cyprus.

¹⁰ Chapter is based on information found on <u>www.carlsberggroup.com</u> (Company – Heritage)

In 1970 Carlsberg and Tuborg merged under the name of The United Breweries A/S to later, 1987, change its name to Carlsberg A/S. The merged company was one of the world's leading exporters of beer, with an annual export of more than 2.5 million hectoliters of beer. The Carlsberg foundation became the majority shareholder of the merged company.

In 2001 Carlsberg A/S decided, as a part of its goal to become one of the 5 largest breweries in the world, to merge its brewing and soft drinks activities with one of Norway's largest listed companies, Orkla, into a new company named Carlsberg Breweries A/S.

Carlsberg owned 60% of the merged company and Orkla 40%. In 2004 Carlsberg A/S bought the remaining 40% of Carlsberg Breweries A/S and became the sole owner of the company.

In 2008 Carlsberg along with Heineken bought the 6^{th} largest brewery in the world, Scottish & Newcastle (S&N). As a part of the acquisition Carlsberg and Heineken split the company amongst themselves.

Carlsberg received full control over Baltic Breweries Holding (BBH) which they owned 50% of before, acquired the French market leader Kronenbourg, the Greek Brewery Mythos and significant shares in Chongqing Brewery Company in China and a new Greenfield brewery in Vietnam.

The acquisition cost Carlsberg 57 billion DKK and was partially financed by issuing new share rights and by short-term debt. The acquisition substantially strengthened Carlsberg's position as one of the world's leading breweries.

In 2008 Carlsberg moved its industrial beer production to Fredericia. This was an end of an era for the company as it had been producing it's beer in the facilities in Valby since 1847. However, Carlsberg still produces it's specialty beers at the production facilities in Valby as well as keeping its headquarters there.

2.2 Ownership

Carlsberg has decided to split its share capital into two classes of shares, Carlsberg A and Carlsberg B. Both share classes are listed on NASDAQ OMX Copenhagen Stock Exchange.

Both share classes have a par value of DKK 20 but Carlsberg A carries 20 votes per share whereas Carlsberg B only carries 2 votes per share but is entitled to a preferential dividend.¹¹

The share capital value of Carlsberg is roughly DKK 3 billion divided into 33,699,252 Carlsberg A shares and 118,857,554 Carlsberg B shares.¹²

The largest shareholder in Carlsberg A/S is The Carlsberg Foundation. According to its statutes it should at all times own at least 25% of Carlsberg's combined share capital and hold 51% of the votes. On 31st of December 2010 the Foundation held 32,422,077 A shares and 13,841,895 B shares or approximately 30% of the total share capital and approximately 74% of the votes.¹³

As a part of the acquisition of Scottish & Newcastle in 2008, Carlsberg successfully carried out a share issue aimed at existing shareholders, where they doubled the share capital. As a part of the rights issue the Carlsberg Foundation altered its statutes so that instead of having to own at least 51% of the issued share capital the Foundation only had to hold at least 25% but keep over 51% of the votes.¹⁴

The single largest shareholder after the Carlsberg Foundation is Fidelity Management and Research Company. At the end of 2010 Carlsberg had more than 56,000 registered capital holders spread over the whole world.¹⁵



GB 18%

2.3 Organization



DK 21%

Carlsberg sells its products in over 150 countries and employs on average more than 43,000 employees. Carlsberg has decided to split its organization according to three regions, Northern and Western Europe, Eastern Europe and finally Asia. These are the three regions it operates in, i.e. where the company has some brewing activities. Northern and Western Europe have then further been split into Northern Europe and Western Europe.

¹¹ www.carlsberggroup.com (Investor – Shares)

¹² www.carlsberggroup.com (Investor – Shares)

¹³ Annual report (2010, p.46)

¹⁴ Annual report (2008, p.59)

¹⁵ <u>www.carlsberggroup.com</u> (Investor – Shares)



Source: www.carlsberggroup.com, own production

2.4 Management¹⁶

The Supervisory Board, headed by Poul Krogsgaard-Larsen as Chairman of the Board, consists of 12 members, 8 of which are elected in the General meetings and 4 who are elected by employees. Five of the eight elected by the General Meeting sit on the Board of Carlsberg's majority shareholder, The Carlsberg Foundation.

The Executive Committee consists of 10 members: the Regional heads for each of the regions along with the Deputy CEO, Head of Group Supply Chain, Head of Sales & Marketing and Innovation, Head of Human Resources, Head of Group Communications and CSR.

The Executive Committee is headed by Jørgen Buhl Rasmusen since 2007. He was appointed to the Executive Board of Carlsberg A/S in 2006 and is the Chairman, Deputy Chairman or member of the Supervisory Boards of Carlsberg Group companies.

¹⁶ <u>www.carlsberggroup.com</u> (Company – Management)

The Deputy CEO is Jørn P. Jensen. He was appointed to the Executive Board of Carlsberg A/S in 2000. He has been CFO since 2004 and Deputy CEO since 2007. He sits as Chairman, Deputy Chairman or member of the Supervisory Boards of Carlsberg Group companies.

The role of the Executive Committee is to drive Carlsberg's strategic development and ensure that there are clear objectives across the organization.

2.5 Strategy¹⁷

The Carlsberg Group is characterized by a high degree of diversity of brands, markets and cultures. The Group's strategy aims at embracing the three regions the company operates and competes in.

The Group's overall strategy and ambition is to be the fastest growing global beer company – measured in terms of average organic growth in net sales and growth in operating profit over a three year period.

The overall strategy is identical in all of the three regions but is adapted to each region in order to reflect local conditions. In order to achieve this goal the company has identified five closely linked core priorities providing a clear direction for the entire Company.



Source: Annual report (2010, p.22)

In each of those five core priorities there are certain guidelines which will be described below.

People: Carlsberg aims at recruiting and retaining talent and to continuously develop the competences of the work force, driving a performance culture and to inspire a leadership culture based on trust, ownership and diversity.

Efficiency: Carlsberg aims at improving efficiency and adjusting and optimizing costs in all markets by concentrating more activities in fewer locations to benefit from economies of scale as well as

¹⁷ Annual report (2010, p.22 – p.29)

optimizing and simplifying its product portfolio by aligning packaging strategy for more markets which leads to more flexibility and reduced costs.

Structure and society: Carlsberg aims at being a significant player, either as a market leader or as a strong number two, in the markets they choose to compete in and balance the presence between growth and mature markets. They aim at sharing best practice between all markets and induce and integrate Corporate Social Responsibility throughout the whole value chain.

Products and innovation: The core competences of Carlsberg are within cereals/grain, yeast, fermentation and brewing and as such Carlsberg drives its growth by innovating and producing primarily beer.

Consumers and customers: Carlsberg's aim is to revitalize Carlsberg and grow through a winning portfolio of international premium and strong local brands and to excel in all commercial areas with an emphasis on route-to-market and superior outlet execution.

2.6 Markets¹⁸

As previously mentioned, Carlsberg sells its products in more than 150 countries both through own breweries and through export and licensing agreements with other brewers. Carlsberg has also entered into licensing agreements with other breweries to produce and distribute their products.

Carlsberg has decided to split the marketplaces in which they operate into three regions, Northern and Western Europe, Eastern Europe and Asia. There is substantial difference in both the maturity and growth opportunities in the beer market between these three regions as will be described below. Figure 6: Northern and Western Europe

2.6.1 Northern and Western Europe

The Northern and Western Europe region is Carlsberg's largest region. This part of the portfolio consists both of a series of mature beer markets and less mature markets in the Eastern part of the region.



Source: Annual report (2010, p.3)

¹⁸ Based on information found in Annual reports and on <u>www.carlsberggroup.com</u>

Carlsberg is the region's second largest brewer with market leader positions in a large number of countries and significant market positions in other countries. In countries where Carlsberg has no breweries, the Group sells its products through exports and licensing agreements.

The region is considered to be the most modern region of the three regions Carlsberg operates in, with stagnating or falling growth rates and stable prices.

After several years of flat market share development, Carlsberg gained volume and market share in the region in 2010. This was mainly driven by strong performance in markets such as the UK, Poland, Denmark, South East Europe, Greece and Norway, while Carlsberg's market share in Sweden and the Baltics declined.

The overall strategic objective for the region is to increase profitability and generate free cash flow, which is to be achieved through streamlining and cost reduction programs as well as an increased focus on revenue growth through value management, innovation and improved commercial execution.



Figure 7: Northern and Western Europe, Strategic objectives, targets and strategies

Source: www.carlsberggroup.com - Company - Strategy, own production

Carlsberg's market development in the region since 2005 is shown in the figure below.

Table 1: Northern and Western Europe

Northern and Western Europe	2005	2006	2007	2008	2009	2010
Net revenue bn DKK	26.3	27.2	27.4	37.1	36.4	36.1
Operating profit bn DKK	2	2.4	2.7	4	4.2	5.1
Operating margin	7.6%	8.8%	9.9%	10.8%	11.6%	14.1%

Source: Annual Reports 2005-2010, own production

2.6.2 Eastern Europe

Eastern Europe is Carlsberg's largest market based on volume, Figure 8: Eastern Europe i.e. 44% of the group's total volume derives from Eastern Europe.

In 2008 Carlsberg finalized the acquisition of a part of Baltic Beverages Holding (BBH), which in 2009 contributed substantially to the group's earnings.



The region is a growth region despite short-term negative Source: Annual report (2010, p.4) impact from the economic crisis. The region is characterized by strong consumer dynamics, by consumers generally aspiring to brands and a distribution environment still in its developing stages.

Carlsberg is the largest brewer in the region holding strong market leader positions in Russia and all other markets in the region except for the Ukraine. Russia is clearly the region's largest market.

Carlsberg's market share was unchanged in 2010 compared to 2009, 39.7%, but still higher than in 2008 where Carlsberg had a market share of 28.8%. In 2009 the Russian beer development was weaker than anticipated due to the weak macroeconomic environment which affected consumer behavior.

2010 was a challenging year for the Russian beer market as the Russian Government increased its excise duty by 200%. This led to very high consumer price increases and less predictable market dynamics. The duty increase led to substantial stock-building in 2009 which had a negative impact on 2010.

Carlsberg increased its marketing budget by double-digit percentages to support its brands and new product introductions which along with very warm weather led to all markets in the region growing in the second half of 2010.

The overall strategic objective for the region is to ensure profitable growth by balancing value and volume and continue the buildup of the smaller and new markets.



Figure 9: Eastern Europe, Strategic objectives, targets and strategies

 $Source: \underline{www.carlsberggroup.com} - Company - Strategy, own production$

Carlsberg's market development in the region since 2005 is shown in the figure below.

Table 2: Eastern Europe

Eastern Europe	2005	2006	2007	2008	2009	2010
Net revenue bn DKK	9.9	11.4	14.6	19.1	18.5	18.1
Operating profit bn DKK	1.6	1.9	2.8	4.1	5.3	5
Operating margin	16.2%	16.7%	19.2%	21.5%	28.5%	27.8%

Source: Annual Reports 2005-2010, own production

2.6.3 Asia

Asia comprises old, mature Carlsberg markets as well as Figure 10: Asia new emerging beer markets in China, Indochina and India.

The Asian beer markets are characterized by large populations, growing economies, rising income per capita and improving infrastructure. 13% of the Group's volume derives from the Asian market.

The Asian markets were less affected by the global economic crisis and the Group's beer volumes continued to



Source: Annual report (2010, p.4)

grow throughout 2010 both with high organic growth and revenue growth as well as strong margin improvement.

In 2009 Carlsberg started construction of two Greenfield breweries, one in India and one in Vietnam.

In 2010 Carlsberg increased its shareholdings in Nepal and in two of their businesses in China, as well as opening its fifth brewery in India and commencing production at a new brewery in Vietnam.

The overall strategic objective of the Asian region is to continue to develop the business so that the region can supplement Eastern Europe as an additional growth engine for the Group. In the less mature markets of Asia, Carlsberg's goal is to concentrate on generating growth that increasingly will be more balanced between volume and value.





Source: www.carlsberggroup.com - Company - Strategy, own production

Carlsberg's market development in the region since 2005 is shown in the figure below.

Asia	2005	2006	2007	2008	2009	2010
Net revenue bn DKK	1.6	2.3	2.5	3.6	4.2	5.6
Operating profit bn DKK	0.4	0.3	0.3	0.5	0.7	1
Operating margin	25.0%	13.0%	12.0%	13.9%	15.8%	18.6%

Table 3: Asia

Source: Annual Reports 2005-2010, own production

2.7 Products¹⁹

Carlsberg has an extensive product range producing more than 500 different brands, international, regional, and local brands which are targeting a wide range of price segments, consumer groups and geographies.

¹⁹ <u>www.carlsberggroup.com</u> (Brands)

Carlsberg's brands are priced in four segments, discount, mainstream, premium and superpremium.

The size of each segment varies substantially between markets and the product portfolio is led by four brands that Carlsberg designates as international, Baltika, Carlsberg, Kronenbourg 1664 and Tuborg.

Baltika is the leading Russian beer brand. It was introduced in 1992 and has made impressive progress in the dynamic Russian beer market. It is considered as a beer of high quality brewed on classic methods.

The Baltika brand has a wide range of brand extensions, each with their own individual characteristics which are differentiated by its number. It is produced throughout Russia and exported to over 50 countries and it is the number one beer brand in Europe in terms of sales.

Carlsberg Pilsner was launched in 1904 and is the flagship in the Group's portfolio of beers. It is a leading international beer brand and is the most distributed brand in the portfolio and is available in 140 countries.

It has been growing fast over the past years and was in 2008 the fifth largest international premium beer brand in the world with a total volume above 12.3 mHL. Carlsberg Pilsner is known as the beer of football and has sponsored many clubs as well as international tournaments.

Kronenbourg 1664 is the best selling super-premium beer in France and the UK, as well as being the world's best known French beer. The brand has over 350 years of heritage and Kronenbourg 1664 has been produced since 1952.

Kronenbourg is the fifth oldest beer brand in the world that still exists today. Kronenbourg 1664 became a part of the Carlsberg Group's product range as part of the acquisition of Scottish and Newcastle.





Tuborg Pilsner is mainly targeted at the younger population and supports different musical and cultural events in many countries.

It has been brewed since 1880 and is the number one brand in Denmark and Norway and is present in more than 70 different countries. Since the launch of Tuborg Green in the Russian market, the Tuborg brand has grown almost 800% in volume.

Premium and super-premium brands are proving less sensitive to difficult economic conditions than standard and economy products and as a result, these brands are central to Carlsberg's expansion strategy.

2.8 Economy²⁰

Carlsberg delivered very strong financial results in 2010. As the year progressed Carlsberg started to see improving trends in all three regions compared to 2009 when most markets were impacted by the global economic crisis.

Carlsberg's net revenue rose again in 2010 to DKK 60,054m after a slight decrease to DKK 59,382m in 2009. The decrease in 2009 was mostly due to the global economic crisis. On the chart below one can see that Carlsberg's net revenue has increased by 58% since 2005.

The most significant changes are in 2008 where net revenue increased by 34%, from DKK 44,750 M in 2007 to DKK 59,944m in 2008. This was mostly due to the acquisition of Scottish & Newcastle in January 2008.

Dividing net revenue down, in the three regions Carlsberg operates in, one can see that in 2010 and 2009 net revenue decreased in Northern and Western Europe as well as Eastern Europe while in Asia Carlsberg has seen a steady increase in net revenue throughout the years.

TUBOR

²⁰ Based on Annual reports 2005-2010





Source: Annual reports 2005-2010, own production

In the figure below one can see that in 2010 Eastern Europe's and Asia's share of Carlsberg's total net revenue has increased compared to 2005 on the cost of Northern and Western Europe's share of Carlsberg's total net revenue.





Source: Annual reports 2005 and 2010, own production

Operating profit grew in 2010 by 9% to DKK 10,249m from DKK 9,390m in 2009 and DKK 7,978m in 2008. In the table below one can see that Carlsberg has more than tripled its operating

profit in Eastern Europe between 2005 and 2010, from DKK 1,618M in 2005 to DKK 5,048M in 2010.

Northern and Western Europe have increased its operating profit significantly in the same period, although not at the same growth rate. Eastern Europe counted in 2009 for 52% of the Group's total operating profit but in 2010 that decreased to 45% due to the excessive stock building in late 2009 which had a positive impact on the 2009 results by DKK 300m while having DKK 300m negative impact on the 2010 results.



Figure 14: Operating profit

Source: Annual reports 2005-2010, own production

Deleveraging has been a high priority in the recent years, after the acquisition of Scottish & Newcastle in 2008 which was partly financed by debt, and in 2010 net debt was further reduced. At the end of 2010 net debt amounted to DKK 32,743m compared to DKK 35,679m at the end of 2009 and DKK 44,156m at the end of 2008. On the graph below one can see the development in net debt since 2005. There it can clearly be seen that Carlsberg increased its debt by more than 223% in 2008.





Source: Annual reports 2005-2010, own production

When looking at 2011 all efforts to drive revenue and market share growth will be carefully balanced with the continuous efforts to improve operational and capital efficiencies. The Group expects market share growth in markets to represent 2/3 of its business, high single-digit percentage growth in operating profit and adjusted net profit growth of more than 20%.

3 Strategic Analysis

The aim of doing a strategic analysis is to describe and identify different non-financial value drivers, external as well as internal, that affect Carlsberg's future growth and earnings potential.

The author will start by looking at Carlsberg's macro environment and identifying which macro effects will affect Carlsberg in the future. The macro analysis will be structured according to the PESTEL model. The macro analysis will be followed by an industry analysis which aims at analyzing the competition and attractiveness within the industry Carlsberg operates in. The industry analysis will be structured according to Porter's five forces model.

The external analysis will be followed with a discussion about which growth strategies Carlsberg follows and should follow in the future.

The strategic analysis will be summarized in a SWOT analysis.

3.1 PESTEL Analysis

In order to analyze the different key macro environmental factors that Carlsberg does not have direct influence on but which affect the industry and as well as Carlsberg I will use the PESTEL model.²¹ The PESTEL model aims at analyzing all the political, economical, sociological, technological, environmental and legal factors that might affect the market value of Carlsberg.





Source: Own production

²¹ Lynch (2003, p.92)

3.1.1 Political Factors

Public health issues have increasingly been on the politicians' mind during the last years. This has led to increased focus and rising concerns about the health impact of alcohol consumption. Politicians have because of this been trying to reduce the general alcohol consumption by legislating more restrictive alcohol policies and increasing their alcohol taxes.

In many countries there is a general prohibition for advertising alcohol to minors. There are however, large differences between most countries. In France it is for example prohibited to advertise beer in connection to sports arrangements²². In Russia the President has proposed a legislation prohibiting all advertisement of beer²³. A legislation prohibiting all advertisement of alcohol would have big consequences for Carlsberg in the Russian market.

In 2006 the EU adopted the first Alcohol Harm Reduction Strategy²⁴. This strategy contains measures to obtain more restrictive alcohol policies. Although most western European countries are members of the European Union (EU), taxes and charges vary across most countries.

According to numbers from the Brewery Association of Denmark beer excise and VAT is generally higher in Northern and Western Europe than in Southern- and Eastern parts of Europe. There is in fact a 28.5 times difference in beer excise and VAT between Norway, which has the highest beer excise and VAT in Europe, and Romania, which has the lowest beer excise and VAT in $Europe^{25}$.

In order to comply with the Alcohol Harm Reduction Strategy many countries have been increasing their alcohol taxes. This would, all other things equal, lead to lower sales of alcohol and would therefore lead to lower revenue for breweries and hence to a lower market value.

It is important to remember that beer excise and VAT also serve as a source of funding for governments. One can therefore argue that governments will in the future increase beer excise and VAT in order to finance their budget deficits.

 ²² www.redorbit.com
²³ www.themoscowtimes.com

²⁴ www.euphix.org – Alcohol Harm Reduction Strategy

²⁵ Bryggeriforeningen (2010, p.15)

In 2009 the Russian Government decided to increase excise duty on beer from 2010 by 200% and in 2011 and 2012 by 11% and 20% respectively²⁶. This is a large threat to Carlsberg's revenue as Russia is as previously mentioned, Carlsberg's largest single market. Carlsberg decided to increase the price of its products by approximately 25% to offset the 200% excise duty increase. This did not hurt the company's revenue as was expected, mostly because not only did Carlsberg's competitors increase their prices as well but as said before there were favorable market conditions in the Russian market in 2010 and demand remained high.

Smoking just as alcohol is something that politicians, due to health reasons, have been trying to reduce in the general public. In many European countries politicians have banned smoking in any indoor public place, such as restaurants, clubs and pubs.

This political interference against smoking is not something that is aimed at the alcohol branch directly but indirectly hurts the industry as a large part of the breweries' sales comes from ontrade places, i.e. restaurants, clubs and pubs.

Where smoking has been banned in public places many smokers opt not to go to these places which has lead to decreased consumption of alcohol.²⁷ As more countries ban smoking in public places this will prove to be a challenge for Carlsberg.

3.1.2 Economic Factors²⁸

The global economic crisis has had mixed consequences for the brewery industry. In 2009 most of the markets Carlsberg operates in were negatively impacted by the crisis while in 2010 the group has seen improving trends for all the regions driven by improved macro-economic environments.

The level of prosperity measured as gross domestic product (GDP) has an impact on the purchasing power of a country's population which again has an effect on the country's beer market. In the table below one can see the GDP levels in 2010 for each of the regions Carlsberg operates in.

 ²⁶ www.carlsberggroup.com (Investor –News – "Bill to raise excise duty on Beer in Russia")
²⁷ Gallet & Eastman (2007, p.1)

²⁸ GDP figures from <u>www.imf.org</u> (World Economic Outlook Database – October 2010)

Table 4: GDP per capita measured in USD

Northern and Western Europe									
GDP in USD per	capita 2010								
Bulgaria	5,955								
Croatia	13,528								
Denmark	55,113								
Estonia	14,417								
Finland	43,134								
France	40,591								
Germany	40,512								
Greece	27,265								
Hungary	13,210								
Italy	33,829								
Latvia	10,378								
Lithuania	10,765								
Norway	84,543								
Poland	11,522								
Serbia	5,262								
Sweden	47,667								
Switzerland	67,074								
United Kingdom	36,298								
Average	31,170								

Eastern Eu GDP in USD per	irope capita 2010
Azerbaijan	5,765
Belarus	5,607
Kazakhstan	8,326
Russia	10,522
Ukraine	3,003
Uzbekistan	1,336
Average	5,760

Asia											
GDP in USD per capita 2010											
Cambodia	795										
China	4,283										
Hong Kong SAR	31,799										
India	1,176										
Laos	984										
Malawi	354										
Malaysia	7,755										
Nepal	536										
Singapore	42,653										
Sri Lanka	2,365										
Vietnam	1,156										
Average	8,532										

Source: www.imf.org, Own production

Below the author will describe how the economic situation is in each of the three regions Carlsberg operates in and the development in GDP and its future estimates.

3.1.2.1 Northern and Western Europe

As can be seen in the below table the Northern and Western Europe region has been hit relatively hard by the economic crisis as GDP growth has decreased substantially. There is however, some difference between the countries. The countries in the southern and Baltic part of the region have been hit relatively harder than the countries in the northern part. It is especially the current debt crisis the countries in the southern part of the region are facing, which is creating uncertainty about the future economical situation.

	Northern and Western Europe											
Country	2005	2006	2007	2008	2009	2010E	2011E	2012E	2013E	2014E	2015E	Average
Bulgaria	6.2%	6.3%	6.2%	6.0%	-5.0%	0.2%	2.0%	4.0%	4.0%	5.0%	5.0%	3.6%
Croatia	4.2%	4.7%	5.5%	2.4%	-5.8%	0.2%	2.5%	3.0%	3.0%	3.0%	3.0%	2.3%
Denmark	2.4%	3.4%	1.7%	-0.9%	-5.1%	1.2%	1.6%	2.6%	2.6%	2.3%	2.3%	1.3%
Estonia	9.4%	10.0%	7.2%	-3.6%	-14.1%	0.8%	3.6%	3.3%	3.2%	3.3%	3.3%	2.4%
Finland	2.9%	4.4%	4.9%	1.2%	-7.8%	1.3%	2.2%	2.2%	2.2%	2.1%	2.1%	1.6%
France	1.9%	2.4%	2.3%	32.0%	-2.2%	1.5%	1.8%	2.0%	2.1%	2.2%	2.2%	4.4%
Germany	0.7%	3.2%	2.5%	1.2%	-5.0%	1.2%	1.7%	2.0%	1.8%	1.6%	1.2%	1.1%
Greece	2.2%	4.5%	4.5%	2.0%	-2.0%	-2.0%	-1.1%	0.2%	1.0%	0.5%	1.4%	1.0%
Hungary	3.5%	3.9%	1.0%	0.6%	-6.3%	-0.2%	3.2%	4.5%	4.0%	3.5%	3.0%	1.9%
Italy	0.7%	2.0%	1.5%	-1.3%	-5.0%	0.8%	1.2%	1.5%	1.4%	1.3%	1.3%	0.5%
Latvia	10.6%	12.2%	10.0%	-4.6%	-18.0%	-4.0%	2.7%	3.8%	3.9%	3.9%	4.0%	2.2%
Lithuania	7.8%	7.8%	9.8%	2.8%	-15.0%	-1.6%	3.2%	3.1%	2.8%	2.8%	2.9%	2.4%
Norway	2.7%	2.3%	2.7%	1.8%	-1.5%	1.1%	1.8%	1.9%	1.9%	2.0%	2.0%	1.7%
Poland	3.6%	6.2%	6.8%	5.0%	1.7%	2.7%	3.2%	3.9%	4.0%	4.0%	4.0%	4.1%
Serbia	5.6%	5.2%	6.9%	5.5%	-2.9%	2.0%	3.0%	5.0%	5.5%	5.5%	5.0%	4.2%
Sweden	3.3%	4.2%	2.6%	-0.2%	-4.4%	1.2%	2.5%	3.0%	3.5%	3.4%	2.3%	2.0%
Switzerland	2.6%	3.6%	3.6%	1.8%	-1.5%	1.5%	1.8%	1.8%	2.0%	2.0%	2.0%	1.9%
United Kingdom	2.2%	2.9%	2.6%	54.8%	-4.9%	1.3%	2.5%	2.9%	2.8%	2.7%	2.5%	6.6%

Table 5: Northern and Western Europe – GDP growth

Source: www.imf.org, own production

As table 4 shows the level of prosperity is higher in the region than it is in the other regions Carlsberg operates in. As for the future, GDP is expected to grow at a moderate rate in all of the countries in the region.

All things equal one must therefore expect that as GDP increases and thereby the general level of prosperity rises which will increase the sale of beer. However, as it is hard to predict the future and the world might see another global economic crisis in the nearest future, there is great uncertainty about GDP growth rates which could influence the sale of beer in the region.

3.1.2.2 Eastern Europe

As discussed earlier the Eastern Europe region is a very important region for Carlsberg. In the below table one can see that the region has been hit very hard by the recent economic crisis and some countries in the region experienced large decreases in GDP.

	Eastern Europe											
Country	2005	2006	2007	2008	2009	2010E	2011E	2012E	2013E	2014E	2015E	Average
Azerbaijan	26.4%	34.5%	25.0%	10.8%	9.3%	2.7%	0.6%	3.0%	2.7%	7.8%	0.7%	11.2%
Belarus	9.4%	10.0%	8.6%	10.0%	0.2%	2.4%	4.6%	5.3%	6.1%	6.5%	6.6%	6.4%
Kazakhstan	9.7%	10.7%	8.9%	3.2%	1.2%	2.4%	4.2%	5.6%	5.9%	6.5%	6.5%	5.9%
Russia	6.4%	7.7%	8.1%	5.6%	-7.9%	4.0%	3.3%	3.7%	4.1%	4.4%	5.0%	4.0%
Ukraine	2.7%	7.3%	7.9%	2.1%	-15.1%	3.7%	4.1%	5.1%	5.1%	5.1%	4.0%	2.9%
Uzbekistan	7.0%	7.3%	9.5%	9.0%	8.1%	8.0%	7.0%	6.5%	6.0%	6.0%	6.0%	7.3%

Table 6: Eastern Europe – GDP growth

Source: www.imf.org, own production

The region's level of prosperity measured as GDP is lower than the average GDP in Northern and Western Europe. This indicates that the region is more sensitive to economic development which again means that the citizens have less disposable income which all other things equal will lead to lower sales of beer.

It is expected that the region will experience larger growth rates in GDP than Northern and Western Europe which with all things equal should increase the sales of beer.

As Russia is such a large part of the region and as it is such a valuable market for Carlsberg it is important that the Russian economy comes well out of the crisis. However, there are certain risk factors, such as a high crime rate, corruption etc, that if not handled correctly could mean that the country's economy will not blossom as expected.

3.1.2.3 Asia

Asia was not his as hard as the other regions by the economic crisis. There is however a large difference in the level of prosperity between the countries that have a developed economy and the developing countries in the region. As can be seen in table 4 the level of prosperity in the developing countries is well below the average level in Eastern Europe.

Asia												
Country	2005	2006	2007	2008	2009	2010E	2011E	2012E	2013E	2014E	2015E	Average
Cambodia	13.3%	10.8%	10.2%	6.7%	-2.5%	4.8%	6.8%	6.2%	6.0%	6.1%	6.8%	6.8%
China	10.4%	11.6%	13.0%	9.6%	8.7%	10.0%	9.9%	9.8%	9.7%	9.6%	9.5%	10.2%
Hong Kong	7.1%	7.0%	6.4%	2.1%	-2.7%	5.0%	4.4%	4.2%	4.2%	4.2%	4.2%	4.2%
India	9.2%	9.8%	9.4%	7.3%	5.7%	8.8%	8.4%	8.0%	8.1%	8.1%	8.1%	8.3%
Laos	6.8%	8.6%	7.8%	7.8%	7.6%	7.2%	7.4%	6.7%	7.4%	7.4%	9.2%	7.6%
Malawi	3.3%	13.6%	1.2%	9.4%	8.0%	6.0%	6.3%	6.6%	6.8%	7.1%	7.1%	6.8%
Malaysia	5.3%	5.8%	6.2%	4.6%	-1.7%	4.7%	5.1%	5.3%	5.2%	5.1%	5.0%	4.6%
Nepal	3.5%	3.4%	3.3%	5.3%	4.7%	3.0%	4.0%	4.2%	4.4%	4.7%	4.8%	4.1%
Singapore	7.6%	8.7%	8.2%	1.4%	-2.0%	5.7%	5.3%	5.1%	4.7%	4.6%	4.5%	4.9%
Sri Lanka	6.2%	7.7%	6.8%	6.0%	3.5%	5.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.2%
Vietnam	8.4%	8.2%	8.5%	6.2%	5.3%	6.0%	6.5%	7.0%	7.2%	7.4%	7.5%	7.1%

Table 7: Asia - GDP growth

Source: www.imf.org, own production

It is expected that the growth in GDP will be higher than in the other regions, which will increase the general level of prosperity and all other things equal this will increase the region's disposable income and hence will be an important growth market for Carlsberg.

3.1.2.4 Financial Risk²⁹

Carlsberg is exposed to a variety of financial risks. Most important are foreign exchange risk, interest rate risk and raw material risk.

As previously described a significant part of Carlsberg's activities takes place outside Denmark and in currencies other than DKK.

Foreign exchange risk is therefore one of the most important financial risks for Carlsberg as exchange rate fluctuations can have a significant impact on the Group's income and profit, as revenue and purchases are translated into Carlsberg's functional currency, DKK.

Carlsberg has chosen generally not to hedge the exposure from translation of revenue or income in foreign currencies, but does in certain cases hedge specific cash flows such as dividends to be received in foreign currencies.

²⁹ Based on Carlsberg's Annual reports (2005-2010)





Source: Annual reports 2008-2010, own production

On the graph above one can see that the most part of Carlsberg's revenue comes from RUB and EUR followed by DKK and GBP. Due to Denmark's fixed exchange rate policy towards EUR the exposure to fluctuations in EUR/DKK is considered insignificant. As such, Carlsberg is mainly exposed to RUB and fluctuations in the RUB/DKK exchange rate can have a significant impact on the Group's revenue and income.





Source: Bloomberg - Daily Closing Rates 2005-2011, own production

As seen above, the DKK/RUB exchange rate has undergone some serious fluctuations during the last few years. Since 2005 the Russian Central Bank has been strengthening the RUB in an attempt to fight the increasing inflation the country experienced at the time. However in the fall of 2008, as a result of the global economic crisis, the Russian Central Bank was forced to devalue the RUB which meant that the DKK/RUB rate went from 45.8222 to 62.8167 in just three and a half months. The RUB has though from that time till March 1st 2011 settled at around the 50 - 55 level.

Up until the economic crisis commodity prices rose significantly. However, as a result of the crisis they fell sharply but in 2010 are back in line with what they were before the crisis. Carlsberg mostly purchases aluminium for the production of cans and bottles, malt for the production of beer and energy. On the graph below one can see the price development in commodity prices since 2005 until March 1st 2011.


Figure 19: Commodity prices Daily Closing Rates

Source: Bloomberg - Daily Closing Rates 2005-2011, own production

As the underlying markets for the specified categories of commodities vary, the way they are hedged against price increases vary as well. The most common form of hedging is fixed-price agreements in local currencies with suppliers. As a part of the hedging process Carlsberg hedges the whole exposure for 2011 through fixed-price purchase agreements in 2010 so eventual price increases in 2011 will first have an impact in 2012.

As a part of the acquisition of S&N in 2008 Carlsberg significantly increased its debt as previously discussed. As a result of this more than 75% of Carlsberg's debt is in EUR, and the rest is primarily in GBP, USD and DKK. A large part of this debt had floating rates but in 2010 Carlsberg managed to refinance many of its loans so that in 2010 the division between floating rates and fixed rates in the debt portfolio was brought to 17% and 83% respectively, compared to 38% and 62% respectively in 2009. The average floating rate in 2010 was 1.98% compared to 1.66% – 1.73% in 2009.

Carlsberg is exposed to interest rate risk, due to being partly financed by debt, which is mainly managed using interest rate swaps and fixed-rate bonds. As the current global economic situation is unsecure there is uncertainty about the development of interest rates. Hikes in interest rates will lead to Carlsberg having to pay higher interest rates on its floating-rate debt which will have a negative impact on the Group's financing costs.

3.1.3 Social Factors

In recent years consumer trends have been changing rapidly. There has been a general tendency amongst consumers, especially in Northern and Western Europe, to focus more on their health and a healthier lifestyle³⁰ which has affected the beer market in the way that consumers are becoming more aware of what they consume and hence are not consuming as much as before of traditional beer. Carlsberg along with other breweries has reacted to these changed consumer preferences by introducing several low-calorie variants of its beers in order to appeal to health-aware consumer.

Alcohol traditions vary greatly across the regions and countries Carlsberg operates in. In Northern and Western Europe the beer market is mostly mature with a strong beer culture. The countries in the region generally have high beer consumption per capita, but the tendency the last years has been a decline in beer consumption. Consumers have moved from drinking traditional lager beers to either drinking wine, or niche premium beers.

Eastern Europe has historically had high alcohol consumption per capita but beer consumption has however been a relatively low part of the alcohol consumption. In recent years beer consumption has been increasing at the cost of stronger spirits as a result of Eastern Europeans adapting to a more Western European lifestyle. As the general beer consumption per capita is lower than in Western Europe one can assume that there is room for increased beer consumption in the region in the future.

Consumer behavior has been changing in the Asian market in the recent years. Consumers have started drinking more beer at the cost of stronger spirits along with the Asian population adapting to a more Western lifestyle and disposable income increasing. An increase in beer consumption

³⁰ Euromonitor (2010, p.27)

along with an immature market is one of the reasons Asia can supplement Eastern Europe as one of Carlsberg's most important markets.

The world's population is becoming generally older³¹ which has an impact on beer consumption as the core beer consumer is a male between the ages of 20 years and 39 years old. This has forced Carlsberg to look for new drinking occasions and target groups. Carlsberg has expanded its product portfolio with beers with a taste of fruit and bubbles, which are targeted at women. This has proven to be a successful strategy and shows how Carlsberg needs to constantly adapt its product portfolio and innovate new products to attract more consumers.

3.1.4 Technological Factors

Although the production of beer has not changed so much since it was first brewed the technology used is constantly developing. In order to preserve its competitiveness and secure that production costs are as low as possible Carlsberg needs to constantly keep investing in new production facilities. As a part of Carlsberg's overall strategy the aim is to improve efficiency by adding more activities in fewer locations to leverage scale. As a part of this strategy Carlsberg modernized its production facilities in Fredericia, Denmark, in 2008 in order to compile all its Danish production sites in one.

Product innovation plays a large part in Carlsberg's differentiating strategy, and it sets aside many resources in order to work on, not only product development, but also on the packaging of its products in order to benefit from its economies of scale and to respond to the ever changing consumer preferences.

3.1.5 Environmental Factors

During recent years the general public has become more and more environmentally conscious. This has resulted not only in the general public being more conscious of what they are buying and from which companies, but also influenced politicians to set legislations in forms of extra duties and higher taxes on companies that pollute, and especially production companies.

³¹ UN: World population prospects 2010

As a large part of the general public and consumers demand that companies take responsibility for the environment, it has become almost a synonym with good business ethics and a tool in order to gain a competitive advantage to declare the company eco-friendly.

In 2008 Carlsberg incorporated Corporate Social Responsibility (CSR) into its corporate strategy. The aim was to establish a global framework for CSR that can be adapted and used locally throughout the whole value chain.³²

In 2010 the CSR policies were introduced across the whole organization. The focus has been on creating awareness among employees through communication and training, which has resulted in structural changes such as increased focus on health and safety on the work floor. Carlsberg has developed a measurement scale to evaluate how far each company has progressed in implementing the policies. Based on this information, necessary actions will be initiated to further align all companies with the CSR Corporate Strategy.

In 2010 Carlsberg has set 3-year targets for the whole group in regards to being environmentally conscious and energy saving. In the below figure one can see some of the very ambitious targets Carlsberg has for the whole group.³³

CSR area	2009 performance	2010 performance	2013 targets
Water	3.7 hl/hl	3.5 hl/hl	3.2 hl/hl
CO2	8.9 kg CO₂/hl	8.7 kg CO ₂ /hl	8.2 kg CO₂/hI
Energy	32.2 kWh/hl	32.3 kWh/hl	29 kWh/hl

Table 8: CSR Performance

Source: Annual Report (2010, p.30), own production

3.1.6 Legal Factors

Legal factors are closely linked to the Political Factors previously discussed above in this PESTEL analysis. Therefore the focus in this part of the analysis will be on some of the specific legal issues Carlsberg faces and not the political debate on those legal issues, some of which were described in part 3.1.1.

³² Annual report (2008, p.56

³³ Annual report (2010, p.30)

The brewing industry is generally subject to very strong laws that in many cases are due to governments bearing social responsibility for its citizens. In many countries it is illegal to sell or serve alcohol to young people. In many countries companies are not allowed to market alcohol aimed at young consumers, and in some countries it is strictly forbidden to market alcohol altogether. All this legislation reduces Carlsberg's revenue opportunities.

The brewery industry is subject, as all other industry, to competition laws. That means that many acquisitions are not possible as competition laws prohibit them as Carlsberg would otherwise achieve a monopoly on the specific markets. In 1996 the British competition authorities banned Carlsberg-Tetley³⁴ and Bass Breweries to merge as they concluded that this merger would create such competitive disadvantages on the market that the company would have a monopoly situation in the UK.³⁵

3.2 Industry Analysis

In the previous section the author looked at Carlsberg's macro environment and identified which macro effects will affect Carlsberg in the future. In the following section the author will conduct an industry analysis which aims at describing which specific industry conditions affect the brewing industry and which five forces determine the competitive intensity and attractiveness of the industry. The industry analysis will be structured according to Porter's five forces model and will include the following five elements: The threat of new entrants, the threat of substitute products, the bargaining power of customers, the bargaining power of suppliers and the overall competitive rivalry within the industry³⁶.

³⁴ Carlsberg-Tetley was established in 1992 when Carlsberg and Allied-Lyons signed an agreement to merge their brewing activities

³⁵ www.carlsberggroup.com (Company – Heritage)

³⁶ Porter (1980, p.4)





3.2.1 The threat of new entrants

It requires a significant amount of capital to establish and maintain a modern beer brewery from scratch. A lot of capital is required to be invested in production facilities and a good distribution system, not to mention marketing in order to gain a position in the market. In an industry like beer brewing there are large economies of scale in most parts of the value chain, e.g. access to commodities, production, distribution and marketing. It would therefore be difficult for new players to enter into the low price segment, where the margins are low and cost benefits and economies of scale are a vital element. One can therefore imagine that the threat of new entrants is either from small microbreweries or from existing breweries entering new geographical markets.

There has been a significant increase of micro-breweries in the modern world over the recent years. Those micro-breweries most often concentrate on high-end products, i.e. niche beers, where the entry barriers are lower as there is not as much need for high capital and marketing. Carlsberg has answered this increased niche threat by starting up its own micro-brewery, Jacobsen. Jacobsen is a separate unit within the Carlsberg Group, but benefits from the Group's economies of scale in terms of access to research and development, distribution channels and Carlsberg's own commodity suppliers.

The second threat, i.e. from existing large breweries entering new geographical markets, either through mergers and acquisition, licensing agreements or building of new production facilities,

plays a larger role, as Carlsberg would have to react to this threat in order not to lose market share.

One can therefore conclude that there are high entry barriers to the beer market for new entrants, but lower entry barriers for existing breweries entering new markets

3.2.2 The threat of substitute products

Generally speaking beer has many substitute products as it is a beverage. Not only other alcohol beverages such as wine, spirits, etc. but also anything you can drink, e.g. coffee, juice, water, cola, etc.

As switching costs for the consumer are not high Carlsberg needs to do its best to maintain its current position. In many parts of the world wine is a direct substitute for beer, so an increase in demand for wine would directly impact the demand of beer.

As mentioned in chapter 3.1.3 there are large differences in beverages consumption within each of the three regions Carlsberg operates in. In many cases it derives from what the culture in the specific countries is.

In Europe there are large differences in what consumers prefer to drink. In countries such as Spain, Italy and France wine has for a long time been the preferred alcohol whereas in countries like Belgium, Germany and the UK beer has been the preferred alcohol.

In Asia and Eastern Europe strong spirits have for a long time been preferred rather than beer, but the consumption pattern has been changing in the last decade to the favor of the brewing industry³⁷.

3.2.3 The bargaining power of customers

Carlsberg does not deal directly with the end user. Carlsberg's customers are mainly retail, restaurants and the entertainment industry. Detail clients are mainly a few large clients, due to the consolidation of supermarkets. Hence they have a strong bargaining position.

³⁷ WHO: Global Status Report on Alcohol and Health 2011

As the beer market is a market with very homogeneous products and low switching costs for the customer, one can assume that the customer has a strong bargaining position. The customer's power increases if they are indifferent in regards to which kind of beer they choose.

The larger difference between different kinds of beer, e.g. different taste or the image of the beer, the larger the buyers' switching costs will be. If the buyers make use of their bargaining power it will most of the time be through discounts or extra service which in the end will cost Carlsberg on the bottom line.

As earlier said, Carlsberg positions itself on the market as a producer of premium beer, this will all other things being equal give Carlsberg a better bargaining power over its customers, rather than if they had positioned themselves as a producer of discount beer. Typically, producers of discount beers are very price sensitive and will therefore not be able to lower their prices in a price war.

As there are some major differences in the customer bargaining powers between the three regions Carlsberg operates in, each one of them will be discussed separately.

Northern and Western Europe is a mature market with many end-users where consumption has been falling.³⁸ There are only a few large distributors and a few large breweries but many different brands. The distributors therefore have many different brands to choose from but in the end it is the end-consumer that decides which brands the distributors sell.

In Eastern Europe there are few distributors and few but large breweries. As previously mentioned Russia is Carlsberg's main market in Eastern Europe and its primary brand is Baltika. As Baltika is twice as popular as its nearest competitor ³⁹ the distributors are almost bound to have Baltika in their product range and therefore their bargaining power is low.

As previously said the Asian market is growing strongly. That is due to many different reasons, amongst other things the strong economic growth in the region and the change in consumer consumption from strong spirits to beer. As the growth rates are so high the breweries have a strong bargaining power over the customer.

 ³⁸ Annual report (2010, p.12)
 ³⁹ Annual report (2008, p.66)

3.2.4 The bargaining power of suppliers

The beer market's prime suppliers are farmers. Most breweries buy their supplies on the relevant countries' futures exchange. Hence the branch has an opportunity to diversify its risk by trading futures contracts as well as hedging other risks.

Carlsberg has chosen to ensure the delivery of their most important ingredients for beer production through the 100% owned Danish Malting Group. This strategy reduces the bargaining power of suppliers against Carlsberg significantly.

In the case of a global harvest failure the bargaining power of suppliers will be extremely high. However, this will not only affect Carlsberg but also its competitors. This might result in lower sales of beer and hence lower profit which is not appealing to any brewery.

There are only a few large suppliers of aluminium cans, plastic and glass bottles, which increases the suppliers' bargaining power. However, taken into consideration that Carlsberg is the world's fourth largest brewery⁴⁰ one can assume that the suppliers of those goods have a large incentment in having Carlsberg as a customer and will therefore provide them with the best possible price, in order to keep them as a customer.

3.2.5 Competitive rivalry within the industry

During the years from 2001 - 2010 the brewing industry has seen a series of consolidation within the 10 largest brewers. They have gone from having a combined market share in 2001 of 38.6% to 60.5% in 2010^{41} . This has been partly achieved through organic growth but primarily it has been driven by mergers and acquisitions as well as joint-ventures between the breweries. In the below table one can see the 10 largest breweries based on volume in 2010.

⁴⁰ Euromonitor (2011, p.11)

⁴¹ Euromonitor (2011, p.12)

Table 9: Market share based on volume

Market share based on	volume
Company	Market share
A-B InBev	18.6%
SABMiller	9.5%
Heineken	8.7%
Carlsberg	5.5%
China Resources	5.0%
Tsingtao Brewery	3.4%
Grupo Modelo	2.8%
Beijing Yanjing Brewery	2.6%
Molson Coors	2.6%
Kirin Holdings	1.8%
Total	60.5%

Source: Euromonitor (2011, p.11), own production

Overall it can be said that the rivalry in the brewery industry is mediocre. This is due to the fact that on the largest markets there are a few large global competitors that can make use of economies of scale and have a well established distribution network.

Western Europe has a high competitiveness as the growth in the region has been stagnating for the last couple of years. This has not only happened to Carlsberg but to all the players in the market. Therefore in order to grow the firms have had to either buy their competitors to gain more market share or fight hard on the marketing side which costs a lot of cash.

Eastern Europe Russia is by far Carlsberg's most important market. As said before, Russia stands for around 85% of the revenue from the region and as Carlsberg is the market leader, after the acquisition of BBH, it is very likely that they will have to fight hard to defend and increase their market share whilst other large breweries try to gain a foothold in the region.

Due to Asia's high growth rates competitive rivalry in the region is strong. Although the region is a relatively new beer market, the high growth rates mean that the competition is strong and the threat from new competitors is big.

3.3 Growth strategies

As described earlier, although Carlsberg has one overall strategy, there are different strategies for each of the three regions the company operates in.⁴²

In Northern and Western Europe the value growth agenda focuses on obtaining and using better consumer insights, and improved in-store execution. The target is to have an operating margin of 15-17% and to increase efficiency and value creation.

In Eastern Europe the aim is to ensure an operating margin of 26-29% and profitable growth through balancing the value growth and volume growth, and roll out of Excellence programs in order to realize synergies.

In Asia the goal is to continue to develop the business so that it can become a growth platform and secure an operating margin of 15-20% by balancing the value growth and volume growth, and focus on realizing synergies.

On the more modern beer markets in Northern and Western Europe there are limited possibilities to realize revenue growth within the traditional beer segment. As volume growth has fallen in recent years Carlsberg needs to either gain market share from its competitors and/or focus more on the sale of premium and super premium beer and other alcoholic beverages.

By expanding the product portfolio to those two segments Carlsberg will manage to counteract the stagnating beer sales on the more mature markets.

Carlsberg expects 2011 to be the year in which profitable market share growth will be driven by innovations, investments in key brands, combined with new initiatives, improved route-tomarket models and continued value and channel management efforts.

Carlsberg expects market share growth in markets representing 2/3 of its business, high singledigit percentage growth in operating profit and adjusted net profit growth of more than 20%.⁴³

 ⁴² Annual report (2010, p.3)
 ⁴³ Annual report (2010, p.9)

3.4 Partial Conclusion

Figure 21: SWOT analysis

Strengths	Weaknesses
 Strong product portfolio Due to its size large economies of scale 	 Intense competition in Northern and Western Europe as well as in Asia Almost non-existing in Northern America as well as in Latin America
Strong position in Russia	 America as well as in Latin America and Africa Due to the shareholder structure the opportunities to grow through
Good at innovating new products	acquisitions is limited
Opportunities	Threats
 Still room for growth in Russia and to expand to more countries in Eastern Europe 	 The macro economic situation in general
 Opportunities for large growth in China and rest of Asia 	Political risk, especially in Russia
 By focusing more on the premium segment for growth on more mature markets 	Currency fluctuations, especially in RUB
 By streamlining the business even more there is room for improvements 	 General tendencies in health awareness
	Intensified competition
	 Higher duties on beer will lower consumption

Source: Own production

The above SWOT analysis combines the most important topics from the strategic analysis. Carlsberg has a number of strategic advantages over its main competitors, first and foremost its strong product portfolio and its economies of scale.

Russia is Carlsberg's single largest market and Carlsberg has a strong position in the market. There is still room for growth in the market but as the political and economical situation in Russia is so unstable there is a high risk involved with focusing solely on Russia. It is important that Carlsberg intensifies its focus on the other market places in Eastern Europe and in Asia.

The intensified competition in the industry might have an effect on Carlsberg's future growth opportunities, which is why it is important that Carlsberg keeps on focusing on streamlining the whole organization in order to cut costs.

4 Financial Analysis

In this chapter the author will conduct a financial analysis of Carlsberg. The aim of this chapter is to create a clear overview of Carlsberg's financial profitability and identify Carlsberg's core financial drivers and key financial ratios.

In order to conduct a financial analysis it is important that the reported financial statements need to be reformulated. This is done in order to separate operating activities and financing activities apart as the operating activities are a central part for creating value for the future, whereas the financing activities show how the operating activities are financed.

The core financial drivers will thereafter form a basis for the following budgeting chapter.

4.1 Accounting Policies

In order to conduct the financial analysis it is important to ensure that the financial statements used are identical for the whole period that is being analyzed.

As of 1st of January 2005 Carlsberg has submitted its financial statements in accordance with International Financial Reporting Standards (IFRS), issued by the IASB, as adopted by the EU and Danish disclosure requirements for listed companies, cf. the statuary order pursuant to the Danish Financial Statement Act⁴⁴.

Carlsberg's accounting policies have not changed in the period and the company has informed that adopting new IFRS-standards, as required by law, has not had significant changes on its financial statements. The author finds it therefore not necessary to make adjustments to the reported financial statements to ensure comparability for the period.

All of Carlsberg's annual reports for the period are approved by independent auditors, KPMG, and give a true and fair view of Carlsberg's financial position in accordance with IFRS as adopted by the EU and Danish disclosure requirements for listed companies.

⁴⁴ Annual report (2005, p.35)

4.2 Equity statement

The purpose of reformulating the equity statement is to make sure that all changes in equity are included in the following analysis, instead of just using the net result from the income statement as the net result does not include value changes incorporated directly on the equity.

By reformulating the equity statement one separates the postings in the equity statement into transactions with the company's shareholders and total income. In order to find the value changes in the balance sheet one must identify the so called dirty surpluses in the equity statement.

The below formula shows the relationship between equity EOY (end of year) and equity BOY (beginning of year):

EquityEOY = EquityBOY + / - total income + / - changes in owner's equity

Carlsberg's own Equity statement for 2010 can be seen below as well as a summary of the reformulated equity statements for 2005 - 2010. In Appendix 1 the equity statements for 2005-2009 are shown as well as the full reformulated equity statements.

	St	atemen	t of chang	ges in equity	1					2010
DKK Million	Share	Curre	ncy Hedgin	Available g for Sale	e Tota	1	Retained	Total share capital	Minority	Total
Equity at 1. January 2010	3,051	- 10,5	78 - 1,384	146	- 11,816		63,594	54,829	4,660	59,489
Total comprehensive income for the year, cf. Separate statement		- 4,5	29 230) 1	4,760		5,228	9,988	1,043	11,031
Acquisition/disposal of treasury shares	-		-	-	-	-	9	- 9	-	- 9
Exercise of share options				-			38	- 38		- 38
Share-based payment	-			-			34	34		34
Dividends paid to shareholders	-	-	-	-	-	-	534	- 534	- 709	- 1,243
Acquisition of minority interests	-		-		-	-	22	- 22	- 55	- 77
Acquisition of entities				-			-	-	442	442
Total changes in equity		- 4,5	29 230) 1	4,760		4,659	9,419	721	10,140
Equity at 31 December 2010	3,051	- 15,1	07 - 1,154	147	- 7,056		68,253	64,248	5,381	69,629

Table 10: Equity Statement

Source: Annual Report (2010, p.58), own production

Reformulated Equity statement	2005	2006	2007	2008	2009	2010
Equity BOY	16,792	19,496	18,987	19,944	59,901	59,489
Transactions with shareholders	- 519 -	· 522	- 884	29,232	- 845 -	- 1,290
Total income excluding minority interests	3,209	33	1,526	10,475	128	9,301
Other	14 -	- 20	315	250	305	2,129
Changes in Equity	2,704 -	509	957	39,957	- 412	10,140
Equity EOY	19,496	18,987	19,944	59,901	59,489	69,629

Table 11: Summary of reformulated equity statements

Source: Annual Reports 2005-2010, own production

As can clearly be seen, transactions with shareholders are not significant apart from 2008 where Carlsberg increased its capital significantly as a part of the acquisition of S&N. Dirty surplus covers amongst others retirement benefit obligations, foreign exchange adjustments of foreign entities and value adjustments of hedging instruments.

4.3 Balance sheet⁴⁵

The traditional balance sheet is not organized for robust assessments of operating performance and value as it mixes together operating assets, non-operating assets and sources of financing. The traditional balance sheet constructed by the most fundamental rule of accounting:

$$Assets = Liabilities + Equity$$

Assets consist primarily of operating assets (OA), such as receivables, inventory and property, plant and equipment. Liabilities consist of operating liabilities (OL), such as accounts payable and accrued salaries, and interest bearing debt (D), such as notes payable and long-term debt. Equity (E) consists of common stock, possibly preferred stock, and retained earnings. One can therefore derive from the previous formula for the balance sheet to the below formula:

Operating Assets = Operating Liabilities + Debt + Equity

However, as the traditional balance sheet equation mixes operating liabilities and sources of financing one must rearrange the formula to separate them. That leads to invested capital:

Operating Assets - Operating Liabilities = Invested Capital = Debt + Equity

⁴⁵ Koller et.al (2010, p.134)

This equation reflects more accurately capital used for operations and the financing provided by investors to fund those operations.

The main objectives of reformulating the balance sheet is to find the drivers behind return on equity (ROE) and growth which will be used later in the thesis when performing the budgeting analysis as well as the valuation itself.

The below table shows that there is a large increase in operating assets in 2008. That is mainly due to goodwill, which is counted under intangible assets, increasing as a result of the acquisition of S&N. It is also evident from the table that the acquisition increased Carlsberg's financial liabilities significantly in 2008.

Table 12: Reformulated balance sheets

Reformulated balance sheet. Mio DKK	2005	2006	2007	2008	2009	2010
Operating assets	h					
Intangible assets	20,672	21,279	21,205	84,091	81,611	87,813
Property, plant and equipment	20,355	20,367	22,109	34,052	31,825	32,420
Investment in associates	1,105	579	622	2,224	2,667	4,877
Deferred tax assets	1,005	822	733	1,254	1,483	1,301
Fixed assets total	43,137	43,047	44,669	121,621	117,586	126,411
Inventories	2,866	3,220	3,818	5,228	3,601	4,191
Trade receivables	7,214	7,247	7,817	8,076	7,502	7,434
Tax receivables	132	84	62	262	175	172
Other receivables	3,015	1,145	1,453	3,095	1,750	1,766
Prepaiments	587	917	950	1,211	666	938
Retirement benefit plan assets	21	14	11	2	2	8
Cash (1% of net revenue)	380	411	448	599	594	601
Total operating assets	57,352	56,085	59,228	140,094	131,876	141,521
Operating liabilities						
Retirement benefit obligations and similar obligations	2,061	2,006	2,220	1,793	2,153	2,434
Deferred tax liabilities	2,362	2,425	2,191	9,885	9,688	9,929
Provisions non-current	195	366	249	1,498	1,353	1,506
Provisions current	561	466	494	677	1,092	512
Trade payables	4,513	5,147	5,833	8,009	7,929	9,385
Deposits on returnable packagaing	1,224	1,159	1,207	1,455	1,361	1,279
Corporation tax	720	187	197	279	411	534
Other non-current liabilities	65	54	20	263	746	922
Other current liabilities	5,174	4,856	5,611	9,905	10,845	11,378
Total operating liabilities	16.875	16.666	18.022	33,764	35.578	37,879
Invested Canital (OA - OL)	40 477	39 419	41 206	106 330	96 298	103 642
	40,477	33,413	41,200	100,550	50,230	103,042
NWC	-2,660	-3,628	-3,464	-15,291	-21,288	-22,769
Financial assets						
Securities (non-current)	2,710	170	123	118	94	124
Securities (current)	109	8	34	7	17	34
Cash (for financial activities)	1,860	2,079	1,802	2,258	2,140	2,134
Financial assets held for sale	328	109	34	162	388	419
Financial assets total	5,007	2,366	1,993	2,545	2,639	2,711
Financial Habilities	25.070	22 707	22.254	40 504	20.207	26.546
Non-current and current borrowings	25,978	22,191	23,254	48,521	39,397	36,546
Liabilities associated with assets held for sale	10	1	0	453	51	1/8
Financial liabilities total	25,988	22,798	23,254	48,974	39,448	36,724
Net financial liabilities	20,981	20,432	21,262	46,429	36,809	34,013
Equity capital	19,496	18,987	19,944	59,901	59,489	69,629
Debt + Equity = Invested capital	40,477	39,419	41,206	106,330	96,298	103,642

Source: Annual Reports 2005-2010, own production

4.4 Income statement

Carlsberg's official income statement shows how the company incurs its revenues and expenses through both operating and non-operating activities. It is important to reformulate the official income statement so that it will show net operating profit less adjusted taxes (NOPLAT) which is the after-tax profit generated from core operations, excluding any gains from non-operating assets or financing expenses, such as interest. NOPLAT is the profit that is available to all investors, i.e. providers of debt, equity etc. whereas net income of the profit is only available to equity holders.

The important things to keep in mind when calculating NOPLAT is that:

- Interest is not subtracted from operating profit, because interest is considered a payment to the company's financial investors and not an operating expense, and by reclassifying interest as a financing item, NOPLAT becomes independent of the company's capital structure.
- 2) All non-operating income generated from assets that have been excluded from invested capital should be excluded when calculating after-tax operating profit.
- 3) Reported taxes are calculated after interest and non-operating income and are therefore a function of non-operating items and capital structure. NOPLAT must be focused only on operations and therefore the effects of interest expense and non-operating income must be removed from taxes. To calculate operating taxes one must therefore start with the reported taxes, add back the tax shield caused by interest expense, and remove the taxes paid on non-operating income. The resulting operating taxes should be equal to the hypothetical taxes that would be reported by an all-equity, pure operating firm.⁴⁶

Below, the reformulated income statements can be seen as well as calculations of taxes on operating and financial activities.

⁴⁶ Koller et.al (2010, p.134)

Table 13: Reformulated income statements

Reformulated income statements, Mio DKK		2005	1	2006	;	2007	i.	2008	2	2009		2010
Net revenue		38,047		41,083		44,750	9	59,944		59,382		60,054
Cost of sales less depreciation	-	17,213		18,420	-	20,776	-	28,736	-	27,616		26,254
Gross profit		20,834		22,663	ŝ.	23,974	8	31,208		31,766		33,800
Sales and distribution expenses	-	12,578	•	13,256	-	13,621	•	16,775		15,141	•	16,321
Administrative expenses	-	2,585	•	2,724	-	2,817	•	3,632	•	3,523		3,618
Other operating income		876		660		933		1,178		554		815
Other operatinge expenses	-	465	•	393	-	448	-	450		599		588
Special items		665		154		318	-	1,309		613		474
Share of profit after tax, associates	Ŀ,	232		85		101		81		112		148
Operating profit before special items (EBITDA)		6,979		7,189	2	7,804	2	10,301	_	12,556	_	14,710
Depreciation, amortisation and impairment losses	Ľ	3,847		3,303		2,969		3,964		3,861		4,710
Operating profit before interest and tax (EBIT)		3,132		3,886	ŝ.	4,835	2	6,337	_	8,695	_	10,000
Taxes (of operating profit)		868		1,098	•	1,338		552	•	2,286	•	2,424
Net operating profit less adjusted taxes (NOPLAT)		2,264		2,788	5	3,497		5,785	_	6,410	_	7,576
Financial income		548		725		651		1,310		609		1,085
Financial expenses	-	1,788	-	1,582	-	1,852	•	4,766	-	3,599	-	3,240
Net financial items	-	1,240		857	+	1,201	-	3,456		2,990	•	2,155
Net financial items after taxes		893	•	617	•	901	•	2,592	•	2,243	•	1,616
Consolidated profit		1,371		2,171	l	2,596		3,193		4,167		5,960
Attributable to Non-controlling interests		261	•	287		299		572		565		609
Net profit		1,110		1,884	8	2,297	1	2,621		3,602		5,351

Source: Annual Reports 2005-2010, own production

Table 14: Calculation of taxes

Calculation of taxes on operating and financial activities		2005		2006		2007	200	8	2009	2010
Tax rate		28%		28%		25%	259	6	25%	25%
Reported taxes	•	521 -	-	858	-	1,038	312	-	1,538 -	1,885
Financial items, net	÷.,	1,240 ·	-	857	-	1,201 -	3,456	-	2,990 -	2,155
Tax of financial items (Tax shield)	-	347 -	-	240	-	300 -	864	-	748 -	539
Operating taxes		868 -	-	1,098	-	1,338 -	552	-	2,286 -	2,424
Net financial items after tax	-	893 -	-	617	-	901 -	2,592	-	2,243 -	1,616

Source: Annual Reports 2005-2010, own production

4.5 Profitability analysis

In the following section the author will conduct a profitability analysis of Carlsberg. A profitability analysis is based on the reformulated income statement and balance sheet. A profitability analysis establishes where the firm is at present time and defines the key financial drivers that drive current Return on Equity (ROE).

The profitability analysis is structured according to the DuPont model. The DuPont model breaks return on equity (ROE) into three parts.⁴⁷

The profitability analysis will start by focusing on the operating profitability, and there after the author will expand it in order to look at how financial leverage has an effect on the overall profitability.

The author will not expand the DuPont model to the 3rd level.



Figure 22: The DuPont Model

Source: Penman (2010, p.372), own production

⁴⁷ Penman, (2010, p372)

4.5.1 Return on Invested Capital (ROIC)

ROIC measures how effectively a company is to generate positive returns from the capital under its control. ROIC is composed of Net Operating Profit less adjusted taxes divided by Invested Capital. As explained before NOPLAT and invested capital exclude all non-operational activities, and are therefore independent of capital structure.

Return on Invested Capital (ROIC) = $\frac{\text{Net Operating Profit less adjusted taxes (NOPLAT)}}{\text{Invested Capital}}$

All other things equal, the higher a company's ROIC, the more value the company's operations create and hence the higher the value of the company.

In order to determine if ROIC has been satisfactory, one can compare the return on the invested capital with the return investors claim. The weighted average cost of capital (WACC), measures the investors' expected rate of return on the market value of the company's securities.

WACC is also an important factor in regards to the final valuation of Carlsberg, as it is a discounting factor in the Free Cash Flow. Calculations of WACC will follow in chapter 6. In chapter 6 WACC is estimated to be 6.83%.

When ROIC and WACC have been found, one can calculate the Economic Value Added (EVA) according to the below formula.⁴⁸

EVA is only positive as long as the accounted profit, compared to the invested capital, is higher than the WACC. However, if ROIC is less than WACC, the company is not profiting enough from the invested capital in order for the owners of the capital to be compensated for the risk they take by providing the company with capital. In such cases the company decreases in value.

⁴⁸ Peterson & Plenborg (2005, p. 152)

The figure below shows the relationship between ROIC and WACC for Carlsberg for the analyzed period, 2005-2010.⁴⁹



Figure 23: Relationship between ROIC and WACC

As can be seen Carlsberg's ROIC has been in the range of 5.44% and 8.49% in the analyzed period and in 2005, 2008 and 2009 it has been lower than WACC. Based on the assumption that the calculated WACC was the same for the whole period one can conclude that in 2005, 2008 and 2009 Carlsberg was not able to compensate the owners of capital for the risk they took.

4.5.1.1 Decomposition of ROIC

In order to understand ROIC fully, it is important that one looks at what is behind the numbers: Profit Margin and the Asset Turnover.⁵⁰

Source: Own production, based on calculations from annual reports 2005-2010

⁴⁹ Calculations can be found in Appendix 2

⁵⁰ ROIC = PM * ATO

Profit Margin:

Profit Margin is calculated as follows:⁵¹

$$Profit Margin (PM) = \frac{\text{Operating Profit after tax (OP)}}{Net Revenue (NR)} * 100$$

The Profit Margin reveals the profitability of each krone of sales in percentage. A Profit Margin of 20% shows that the company generates 20 øre in profit of every 1 krone that is generated. All things equal a high Profit Margin is desired for every company.

Asset Turnover:

Asset Turnover is calculated as follows:⁵²

Asset Turnover
$$(ATO) = \frac{\text{Net Revenue (NR)}}{\text{Invested Capital (IC)}}$$

Asset turnover measures the company's ability to generate revenue from the Invested Capital. If used as an inverse, i.e. 1/ATO = IC/NR, it shows the amount of Invested Capital which is used to generate 1 krone of sales. If the ATO is 2 it means that for every 1 krone invested in the company, revenue of 2 krones is generated. All things equal, it is attractive for a company to have a high ATO.

⁵¹ Penman (2010, p.371) ⁵² Penman (2010, p.371)



Figure 24: Relationship between Profit Margin and Asset Turnover

Source: Own production, based on calculations from annual reports 2005-2010

As can be seen on the figure above the Profit Margin has risen steadily in the analyzed period which indicates that Net Profit has increased more than Net Revenue.⁵³ As it has risen more in 2009 and 2010 this might indicate that Carlsberg has managed to make use of the synergies created as a result of the acquisition of S&N in 2008.

Asset Turnover fell between 2007 and 2008 with around 50% which is connected with the significant increase in Invested Capital in 2008 in accordance with the shares emission when Carlsberg acquired S&N. In 2009 ATO showed improvements but in 2010 ATO has almost fallen back to the 2008 level.

4.5.2 Decomposition of Financing Activities

The above analysis focused on the operating profitability of Carlsberg. In the following part the author expands the analysis according to the DuPont-Model to also consider the effects of Financial Leverage (FLEV) on the company's profitability. This is essential as Return on Equity (ROE) is made up of both ROIC and FLEV. ROE measures the return on capital to the owners of the equity invested in Carlsberg.

⁵³ Calculations can be found in Appendix 2

The calculation of ROE can be expressed by the following formula:

$$ROE = ROIC + (ROIC - NBC) * \frac{NFO}{CSE}$$

Where:

(ROIC – NBC) is the operating spread referred to as SPREAD

NBC = *Net borrowing cost and is calculated as Net Financial Items after taxes/Common shareholder Equity*

NFO/CSE = Net Financial Obligations/Common shareholder equity, referred to as FLEV

In the below table ROE and its components are shown for the analyzed period.

Table 15: Components of ROE

	2005	2006	2007	2008	2009	2010
Return on Invested Capital (ROIC)	5.59%	7.07%	8.49%	5.44%	6.66%	7.31%
Net Borrowing Cost (NBC)	4.58%	3.25%	4.52%	4.33%	3.77%	2.32%
ROIC - NBC = SPREAD	1.01%	3.82%	3.97%	1.11%	2.89%	4.99%
Financial Leverage (FLEV)	1.08	1.08	1.07	0.78	0.62	0.49
Return on Equity (ROE)	6.68%	11.19%	12.72%	6.30%	8.44%	9.75%

Source: Own production, based on calculations from annual reports 2005-2010

As can be seen in the table above Carlsberg has had positive leverage in the analyzed period although it has been falling since 2008. As FLEV measures the degree to which Net Operating Assets are financed by common equity the higher the FLEV all things equal the higher the ROE will be.

From the table above one can see that ROIC has constantly been higher than the NBC, although the SPREAD decreased significantly in 2008. The higher NBC in 2007 and 2008 is closely linked to the recent economic crisis, mentioned previously in the thesis, which has meant that it has been more expensive to borrow capital. Carlsberg has though been able to keep its ROIC above NBC in this period and hence has been able to create more return for its shareholders than they would otherwise have received.



Figure 25: Components of ROE

4.6 Partial Conclusion

In this chapter the author conducted a financial analysis of Carlsberg in order to create a clear overview of Carlsberg's financial profitability and indentify Carlsberg's core financial drivers and key financial ratios.

The author started by reformulating the official financial statements published by Carlsberg. This was done in order to separate operating activities and financing activities as the operating activities are a central part for creating value for the future, whereas the financing activities show how the operating activities are financed.

Thereafter the author conducted a Profitability analysis on the basis of the reformulated financial statements. The Profitability analysis showed that the Return on Invested Capital (ROIC) was positive and relatively stable throughout the analyzed period.

Source: Own production, based on calculations from annual reports 2005-2010

The decomposition of the ROIC showed that Carlsberg's Profit Margin (PM) increased through all the years in the analyzed period.

The decomposition of Carlsberg's financing activities showed that the Return on Equity (ROE) decreased along with ROIC and the SPREAD decreasing in 2008. In 2009 and 2010 Carlsberg was able to turn this around resulting in higher ROE.

The overall tendency in the financial analysis is that there was an increase in all key financial drivers until 2008 when the economic crisis hit and at the same time Carlsberg acquired S&N but from 2009 Carlsberg has been able to make use of the synergies created due to the acquisition along with an increase in revenue and lower borrowing costs and this has resulted in more positive results.

Forecast 5

In order to conduct a complete valuation one must conduct a forecast, i.e. estimate future cash flows in order to be able to determine the present value of them. The forecast is based on the strategic analysis and the financial analysis, as well as being inspired by the average consensus estimates from world recognized analysts covering Carlsberg.⁵⁴

The forecast is performed based on the reformulated balance and income statements. The forecast development is based on the knowledge gained while conducting the strategic and the financial analysis.

5.1 Forecast assumptions

The valuation models used in this thesis demand that one forecasts the company's development for all future. However, as that is very difficult in practice it is recommended that the forecast be split into two parts: the explicit forecasting period and a terminal period.

In the explicit forecasting period one tries to forecast the company's proforma statements relatively detailed, by combining the knowledge gained in the strategic and the financial analysis, while in the terminal period one assumes that the company has reached a "steady state" where the company will grow at a constant rate.

For high cyclical companies and companies experiencing very rapid growths a longer forecasting period is recommended than for branches expecting lower growth and a somewhat constant revenue level.55

The forecasted period will be 5 years which is chosen, as a longer period raises the difficulty of forecasting individual items for a longer time into the future. As such this chapter will include a forecast for 2011 - 2015 and 2016 will be the year that Carlsberg is assumed to have reached a steady state.

It is of course not given that Carlsberg will reach a steady state in 2016, but making the explicit forecast period longer will create more uncertainty in the valuation which in turn will not make the valuation any better.

 ⁵⁴ www.carlsberggroup.com (Investor – Analysts & Estimates)
 ⁵⁵ Sørensen (2009, p.316)

5.2 Net Revenue

As the growth forecasts for each of the three regions Carlsberg operates in are different, it is essential that each of the regions is forecast separately.

5.2.1 Northern and Western Europe

Low positive sales growth can be expected during the next years. In 2011 the author expects the negative growth to have turned to positive growth, based on forecasts of GDP per capita increasing in the region. This is also based on the efficiency programs Carlsberg has initiated in the last years as well as a steady growth within the premium-segment, which as discussed previously is expected to grow within the coming years.

Table 16: Northern and Western Europe

Northern and Western Europe	2005	2006	2007	2008	2009	2010	Average	2011E	2012E	2013E	2014E	2015E	2016E
Net revenue bn DKK	26.3	27.2	27.4	37.1	36.4	36.1	31.8	36.3	36.6	37.1	37.5	38.0	38.4
Change		3.42%	0.74%	35.40%	-1.89%	-0.82%	7.37%	0.50%	1.00%	1.20%	1.20%	1.20%	1.20%
% of net revenue	69.13%	66.21%	61.23%	61.89%	61.30%	60.11%	63.31%	58.25%	56.05%	54.30%	53.02%	51.88%	50.88%

Source: Source: Own production, based on calculations from annual reports 2005-2010

5.2.2 Eastern Europe

As discussed in the strategic analysis Eastern Europe was hit relatively hard by the current economic crisis. However, the region is expected to recover quickly in the coming years and as the societies adapt more and more Western European lifestyles beer consumption is expected to increase.

There still is however, a relatively large political risk in Russia, with regards to stricter alcoholic policies which the author has calculated in the longer term growth numbers.

Table 17: Eastern Europe

Eastern Europe	2005	2006	2007	2008	2009	2010	Average	2011E	2012E	2013E	2014E	2015E	2016E
Net revenue bn DKK	9.9	11.4	14.6	19.1	18.5	18.1	15.3	19.0	20.3	21.6	22.6	23.8	25.0
Change		15.15%	28.07%	30.82%	-3.14%	-2.16%	13.75%	5.00%	7.00%	6.00%	5.00%	5.00%	5.00%
% of net revenue	26.02%	27.75%	32.63%	31.86%	31.15%	30.14%	29.93%	30.51%	31.11%	31.56%	31.98%	32.46%	33.04%

Source: Source: Own production, based on calculations from annual reports 2005-2010

5.2.3 Asia

Asia was not hit as hard as the other regions by the recent economic crisis. As GDP growth is expected to be higher than in the other regions and which will increase the general level of prosperity in the region it will be an important growth market for Carlsberg.

It is expected that in the next coming 2 years the Asia region will be positively affected by the recent investments in the region. However, on a long term scale one cannot expect that Carlsberg will be able to maintain its recent growth rates in the region among other things due to higher competitive rivalry in the industry.

Table 18: Asia

Asia	2005	2006	2007	2008	2009	2010	Average	2011E	2012E	2013E	2014E	2015E	2016E
Net revenue bn DKK	1.6	2.3	2.5	3.6	4.2	5.6	3.3	7.0	8.4	9.7	10.6	11.6	12.5
Change		43.75%	8.70%	44.00%	16.67%	33.33%	29.29%	25.00%	20.00%	15.00%	10.00%	9.00%	8.00%
% of net revenue	4.21%	5.60%	5.59%	6.01%	7.07%	9.32%	6.30%	11.24%	12.85%	14.14%	15.01%	15.82%	16.56%

Source: Source: Own production, based on calculations from annual reports 2005-2010

5.3 Cost of Sales

The last six years cost of sales has been between 44% and 48% of net revenue. As discussed in chapter 4 cost of sales mainly consists of cost of materials. As the Strategic analysis pointed out there have been large fluctuations in the prices of raw materials through the years. However, as shown, the general tendency has been that commodity prices have been increasing and although Carlsberg hedges its raw material risk in advance one cannot look past the fact that as the prices have been rising, so will Carlsberg's cost of sales.

Carlsberg has initiated several efficiency plans in order to lower the cost of sales. This had an impact in 2010 where cost of sales reached its lowest level, as a percentage of net revenue, since 2005.

The author expects that Carlsberg will keep on focusing on the efficiency of its operations and cost of sales will therefore gradually decrease, as a percentage of net revenue, in the forecasted period.

5.4 Corporate Tax rate

The current corporate tax rate in Denmark is 25% and the author expects this to be the same throughout the forecasted period.⁵⁶

5.5 Other expenses

The author refers to Appendix 3 and 4 for a breakdown of the budgeted other expenses.

5.6 Partial conclusion

As previously stated, forecasting the future is bound with a lot of uncertainty. The forecast is based on many assumptions and predictions, and the actual development in Carlsberg can deviate from the forecast. This leads to the reality that the end result is bound with a lot of uncertainty.

The forecasted reformulated financial statements can be found in Appendixes 3 and 4.

In the table below one can see the most relevant key figures which are a result of the forecast.

Table 19: Forecasted key figures

	2011E	2012E	2013E	2014E	2015E	2016E
Net revenue	62,282	65,371	68,293	70,779	73,207	75,535
Operating profit before special items (EBITDA)	14,321	15,826	17,222	18,334	19,412	20,414
Operating profit before interest and tax (EBIT)	9,463	10,766	11,977	12,941	13,878	14,749
Net operating profit less adjusted taxes (NOPLAT)	6,397	7,339	8,215	8,909	9,585	10,212
Consolidated profit	2,894	3,662	4,373	4,928	5,467	5,963
Net profit	2,517	3,186	3,805	4,287	4,756	5,188
Invested Capital (OA - OL)	108,788	113,203	117,239	120,445	123,478	126,272
Equity capital	73,038	75,680	78,039	79,818	81,457	82,915

Source: Own production

⁵⁶ www.taxindenmark.com/article.37.html

6 Valuation

In the following chapter the author will conduct a valuation of Carlsberg. The chapter will start by a short introduction to the valuation models used to conduct the valuation of Carlsberg.

When valuing a company all aspects of both the company's external factors as well as internal factors must be analyzed. This has been done in the previous chapters of this thesis.

6.1 Valuation models

The important thing for an investor when deciding whether to buy or sell a share is to find out if a share is undervalued or overvalued.

Most investors use two Capital based valuation models in order to find out if a share is undervalued or overvalued, the Discounted Cash Flow model (DCF) and the Economic Value Added model (EVA). Both of those models are based on the cash flows that the company is expected to be able to generate in the future.

It should not matter which of the models is used as both of them should return the same theoretical value of the share. That is due to the fact that the models just use different ways of calculating the value of the share.

6.1.1 Discounted Cash flow model (DCF)

The DCF model relies solely on the flow of cash in and out of the company, independent of the accounting policies used. It discounts free cash flow, i.e. the cash flow available to all investors, both equity and debt holders as well as non-equity investors, at the weighted average cost of capital.⁵⁷

⁵⁷ Koller et.al (2010, p.104)

The two-stage DCF model used can be expressed in the below formula:

$$EV_0 = \sum_{t=1}^{n} \frac{FCF_t}{(1 + WACC)_t} + \frac{FCF_{n+1}}{WACC - g} * \frac{1}{(1 + WACC)^n}$$

Where:

 $EV_0 = Enterprise$ value at the time of valuation

 $FCF_t = The free \ cash flow \ at \ time \ 1$

WACC = The Weighted Average Cost of Capital

g = growth in the terminal period

 $n = The \ length \ of \ the \ budget \ period$

The first part of the equation represents the first FCF observed after the explicit forecasting period discounted with WACC. The second part of the equation represents the FCF observed in the terminal period based on Gordon's growth model where the growth is expected to have reached "steady-state".⁵⁸ This means that the growth is constant at that time and all forecasted assumptions will not change.

6.1.2 Economic Value Added model (EVA)

The EVA model expresses the value of the company as the sum of two components. The first component is the invested capital at the beginning of the period and the second component is the future excess returns defined as the difference between the return on invested capital and the required rate of return.

The larger the difference between the rate of return on the Invested Capital and the required rate of return and the larger the growth in Invested Capital the more the estimated value of the Invested Capital will deviate from the accounted value of the Invested Capital.

⁵⁸ Penman (2010, p.117)

The EVA model is based on the assumption of "clean surplus accounting" in the forecasted period. This means that all income and costs are passed through the income statement. If this assumption is held the EVA model will be immune to the choice of accounting policies etc.⁵⁹

The two-stage EVA model which is used in this valuation can under the assumption of constant rate of return and constant growth in the terminal period be expressed as follows:

$$EV_0 = IC_0 + \sum_{t=1}^{n} \frac{\text{NOPLAT}_t - \text{WACC} * \text{IC}_{t-1}}{(1 + \text{WACC})^t} + \frac{\text{NOPLAT}_{n+1} - \text{WACC} * \text{IC}_n}{\text{WACC} - g} * \frac{1}{(1 + \text{WACC})^n}$$

Where:

 EV_0 = Enterprise value at the time of the valuation

 $NOPLAT_t = Net operating profit less adjusted taxes in period t$

- WACC = The Weighted Average Cost of Capital
- $IC_t = Invested Capital in period t$
- n = Length of the budget period
- g = Growth rate in EVA in the terminal period

The Weighted Average Cost of Capital (WACC) 6.2

To value a company using the DCF and EVA models one must, as shown above, discount with the Weighted Average Cost of Capital (WACC). The WACC represents the opportunity cost that investors face for investing their funds in one particular business instead of others with similar risk.60

One of the most important principles while estimating the WACC is that there must be consistency between the components of the WACC and the FCF as FCF is the cash flow available for all investors, both equity and debt holders as well as others, the WACC must also

 ⁵⁹ Koller et. al (2010, p.119)
 ⁶⁰ Brealey et. al (2006, p.503)

include the required return for each of those. The WACC can therefore be thought of as the weighted average required rate of return of all the investors.⁶¹

The WACC consists of different inputs that need to be addressed carefully as even small deviations in each component can have a large impact on the final WACC. If the WACC is estimated too high, the firm will be undervalued whereas if the WACC is estimated too low, the firm will be overvalued.

The WACC can be expressed as follows:

$$WACC = \frac{D}{V}k_d(1-T) + \frac{E}{V}k_e$$

Where:

D: market value of the company's debt

V: total market value of the company

E: market value of the company's equity

 k_d : the cost of debt

 $k_e = the \ cost \ of \ equity$

T = the company's operating tax rate

In the following sub-chapters the different parts of the WACC will be discussed and calculated.

Based on the below discussions and calculations Carlsberg's WACC is:

$$WACC = (28\% * 5.12\%) * (1 - 25\%) + (72\% * 8.00\%) = 6.83\%$$

⁶¹ Koller et. al (2010, p.113)

6.2.1 Carlsberg's Capital Structure

The capital structure is the ratio between equity and debt. As previously mentioned in the thesis Carlsberg has in the last two years managed to bring its debt down considerably after 2008 where it increased significantly due to the acquisition of S&N.

In theory one should use the market value of Carlsberg's debt and equity. However, in practice the book value of net financial obligations and the market value of equity are most often used.⁶² The author will use the book value of net financial obligations and the market value of equity in his estimations.

Below the historical development in Carlsberg's capital structure can be seen.

Market value of Carlsberg's equity	2005	2006	2007	2008	2009	2010
Closing rate						
Carlsberg A	315	520	583	192	391.5	572
Carlsberg B	338.5	561	617	171.25	384	558.5
Total shares						
Carlsberg A	33,699,252	33,699,252	33,699,252	33,699,252	33,699,252	33,699,252
Carlsberg B	42,579,151	42,579,151	42,579,151	118,857,554	118,857,554	118,857,554
Market value of equity (DKK mio)	25,028	41,411	45,918	26,825	58,835	85,658
Book value of debt	2005	2006	2007	2008	2009	2010
Net financial obligations (DKK Mio)	20,981	20,432	21,262	46,429	36,809	34,013
Historical Capital Structure	2005	2006	2007	2008	2009	2010
D/V	46%	33%	32%	63%	38%	28%
E/V	54%	67%	68%	37%	62%	72%

Table 20: Capital Structure

Source: Own production, based on calculations from annual reports 2005-2010 and www.nasdaqomxnordic.com

As can be seen the D/V ratio has constantly been below 47%, apart from 2008, and the E/V ratio has been constantly above 54%, apart from 2008. As previously mentioned Carlsberg is determined to effectively manage its capital structure in the nearest future and the author therefore estimates that the capital structure for the forecasted period stays the same as in 2010, i.e. 28% debt and 72% equity.

⁶² Koller et. al (2010, p.267)
6.2.2 Cost of Debt

Carlsberg's cost of debt shows the expected return debt holders expect on the loans given to Carlsberg, i.e. by buying a bond issued by Carlsberg investors expect a return that is higher than the risk free interest rate.

As the FCF is measured on an after-tax basis it is important to measure Carlsberg's cost of debt on an after-tax basis as well.⁶³

The Cost of Debt can be expressed in the following formula:

$$r_d = (r_f + r_{s)} * (1 - T)$$

Where:

r_f: risk-free interest rate

rs: Company specific interest rate risk premium

T: the company's operating tax rate

Based on the below discussion the cost of debt is estimated to be:

$$k_d = (3.42\% + 3.4\%) * (1 - 25\%) = 5.12\%$$

6.2.2.1 The risk-free interest rate

The risk-free interest rate cannot be observed directly in the market and is therefore based on a 10-year Danish government bond. The effective interest rate as of 1st of March is 3.42%.⁶⁴

⁶³ Brealey et. al (2006, p. 504)

⁶⁴ www.nasdaqomxnordic.dk (Bonds – Denmark – 3St.I. 21 GB "DK000992676")

6.2.2.2 The company specific interest rate risk premium

The company specific interest rate risk premium is the risk premium that creditors demand for providing Carlsberg with debt. The risk premium is based on the company's operational as well as its financial risk.

The two international credit rating agencies Fitch and Moody's have given Carlsberg's bonds a long term rating of BBB and Baa2 respectively.⁶⁵ These are relatively high ratings which indicate that Carlsberg's risk premium is in the lower end.⁶⁶

Based on the above and that Carlsberg's bonds have an average duration of 3.1 years⁶⁷ the risk premium is estimated at 340 basis points or 3.4%.⁶⁸ A low risk premium like this interprets that the credit market sees Carlsberg as having adequate capacity to meet its financial commitments but adverse economic conditions and changing circumstances could mean that Carlsberg will face problems meeting its financial commitments.

6.2.2.3 The company's operating tax rate

The current tax rate in Denmark is $25\%^{69}$ which will be used in the calculations of WACC, as well as in all calculations in the forecasted and the terminal period. As mentioned in chapter 5 it is assumed that the corporate tax rate will not change in the forecasted period.

6.2.3 Cost of Equity

The Cost of Equity will be calculated on the basis of the Capital Asset Pricing Model (CAPM) which is the most commonly used model to estimate the cost of equity. The rationale behind the model is that investors are only exposed to systematic risk, also known as beta (β), as the investors have diversified portfolios and hence all unsystematic risk, which is company-specific, is not there.⁷⁰

However, the CAPM model has been criticized as it is based on some unrealistic assumptions such as that markets are perfectly efficient, all investors can borrow and lend at the risk free rate,

⁶⁵ <u>www.carslberggroup.com</u> (Investor – Debt Overview – Rating)

⁶⁶ www.fitchrating.com and www.moodys.com

⁶⁷ Annual report (2010, p.106)

⁶⁸ Koller et. al (2010, p.263)

⁶⁹ www.taxindenmark.com/article.37.html

⁷⁰ Elton et. al (2003, p.299)

there are no transaction costs and all investors are equally rational and have the same expectations of return.⁷¹ As a result of this, several models have been developed in order to calculate cost of equity: Fama-French three-factor model and the Arbitrage Pricing Theory model (APT). Despite this the CAPM model is still the most widely used model and is therefore used in this valuation.⁷²

The cost of equity can be expressed in the following way:

$$k_e = r_f + \beta \big[E(r_m) - r_f \big]$$

Where:

 $k_e = cost of equity$

 $r_f = risk$ -free interest rate

 β = the stock's sensitivity to the market or the systematic risk (Beta)

 $E(r_m)$ - r_f = the expected market risk premium

In the below sub-chapters the relevant parts of the CAPM model that have not previously been discussed will be discussed and calculated. Based on the below calculations Carlsberg's cost of equity is:

$$k_e = 3.42\% + 0.9157 * 5\% = 8.00\%$$

6.2.3.1 Systematic risk, β

Beta, or the systematic risk, measures a stock's sensitivity to the market. Beta measures how much the return on a specific stock on average changes, in relation with a market portfolio.⁷³ Beta can be interpreted in the following way:

 $\beta = 0$ Risk-free investment

 $\beta < 1$ the investment is less risky than the market portfolio

⁷¹ Elton et. al (2003, p.293)
⁷² Koller et. al (2010, pp. 257-260)
⁷³ Koller et. al (2010, p.249)

 $\beta = 1$ the investment has the same risk as the market portfolio

 $\beta > 1$ the investment is more risky than the market portfolio

Beta cannot be observed directly in the market, and must therefore be calculated based on financial data. In this thesis the author will follow the steps mentioned below to calculate Carlsberg's Beta:

- Carlsberg's raw beta is estimated based on historical returns
- The industry Beta is estimated
- Adjust the raw beta by smoothing

Then the author will apply simple average on these three calculations to arrive at the correct beta. The Beta regressions can be found in Appendix 5.

Based on the calculations below the estimated beta is 0.9157. It can therefore be concluded that investing in a Carlsberg B share is less risky than investing in the market portfolio.

6.2.3.1.1 Raw Beta

Carlsberg's raw-beta is estimated on the basis of 6 years weekly closing price share data of Carlsberg's B share and the MSCI-World index. The beta is then calculated from this data using a regression analysis with the following formula⁷⁴:

$$\beta_i = \frac{\sigma_{im}}{\sigma_m^2}$$

Where:

 σ_{im} = the covariance

 σ^2_m = the total market variance

 β_i = the beta for Carlsberg

Based on these calculations Carlsberg's raw-beta is estimated to be 1.0313.

⁷⁴ Elton et. al (2003, p.299)

6.2.3.1.2 Industry Beta

The industry beta is calculated on the basis of 6 years weekly closing price stock data for Carlsberg's B share, for 5 peer-group companies and for the MSCI World Index. The 5 peergroup companies are A-B Inbey, SABMiller, Heineken, China Resources and Tsingtao Brewery who are all amongst the top 6 global brewing companies in the world 2010 measured by volume.75

As the regression analysis returns a levered beta one must therefore undo the effect of leverage. This is done by using a modified Modigliani and Miller's proposition II which is based on the assumption that the beta of debt is $zero^{76}$ and hence:

$$\beta_e = \beta_u (1 + \frac{D}{E})$$

Where:

 $\beta_e = beta \ of \ equity$ β_u = unlevered beta D = market value of the company's debtK = market value of the company's equity

⁷⁵ Euromonitor (2011, p. 11)
⁷⁶ Koller et. al (2010, p.257)

Table 21: Industry Beta calculations

Company	Levered	D/E	Un-levered
Carlsberg	1.0313	0.3971	0.7382
A-B InBev	0.7770	1.2733	0.3418
SABMiller	0.9115	0.4728	0.6189
Heineken	0.6572	0.8531	0.3546
China Resources	1.0898	0.3994	0.7788
Tsingtao Brewery	0.1754	0.1552	0.1518
Average			0.4974
Estimated industry beta			0.6948

Source: Own production

Based on the above table the estimated industry beta is 0.6948

6.2.3.1.3 Adjusted raw-beta

The last component in the average calculation is the adjusted raw-beta. In order to adjust the raw-beta the author uses the smoothing technique introduced by Blume.⁷⁷ According to Blume smoothing the raw-beta dampens the extreme observations towards the overall average and that all beta observations revert to the mean.

The adjusted raw-beta can according to Blume be expressed as follows:

Adjusted Beta = 0.33 + 0.67(Raw Beta)

According to this the adjusted raw beta is 1.0210

⁷⁷ Koller et. al (2010, p.257)

6.2.3.2 The estimated market risk premium

The estimated market risk premium is the difference between the expected return on the stock market and the risk-free rate. Estimating the market risk premium is one of the most debated issues in finance today and no single model has been universally accepted.⁷⁸

Koller, Goedhart and Wessels state that the risk premium varies continually between 4.5 and 5.5 percent⁷⁹ while Brealey, Meyers and Allen believe it lies in the range between 5 and 8 percent.⁸⁰ In 2008 PriceWaterhouseCoopers made a survey amongst investors and based on that survey investors used a risk premium of 4.7 percent.⁸¹

Based on the above, the author has chosen to use a market risk premium of 5 percent in the calculations in this thesis.

6.3 Estimating the growth rate in the terminal period

The terminal period is, as described in Chapter 5, the period where Carlsberg is expected to have reached "steady state" and the forecast assumptions are expected to grow with a constant growth rate into perpetuity in the future.

The constant growth rate is an important factor as the terminal period weighs heavily in the final valuation.

The strategic analysis showed that the world economy was hit hard by the recent financial crisis, but GDP numbers were expected to rise in the nearest future. It also showed that there is substantial growth potential especially in the Eastern Europe and the Asia region. One must though assume that the growth rates previously seen on these markets cannot continue in all eternity as competition intensifies.

It is important that the constant growth rate does not exceed the average growth rate in the world economy as if it did, then Carlsberg would become larger than the world economy itself.

Based on the above discussion the author finds it reasonable to use a growth rate of 3%.

 ⁷⁸ Koller et. al (2010, p.242)
 ⁷⁹ Koller et. al (2010, p249)

⁸⁰ Brealey et. al (2006, p.154)

⁸¹ Sørensen (2009, p.51)

6.4 Valuation according to DCF

Based on the information calculated above the author will calculate the theoretical fair value of one Carlsberg B share according to the DCF-model. The DCF-model, as previously described, discounts free cash flow, i.e. the cash flow available to all investors, both equity and debt holders as well as non-equity investors, at the weighted average cost of capital.

Calculations of the free cash flow can be found in appendix 6.

			Terminal period			
DCF Model	2011E	2012E	2013E	2014E	2015E	2016E
FCF	10,305	1,420	2,757	4,494	5,370	6,286
WACC	6.83%	6.83%	6.83%	6.83%	6.83%	6.83%
Discount Factor	0.93607	0.87622	0.82020	0.76776	0.71868	
Present Value of Terminal period	9,646	1,245	2,261	3,450	3,859	
Present Value of Forecasted period	20,462					
Present Value of Terminal period	117,949					
Enterprise Value	138,411					
Interest bearing debt	34,013					
Minority interests	5,381					
Equity value	99,017					
Total outstanding A shares	33,699,252					
Total outstanding B shares	118,857,554					
Share Value	649					

Table 22: DCF Valuation

Source: Own production

As can be seen the theoretical value of one Carlsberg B-share is DKK 654. This is 13.74% higher than the official closing price 28/2/2011. It can therefore be concluded that the stock is undervalued by the market participants and the author recommends investors to buy the share for long-term investments.

6.5 Valuation according to EVA

In this section the author will calculate the theoretical fair value of one Carlsberg B share according to the EVA-model. The EVA model, as previously described, expresses the value of the company as the sum of two components. The first component is the invested capital at the

beginning of the period and the second component is the future excess returns defined as the difference between the return on invested capital and the required rate of return.

		Fore	cast period			Terminal period
EVA Model	2011E	2012E	2013E	2014E	2015E	2016E
NOPLAT	6,397	7,339	8,215	8,909	9,585	10,212
Invested Capital, primo	103,642	108,788	113,203	117,239	120,445	123,478
WACC	6.83%	6.83%	6.83%	6.83%	6.83%	6.83%
Cost of Capital	7,079	7,430	7,732	8,007	8,226	8,434
EVA	-682	-91	483	902	1,358	1,779
Discount factor	0.93607	0.87622	0.82020	0.76776	0.71868	
Present value of EVA	-638	-80	396	693	976	
Invested capital, primo	103,642					
Present Value of Forecasted period	1,347					
Present Value of Terminal period	33,374					
Enterprise Value	138,362					
Interest bearing debt	34,013					
Minority interests	5,381					
Equity value	98,969					
Total outstanding A shares	33,699,252					
Total outstanding B shares	118,857,554					
Share Value	649					

Source: Own production

As expected the theoretical price of one Carlsberg B-share is the same as the DCF-model returned. This is 12.87% higher than the official closing price 28/2/2011. It can therefore be concluded that the stock is undervalued by the market participants and the author recommends investors to buy the share for long-term investments.

6.6 Sensitivity analysis

As previously discussed a valuation of a company is bound with many assumptions and uncertainty. The author will therefore conduct a sensitivity analysis on some of the central value drivers in the DCF valuation model as the EVA model was used to test the results in the DCF model.

As was evident in tables 22 and 23 the terminal value is a large part of the overall enterprise value in the DCF valuation model. This sensitivity analysis will therefore focus on how small changes in WACC and growth affect the share price while all other components are kept fixed.

				WACC		
		6.63%	6.73%	6.83%	6.93%	7.03%
	2.80%	657	633	611	589	569
ŧ	2.90%	678	653	629	607	586
<u>ē</u>	3.00%	700	674	649	626	603
G	3.10%	723	696	670	645	622
	3.20%	748	719	692	666	641

Table 24: Sensitivity Analysis

Source: Own production

As can be seen in table 24 the change in the WACC plays a larger role in the final valuation of the theoretical value than the estimated Growth factor. A change of +/- 0.1% in WACC has between 3.47% and 3.87% affect on the theoretical share price while a +/- 0.1% change in the growth factor has between 3.01% and 3.41% effect on the theoretical share price.

6.7 Partial conclusion

In this chapter the author has conducted a financial valuation of one Carlsberg share, based on the DCF-valuation model and the EVA-valuation model.

The financial valuation is based on the forecasted proforma statements conducted in chapter 5, as well as estimates for Carlsberg's WACC and growth factor, which were calculated in this chapter.

The valuation is based on a WACC, which is estimated to be 6.83%, and a growth factor in the terminal period of 3%.

The WACC was estimated based on a long-term capital structure of 28% debt and 72% equity, cost of debt of 5.12% and cost of equity of 8.00%.

The cost of debt was calculated using a risk-free interest rate of 3.42%, an interest rate risk premium of 3.4% and a corporate tax rate of 25%.

The cost of equity was calculated, with the use of the CAPM model by using an estimated beta of 0.9104, a risk-free interest rate of 3.42%, and a risk premium of 5% based on historical consideration.

The final valuation which was conducted in accordance with the DCF-valuation model gave an estimated share price of DKK 654. The DCF valuation was tested using the EVA-valuation model which resulted in the same share price.

A sensitivity analysis was conducted in order to examine whether the WACC or the growth factor had a larger impact on the final valuation. The sensitivity analysis showed that the WACC had a larger impact on the final valuation where a $\pm - 0.1\%$ change in the WACC resulted in 3.48% - 3.89% changes in the share price, whereas a $\pm - 0.1\%$ change in the growth factor only resulted in a 3.02% - 3.43% change in the share price.

7 Conclusion

The main purpose of this thesis was to estimate the theoretical share price of one Carlsberg share on the 1st of March 2011, and to answer the main problem formulation of the thesis.

For the private investor, what is the theoretical fair value of one Carlsberg share 01.03.2011 and is it under- or overvalued in comparison with the traded price on the OMX Nordic Exchange?

The problem formulation was solved by using a strategic analysis, a financial analysis, a forecast and the final valuation.

The strategic analysis

The aim of the strategic analysis was to describe and indentify the different non-financial value drivers, both external and internal, that affected Carlsberg's future growth and earnings potential.

Carlsberg is the fourth largest brewery in the world and is widely spread throughout Europe and Asia both through own breweries and through export and licensing agreements. In Northern and Western Europe Carlsberg is the second largest brewery and in Eastern Europe Carlsberg is the largest brewery.

The strategic analysis showed that Carlsberg has a very strong product portfolio and one of its main strengths is innovation in regards to new products targeting new market segments and by focusing more on the premium segment. Being one of the largest breweries in the world brings many competitive advantages, especially in regards to economies of scale.

The factors that can threaten Carlsberg are mainly the political and economical situation in Russia, along with the economic crisis in Europe. These are factors that Carlsberg cannot influence by itself but will need to take some strategic actions to counteract the development. Intensified competition also limits Carlsberg's growth opportunities and as Carlsberg is not present in the USA and in Latin America it misses out on any growth opportunities in those markets.

As Russia is Carlsberg's largest single market, Carlsberg is very exposed to the development in the Russian economy and especially the development in the Russian Rouble which in 2010 represented around 20% of Carlsberg's foreign income. Even if Carlsberg hedges some of its foreign exchange risk, a negative development in the Rouble can have a significant impact on Carlsberg's revenue and income.

Financial Analysis

In order to be able to analyse the financial statements properly the author started by reformulating the original statements by separating the operating activities apart from the financing activities.

The profitability analysis, which was conducted in accordance with the DuPont model, showed that between 2005 and 2010 Carlsberg's ROIC was between 5.53% and 8.43%. Decompositioning ROIC showed that Carlsberg's profit margin had from 2005 to 2010 risen steadily during all the years. The decomposition also showed that Asset Turnover fell quite dramatically between 2007 and 2008 which was explained by the significant increase in Invested Capital in accordance with the share emission when Carlsberg acquired S&N. The decomposition of Carlsberg's financing activities showed that Carlsberg's ROE and SPREAD decreased significantly in 2008 as a result of the acquisition of S&N.

The overall tendency in the financial analysis showed that all key financial drivers increased upon till 2008 when the recent economic crisis hit and Carlsberg at the same time acquired S&N, but from 2009 the key financial drivers have shown improvements due to Carlsberg being able to make use of the synergies created due to the acquisition along with an increase in revenue and lower borrowing costs.

Valuation

The chapter opened with a description of the two valuation models used, the DCF valuation model and the EVA valuation model. The final valuation was based on the forecasted proforma

statements conducted previously in the thesis. Subsequently the two fundamentally important key figures, WACC and g, were calculated and estimated to be 6.83% and 3%.

The final valuation, conducted in accordance with the two valuation models, gave a theoretical share price of DKK 649 per share which was 12.87% higher than the actual share price on the OMX stock exchange the same date.

As a valuation is bound with many assumptions and uncertainty a sensitivity analysis was conducted. The sensitivity analysis showed that the theoretical share price was more sensitive to changes in the WACC than to changes in the growth factor.

The theoretical price of one Carlsberg share was 12.87% higher than the official closing price 28th of February 2011. The stock is therefore undervalued by the market participants and the author recommends investors to buy the share for long-term investment.

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Appendix 1 Equity Statements

	Statement of changes in equity									
	Share	Currency	Fair value	Retained	Total	Total share capital	Minority	Total		
DKK Million	Capital	translation	adjustments	earnings	reserves	and reserves	interests	equity		
Equity at 1. January 2005	1,526	32	- 108	13,634	13,558	15,084	1,708	16,792		
Total comprehensive income for the year, cf.										
Separate statement	-	604	1,629	976	3,209	3,209	431	3,640		
Capital increase	-	-	-	-	-	-	8	8		
Acquisition/disposal of treasury shares	-	-	-	55	55	55	-	55		
Dividends paid to shareholders	-	-	-	- 380	- 380	- 380	- 202	- 582		
Acquisition of minority interests	-	-	-	-	-	-	- 305	- 305		
Acquisition of entities	-	-	-	-	-	-	- 112	- 112		
Other	-	-	-	-	-	-	-	-		
Total changes in equity	-	604	1,629	651	2,884	2,884	- 180	2,704		
Equity at 31 December 2005	1,526	636	1,521	14,285	16,442	17,968	1,528	19,496		

	Statement of changes in equity											
								_				
	Share	Currency	Fair value	Retained	Total	Total share capital	Minority	Total				
DKK Million	Capital	translation	adjustments	earnings	reserves	and reserves	interests	equity				
Equity at 1. January 2006	1,526	636	1,521	14,285	16,442	17,968	1,528	19,496				
Total comprehensive income for the year, cf.												
Separate statement	-	- 285	- 1,541	1,859	33	33	205	238				
Capital increase	-	-	-	-	-	-	23	23				
Acquisition/disposal of treasury shares	-	-	-	- 16	- 16	- 16	-	- 16				
Dividends paid to shareholders	-	-	-	- 381	- 381	- 381	- 148	- 529				
Acquisition of minority interests	-	-	-	-	-	-	- 271	- 271				
Acquisition of entities	-	-	-		-	-	53	53				
Other	-	-	-	- 7	- 7	- 7	-	- 7				
Total changes in equity	-	- 285	- 1,541	1,455	- 371	- 371	- 138	- 509				
Equity at 31 December 2006	1,526	351	- 20	15,740	16,071	17,597	1,390	18,987				

	Stateme	nt of cha	inges in ea	quity				2007
	Share	Currency	Fair value	Retained	Total	Total share capital	Minority	Total
DKK Million	Capital	translation	adjustments	earnings	reserves	and reserves	interests	equity
Equity at 1. January 2007	1,526	351	- 20	15,740	16,071	17,597	1,390	18,987
Total comprehensive income for the year, cf.								
Separate statement	-	- 521	87	1,960	1,526	1,526	233	1,759
Capital increase	-	-	-	-	-	-	43	43
Acquisition/disposal of treasury shares	-	-	-	- 74	- 74	- 74	-	- 74
Repurchase of shared	-	-	-	30	30	30	- 198	- 168
Dividends paid to shareholders	-	-	-	- 458	- 458	- 458	- 227	- 685
Acquisition of minority interests	-	-	-	-	-	-	-	-
Acquisition of entities	-	-	-	-	-	-	82	82
Total changes in equity	-	- 521	87	1,458	1,024	1,024	- 67	957
Equity at 31 December 2007	1,526	- 170	67	17,198	17,095	18,621	1,323	19,944

	Statement of changes in equity											
				Available for								
	Share	Currency	Hedging	Sale	Total	Retained	Total share capital	Minority	Total			
DKK Million	Capital	translation	reserves	investments	reserves	earnings	and reserves	interests	equity			
Equity at 1. January 2008	1,526	- 170	41	26 -	- 103	17,198	18,621	1,323	19,944			
Total comprehensive income for the year, cf.												
Separate statement		- 7,523 -	- 1,556	119 -	8,960	15,576	6,616	1,777	8,393			
Capital increase	1,525	-	-	-	-	28,413	29,938	15	29,953			
Acquisition/disposal of treasury shares	-	-	-	-	-	2	2	-	2			
Share-based payment	-	-	-	-	-	31	31	-	31			
Dividends paid to shareholders	-	-	-	-	-	- 458	- 458	- 265	- 723			
Acquisition of minority interests	-	-	-	-	-	-	-	- 87	- 87			
Acquisition/disposal of entities	-	-	-	-	-	-	-	2,388	2,388			
Total changes in equity	1,525	- 7,523	- 1,556	119 -	8,960	43,564	36,129	3,828	39,957			
Equity at 31 December 2008	3,051	- 7,693	- 1,515	145		60,762	54,750	5,151	59,901			

	Statement of changes in equity									
				Available						
	Share	Currency	Hedging	for Sale	Total	Retained	Total share capital	Minority	Total	
DKK Million	Capital	translation	reserves	investments	reserves	earnings	and reserves	interests	equity	
Equity at 1. January 2009	3,051	- 7,693 -	- 1,515	145 -	9,063	60,762	54,750	5,151	59,901	
Total comprehensive income for the year, cf.										
Separate statement	-	- 2,885	131	1 -	2,753	3,320	567	171	738	
Capital increase	-	-	-	-	-	-	-	7	7	
Acquisition/disposal of treasury shares	-	-	-	-	-	- 6	- 6		6	
Share-based payment	-	-	-	-	-	52	52	-	52	
Dividends paid to shareholders	-	-	-	-	-	- 534	- 534 -	312 -	846	
Acquisition of minority interests	-	-	-	-	-	-		357 -	357	
Acquisition of entities	-	-	-	-	-	-	-	-	-	
Total changes in equity	-	- 2,885	131	1 -	2,753	2,832	79 -	491 -	412	
Equity at 31 December 2009	3,051	- 10,578 ·	- 1,384	146 -	11,816	63,594	54,829	4,660	59,489	

	Sta	itement of	f change	s in equity					2010
				Available					
	Share	Currency	Hedging	for Sale	Total	Retained	Total share capital	Minority	Total
DKK Million	Capital	translation	reserves	investments	reserves	earnings	and reserves	interests	equity
Equity at 1. January 2010	3,051 -	10,578	- 1,384	146 ·	- 11,816	63,594	54,829	4,660	59,489
Total comprehensive income for the year, cf.									
Separate statement		4,529	230	1	4,760	5,228	9,988	1,043	11,031
Acquisition/disposal of treasury shares	-	-	-	-		9	- 9	-	- 9
Exercise of share options	-	-	-	-		38	- 38	-	- 38
Share-based payment	-	-	-	-	-	34	34	-	34
Dividends paid to shareholders	-	-	-	-		534	- 534	- 709	- 1,243
Acquisition of minority interests	-	-	-	-		22	- 22	- 55	- 77
Acquisition of entities	-	-	-	-	-	-	-	442	442
Total changes in equity		4,529	230	1	4,760	4,659	9,419	721	10,140
Equity at 31 December 2010	3,051 -	15,107	- 1,154	147 -	7,056	68,253	64,248	5,381	69,629

Reformulated Equity statement	20	05	2006	5	2007	2008	3	2009		2010
Equity BOY	16,79	2	19,496		18,987	19,944		59,901	59	,489
Transactions with shareholders										
Capital increase		8	23		43	29,953		7		-
Acquisition/disposal of treasury shares	5	5 -	16	-	74	2	-	6	-	9
Dividends paid to shareholders	- 58	2 -	529	-	685	- 723	-	846	- 1	,243
Exercise of share options	-		-		-	-		-	-	38
Repurchase of shares	-		-	-	168	-		-		-
Total	- 51	9 -	522	-	884	29,232	-	845	- 1	,290
Total income excluding minority interests										
Profit for the year	1,37	1	2,171		2,596	3,193		4,167	5	,960
Dirty surplus	2,26	9 -	1,933	-	837	5,231	-	3,377	5	,105
Minority interests share of Profit for the year	- 26	1 -	287	-	299	- 1,777	-	171	- 1	,043
Minority interests included in Equity	- 17	0	82		66	3,828	-	491	-	721
Total	3,20	9	33		1,526	10,475		128	9	,301
Other										
Acquisition of minority interests	- 30	5 -	271		-	- 87	-	357	-	77
Acquisition of entities	- 11	2	53		82	2,382		-		442
Disposal of entities	-		-		-	6		-		-
Minority interests share of Profit for the year	26	1	287		299	1,777		171	1	,043
Minority interests included in Equity	17	0 -	82	-	66	- 3,828		491		721
Other	-	-	7		-	-		-		-
Total	1	4 -	20		315	250		305	2	,129
Changes in Equity	2,70	4 -	509		957	39,957	-	412	10	,140
Equity EOY	19,49	6	18.987		19.944	59,901		59,489	69	.629

Appendix 2: Profitability calculations

POIC colculations	2005	2006	2007	2000	2000	2010
ROIC calculations	2005	2006	2007	2008	2009	2010
Net operating profit less adjusted taxes (NOPLAT)	2,264	2,788	3,497	5,785	6,410	7,576
Invested Capital	40,477	39,419	41,206	106,330	96,298	103,642
Return on Invested Capital (ROIC)	5.59%	7.07%	8.49%	5.44%	6.66%	7.31%
Weighted Average Cost of Capital (WACC)	6.83%	6.83%	6.83%	6.83%	6.83%	6.83%
Profit Margin Calculations	2005	2006	2007	2008	2009	2010
Net operating profit less adjusted taxes (NOPLAT)	2,264	2,788	3,497	5,785	6,410	7,576
Net revenue	38,047	41,083	44,750	59,944	59,382	60,054
Profit Margin (PM) Left axis	5.95%	6.79%	7.81%	9.65%	10.79%	12.62%
Asset Turnover Calculations	2005	2006	2007	2008	2009	2010
Net Revenue	38,047	41,083	44,750	59,944	59,382	60,054
Invested Capital	40,477	39,419	41,206	106,330	96,298	103,642
Asset Turnover (ATO) Right Axis	0.9	1.0	1.1	0.6	0.6	0.6
ROIC testing, PM*ATO	5.59%	7.07%	8.49%	5.44%	6.66%	7.31%
Financial Leverage	2005	2006	2007	2008	2009	2010
Net Financial Obligations	20,981	20,432	21,262	46,429	36,809	34,013
Common Shareholder Equity	19,496	18,987	19,944	59,901	59,489	69,629
Financial Leverage (FLEV) Right Axis	1.08	1.08	1.07	0.78	0.62	0.49
Net Borrowing Cost	2005	2006	2007	2008	2009	2010
Net Financial Items after taxes	893	617	901	2,592	2,243	1,616
Common Shareholder Equity	19,496	18,987	19,944	59,901	59,489	69,629
Net Borrowing Cost (NBC)	4.58%	3.25%	4.52%	4.33%	3.77%	2.32%
ROIC - NBC = SPREAD	1.01%	3.82%	3.97%	1.11%	2.89%	4.99%
Return on Equity (ROE)	6.68%	11.19%	12.72%	6.30%	8.44%	9.75%
	2005	2006	2007	2008	2009	2010
Return on Invested Capital (ROIC)	5.59%	7.07%	8.49%	5.44%	6.66%	7.31%
Net Borrowing Cost (NBC)	4.58%	3.25%	4.52%	4.33%	3.77%	2.32%
ROIC - NBC = SPREAD	1.01%	3.82%	3.97%	1.11%	2.89%	4.99%
Financial Leverage (FLEV)	1.08	1.08	1.07	0.78	0.62	0.49
Return on Equity (ROE)	6.68%	11.19%	12.72%	6.30%	8.44%	9.75%

Appendix 3: Forecasted growth rates and the reformulated income statement

Reformulated income statement, Mio DKK	2005	2006	2007	2008	2009	2010	2011E	2012E	2013E	2014E	2015E	2016E
Net revenue		7.98%	8.93%	33.95%	-0.94%	1.13%	3.71%	4.96%	4.47%	3.64%	3.43%	3.18%
Cost of sales less depreciation		7.01%	12.79%	38.31%	-3.90%	-4.93%	2.14%	2.00%	1.95%	1.90%	1.85%	1.85%
Sales and distribution expenses (% of net revenue)	33.06%	32.27%	30.44%	27.98%	25.50%	27.18%	29.50%	29.50%	29.50%	29.50%	29.50%	29.50%
Administrative expenses (% of net revenue)	6.79%	6.63%	6.29%	6.06%	5.93%	6.02%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
Other operating income (% of net revenue)	2.30%	1.61%	2.08%	1.97%	0.93%	1.36%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%
Other operatinge expenses (% of net revenue)	1.22%	0.96%	1.00%	0.75%	1.01%	0.98%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Special items (% of net revenue)	1.75%	0.37%	-0.71%	-2.18%	-1.03%	0.79%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Share of profit after tax, associates (% of net revenue)	0.61%	0.21%	0.23%	0.14%	0.19%	0.25%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%
Depreciation, amortisation and impairment losses (%												
of intangible assets and PPE)	9.38%	7.93%	6.85%	3.36%	3.40%	3.92%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Taxes (of operating profit)	28.00%	28.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
Net financial items (% net revenue)	3.26%	2.09%	2.68%	5.77%	5.04%	3.59%	4.50%	4.50%	4.50%	4.50%	4.50%	4.50%
Attributable to Non-controlling interests (% of												
consolidated profit	19.04%	13.22%	11.52%	17.91%	13.56%	10.22%	13.00%	13.00%	13.00%	13.00%	13.00%	13.00%

Reformulated income statement, Mio DKK	2005	2006	2007	2008	2009	2010	2011E	2012E	2013E	2014E	2015E	2016E
Net revenue	38,047	41,083	44,750	59,944	59,382	60,054	62,282	65,371	68,293	70,779	73,207	75,535
Cost of sales less depreciation	-17,213	-18,420	-20,776	-28,736	-27,616	-26,254	-26,816	-27,352	-27,886	-28,415	-28,941	-29,476
Gross profit	20,834	22,663	23,974	31,208	31,766	33,800	35,466	38,019	40,408	42,364	44,266	46,058
Sales and distribution expenses	-12,578	-13,256	-13,621	-16,775	-15,141	-16,321	-18,373	-19,285	-20,147	-20,880	-21,596	-22,283
Administrative expenses	-2,585	-2,724	-2,817	-3,632	-3,523	-3,618	-3,737	-3,922	-4,098	-4,247	-4,392	-4,532
Other operating income	876	660	933	1,178	554	815	-779	-817	-854	-885	-915	-944
Other operatinge expenses	-465	-393	-448	-450	-599	-588	-623	-654	-683	-708	-732	-755
Special items	665	154	-318	-1,309	-613	474	-125	-131	-137	-142	-146	-151
Share of profit after tax, associates	232	85	101	81	112	148	2,491	2,615	2,732	2,831	2,928	3,021
Operating profit before special items (EBITDA)	6,979	7,189	7,804	10,301	12,556	14,710	14,321	15,826	17,222	18,334	19,412	20,414
Depreciation, amortisation and impairment losses	3,847	3,303	2,969	3,964	3,861	4,710	4,858	5,060	5,245	5,393	5,534	5,665
Operating profit before interest and tax (EBIT)	3,132	3,886	4,835	6,337	8,695	10,000	9,463	10,766	11,977	12,941	13,878	14,749
Taxes (of operating profit)	-868	-1,098	-1,338	-552	-2,286	-2,424	-3,067	-3,427	-3,763	-4,031	-4,293	-4,537
Net operating profit less adjusted taxes (NOPLAT)	2,264	2,788	3,497	5,785	6,410	7,576	6,397	7,339	8,215	8,909	9,585	10,212
Financial income	548	725	651	1,310	609	1,085						
Financial expenses	-1,788	-1,582	-1,852	-4,766	-3,599	-3,240						
Net financial items	-1,240	-857	-1,201	-3,456	-2,990	-2,155	-2,803	-2,942	-3,073	-3,185	-3,294	-3,399
Net financial items after taxes	-893	-617	-901	-2,592	-2,243	-1,616	-701	-735	-768	-796	-824	-850
Consolidated profit	1,371	2,171	2,596	3,193	4,167	5,960	2,894	3,662	4,373	4,928	5,467	5,963
Attributable to Non-controlling interests	-261	-287	-299	-572	-565	-609	-376	-476	-569	-641	-711	-775
Net profit	1,110	1,884	2,297	2,621	3,602	5,351	2,517	3,186	3,805	4,287	4,756	5,188

Calculation of taxes on operating and financial activities	2005	2006	2007	2008	2009	2010	2011E	2012E	2013E	2014E	2015E	2016E
Tax rate	28%	28%	25%	25%	25%	25%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
Reported taxes	-521	-858	-1,038	312	-1,538	-1,885	-2,366	-2,691	-2,994	-3,235	-3,469	-3,687
Financial items, net	-1,240	-857	-1,201	-3,456	-2,990	-2,155	-2,803	-2,942	-3,073	-3,185	-3,294	-3,399
Tax of financial items (Tax shield)	-347	-240	-300	-864	-748	-539	-701	-735	-768	-796	-824	-850
Operating taxes	-868	-1,098	-1,338	-552	-2,286	-2,424	-3,067	-3,427	-3,763	-4,031	-4,293	-4,537
Net financial items after tax	-893	-617	-901	-2,592	-2,243	-1,616	-2,102	-2,206	-2,305	-2,389	-2,471	-2,549

Appendix 4: Forecasted growth rates and the reformulated balance sheets

Reformulated balance sheet. Mio DKK	2005	2006	2007	2008	2009	2010	2011E	2012E	2013E	2014E	2015E	2016E
Operating assets												
Intangible assets (% of net revenue)	54.33%	51.80%	47.39%	140.28%	137.43%	146.22%	140.00%	138.50%	137.00%	135.50%	134.00%	132.50%
Property, plant and equipment (% of net revenue)	53.50%	49.58%	49.41%	56.81%	53.59%	53.98%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%
Investment in associates (% of net revenue)	2.90%	1.41%	1.39%	3.71%	4.49%	8.12%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
Deferred tax assets (% of net revenue)	2.64%	2.00%	1.64%	2.09%	2.50%	2.17%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Inventories (% of net revenue)	7.53%	7.84%	8.53%	8.72%	6.06%	6.98%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%
Trade receivables (% of net revenue)	18.96%	17.64%	17.47%	13.47%	12.63%	12.38%	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%
Tax receivables (% of net revenue)	0.35%	0.20%	0.14%	0.44%	0.29%	0.29%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%
Other receivables (% of net revenue)	7.92%	2.79%	3.25%	5.16%	2.95%	2.94%	3.30%	3.30%	3.30%	3.30%	3.30%	3.30%
Prepaiments (% of net revenue)	1.54%	2.23%	2.12%	2.02%	1.12%	1.56%	1.35%	1.35%	1.35%	1.35%	1.35%	1.35%
Retirement benefit plan assets (% of net revenue)	0.06%	0.03%	0.02%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Cash (1% of net revenue)	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Operating liabilities												
Retirement benefit obligations and similar obligations												
(% of net revenue)	5.42%	4.88%	4.96%	2.99%	3.63%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%
Deferred tax liabilities (% of net revenue)	6.21%	5.90%	4.90%	16.49%	16.31%	16.53%	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%
Provisions non-current (% of net revenue)	0.51%	0.89%	0.56%	2.50%	2.28%	2.51%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
Provisions current (% of net revenue)	1.47%	1.13%	1.10%	1.13%	1.84%	0.85%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Trade payables (% of net revenue)	11.86%	12.53%	13.03%	13.36%	13.35%	15.63%	13.29%	13.29%	13.29%	13.29%	13.29%	13.29%
Deposits on returnable packagaing (% of net revenue)	3.22%	2.82%	2.70%	2.43%	2.29%	2.13%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Corporation tax (% of net revenue)	1.89%	0.46%	0.44%	0.47%	0.69%	0.89%	0.89%	0.89%	0.89%	0.89%	0.89%	0.89%
Other non-current liabilities (% of net revenue)	0.17%	0.13%	0.04%	0.44%	1.26%	1.54%	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%
Other current liabilities (% of net revenue)	13.60%	11.82%	12.54%	16.52%	18.26%	18.95%	16.50%	16.50%	16.50%	16.50%	16.50%	16.50%
Financial assets												
Securities (non-current) (% of net revenue)	7.12%	0.41%	0.27%	0.20%	0.16%	0.21%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
Securities (current) (% of net revenue)	0.29%	0.02%	0.08%	0.01%	0.03%	0.06%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%
Cash (for financial activities) (% of net revenue)	4.89%	5.06%	4.03%	3.77%	3.60%	3.55%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Financial assets held for sale (% of net revenue)	0.86%	0.27%	0.08%	0.27%	0.65%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%
Financial liabilities												
Non-current and current borrowings (% of net revenue)	68.28%	55.49%	51.96%	80.94%	66.35%	60.86%	61.00%	61.00%	61.00%	61.00%	61.00%	61.00%
Liabilities associated with assets held for sale (% of												
net revenue)	0.03%	0.00%	0.00%	0.76%	0.09%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%

Reformulated balance sheet. Mio DKK	2005	2006	2007	2008	2009	2010	2011E	2012E	2013E	2014E	2015E	2016E
Operating assets												
Intangible assets	20,672	21,279	21,205	84,091	81,611	87,813	87,195	90,539	93,562	95,906	98,097	100,084
Property, plant and equipment	20,355	20,367	22,109	34,052	31,825	32,420	34,255	35,954	37,561	38,929	40,264	41,544
Investment in associates	1,105	579	622	2,224	2,667	4,877	3,737	3,922	4,098	4,247	4,392	4,532
Deferred tax assets	1,005	822	733	1,254	1,483	1,301	1,246	1,307	1,366	1,416	1,464	1,511
Fixed assets total	43,137	43,047	44,669	121,621	117,586	126,411	126,432	131,723	136,587	140,497	144,218	147,671
Inventories	2,866	3,220	3,818	5,228	3,601	4,191	4,048	4,249	4,439	4,601	4,758	4,910
Trade receivables	7,214	7,247	7,817	8,076	7,502	7,434	8,719	9,152	9,561	9,909	10,249	10,575
Tax receivables	132	84	62	262	175	172	218	229	239	248	256	264
Other receivables	3,015	1,145	1,453	3,095	1,750	1,766	2,055	2,157	2,254	2,336	2,416	2,493
Prepaiments	587	917	950	1,211	666	938	841	883	922	956	988	1,020
Retirement benefit plan assets	21	14	11	2	2	8	0	0	0	0	0	0
Cash (1% of net revenue)	380	411	448	599	594	601	623	654	683	708	732	755
Total operating assets	57,352	56,085	59,228	140,094	131,876	141,521	142,937	149,046	154,684	159,253	163,617	167,687
Operating liabilities												
Retirement benefit obligations and similar obligations	2,061	2,006	2,220	1,793	2,153	2,434	2,522	2,648	2,766	2,867	2,965	3,059
Deferred tax liabilities	2,362	2,425	2,191	9,885	9,688	9,929	8,719	9,152	9,561	9,909	10,249	10,575
Provisions non-current	195	366	249	1,498	1,353	1,506	1,557	1,634	1,707	1,769	1,830	1,888
Provisions current	561	466	494	677	1,092	512	623	654	683	708	732	755
Trade payables	4,513	5,147	5,833	8,009	7,929	9,385	8,277	8,688	9,076	9,407	9,729	10,039
Deposits on returnable packagaing	1,224	1,159	1,207	1,455	1,361	1,279	1,246	1,307	1,366	1,416	1,464	1,511
Corporation tax	720	187	197	279	411	534	554	582	608	630	652	672
Other non-current liabilities	65	54	20	263	746	922	374	392	410	425	439	453
Other current liabilities	5,174	4,856	5,611	9,905	10,845	11,378	10,277	10,786	11,268	11,679	12,079	12,463
Total operating liabilities	16,875	16,666	18,022	33,764	35,578	37,879	34,149	35,843	37,445	38,808	40,139	41,416
Invested Capital (OA - OL)	40,477	39,419	41,206	106,330	96,298	103,642	108,788	113,203	117,239	120,445	123,478	126,272
Net Working Capital	-2,660	-3,628	-3,464	-15,291	-21,288	-22,769	-17,644	-18,520	-19,347	-20,052	-20,740	-21,399
Financial assets												
Securities (non-current)	2,710	170	123	118	94	124	156	163	171	177	183	189
Securities (current)	109	8	34	7	17	34	31	33	34	35	37	38
Cash (for financial activities)	1,860	2,079	1,802	2,258	2,140	2,134	1,806	1,896	1,981	2,053	2,123	2,191
Financial assets held for sale	328	109	34	162	388	419	436	458	478	495	512	529
Financial assets total	5,007	2,366	1,993	2,545	2,639	2,711	2,429	2,549	2,663	2,760	2,855	2,946
Financial liabilities												
Non-current and current borrowings	25,978	22,797	23,254	48,521	39,397	36,546	37,992	39,876	41,659	43,175	44,656	46,076
Liabilities associated with assets held for sale	10	1	0	453	51	178	187	196	205	212	220	227
Financial liabilities total	25,988	22,798	23,254	48,974	39,448	36,724	38,179	40,073	41,864	43,388	44,876	46,303
Net financial liabilities	20,981	20,432	21,262	46,429	36,809	34,013	35,750	37,523	39,200	40,627	42,021	43,357
Equity capital	19,496	18,987	19,944	59,901	59,489	69,629	73,038	75,680	78,039	79,818	81,457	82,915
Debt + Equity = Invested capital	40,477	39,419	41,206	106,330	96,298	103,642	108,788	113,203	117,239	120,445	123,478	126,272















Appendix 6 Free Cash Flow Calculation

Free Cash Flow	2011E	2012E	2013E	2014E	2015E	2016E
EBITDA	14,321	15,826	17,222	18,334	19,412	20,414
Taxes of operating profit	-3,067	-3,427	-3,763	-4,031	-4,293	-4,537
Changes in net working capital	5,125	-875	-828	-704	-688	-660
CAPEX	6,075	10,103	9,875	9,105	9,061	8,932
FCF	10,305	1,420	2,757	4,494	5,370	6,286