Copenhagen Business School

Valuation of PANDORA A/S

Applied Economic and Finance

Exam: Thesis

Name: Pernille Vestergaard Boesen

Date: 1 December 2016

Supervisor: Søren Plesner

Number of pages: 73 excluding references and appendix

Number of characters: 128.813 excluding tables and figures

Table of Contents

Executive summary

The aim of my thesis is to valuate PANDORA A/S from an analysis of their strategic and financial position.

In my external strategic analysis, I found that the global jewellery market is growing during the next five years in PANDORA's three geographical market Asia Pacific, Americas and Europe. PANDORA is affected by several macroeconomics factors as prices on silver and gold, fluctuations in exchange rates and trends. The competition in the global jewellery market is fragmented with a lack of truly dominated players. The lack of dominated players in the market and an increasing growth does that PANDORA has the opportunity to gain market shares worldwide. On the other hand, high profits, increasing market growth, online sales platforms and low switching costs make the threat of new entrants and substitutes high.
PANDORA's jewelleries are in the category affordable luxury. Especially this kind of jewelleries has been very popular and a new trend in most markets worldwide. Since it is in the category affordable luxury, it is not as affected of economic factors as luxury jewelleries are. The internal analyse of PANDORA showed that one of their key value drivers was their design and production of affordable luxury jewelleries. PANDORA has own production facilities in Thailand and have seven launches of new jewelleries every year. Therefore, PANDORA has the opportunities to follow trends and demands in the market faster than if they not had own production facilities or the only had new launches one or twice a year.

After an analysis of the internal and external factors PANDORA's profitable historical ratios was calculated and analysed to get an overview of their ability to create value for their shareholders and their historical financial profitability. The overall profitability measure ROIC has been increasing since 2012 with only a small decrease in 2015. PANDORA's ability to create value for their shareholders has also been increasing since 2012. Based on the strategic and financial analysis of PANDORA the pro forma income statement and pro forma balance sheet were estimated and the free cash flow to the firm calculated.

Based on the Discounted Cash Flow model I have estimated PANDORA's enterprise value and expected market equity to conclude whether PANDORA's shares had a fair price 21 October 2016 or whether the shares were over- or undervalued.

Introduction

October 2010 one of Denmark's largest jewellery companies PANDORA A/S was listed on the Danish Stock exchange Nasdaq Copenhagen. Back in 2000 PANDORA launched the concept 'charms' in Denmark, which ended up being a huge success and was the driver for PANDORA's increasing growth up to today. Just before the initial public offering, one of the largest elements of risk was whether PANDORA was too dependent on the product category charms. Almost 90 percent of the revenue came from charms and charm bracelets. Immediately after the introduction PANDORA had huge success due to increasing growth and high earning margins.

The huge success after the initial public offering was only temporarily. A press release in August 2011 regarding downgrades to the expectations for 2011 and a fired CEO caused a large drop in the share price. Many people began to question whether charms were only a gimmick and whether PANDORA's golden times with increasing growth were gone forever.

After two hard years with decreasing growth and profit all doubts were dispelled. In 2013 PANDORA was back on track with positive growth rates across the entire board and increasing share prices. PANDORA has since 2013 proved that charms were not a gimmick and they have managed to create growth every year since. Much have changed in PANDORA since the initial public offering in 2010. Charms are still the largest product category, but today it only accounts for around 75 percent of the revenue.

Pandora sells affordable luxury jewelleries, which are high quality jewelleries to affordable prices. The demand for affordable luxury jewelleries has in recent years increased worldwide. The big question is now whether Pandora is able to maintain their huge success in the future in a competing market where trends can change all the time.

Company history

The Danish jeweller Per Enevoldsen and his wife founded PANDORA in 1982. In 1982 PANDORA was a small shop and the couple often went to Thailand to import jewelleries to the shop in Copenhagen. In the following years, their focus changed to wholesale trade with Danish customers.

In 1987 PANDORA's first intern designer was hired and PANDORA stopped the activities in the retail and instead they began to create their own unique jewelleries. Two years after the company decided to produce their jewelleries in Thailand.

In 2000 PANDORA launched the charm collection in the Danish market. The charm collection was a great success among the consumers and today many consumers connect charms with PANDORA. Due to the huge success and demand on the Danish market PANDORA decided to expand the company to new international markets. PANDORA expanded to USA in 2003 and thereafter to Germany and Australia in 2004.

The years after PANDORA expanded its presence in the industry from a Scandinavian platform to an international marketing and sales platform, which was driven by third-party distributors with a production capacity in Thailand.

In 2010 PANDORA was listed at Nasdaq Copenhagen. Today PANDORA has a vertical integrated business model from inhouse-design and production to global marketing and direct distribution to the markets. PANDORA designs and sells high quality jewelleries in the category 'affordable luxury'. Affordable luxury jewelleries are high quality jewelleries to affordable prices. PANDORA's jewelleries are represented in over 70 countries and has more than 10,000 outlets and 900 concept stores. In 2015 PANDORA sold more than 100 million pieces of jewelleries.

Vision and mission

PANDORA wants to be the worlds most popular and recognized jewellery brand. Today seven out of ten women in the target group recognized the PANDORA brand[1].

The PANDORA's vision[2]:

[1] Annual report, 2015, p. 13
[2] Annual report, 2015, p. 12

"We want to become the world's most loved jewellery brand."

PANODRA's goals for new markets and emerging markets are still recognition, but PANDORA wishes to create a stronger emotional bond to their customers. The strategy is to strength the position on the markets and put the customers in the heart of everything from product development and design to manufacturing, marketing and retail[3].

The PANODRA's mission[4]:

"To celebrate women by offering the opportunity for personal expression through our universe of high-quality and contemporary jewellery at affordable prices."

Stock price and revenue overview

PANDORA has been listed at Nasdaq Copenhagen since 2010. The past five years the stock price has been increasing. The historical stock price movements from the last five years are illustrated in below figure.[5]

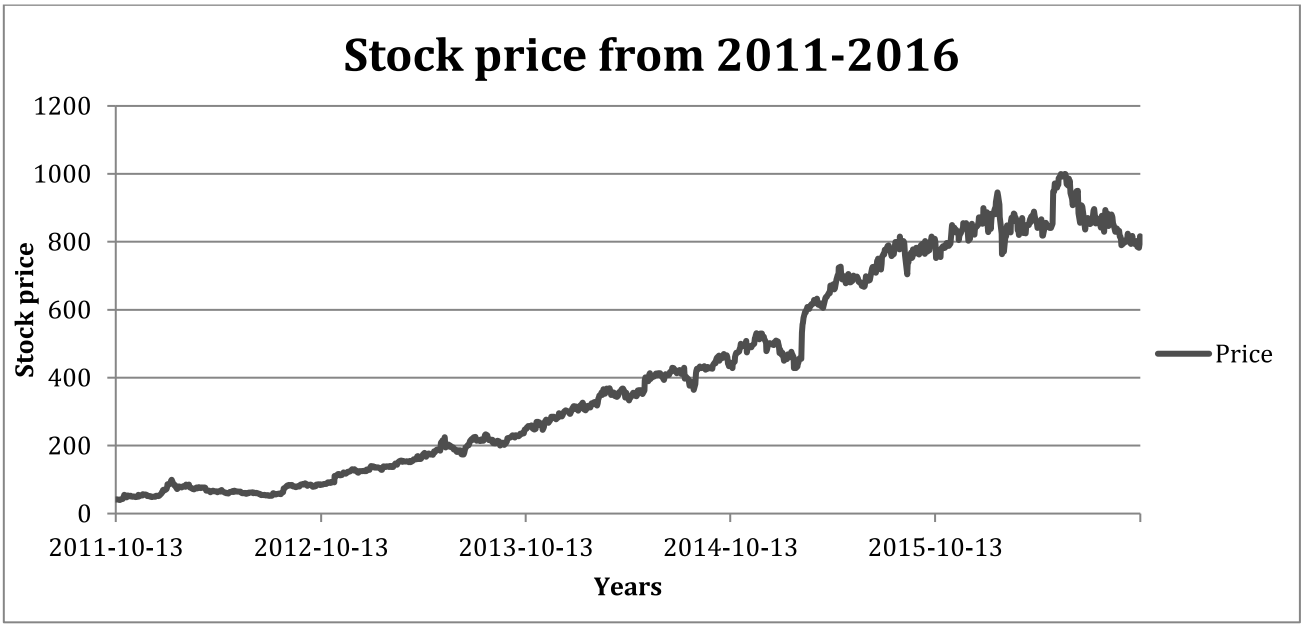

Figure 1: Stock price 2011-2016

[3] Annual report, 2015, p. 13
[4] Annual report, 2012, p. 12
[5] www.euroinvestor.com

Since 2011 the stock price has an upward curve. Over the past five years the stock price has been between 39.88 DKK and 999.5 DKK. The stock price was lowest back in October 2011 and highest in May and June 2016. From June 2016 the price has been decreasing and 21 October 2016 the price ended at DKK 918.

21 October 2016 there was 117060000 shares, which means that PANDORA's share capital was DKK 107461080000.[6]

PANDORA's revenue has been increasing since 2012. From 2011 to 2012 there was a little decrease in the revenue. In 2011 the revenue was at 6,658 million DKK and in the revenue increased to 16,737 million DKK. At the same time the profit has increased from 2,037 million DKK to 3,674 million DKK. The increasing revenue and profit has affected the stock price positively.

Problem statement

The objective of my thesis is to determine if PANDORA is fairly priced through a financial and strategic analysis. I will base my analysis on an external view and use publicly available information and secondary literature. My problem statement is:

Is PANDORA fairly priced on 21 October 2016?

Based on my valuation I will conclude whether PANDORA's shares are over- or undervalued.

Methodology

This valuation of PANDORA A/S is a straightforward valuation assignment including already well-known theory.

[6] www.euroinvestor.dk

Before I began my thesis I have studied relevant valuation literature, information regarding the jewellery industry and publicly available information about PANDORA. The theory is based on the information from well-known valuation- and strategic books. The quantitative and qualitative data is collected from annual reports, databases, market reports and websites.

I will only use public information about PANDORA, their competitors and their expectations to the future. I do not have any insider information about PANDORA or any of their competitors. I have only chosen sources I consider to be reliable and the use of multiple sources such as different valuation books and market reports increases the validity of my thesis.

The valuation of PANDORA includes a strategic and financial analysis. These analyses will be used to estimate the forecast of PANDORA's income statement and balance sheet and hereafter estimate the free cash flow to the firm. The free cash flow will be used in the DCF model to estimate market value of equity to conclude if PANDORA's shares were fairly priced.

The strategic analysis consists of an external and internal analysis of PANDORA. The financial analysis includes a historical analysis of their financial statement the past five years, and the possible reasons for the financial development in PANDORA.

The strategic and valuation strategy is a part of this thesis. Since I only use well-known theory I have not explained the theory in depth and instead explained why I choose to use the theory and why it is good for the valuation of PANDORA. I have begun with a little section about the strategic theory and the DCF model. Other relevant theory will be explained through the thesis, when it is relevant.

Limitations

In my thesis I valuate if PANDORA's shares are fairly priced the 21 October 2016. The thesis is based on information, which was available until and include 21 October 2016. Information that has been public after this date will not be included in the thesis.

The thesis is only based on public available information as annual reports, market reports, website etc. No surveys or interviews are included in the thesis.

Theory

The value in a company is created by the strategic and operating performance, which means that the financial value drivers do not create value by them selves. To identify the strategic value drivers, it is necessary to create a strategic analysis. The strategic analysis can cover important aspects of a company's cash flow potential and risk.[7]

To decide the appropriate level of the strategic analysis it is helpful to take a view at the nature of the company's business environment including the stability of the company's business environment and the complexity and dynamics of the industry. If a market is stable or even static and the company's products are simple, the analysis only has to be based on historical data to forecasting future outcomes. If the market is dynamic or the service or products are complex, it will not make sense only to use historical data. [8]
PANDORA operates in the affordable luxury price segment in the jewellery industry. I assume this market to be dynamic since it is not a necessity good and their product's complexity to be moderate. From this perspective, it is not useful only to base the analysis on historical data. Therefore, I have chosen to create a top-down strategic analysis.

A top-down approach includes:

- Macro factors which have an influence of the PANDORA's cash flow potential and risks
- Industry factors which have an influence of PANDORA's cash flow potential and risks
- Company factors which have an influence of PANDORA's cash flow potential and risks
- An analysis of PANDORA's value chain
- PANDORA's strength, Weakness, Opportunities and Threats.

[7] Petersen & Plenborg, 2012, p. 187
[8] Petersen & Plenborg, 2012, p. 187

External analysis

In the external analysis, I will determine PANDORA's opportunities and threats. It will help me understand which factors in the market that may affect PANDORA.

PEST analysis

In the PEST model, you analysis the macro factors that may affect PANDORA's cash flow potential and risks. The PEST analysis includes the political, economic sociocultural and technological factors.[9]

Porter's five forces

Porter's five forces is a part of the external analysis. It consists of five forces; Potential entrants, Suppliers and buyers bargaining power, threat of substitutes and competitive rivalry.[10]
I have chosen to analyse Porter's five forces to determine the forces that affect the competition in the global jewellery industry. The level of competition will affect PANDORA's potential Cash flow and risk. Increased competition will reduce the chances for abnormal return.

Internal analysis

In the internal analysis, I will determine PANDORA's strength and weaknesses. This analysis will provide information about company specific factors, which has influence on PANDORA's future Cash flows and risk.

Value chain

An analysis of PANDORA's value chain will describe the activities within and around the company. It helps determine the company's strength and core competencies.[11]
I have based my analysis of Porter's generic value chain, which includes the company's support and primary activities. I have chosen to use this model, as I believe it will show the areas where PANDORA's value is most likely to be created.

[9] Petersen & Plenborg, 2012, p. 188
[10] Petersen & Plenborg, 2012, 189
[11] Petersen & Plenborg, 2012, p. 192

Choice of valuation model

Future income, typically cash flows and a proper discount rate is the factors, which need to be known when valuate an asset. There is a lot of different valuation approaches but they can overall be classified into four groups; Present value, Relative valuation (multiples), Liquidation and contingent claim valuation.[12] Practitioners often use the present value approach or the relative valuation approach. The liquidation approach and the contingent claim valuation is rarely used in practice. In PANDORA's case either of the two approaches are relevant. The liquidation approach values a company as if it were to go out of business, and is often used when a company is questioned. This is not at all relevant for PANDORA, since they have no thoughts about living business.

The relative valuation approach is often used as a complementary valuation to the present value approach. Since the present value approach relies on own expectations to the future, a multiple valuation can be used as a method to stress test the values estimated in the present value approach. The relative approach is based on markets prices, which reflects many investors opinions instead of only the analyst's own expectations to the future.

The present value approach estimates the value of the company based on expectations of future cash flows and a relevant discount factor. The different valuation models under the present value approach are all derived from the dividend discount model, and therefore theoretically the models are a like. Therefore if the models are based on the same assumptions and inputs, the estimated values should be identical.

The Discounted Cash Flow model is the most used model among practitioners when valuing a company. This model can be done in two ways either by estimates the enterprise value of a company or estimate the equity value of the company. The enterprise value is the expected market value of PANDORA's operations (invested capital). The enterprise value includes both the market value of net interest debt and equity, where the net interest debt is the difference between shareholders equity and enterprise value.

[12] Petersen & Plenborg, 2012, p. 210

In the valuation of PANDORA I use the enterprise value approach to estimate market value of equity. Since PANDORA's has debt I have chosen to use this model instead of the equity value approach. In this model the value of PANDORA is determined by their present value of the future free cash flows. In this model it is only the free cash flows and WACC, which affects the market value of PANDORA. Therefore PANDORA's market value is positively affected by higher cash flows and lower WACC. Since PANDORA will not have an infinity cash flow stream the enterprise value model is specified as a two-stage model:

$$\sum_{t=1}^{n} \frac{FCFF_t}{(1+WACC)^t} + \frac{FCFF_{n+1}}{WACC-g} * \frac{1}{(1+WACC)^n}$$

Since the model is only affected by the free cash flows to the firm and weighted average cost of capital it is very important that these factors are estimated correct. A little change in either the cash flows or the WACC can have large effect on the estimated market value. The free cash flows are estimated from the analyst's own expectations to the future based on a strategic analysis and historical financial numbers. Therefore the estimated market value will most likely be different from each person who has estimated the market value.

The free cash flows to the firm have a horizon and a terminal period. In the enterprise value model the terminal value accounts for about 70-75 percent of the present value. It is therefore very important to be careful when calculating the different parameters in the company's terminal period. Comparing the enterprise value model to the EVA model, the terminal period in the EVA model only account for about 35 percent of the present value. The large difference is due to that the EVA model uses the invested capital as a starting point. The EVA model is priced on book values, which is a good estimate if a company has a large part of tangible assets.

Conclusion

Based on above the DCF model will be used to estimate PANDORA's expected market value of equity. The DCF model is theoretically the best to use when a company like PANDORA has large part of intangible assets. At the same time, the model is priced on expectations to the future income and not book values. Companies as PANDORA are often more valuable than the book values.

Strategic analysis

PEST analysis

Political/legal factors

TAX

Taxes are an important factor for PANDORA's cash flows and operations, because the rates can differ depending what the company's home country is and where they have their production facilities. PANDORA's headquarter is based in Denmark, and therefore the tax rates are depending on Denmark's corporation tax rates. The Danish corporation tax rates was until 2013 25 percent. In 2014, it decreased to 24.5 percent and to 23.5 percent in 2015. From 2016 and forward the tax rate is 22 percent[13]. Therefore a change in income will have an effect on tax payment in Denmark.

PANDORA's production is located in Thailand. Currently PANDORA has tax benefits in Thailand. PANDORA is included in some Board of Investment agreements, which reduce the income tax in Thailand. Some income is tax-free and others are taxed by 20 percent. Therefore classification and change in types of incomes and costs can have an effect on tax payments in Thailand.[14] PANDORA continuously has to apply for the Board of Investment agreements. It will affect PANDORA negatively if they in the future do not qualify for the favourable tax benefits.

PANDORA has from 2009 to 2015 had a tax case regarding transfer pricing with the Danish tax regulations. In 2015 PANDORA entered into a settlement where PANDORA had to pay DKK 995 million. This resulted in that their effective tax rate was 31.3 percent in 2015, which was significant higher than earlier years. In the future PANDORA's effective tax rate will probably be lower since they have paid their debt to TAX and the Danish corporate tax rate are reduced to 22 percent from 2016.

Foreign trade regulations

PANDORA is an exporting company and therefore trade regulations are important factors, since it may affect their cash flow. Denmark is a part of the European Union (EU). This means that

[13] skatteministeriet, 2015
[14] Annual report, 2015, p. 89

PANDORA can participate in the European Union's internal market, which includes free movement of capital, services, persons and goods. When the export reaches outside of the European Union, there will be other conditions to be aware.

Economic factors

Cyclical sensitivity

PANDORA produces jewelleries in the affordable luxury category. The segment affordable luxury is less cyclical sensitive than the high-end jewellery segment. Therefore eventual crises in one or more of the markets will not automatically means a negatively result for PANDORA. Under the financial crisis PANDORA managed to deliver a positive result in both 2009 and 2010.

Commodity prices

PANDORA's commodities consist primarily of silver and gold[15]. Changes in the prices for silver and gold will have significant influence for PANDORA's cost of sales. The prices for silver and gold are determined by the international supply and demand. The prices are specially affected under crises around the world. The jewellery industry is especially affected by the fluctuations in the price and supply of diamonds and gold. The prices are of these materials are historical high, and therefore many designers are begin to use less expensive materials.[16]

PANDORA uses commodity futures contracts to hedge its exposure to changes in the commodity prices.[17] These commodity futures contracts can have a negative economic result for PANDORA. PANDORA often buys their gold and silver for the next three, six, nine or twelve months. When PANDORA buys gold and silver to the future they can risk that the buying prices are higher than the spot prices. On the other hand if the gold and silver prices increases over the year, PANDORA has saved money and therefore can increase their profit margin.[18]

Currency risk

Even though many of PANDORA's income, costs and investments are in foreign currencies PANDORA's presentation currency is Danish Kroner. Most of PANDORA's income is in USD,

[15] Annual report, 2015, p. 103
[16] Marketline, 2016, p. 16
[17] Annual report, 2015, p. 106
[18] Berlingske, 2013

CAD, AUD, GBP and EUR. Costs to silver and gold are in USD and other commodities and other costs are primarily in THB.[19] Exchange rate fluctuations can have significant influence on PANDORA's future cash flows and income, since the fluctuations can influence the income and costs negatively. PANDORA uses foreign exchange contracts to hedge its exposure to changes in the currency against Danish kroner.[20]

Development in GDP

PANDORA may be affected by the development in the gross domestic product (GDP) in the markets where they are located. PANDORA's largest markets are USA, Canada, Great Britain, Italy, Germany and Australia. PANDORA's largest markets represent five or more percent of the total revenue[21]. PANDORA's activities are divided into three segments; North- and South America, Europe and Asia Pacific[22]. As I will elaborate in the forecasting section PANDORA's revenue growth will in the long run be equal to the overall economic. Below figure shows the annual percentage growth rate in the GDP from 2011 to 2017 in PANDORA's largest markets and the total OECD GDP.[23]

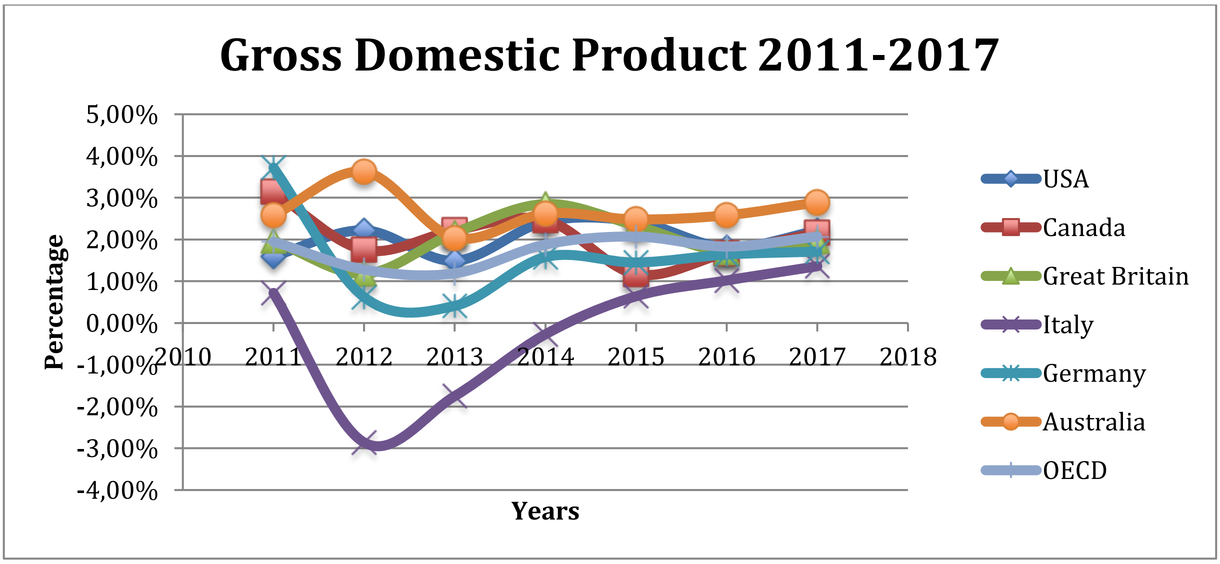

Figure 2: Gross Domestic Product 2011-2017

[19] Annual report, 2015, p. 103
[20] Annual report, 2015, p. 106
[21] Annual report, 2015, p. 43
[22] Annual report, 2015, p. 82
[23] OECD, 2016a

I believe that the total OECD growth is a good indicator of the annual growth rates in GDP in PANDORA's markets. The GDP in OECD has in average increased by 1.75 percent since 2011. In 2016 and 2017 the GDP will increase by 1.83 and 2.07 percent. On basis of this, I have estimated the annual growth rate in GDP to be two percent in the future.

In October 2016 Gagnon, Johansen and Lopez-Salido published the article: "Understanding the new normal: The role of demographic". Their results indicate that the GDP growth will remain low in the coming decades. The results also indicated that the interest rates will remain low in the future.[24] These observations about the GDP growth and the interest rates strengthen my conclusions. Therefore I believe that a future GDP growth at two percent is realistic.

Sociocultural factors

Quality is an important element when many women buy jewelleries. The jewellery industry success depends on their ability to predict their consumers' preferences and patterns. Trends in jewelleries can be different from market to market, and therefore it is important that PANDORA can identify changes in the different consumers' preferences.

Technological factors

Online marketing and web shops have gained huge influence in general worldwide. Also in the jewellery industry online marketing and online sales platform have been more and more popular. The jewellery industry has been more transparent in relation to prices and assortments. First in April 2015 PANDORA launched their first online sales platform in USA. Today PANDORA has online sales platforms in 14 countries including China.

Counterfeits goods is an increasing problem in several industries around the world including the jewellery industry. The problem with counterfeit goods is especially large in the jewellery industry because the profit on counterfeit jewelleries is huge. Online sales platforms make it easier for the people to falsify the products. Companies have to fight the counterfeiters since copy sales of their jewelleries will have a negative impact on their income. The counterfeiters will always be there, so the companies have to be aware of them all the time.

---

[24] Gagnon, Johansen, Lopez-Salido, 2016, p. 1

Summary of the PEST analysis

Commodity prices, trends and the Internet are the macro factors, which will have the largest influence for PANDORA future cash flows. These macro factors are the ones PANDORA should be focus at in the future. If PANDORA doesn't follow the trends, both according to the Internet and the fashion, in the jewellery industry they will loose customers to their competitors or if their commodity prices increase a lot, PANDORA's profit margin will decrease and they might need to increase their prices, which in the end can risk the costumers.

Value chain

PANDORA uses a vertical integrated value chain where they have control with the entire value chain.[25]

Inbound logistic

The production facility in Thailand buys all the commodities they use in the production this include gold, silver, stone etc. All other products as bags, gift boxes etc. are bought from the procurement department in Copenhagen.

Today PANDORA has around 40 different suppliers worldwide.

Production

PANDORA's design team designs all of their affordable luxury jewelleries. PANDORA has seven product launches every year; Valentine's Day, Spring, Mother's Day, Summer, Pre Autumn, Autumn and Christmas to be sure that the customers always have new opportunities to choose between.[26]

Each piece of jewellery is made in 3D in PANDORA's innovation Centre in Thailand. Each design is analysed to organize the most effective production process. PANDORA has one production facility in Thailand with around 11,000 employees. Each piece of jewellery is hand

[25] Annual report, 2015, p. 43
[26] Annual report, 2015, p. 17

processed of experienced jewellery artisans, combined with standardized and modern productions technics PANDORA produced more than 100 million quality jewelleries in 2015.

Since PANDORA owns the production facility in Thailand they have the opportunity to make up and downs adjustments for each piece of jewellery depending on demand. At the same time they can always have a regular supply of quality jewelleries.[27]

For only four years ago PANDORA had only 5,000 employees in Thailand, today this is more than double because of the increase demand for their jewelleries. To increase the production capacity in the future PANDORA is building another production facility in North Thailand. The new production facility is expected to be fully functional in 2017. In the period 2015 and 2019 PANDORA expects to invest 1.8 million DKK in capital expenditures related to the increase of the production capacity in Thailand. The increase of the production capacity will double the current production capacity.[28]

Outbound logistic

PANDORA has four global distributions centre, which distribute PANDORA's products to the shops and jewellery stores around the world.[29] PANDORA's focus is on PANDORA branded distribution network, which include PANDORA owned shops on selected profitable markets. PANDORA's networking strategy is to have focus on attractive location and strong execution in the shops.[30]

PANDORA has few distributors. They have one in Japan, one in China and one in the Philippines. PANDORA has with all three distributors a strategic alliance around joint distribution of PANDORA's jewelleries on the three markets.

[27] Annual report, 2015, p. 17
[28] Annual report, 2015, p. 7
[29] Annual report, 2015, p. 42
[30] Annual report, 2015, p. 24

Marketing and Sales

PANDORA has around 9,300 retailers including 1,800 concept stores.[31] PANDORA has online sales platforms in 14 countries. PANDORA's goal is to have online sales platforms in each country. In China PANDORA is online on Alibaba's TMALL, which is a business to consumer platform. This is their first online presence in China. PANDORA launches their own online sales Platform in China in December 2016.[32]

The customers shopping experience is very important for the company's success and PANDORA increase the focus on branded sales. 89 percent of the company's revenue is related to branded sales. The majority of branded sales are franchise stores but the company has 592 PANDORA owned shops. These PANDORA owned shops generates 27 percent of PANDORA's revenue.[33]

PANDORA has launched the PANDORA brand DNA to ensure that the brand is presented in the same way in all markets both in the shops, the marketing and all other activities. The brand DNA consists of three approaches which celebrating women; Affordable luxury, Contemporary and Personal expression. The PANDORA brand DNA is equal worldwide, but the marketing in the different market can focus different on the three approaches.[34]

Service after sale

PANDORA has as many other company's exchange services and repair. Women can be members of PANDORA's customer club with special offers, VIP events, their own personal wish list etc. Besides this PANDORA has an APP, where it is possible to look at all their products.

Support activities

In Porters generic value chain there is different kinds of support activities as human resource, firm infrastructure, technology development and procurement. PANDORA has all of these support activities in the organisation. One of the most valuable support activities PANDORA has is in Human Resource Management. PANDORA educates and has close dialogue with their suppliers. PANDORA has a "responsible supplier programme". Based on this programme

[31] Annual Report, 2015, p. 3
[32] PANDORA Press releases, 2016.
[33] Annual report, 2015, p. 3
[34] Annual report, 2015, p. 13

PANDORA has achieved their key performance indicator for procurement in 2015, which demanded that 80 percent of the entire purchase value should be from companies, which are certified members of RJC.[35]

To increase their environment responsible procurement procedures PANDORA uses recyclable metals. In 2015 96 percent of the gold used in the production came from recyclable metals, for silver the number was 83 percent. The rest of the metals came from certified responsible mining.[36]

Summary of the value chain analysis

It is very value creating for PANDORA to have a vertical integrated value chain. In this way they have the opportunity to manage and control the entire company from down to top. The most value creating part in PANDORA's value chain is their production. PANDORA produces all the jewelleries by them self. The own production does that they have the opportunity to react faster in the case of changes in the demand or the trend. At the same time they can control, that the jewelleries have the high quality that PANDORA wishes. Today PANDORA' production facilities can handle the production of more than 100 million jewelleries every year, and in the future this will be higher.

Porters five forces

The Porters Five Forces model will give an overview over the global jewellery industry. A further analysis of the individuals markets will be an extension of the Porters Five Forces.

In 2015 the global jewellery market had a value of $481,532.9 million. It was an increase of 7.7 percent from 2014. The global jewellery and watches market is forecasted to grow 47.5 percent until 2020, and the value will reach $710,275.2 million.[37]

[35] RJC = Responsible Jewellery Council
[36] Annual report, 2015, p. 36
[37] Marketline, 2016, p. 2

Bargaining power of buyers

The buyers are in this case defined as the end consumer. PANDORA produces and sells their jewelleries through retailers, franchise stores and own stores. According to Porter, the individual consumer's strength relative to the companies depends on the consumers bargaining power and price sensitivity.[38]

In this market there is a large number of small buyers, which tends to weaken the buyers bargaining power. On the other side it is easy and cost free for the consumer to switch to another retailer or brand. The low switching cost makes the buyers bargaining power higher.

In some part of the market the products are undifferentiated but in others the products are differentiated. Sometimes it is difficult to see the differentiation on jewelleries, some cheap jewelleries are a look a like to more expensive jewelleries but the quality and the authenticity is different. In the category undifferentiated products are especially counterfeits goods. Today counterfeits good in most cases are complete look a likes of the real product, but the quality is lower. In the category differentiated products are PANDORA's charms, which are easily recognizable from the few other similar products on the market. Product differentiation also makes customers more loyal to the brand. Product differentiation and loyalty minimize the customers bargaining power.

The jewellery industry will be affected under recessions. Under recessions the customers are price sensitive and since jewelleries are a non-essential item, customers will not buy it, if the prices are too high.[39] This will increase the customers bargaining power.
As mentioned in the pest analysis the Internet has gained a huge influence in the jewellery industry. Today the industry is more transparent according to prices and assortments. It is easier for each customer to compare prices and select the best offers from the different stores and brands. Most of the large brands have an online sales platform, so the customers easily can buy products from the different brands. The transparency to prices and assortment increases the customers bargaining power.

[38] Grant, 2013, p. 71-72
[39] Marketline, 2016, p. 14

The Internet, low switching costs and counterfeit goods make the buyers bargaining power moderate to high.

Bargaining power of suppliers

The suppliers are in this case the ones who supply PANDORA with input factors. According to Porter, the suppliers can pressure the companies operating margin by decreasing quality and service or increase the prices if they have a high bargaining power in the industry. Suppliers also have an advantage if the switching cost from one supplier to another supplier is high or the suppliers offer an important product to the company.[40]

The suppliers in the jewellery industry mainly include the ones who supply gold, silver and stones. In this market there are a high number of suppliers. The suppliers' deliver an important product to the jewellery manufactures, but the switching costs from one supplier to another are relatively low.

PANDORA has different suppliers of gold, silver and stones. At the same time they have requirements for their suppliers and all of their suppliers have to complete an education. If the suppliers do not meet the requirements PANDORA can cancel the cooperation. Since PANDORA educate their suppliers and have high requirements to their products it can be more difficult to switch and the switching costs are higher.

The number of suppliers and the switching costs makes the suppliers bargaining power moderate.

Threats of new entrants

Threats of potential entrants cover the possibility of new jewellery manufactories or retailers entering the industry, this might have a negative effect on PANDORA's future sales and earnings.[41] The barriers to entry are an advantage for the existing companies in the industry, if the barriers are large and expensive the bargaining power of new entrants is low. The barriers to entry are different from what kind of industry it is, but typically it is capital requirements, product differentiation and economics of scale.[42]

---

[40] Petersen & Plenborg, 2012, p. 190
[41] Petersen & Plenborg, 2012, p. 189
[42] Grant, 2013, p. 67

The establishment of jewellery production in the market requires high liquidity to inventories, production facilities and building a brand identity through marketing. The demand for products from large brands is increasing, and therefore marketing to build a brand and increase brand awareness on the market requires investments. The high liquidity investments for producing jewelleries decrease the threats for new entrants. On the other hand many new entrants are motivated by the high profit and increasing market growth in the industry, which increase the threat.[28]

Today most marketing and customer relationship is through social medias, since the customers use these platforms to collect information about the different brands. Therefore it is easier for new brands to increase brand awareness and build customer relationships and this increase the threats of new entrants.[43]

New entrants in the jewellery industry do not necessarily need to have their own production facilities and commodities stock. New entrants can buy products from existing suppliers and can just establish the stores and brand. This makes the capital requirements essentially lower and increase the threats of new entrants.

In recent years many fashion retailers have expanding their product assortment to include fashion jewelleries. These retailers already have a brand and they only need small adjustments to their production facilities. The entrant of fashion retailers is analysed as high.

High profits and increasing market growth makes the threat of new entrants in the jewellery industry high.

Threats of substitutes

Price performance characteristics and availability of products are the two types of threats of substitutes in an industry.[44] A high return in the market will make the presence of substitutes more attractive; this can limit the potential sales and revenues for the existing companies in the market.

The Internet is probably the largest threat of substitute in the jewellery industry. The Internet has 8.8 million members worldwide and has made it possible for the manufactories to sell their

[43] Marketline, 2016, p. 16
[44] Grant, 2013, p. 66

products directly to the end consumer instead of through the retailer. The manufactures can ship the jewelleries directly from the production, which makes it both easier and cheaper for the manufacture and the end consumer. Second hand products are another threat online sales platforms have created. The consumer has the opportunity to sell second hand products through online sales platforms like eBay and DBA. Consumers worldwide can sell or buy jewelleries through these platforms, which may limit the sale of new jewelleries.[45]
Online sales platforms have also made it easier to sell counterfeit goods. Jewelleries are categorized as a luxury good. In hard times and recessions counterfeit goods will be a good substitute and these counterfeits jewelleries are often produced in materials, which the customers will consider as the same quality. Online sales platforms and counterfeits goods increase the threat of substitutes.

Jewelleries are often bought as presents or a personal good. In the global market there are many substitutes for both presents and personal goods. Jewelleries have a wide range of prices and therefore different products can be substitutes in the different price ranges. In the high end products as holidays and cars can be substitutes and in the lower end personal treatments as SPA and clothes can be substitutes.

The switching costs to a substitute product are only few or in most cases none.

The wide range of substitutes, online sales platform and low switching costs makes the threat from substitutes high.

Degree of rivalry in the market

Rivalry between competitors is the major determinant of the overall state of competition and the general level of profitability in an industry. The intensity of the degree of rivalry is explained by several factors and diversity of competitors, product differentiation, exit barriers and concentration. Concentration indicates the number of the companies competing in the industry and the size of them. Low concentration in an industry increases rivalry while it is opposite with high concentration.[46]

---

[45] Marketline, 2015, p. 17
[46] Grant, 2013, p. 69

The jewellery industry consists both of jewellers, department stores, mass merchandise, online retailers, fashion stores, auction sites, other retailers etc. Specialists in the industry often have success in one market where more diversified companies often have success in more markets. Especially producers and retailers may have success with seasonality sales as Mother's day, Christmas, Valentine etc.

In the jewellery industry there are many small players and only a few dominant players. 80 percent of the global annual sold jewelleries are unbranded and the ten largest players in the industry capture only 12 percent of the global sales. This indicates that the jewellery industry is high fragmented and competitive.[47]

In some established market the overall economy is increasing and the personal disposable income is improving, which has increased customer spending on luxury goods. At the same time customers from developing markets such as China, India and Russia are being more brand-conscious and these customers are spending more and more money on luxury from overseas including Danish brands. On the other hand economic instability in some part of the world, social unrest and turmoil on the global foreign-exchange markets can have influence of the growth in the industry.[32]

Furthermore the jewellery industry is expecting to grow at a healthy steady rate in the future and it is easy and not expensive to exit, which increase the rivalry.

Low exit cost, high fragmentation, few large players and the overall economy makes the degree of rivalry high.

Market analyse

PANDORA operates on three segmented geographic areas: Americas, Europa and Asia Pacific. Europe is the largest of the three areas and Asia Pacific is the smallest when looking at revenue.

[47] Marketline, 2016, p. 16

In the below figure is illustrated the distribution of revenue in Americas, Europe and Asia Pacific for the last five years.[48]

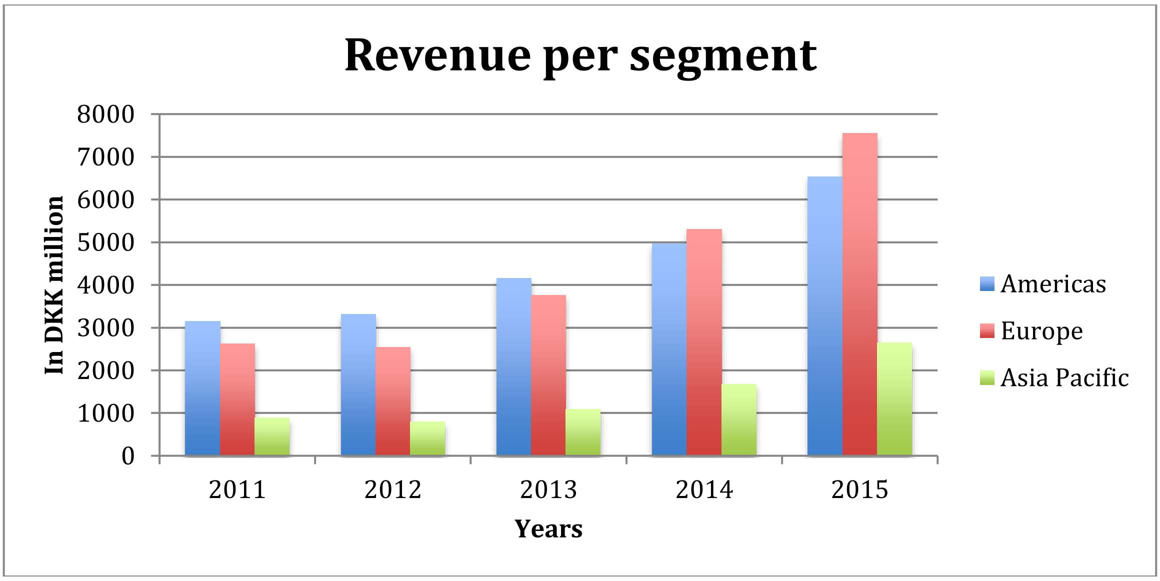

Figure 3: Revenue in geographic segments

Expect from 2011 to 2012, where the areas Europe and Asia Pacific had a small decrease, the three areas are increasing each year. Until 2014 Americas was the largest area, but in 2014 Europe became the largest area measured in revenue.

In the below section I will analyse the three areas and PANDORA's potential and growth on the different markets.

Asia Pacific

Asia Pacific is the world's largest jewellery industry and it accounts for around 50 percent of the world's jewelleries and watches market value. In 2015 the market value in Asia Pacific was on $ 238,645 million.[49] The jewellery and watches industry in Asia Pacific has been growing at a steady strong rate with an annual growth rate at 11 percent between 2011 and 2015. The strong rate trend is expected to continue in the future. In 2020 the Asia Pacific jewellery industry is

[48] Annual reports 2011-2016
[49] Marketline, 2016, p. 9

expected to reach a market value at $400 million, which is an increase at around 67 percent since 2015.[50]

One-third of the global personal luxury goods sales are on the Asia Pacific market, which is the key area for international luxury brands. Especially affordable luxury goods have in recent years gained impact on the market and the demand for these goods are increasing. Affordable luxury goods are high quality branded goods to lower prices than high-end luxury goods. The high-end luxury goods are already well established in the Asia Pacific market and they are in the risk of overexposure. The risk of overexposure does that the customers are looking for different brands.[35]

PANDORA's sales in the geographic segmented area Asia Pacific has tripled since 2011. In 2015 the revenue was DKK 2652 million, which was an increase of 58 percent from 2014.[51]

Today PANDORA has 268 concept stores in Asia Pacific and they expect to expand with around 50 concept stores during 2016, which is 20 percent of the total opening of new concept stores worldwide. Until 2018 PANDORA plans to open between 40 and 60 concept stores every year. Asia is a new region for PANDORA and the geographic segment has a large growth potential for the company. Especially China and Japan will have PANDORA's focus in the future, since these countries represent a third of the global jewelleries sales.

China

China is the largest jewellery market in the Asia Pacific and also the largest market worldwide. China's jewellery market had in 2015 a market value of $97 billion. This was an increase of seven percent from 2014 and the market expects to have an annual growth rate at six percent until 2021.[52]

---

[50] Marketline, 2016, p. 7
[51] Annual report, 2016, p. 83
[52] Press release, 2016

China has 213 billion citizens, which is the second largest worldwide. China is one of the countries where the numbers of Ultra High Net Worth Individuals are growing. These individuals have an increasing buyer power and higher disposable income.[53]

Faster Internet and increased payment security has increased sales by online sales platform in China. The Chinese has bought for more than DKK 1,780 billion on the Internet in 2015. This is an increase at 53 percent from 2014.[37] As the global jewellery market, the market in China is fragmented and there is a lack of truly dominated players.

Europe

Europe accounts for 21 percent of the market value in the global jewellery and watches industry. In 2015 the European market increased by 5.5 percent and reach a market value of $101,270 million. It is expecting that the European jewellery market will have a moderate steady growth in the future. Until 2020 the market will increase to $128,067 million, which is a growth of 26.5 percent since 2015.[54] Especially brand jewelleries have grown the past years. Europe is the largest market worldwide for luxury goods, since most of the major brand companies are located in Europe and large spending from tourism.[55]

The largest jewelleries markets in Europe are France, Italy, Germany, United Kingdom and Spain. Here the biggest trend in consumer behaviour is evolving and buying jewelleries are no longer just for gifts and special treatments.[56] Customers, which are buying luxury goods often, purchase their goods locally. The growths in these markets increasingly consist of tourist spending.

In the European jewellery market gold has the highest demand followed by silver, also costume jewelleries have gained market value in recent years. In Eastern Europe the customer prefer expressive and creative jewelleries in the affordable luxury category. In East- and Central Europe the customers prefer gold and silver jewelleries but still in the affordable luxury category. In the mature countries costume jewelleries has increasing popularity.[57]

---

[53] Marketline, 2016, p. 14
[54] Marketline, 2016, p. 2
[55] Marketline, 2016, p. 18
[56] Marketline, 2016, p. 14
[57] Marketline, 2016, p. 15-18

PANDORA's sale in the geographic segmented area Europe has almost tripled since 2011. In 2015 the revenue was DKK 7548 million, which makes PANDORA's largest geographic area.[58] United Kingdom is PANDORA's largest market in Europe with revenue of DKK 2,487 million in 2015.

Today PANDORA has 1033 concept stores in Europe and they expect to expand with around 150 concept stores during 2016, which is 60 percent of the total opening of new concept stores worldwide. Until 2018 PANDORA plans to open between 120 and 180 concept stores every year. Italia and France are the two largest jewelleries markets in Europe and at the same time the countries are relatively new for PANDORA. Both France and Italy has large growth potential for PANDORA and the company will increase their activities in these markets.[59]

Americas

It has not been possible to find a market analyse for the entire Americas market, instead this market will be divided into North America and South America.

PANDORA's sale in the geographic segmented area Americas has doubled since 2011. In 2015 the revenue was DKK 6537 million, which makes it PANDORA's second largest geographic area.[60] USA is PANDORA's largest market in America with revenue of DKK 4,893 million in 2015.[44]

Today PANDORA has 501 concept stores in Americas and they expect to expand with around 50 concept stores during 2016, which is 20 percent of the total opening of new concept stores worldwide. Until 2018 PANDORA plans to open between 40 and 60 concept stores every year.

North American

The jewellery and watches market in North American has had a healthy steady rate grow and this trend is expected to continue in the future. The market value was in 2015 $107,600 million. Since

[58] Annual report, 2016, p. 83
[59] Annual report, 2016, p. 27
[60] Annual report, 2016, p. 83

2011 there has been an annual growth rate at 5.4 percent. The North American jewellery and watches market expects to increase 24 % until 2020.[61]
USA is the largest market in North America, which accounts for more than 90 percent of the jewellery and watches market in North American. The USA market will grow at same level as the entire North American market.[62]

The sales of luxury goods in the North American market are highly influenced by currency fluctuations. Currently the US dollar is strong and there is a decrease in the Chinese tourism to the US, if this continues the sales of luxury good will decrease, since the growth in sales depends on tourism. At the same time the US dollar appreciating against the Mexican peso, which makes the price of luxury good more attractive and this may have a positive impact of local sales in Mexico.[45]

Customers in the US and Canadian market often buy luxury goods locally. Many retailers from the US are expanding to Canada and this will increase demand for luxury goods in the Canadian market.

South American

Brasilia is PANDORA's largest market in South American. The market accounts for 20 percent of PANDORA's sales in the category others Americas, which do not include USA. The jewellery and watches market in Brazil has had a strong growth rate in recent years. The future growth rate is not expected to be as high. The Jewellery and watches market has a market value at $5,727 million and in 2020 the market value expects to be 7,805 with an annual growth rate at 6.4 percent.[63]

As in Asia there is a high number of high net worth individuals in South America, almost 50 percent of the high net worth individuals are living in Brazil and Brazil is homeland for high number of wealthy people, which makes it an important market for sales of luxury goods.[64]

[61] Marketline, 2016, p. 7
[62] Marketline, 2016, p. 7
[63] Marketline, 2016, p. 7
[64] Marketline, 2016, p. 7

In Brazil there is high tariffs on luxury goods, which in many cases increases the prices with 50-60 percent. These tariffs have a negatively impact on sales of luxury goods and therefore many international brands have lower their prices to increase sales.[65]

Summary of the market analysis

The three geographic segmented areas Asia Pacific, Europe and Americas have all an increasing jewellery market in the coming years, which indicates that PANDORA has the opportunity to increase sales and gain market shares. Especially the Asia Pacific market has large growth opportunities because of the lack of truly dominated players and high growth potential in the jewellery industry.

SWOT

In the SWOT analysis PANDORA's internal and external factors are determined. The internal factors are divided into strengths and weaknesses and the external factors are divided into opportunities and strengths. Below figure illustrates PANDORA's SWOT.

[65] Marketline, 2016, p. 17

Internal factors	
Strengths	**Weaknesses**
Production faclities	Not online sales in every maket
7 new launches every year	Distribution problems
Affordable luxury segment	Possibility to pay to high prices for silver and gold
High capacity - double in 2017	
Resonsible supplier programme	
World known brand	
Differentiated communication and marketing	
External factors	
Opportunities	**Threats**
Growing jewellery market worldwide	Currency risk
Fragmented industry	Increasing silver and gold prices
Lack of truly dominated players	Trends can change
Ultra High Net Worth Individuals	High tariff in Brazil
New trend in consumer behavior	Internet - counterfeit goods
Growth in overall economy	High rivalry
Internet	High threats from substitutes
	High threats from new entrants
	Moderate to high buyer power

Figure 4: SWOT

Financial statement analysis

An analysis of the financial statement can give an insight into PANDORA's trends and profitability according to the historical financial ratios. By analyse the historical financial ratios in a company, you can identify the company's key value drivers within the financial.

Reorganizing the financial statement

A company consist of three different activities; operating, investing and financial. Before calculating PANDORA's financial ratios to measure their profitability it is a good idea to separate the operating and investing activities in operations from the financial activities. The reason to separate the activities into operations and financial is that the operations is the primary driving force behind value creation. At the same time the operating items are the ones who are difficult for the competitors to copy and therefore unique for PANDORA. The financial items are easier to copy for the competitors, but on the other hand the financial items finance the operations.[66]

Reorganizing the income statement

In the analytical income statement the different items should be separating into operations or financial items. This classification of the financial items will give a better picture of the company's sources of the value creation.

The key performance measure in the analytical income statement is the operating profit also called NOPAT. The operating profit shows PANDORA's profit from its core business.[67] The analytical income statement is illustrated in appendix 2.

DEPRECIATION, AMORTISATION, WRITE-DOWNS AND IMPAIRMENT LOSSES

In PANDORA's income statement depreciations and amortisations are included in cost of sales, sales, distribution and marketing expenses and administrative expenses. This is illustrated in note 3.1 in the Annual Report.[68] In the below figure the five years of depreciation and amortisation are illustrated.

DKK million	**2011**	**2012**	**2013**	**2014**	**2015**
Cost of sales	18	21	41	49	60
Sales, distribution and marketing expenses	163	102	83	92	253
Administrative espenses	40	57	76	81	87
Total	**221**	**180**	**200**	**222**	**400**

Table 1: Notes: DEPRECIATION and AMORTISATION

To calculate earnings before interests, taxes, depreciations and amortisation also called EBITDA it is important to reclassifying depreciation and amortisation in the analytical income statement so these items no longer are a part of cost of sales, sales, distribution and marketing expenses and administrative expenses but instead are one item called depreciation and amortisation. The item

[66] Petersen & Plenborg, 2012, p. 68
[67] Petersen & Plenborg, 2012, p. 73
[68] The number of note can changes for the different years.

depreciation and amortisation is first a part of the analytical income statement after EBITDA is calculated.

EBITDA is a useful earning measure when you calculate the cash flow statement, and popular when you valuate a company.[69]

Taxes

In PANDORA's annual report income tax expenses is a single item in the income statement. Income tax expenses are related both to operating and financial items, while PANDORA both have financial income and financial costs. When making the analytical income statement it is important to choose between the effective tax rate and the marginal tax rate.

In the annual report note 2.5 PANDORA's tax is divided into several items.[70] The division of the tax shows that PANDORA is starting by calculate the tax for the year using the domestic marginal tax rate, and then they draw and plusses the tax effects including deviations in foreign subsidiaries' tax rates compared to tax rate applicable for the parent company, impact of changes in tax rates, non-taxable income and non-deductible expenses, adjustment concerning previous years and adjustments of deferred tax assets, net. PANDORA is therefore using the effective tax rate. PANDORA is an international company it makes good sense that PANDORA is using the effective tax rate.

$$Effective\ tax\ rate = \frac{Corporation\ tax * 100}{Earnings\ before\ tax}$$

PANDORA's homeland is Denmark. The marginal tax rate in Denmark was in 2011 to 2013 25 percent, in 2014 the marginal tax rate was 24.5 percent and in 2015 it was 23.5 percent. In below figure the marginal and effective tax rates for the years 2011 to 2015 are illustrated.

[69] Petersen & Plenborg, 2012, p. 84
[70] Annual report, 2014/2015, p. 51

Tax percent	2011	2012	2013	2014	2015
Tax percent in DK	25%	25%	25%	24,50%	23,50%
Effective tax rate	14,0%	18,7%	19,0%	20,0%	31,3%

Table 2: Tax rate in DK 2011-2015

Reorganizing the balance sheet

Like the analytical income statement the analytical balance sheet should be classified in operations and financial items. If an item in the analytical income statement is classified as operations, the matching item in the analytical balance sheet should also be classified as operations.

Invested capital or net operating assets is the combined investment in PANDORA's operating activities. Invested capital is the sum of operating assets minus the operating liabilities. The higher the operating liabilities are the less PANDORA needs to borrow money to finance its activities.[71] The analytical balance sheet is illustrated in appendix 3.

Assets

Most assets are classified as operating assets as goodwill, brands, receivables and plant, equipment and property, but it is necessary to make some adjustment.

Cash

Cash are assets classified as financial assets. Cash can often be divided into excess cash and operating cash. Operating cash are used in day-to-day operations. The excess cash and operating cash are not been separated in the balance sheet. In this case PANDORA has no notes for this items, and it is therefore difficult to reclassified cash into operating and excess cash. According to Petersen and Petersen the reclassification of the cash is in most cases modest.[72] In the notes regarding cash, cash are considering as net interest-bearing debt. I therefore consider them only to be excess cash and an interest-bearing asset.

[71] Petersen & Plenborg, 2012, p. 75
[72] Petersen & Plenborg, 2012, p. 76-77

Other financial assets

Together with cash, other financial assets are classified as financial assets, since it is a interest bearing assets.

Equity and liabilities

Liabilities can be divided into operating and financial liabilities. Liabilities that are interest free are considered as operating liabilities. These operating liabilities have been deducted from operating assets to calculate the invested capital.

Trade payables, income tax payables and other payables

Payables are in most cases not interest bearing and at the same time payables are not a source for funding the operating activities in the company. In PANDORA's annual report there are nothing, which indicates that their payables are interest bearing and therefore I consider them as operating liabilities.

Deferred tax

Deferred tax liabilities are a consequence of temporary differences between book values and tax values. Deferred tax in PANDORA is related to intangible and tangible assets and is therefore considered as operating liabilities.

Provisions

In provision are included sales return and warranty provision and other provisions. The provisions are not interest bearing and therefore they are considered as operating liabilities.

Estimating the cost of capital

In a valuation it is important to estimate the cost of capital to determine whether PANDORA creates value for their investors and if is profitable. The calculation of the cost of capital is made before the profitability analysis and the valuation, while the cost of capital is a part of the profitability analysis and the valuation. When estimating the cost of capital it is important to take all the investors required return into consideration and therefore I have calculated the weighted average cost of capital also called WACC. Below sees the formula for the weighted average cost of capital:[73]

$$WACC = \frac{NIBD}{(NIBD + E)} * rd * (1 - t) + \frac{E}{(NIBD + E)} * re$$

Capital structure

PANDORA's capital structure consists both of debt and equity. When calculating the WACC the markets value of debt and equity should be used. The market value of equity is estimated as the share price times the number of shares and the market value of debt is equal to net interest-bearing debt. In 2015 PANDORA had a capital structure at 98.57 percent equity and 1.43 percent debt. Hence PANDORA's capital structure in the calculation of WACC is 98.57 percent equity and 1.43 percent debt.

Estimating owners' required rate of return

One of the most common ways of estimating the required rate of return, when doing a valuation, is the Capital Asset Pricing Model also called CAPM. CAPM consist of three factors; the risk free rate, the market risk premium and a company-specific risk adjustment.[74] Below sees the formula for the Capital Asset Pricing Model:

$$r_e = r_f + \beta_e * (r_m - r_f)$$

The risk free rate and market risk premium are common to all companies in the market. It is only beta that varies across the companies. Beta is the incremental risk to a diversified investor.[75]

[73] Petersen & Plenborg, 2012, p. 246
[74] Koller et al, 2010, p. 234
[75] Koller et al, 2010, p. 235

Estimating the risk-free interest rate

The risk-free interest rate indicates how much an investor can earn without taking any risks. The best way to define the risk free interest rate is to use the expected return on a zero-beta portfolio, but this is only possible in the theory and not in practice. Instead, the most common way is to use a government bond, since this is risk free. An important assumption when using a government bond is that the bond should be risk-free, there has been cases where not all government bonds were risk-free.[76]

There are different types of government bonds according to time to maturity. When estimating the risk-free interest rate, you need to consider the time to maturity. The optimal way would be to discount each cash flow with a government bond that has similar time to maturity. This way of discounting the cash flows would take a lot of time and therefore it is more common to use a government bond with long maturity often 10 years or 30 years.[77]

PANDORA's financial statements and cash flows is denominated in DKK, and to handle the inflation, it is important to use a government bond with same currency. I have chosen to use the interest rate on a 10-year Danish government bond instead of a 30-year government bond to avoid that illiquidity affects the yields.[78] According to Damodaran Danish government bonds are default free, and therefore I consider it as a good proxy for the risk-free interest rate.[79] Below figure shows the rate of a 10-years Danish government bond from 2011 to 2016.[80]

[76] Petersen & Plenborg, 2012, p. 249
[77] Koller et al, 2010, p. 237
[78] Petersen & Plenborg, 2012, p. 251
[79] Damodaran, 2016a
[80] Danmarks statistik, 2016a

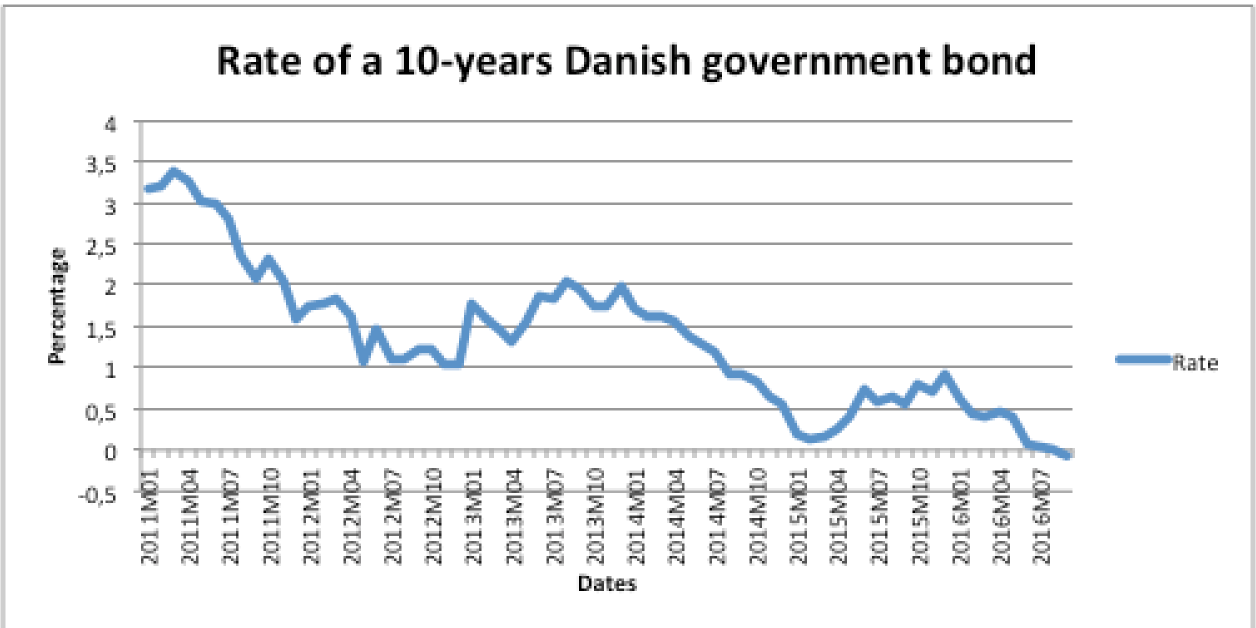

Figure 5: Rate of a 10-years Danish government bond 2010 – 2016

Years	2011	2012	2013	2014	2015
Average rate %	2,69	1,36	1,74	1,19	0,51

Table 3: Average risk-free interest rate 2011 – 2015

As illustrated in the figure the rate of a 10-years Danish government bond has been fluctuating during the years. The rate was lowest in August 2016, where the rate was negative. The interest rate of 10-year Danish government bond was in December 2015 0.92 percent.[81] This is the risk free rate I will use to estimate PANDORA's WACC. The risk-free rate from December 2015 is used since PANDORA closed their financial year 2015 in December.

Estimating the market portfolio risk premium

The market risk premium shows the difference between market returns and the risk free rate. When calculating the market risk premium there are two ways; ex-post and ex-ante approach.[82]

The ex-post is the difference between the historical returns on the stock market and the risk free rate. The ex-ante approach is based on consensus earnings forecast. There has been several analysis of the Danish market risk premium.

[81] Danmarks statistik, 2016a
[82] Petersen & Plenborg, 2012, p. 263

The website market-risk-premia, which is a Deutsch website, has determined the market return and the market risk premium for several countries worldwide. Market-risk-premia uses the ex-post approach when calculating the market risk premium. According to the website the Danish market return in May 2015 was 5.43 percent.[83] Subtracting the risk-free rate it gives a market risk premium at 5.02 percent.[84]

Damodaran uses the historical data when calculating the market risk premium. According to Damodaran Denmark's risk premium was in January 2016 at six percent.[85]

Paplo Fernandez analysed in 2015 the market risk premium and risk-free rate for 41 countries worldwide.[86] In Denmark the study was based on 65 respondents. Fernandez determined the average risk premium in the Danish market to be 5.5 percent.

PWC analysed in 2015 the Danish stock market. The analysis is based on 17 respondents from valuation and corporate finance departments in Denmark. The respondents uses a market risk premium between four and eight percent with an average of 5.6 percent.[87]

The four analysis on the Danish risk premium shows a risk premium between five and six percent. Since Pablo Fernandez's analyse is based on most respondents from Denmark, and his risk premium is between the other market risk premiums, I have chosen to use a market risk premium at 5.5 percent.

Estimating the systematic risk (βe)

The systematic risk βe is estimated based on historical monthly stock returns. Since PANDORA has homeland in Denmark and most of the shareholders are from Denmark I have used an index on the C20 in the Danish market. The foreign investors have by buying PANDORA shares chosen to invest in the Danish share market. Therefore I find the index of the total Danish share market a fair index to use when calculating the beta value for PANDORA.

[83] Market risk premia, 2016a
[84] (5.43-0.41) = 5.02 percent
[85] Damodaran, 2016c
[86] Farnandez et al., 2015
[87] PWC, 2016

Monthly stock returns should provide sufficient observations for companies who have been listed for more than three years. Using daily or weekly returns are likely to have a significant bias because of the non-trading problem.[88]

The historical stock returns for the Danish market are calculated from an index of the prices on the Danish C20 market for the last five years found on Nasdaq Copenhagen.[89] The Historical stock prices for PANDORA the last five years are also found on Nasdaq.[90]
I have from the historical stock prices for PANDORA and the Danish share market calculated the monthly stock returns the past five years. By calculating the covariance between PANDORA and the Danish C20 market's returns and divided it by the variance of the returns in the market I have determined PANDORA's beta to 1.11.

Estimating the interest rate on debt

Cost of debt consists of the risk-free rate, a credit spread and the tax. Cost of debt after tax is calculated as illustrated below:[91]

$$r_d = \left(r_f + r_s\right) * (1 - t)$$

Risk-free rate

The risk-free rate is the same as the one determined in the section of estimating the interest risk-free rate.

Estimating the tax rate

The corporation tax is a part of the cost of debt. Since PANDORA has operations in other countries than Denmark, the effective tax rate should be used when calculating the cost of debt. It is very difficult to determine PANDORA's effective tax rate. The past five years the effective tax rate has fluctuated between 14 and 31 percent. A calculation of the future effective tax rate will

[88] Damodaran, 2016d
[89] Nashdaq, 2016b
[90] Nashdaq, 2016a
[91] Petersen & Plenborg, 2012, p. 265

require a lot of assumptions and knowledge, which is not available. Instead I use the corporate tax, which is 22 percent in 2016 and forward.[92]

Credit spread

PANDORA is in large segment of companies in Denmark and represented in the cap 20 market at the Copenhagen stock exchange. Usually you use the credit rating as an indicator of cost of debt.[21] In the end of 2014 S&P credit rated PANDORA A/S to be an AAA credit score, which is the highest credit quality.[93] A high credit range is a competitive advantage for a company, since they have the opportunity to borrow faster and have a low cost of borrowing. According to Damodaran a credit rating of AAA is equal to a credit spread of 0,75 percent.[22]

Cost of debt for companies can be estimated in two other ways; the synthetic rating or the recent borrowing history.[94] The synthetic rating is done by calculate the companies interest coverage ratio. The higher the interest cover ratio the higher is the rating and the lower is the credit spread. PANDORA's interest coverage ratio is calculated by divide EBIT with interest expenses. Calculating PANDORA's interest coverage ratio for the past years shows that the ratio all year except from 2011 is higher than 8.5. This indicates according to Damodaran that the rating should be AAA, just like credit rating from S&P. Based on S&P rating and the calculation of PANDORA's interest coverage ratio I Conclude that a credit spread of 0.75 percent is a reasonable credit spread for PANDORA's cost of debt.

Based on above estimations and assumptions PANDORA's WACC has been calculated as illustrated below.

$$WACC = 1.43\% * 0.92\% + 0.75\% * (1 - 22\%) + 98.57\% * 0.92\% + 1.11 * 5.5\% = 6.94\%$$

.

[92] Pest analysis
[93] McGraw Hill Financial (2014)
[94] Damodaran, 2016e

Summary of the estimation of cost of capital

PANDORA has a weighted average cost of capital at 6.49 percent, which is a low WACC comparing to other companies. PANDORA has an AAA credit rating, which indicates that their credit spread is very low and they have a very low debt ratio at 1.43 percent. The risk-free rate is currently historical low, which also affects the WACC. Based on this I conclude that the WACC for PANDORA is reasonable estimated.

Profitability analysis

One of the key areas of a financial analyse is to measure a company's profitability. Profitability is important for PANDORA's survival in the future and to secure a satisfying return to the shareholders. To define the future expectations for PANDORA the historical profitability is an important element.[95] The profitability analysis will together with the strategic analysis provide the basis for a correct and precise forecast of PANDORA's future profitability.

To analyse PANDORA's historical profitability I have chosen to use the DuPont model.[96] This model gives an overall structure of the historical profitability the past five financial years. It shows the level and fluctuations in their historical performance and helps define their key value drivers. I have chosen that the profitability is analysed on basis of the past five years, I think this is a realistic historic perspective, since the numbers relevance from more than five years back will be questionable. At the same time PANDORA was listed in 2010, hence both numbers and accounting can be different. The analysis will begin with an analysis of PANDORA's revenue overall and decomposed into the three main geographic segments.

Revenue

Below figure shows the total revenue the past five years and the revenues on the three main geographic segments: Americas, Europe and Asia Pacific. As mentioned in the strategic analysis, the three segments are different in a wide range of characteristics. The revenue consists of two components price and quantity. In the annual reports PANDORA does not include the amount of quantity sold in the different markets or the prices of these. In the annual report PANDORA

[95] Petersen & Plenborg, 2012, p. 93
[96] Petersen & Plenborg, 2012, p. 94

shows the overall revenue divided into the different product categories but not divide into markets level.

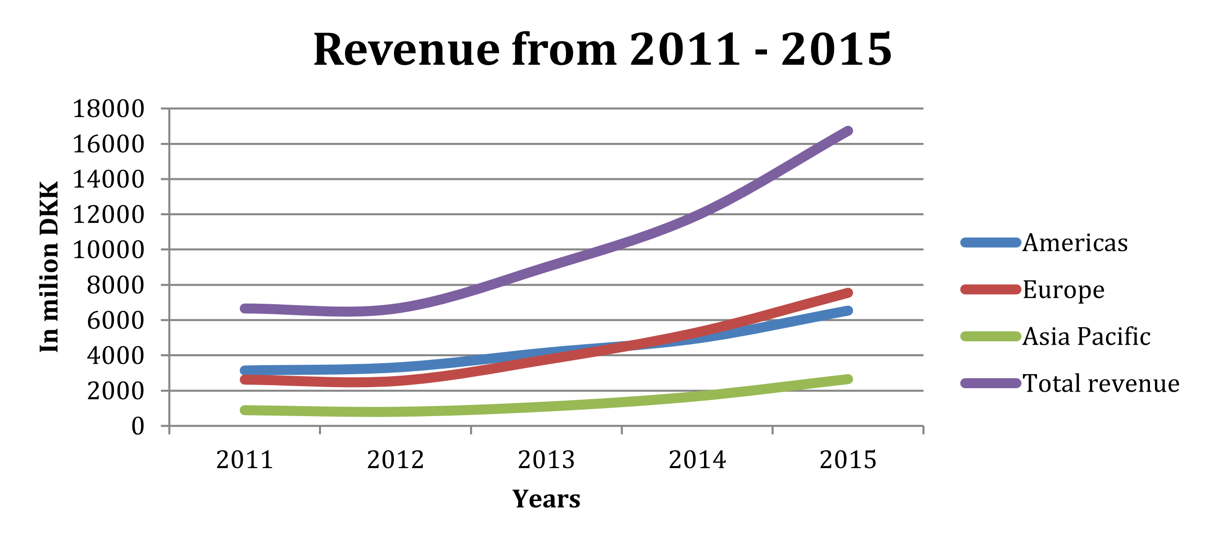

Figure 6: Revenue from 2011-201

As illustrated in above figure PANDORA's overall revenue has been increasing since 2012. From 2011 to 2012 there was a little decrease in the revenue at six million DKK, corresponding to a decrease at 0.1 percent. The decrease in revenue was due to decreases in the geographic segments Europe and Asia Pacific. I will elaborate on this in the different segments further down. From 2011 and forward PANDORA has had an annual average growth rate at 27 percent. The largest increase in revenue was from 2014 to 2015, which was at more than 40 percent. The large increase was especially a consequence of better operational results in most markets and a favourable development in exchange rates. Better operational result than the expectations was due to opening of 400 concept stores and launch of 446 new products. In the same period PANDORA closed more than 1,400 not branded outlets, so the focus forward is on branded concept stores.[97] The increase in revenue in recent years is also due to that PANDORA not only has focus on increase in established markets, but also focus on new markets and emerging markets. By having focus on growth in both established and emerging markets, PANDORA is less dependent of each market, and instead they can focus on gaining market shares worldwide.

[97] Annual report, 2015, p. 3

Revenue by product category					
In million DKK	2011	2012	2013	2014	2015
Charms	4639	4958	6293	7933	10833
Silver and gold charms bracelets	786	846	1157	1427	1923
Rings	401	427	550	1192	2066
Other jewellery	832	421	1010	1390	1915
Total revenue	6658	6652	9010	11942	16737

Table 4: Revenue by product category 2011-2015

As illustrated in above table PANDORA divide their products in four categories; Charms, Silver and gold charms bracelets, Rings and Other Jewellery. Charms are PANDORA's largest product category with a growth every year the past five years. Charms have had an annual average growth rate at 24 percent. Since the beginning of production of charms, it has been PANDORA's most important product category, which they have refined each year. The large increase in charms n recent years is due to the differentiation in the product. Women have the opportunity to create their own individual and personal bracelet combined of the different kinds of charms. Silver and gold charm bracelets stands for a minor part of the revenue than charms, which is due to that women can have many charms at one bracelet. On the other hand charms bracelets are still one of the largest product categories measured by revenue because women cannot use charms without a charm bracelet. PANDORA has designed the charms so they only fit to PANDORA's own charm bracelet, so if women want to wear charms they need to buy a bracelet from PANDORA. The product category charm bracelets had an annual average growth rate at 25 percent, and the revenue has been increasing every year the past five years. Charm and charm bracelets accounted for 76.2 percent of the overall revenue in 2015, hence the charms accounted for 64.7 percent and charm bracelets for 11.5 percent.

With an annual average growth rate at 56.3 percent the product category rings has the past five years been the category, which has had the largest percentage growth. In 2014 sales on rings more than doubled and it increased by 73.3 percent in 2015. In 2015 rings overtook charms bracelets based on sales, and it therefore became PANDORA's second largest product category. Rings are the largest jewellery category worldwide and there is a large potential, which has not been exploited.[98] In recent years PANDORA has had increased focus on this product category and has increased the marketing on rings. Beside this PANDORA has launched showcases in the

[98] Annual report, 2014, p. 12

stores where the customers can see and try the different rings, which also has increased sales. All of PANDORA's rings can be carried together with other PANDORA's jewelleries and most of the rings are designed to be in the extension with the other PANDORA rings, so the customer can create a personal expression. Therefore customers often buy more than one ring, which has a positive effect on sales.

Other jewelleries consist of other bracelets, earrings, necklaces and pendants. This product category is PANDORA's smallest category based on sales in 2015. The past five years the category has had an annual average growth rate at 41.5 percent. From 2011 to 2012 the sale of other jewelleries decreased by 49 percent and this had a negative effect on the overall revenue, which also decreased in this period. Earrings are the largest jewellery based on sale in the category. In 2015 especially necklaces and earrings had a growth at 70 percent, and earrings accounted for three percent of the overall sale in the first nine months. PANDORA will in 2016 increase their product focus to include earrings.

Americas

The geographic segment Americas was until 2013 PANDORA's largest segment area, where it accounted for almost 50 percent of the sales. Americas has had an annual average growth rate at 20.5 percent the past five years. The geographic segment has, as the only of the three segments, had a positive growth since 2011. The increasing sale in Americas in recent years is due to increased demand after new jewelleries and an improved distribution network. In 2015 PANDORA formed a partnership with WALT DISNEY, which had the positive impact on the large growth in the segment from 2014 to 2015. Also the product category rings had a positive effect on sales, which was more than doubled.

Europe

Europe has since 2014 been PANDORA's largest geographic segment. In 2014 and 2015 it accounted for 44 and 45 percent of the overall sales. Europe has had an annual average growth rate at 32 percent the past five years. The geographic segment has had a positive growth since 2012. From 2011 to 2012 there was a little decrease in sales at 3 percent, which had a negative impact on the overall sales, which decreased.

Asia Pacific

Even though Asia Pacific is PANDORA's smallest geographic area based on sales the past five years, Asia Pacific has the highest annual average growth rate of the three segments. Asia Pacific has had an annual average growth rate at 34.7 percent. In 2015 sales increased by more than 50 percent. The geographic segment has had a positive growth the past five years except from 2011 to 2012 where the sales decreased by ten percent. The decrease in sales in 2012 was due to changing trends in especially Australia, which PANDORA was to slow to follow. Asia Pacific has a lot emerging markets and PANDORA has in recent years managed to gain market share in these markets and has still increased focus in these. The big success in the area is due to the launch of new products and expanding of branded stores.

The overall profitability measure for PANDORA's operations is the return on invested capital also called ROIC. ROIC shows the return on capital invested in a company's net operating assets. ROIC can be calculated in two ways. Below sees the formulas for ROIC in percent after tax:

$$ROIC = \frac{Net\ operating\ profit\ after\ tax\ (NOPAT)}{Invested\ capital} * 100$$

$$ROIC = Profit\ margin * Turnover\ rate\ of\ invested\ capital$$

Both ways of calculating ROIC will give the same result. The calculation of return on invested capital is important in the profitability analysis and in a valuation. The higher the rate is the higher PANDORA's estimated value is. At the same time it will be more attractive to loan money to a company with high ROIC. PANDORA can probably get cheaper finance when they have a high ROIC. The calculated ROIC ratios are illustrated in appendix 4. Below figure shows PANDORA's ROIC for the past five financial years.

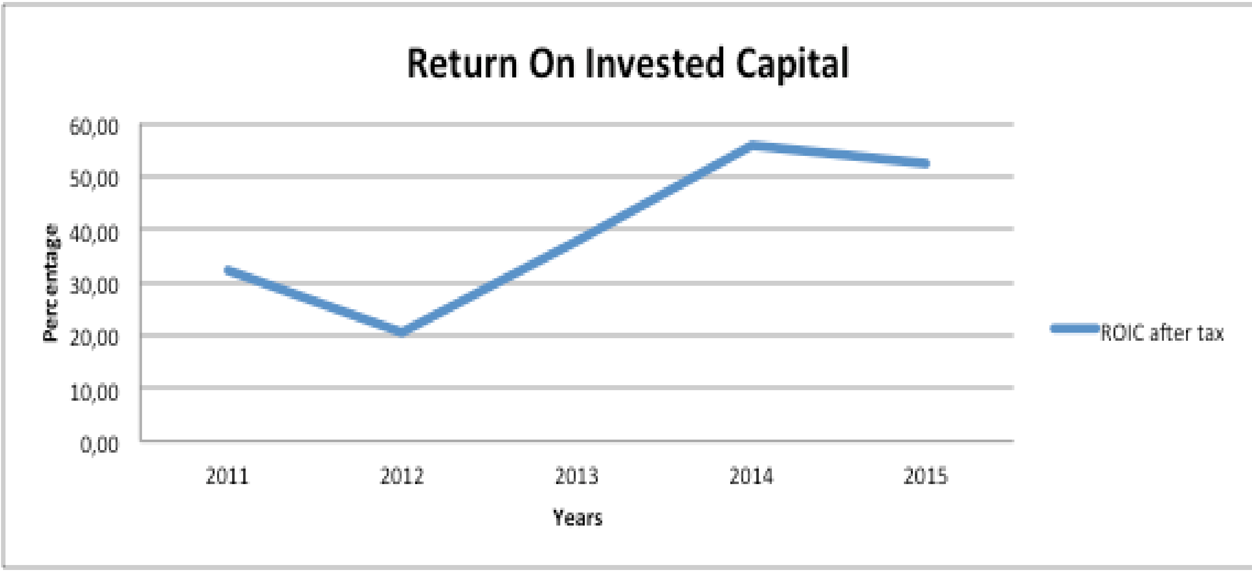

Figure 7: Return on invested capital 2011 - 2015

PANDORA's return on invested capital has increased from 2012 to 2014, but has decreased from 2011 to 2012 and 2014 to 2015. From 2011 to 2012 NOPAT has decreased. The decrease in NOPAT is due to lower revenue and higher cost. In the same period invested capital increased by 243 million DKK. The decrease in NOPAT and increase in invested capital is due to the decrease in ROIC from 2011 to 2012. From 2014 to 2015 PANDORA's ROIC had a small decrease at 3.51 percentage-point. The small decrease was due to a higher invested capital, which increased since PANDORA had an increasing growth in their interest bearing debt in 2015 compared to the other years. The large increase in interest bearing debt in 2015 was due to a share buyback program and increased capital expenditures in new production facilities in Thailand. The increase in ROIC from 2012 to 2014 was due to a large growth in revenue and a stabile invested capital.

The revenue and expense relation or an improved capital utilisation often drives the profitability. Analyse ROIC only will not explain what drives the profitability, therefore it is necessary to decompose ROIC into profit margin and turnover rate of invested capital.[99]

The profit margin also called the operating profit margin analyse the relation between the revenue and the expenses. Below sees the formula for profit margin in percent after tax:

[99] Petersen & Plenborg, 2012, p. 107

$$Profit\ margin = \frac{Net\ operating\ profit\ after\ tax\ (NOPAT)}{Net\ revenues} * 100$$

The higher profit margin is the more attractive it is. The calculated profit margin after tax ratios are illustrated in appendix 4. Below figure shows PANDORA's profit margin for the past five financial years.

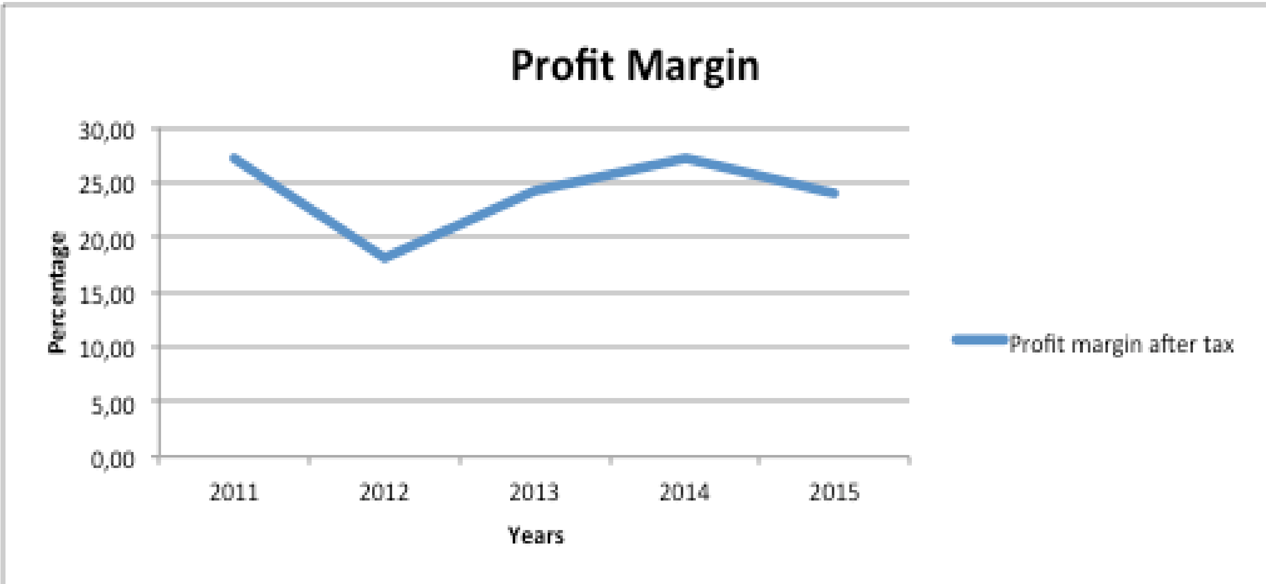

Figure 8: Profit Margin 2011 - 2015

As illustrated in above figure PANDORA's profit margin follow the same pattern as their return of invested capital. PANDORA's profit margin Increases from 2012 to 2014 and decreases from 2011 to 2012 and again from 2014 to 2015. Since the profit margin is the relation between PANDORA's NOPAT and revenue these numbers from the past five years will be analysed. From 2011 to 2012 both PANDORA's revenue and NOPAT decreased, but the percentage decrease in NOPAT was higher than the percentage decrease in revenue, and therefore the profit margin decreased. As mentioned before the 33 percent decrease in NOPAT was due to higher cost especially cost of sales, which increased by 23 percent in 2012. From 2012 to 2014 both revenue and NOPAT increases, but since NOPAT percentage increases more than revenue, the profit margin is growing. The higher percentage increase in NOPAT than revenue is due to that PANDORA has had lower costs related to their increase in revenue. Even though PANDORA's costs has increased from 2012 to 2014 the costs per 1 DKK has decreased and therefore NOPAT percentage has increased more than revenue, which increases the profit margin. The decrease in profit margin from 27.21 percent to 24.1 percent is due to a lower percentage increase in NOPAT than revenue. In 2015 revenue increases by 40 percent and NOPAT increases by 24 percent.

The turnover rate of invest capital is the second part of ROIC. The turnover rate shows PANDORA's ability to utilise their invested capital. Like the profit margin it is attractive to have a high turnover rate. Below sees the formula for the turnover rate:

$$Turnover\ rate = \frac{Net\ revenue}{Invested\ capital}$$

The calculated turnover rate of invested capital ratios are illustrated in appendix 4. Below figure shows PANDORA's turnover rate for the past five financial years.

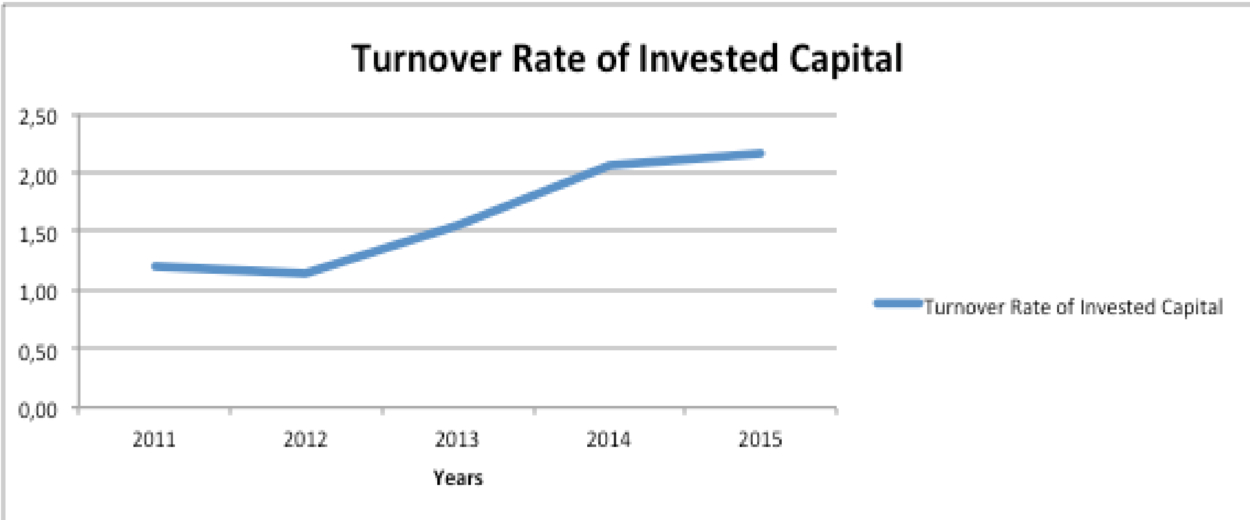

Figure 9: Turnover rate of invested capital 2011 – 2015

As illustrated in above figure PANDORA's turnover rate has been increasing the past five years except from 2011 to 2012. The turnover rate shows a completely different pattern than both ROIC and profit margin. The past five years PANDORA has had a turnover rate between 1.14 and 2.17.

A turnover rate of 5.02 shows that PANDORA has tied up invested capital in 166 days.[100] Alternatively, the turnover rate shows that for each DKK PANDORA has invested in operations they have generated a sale of 2.17 DKK. The past five years PANDORA has generated a sale between 1.14 and 2.17 DKK during the years for each DKK invested in operations.

The turnover rate shows the relation between the revenue and invested capital. Below figure shows PANDORA's revenue and invested capital for the past five financial years.

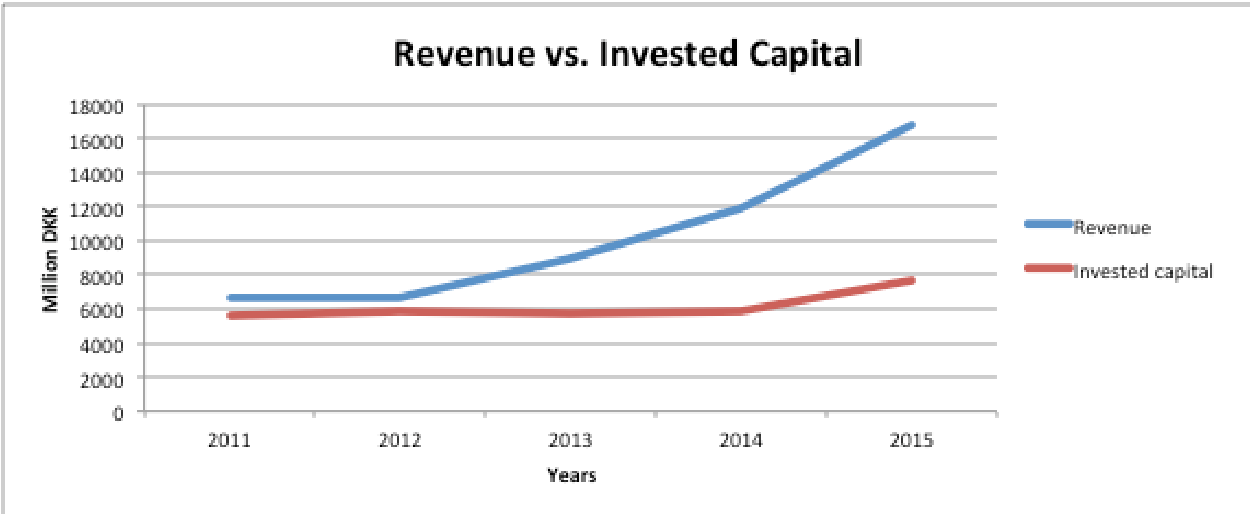

Figure 10: Revenue vs. Invested Capital 2011 – 2015

Beside from 2015 where it increases PANDORA's invested capital are stabile during the years. Invested capital increases in 2015 due to more interest bearing debt. Since 2011 interest-bearing debt has been a little item in PANDORA's Balance sheet. From 2011 to 2014 interest bearing debt has been between 10 and 385 million DKK, in 2015 it increased to 2,607 million DKK. The reason for the large amount of interest bearing debt was a share buyback program and capital expenditures in Thailand. Since invested capital is stabile the increase in turnover rate from 2012 to 2015 is due to PANDORA's increasing revenue. The decrease in turnover rate in 2012 was also due to increasing revenue.

[100] Average days in one year/turnover rate = (365/2.17) = 166 days.

Conclusion on ROIC

After decomposing ROIC into profit margin and turnover rate, the calculations show that the profit margin is the main driver behind the development in ROIC. Turnover rate does also have an impact on ROIC. Except from 2014 to 2015, where turnover rate is increasing, it follows the same pattern as ROIC and profit margin.

Return on Equity also called ROE is a ratio, which can be a part of the profitability analysis. Roe takes into account both financial and operating profitability, where ROIC focuses on the operating profitability.[101] The calculated return on equity ratios are illustrated in appendix 4. Below sees the formula for Return on Equity:

$$ROE = \frac{Net\ earnings\ after\ tax}{Book\ value\ of\ equity} * 100$$

ROE measures the shareholders accounting return on their investments in PANDORA. Since PANDORA has focus on their shareholders returns, this is an important factor in the profitability analysis.[102] Below figure shows the shareholders return on Equity in PANDORA for the past five financial years.

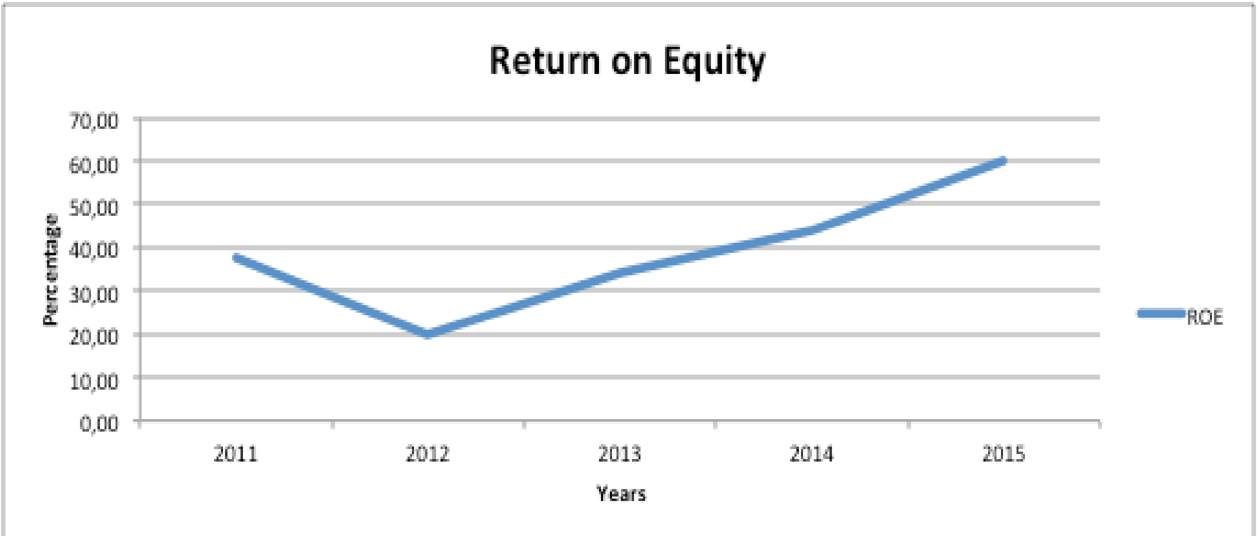

Figure 11: Return on Equity 2011 – 2015

[101] Petersen & Plenborg, 2012, p. 117
[102] Rosenbaum & Pearl, 2009, p. 36

PANDORA's ROE has been increasing since 2012, which indicates that the shareholders value are increased every year. The increasing return on equity is due to increasing net profit for the years.

Liquidity risk

PANDORA needs to pay their bills and have the ability to invest in profitable investment in the future. In continuation of the profitable analysis I have estimate PANDORA's liquidity risk for the past five historical years. I will in the analysis put the emphasis on the long-term liquidity risk, since this is the most interesting part of the liquidity risk when estimating PANDORA's pro forma statement.

Short term liquidity risk

The current ratio is estimated to determine PANDORA's ability to pay back their current liabilities with their current assets. Below sees the formula for current ratio:

$$Current\ ratio = \frac{Current\ assets}{Current\ liabilities}$$

A high current ratio is preferred in a company. The higher the ratio is the higher PANDORA's ability to pay back their obligations. The calculated current ratios are illustrated in appendix 4. Below figure shows current ratio in PANDORA for the past five financial years.

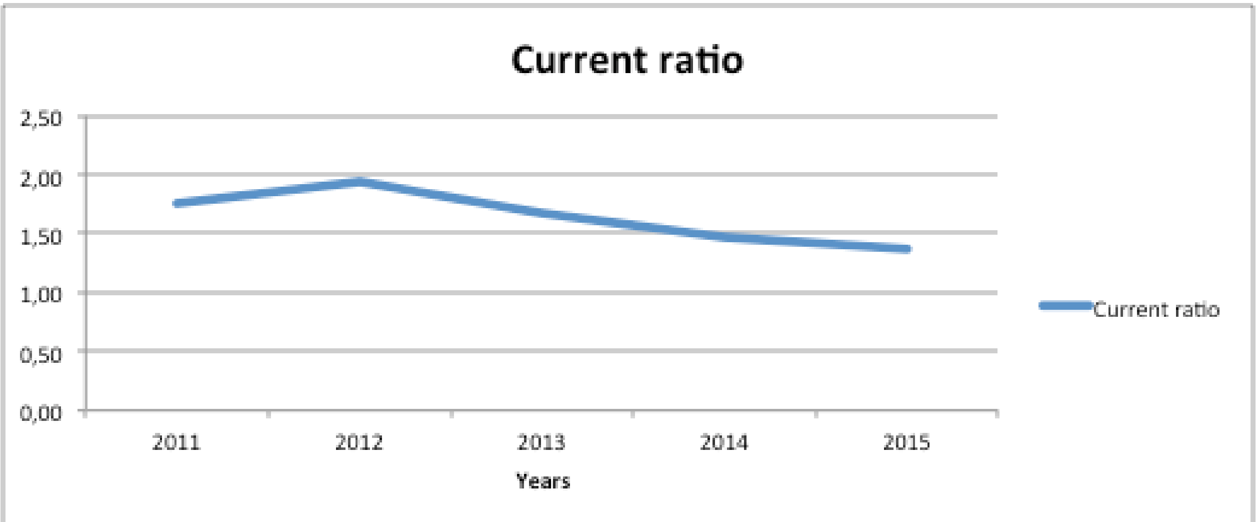

Figure 12: Current ratio 2011 – 2015

PANDORA's current ratio has since 2012 been decreasing. In 2012 the current ratio was 1.95 and in 2015 it has decreased to 1.37. This indicates, that PANDORA's ability to pay back their obligations in the short run is impaired. Even though the ratio has decreased, the ratio is over one, which shows that PANDORA's current assets are larger than their current liabilities and the sales of the current assets can therefore cover current liabilities in the event of liquidation. It is important to be aware that in the event of liquidation it I doubtful if the current assets can be sold to book value. A higher current ratio is therefore preferable.

Long-term liquidity risk

Financial leverage

The long-term liquidity risk can be analysed by the financial leverage ratios; financial leverage and solvency ratio. The ratios are based on book values from PANDORA's balance sheet the past five years. Below sees the formulas for the financial leverage and solvency ratio:[103]

$$Financial\ leverage = \frac{Total\ liabilities}{Equity}$$

$$Solvency\ ratio = \frac{Equity}{Total\ liabilities + Equity}$$

The solvency and financial equity provides identical information about PANDORA's long-term liquidity risk. The higher the financial leverage is, the higher is the long-term liquidity risk and a low solvency ratio is equal to high long-term liquidity risk. The calculated financial leverage and solvency ratios are illustrated in appendix 4. Below figure shows financial leverage and solvency ratio in PANDORA for the past five financial years.

[103] Petersen & Plenborg, 2012, p. 158

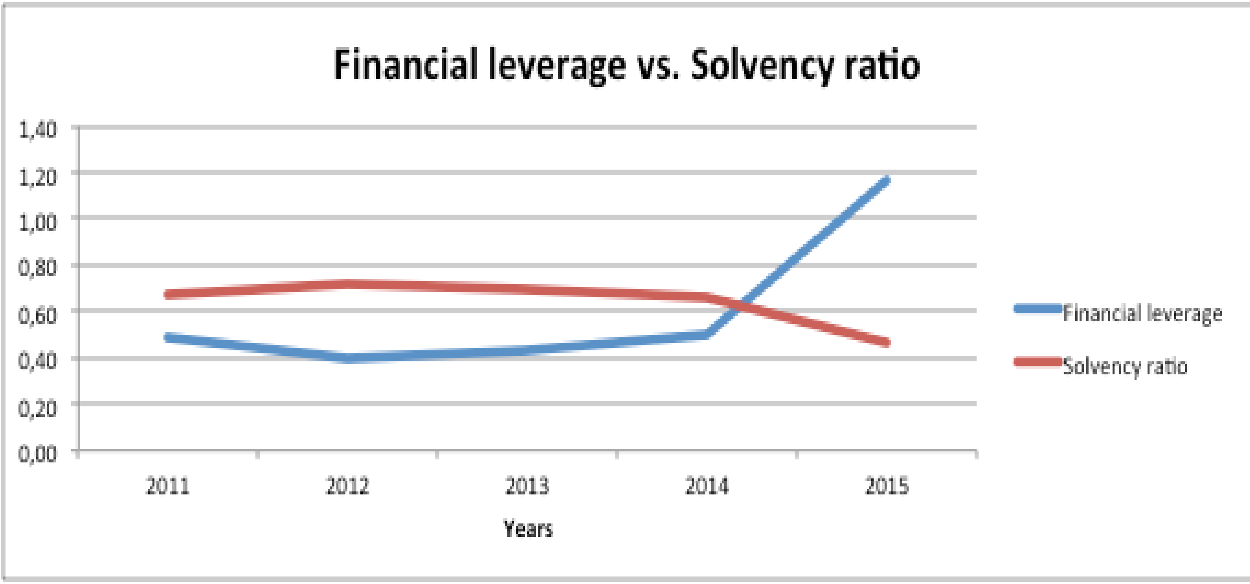

Figure 13: Financial leverage vs. Solvency ratio 2011 – 2015

As illustrated in above figure PANDORA's financial leverage and solvency ratio has been stabile from 2011 to 2014. From 2011 and to 2014 the financial leverage has been higher than the solvency ratio, which indicates that PANDORA's long-term liquidity risk has been low. In 2015 the two ratios exchanged and the financial leverage exceeded the solvency ratio. The change in the ratios indicates that PANDORA's long-term liquidity risk has increased. The higher risk in the long-term liquidity is due to more interest-bearing debt in 2015. Even though PANDORA's long-term liquidity risk has increased in 2015, the financial leverage and solvency ratio are still low numbers, which indicates that PANDORA's long-term liquidity risk is low.

It is important to be aware that in my liquidity analysis I have used equity book values instead of market value. According to Petersen and Plenborg it more correct to use market values instead of book values, since market values are closer to realisable values. In PANDORA's case using market values of equity for the financial year 2015 gives an opposite results than using book values of equity. PANDORA's financial leverage is calculated to 0.08 and the solvency ratio to 0.93. This shows that PANDORA has a low financial leverage and a high solvency ratio, hence PANDORA's long-term liquidity risk is low.

Forecasting

Forecasting is one of the most important steps in valuing a company. When developing a pro forma income statement and a pro forma balance sheet both the historical financial value drivers and the strategic analysis are important measures.[104] In the assignment focus is on PANDORA's strategic analysis included the competition in the Jewellery market and tPANDORA's revenue growth and the profits margins, which are part of the profitability in the company. In the financial statement analysis is focused on which market conditions and strategic drivers are behind the ratios.

As mentioned in the financial statement analysis the operations and the investment in operations are the driving forces behind PANDORA's value creation, where financing shows how the operations are financed. In forecasting you look at strategic and financial value drivers. Strategic value drivers are the ones where PANDORA takes operational or strategic initiatives to improve value like product development and entering new markets. The financial value drivers are margins, growth and investments ratios, which shows PANDORA's underlying performance.[105] When forecasting PANDORA's pro forma income statement and pro forma balance sheet I will use the information found in the strategic and financial analysis to found the company's future revenue, expenses, investments and profit after tax. I will use the pro forma income statement and balance sheet to valuate PANDORA using the Discounted Cash flow model.

Before making a pro forma income statement and balance sheet for PANDORA, it is important to determine how many years to forecast. One of the things you should take in mind is that the forecast period must be long enough so PANDORA reach the steady state period.[106] Even though the forecast should reach steady state, it should not be too long because of the increasing opportunity of errors in the forecast. The more years you are forecasting, the more difficult it will be to forecast the individual posts in the income statement and balance sheet.[107] I have chosen to make a five years explicit forecasting period, and a two years terminal period, which I conclude is a long enough period to forecast when valuing PANDORA. In the terminal period the items

[104] Petersen & Plenborg, 2012, p. 174
[105] Petersen & Plenborg, 2012, p. 175
[106] Koller et al, 2010, p. 186
[107] Koller et al, 2010, p. 186

have to be stable and the revenue need to equal the overall economy.[108] The terminal period is a theoretical concept, it can be considered that the terminal period does not exist, that a company will reach a time, where everything will develop with same speed forever. PANDORA has been on the market for several years. It is difficult to estimate the overall economy and market conditions for the next ten to fifteen years, therefore I think that a five years explicit forecast period and a two years terminal period is a reasonable choice in this case.

There are different ways to forecast the income statement and balance sheet. I have chosen to use a sales-driven-forecasting approach.[109] In a sales-driven-forecasting approach the accounting items are driven by the level of activity in PANDORA's case their revenue. This approach is chosen because it shows the relation between the revenue and the expenses and investments, since I believe that the activity level drives PANDORA's expenses and investments.

PANDORA's growth rates and free cash flows for the past five years are illustrated in appendix 5. The analytical income statement is divided into growth drivers and cost drivers. Growth drivers are only including revenue, therefore the rest of the income statement are cost drivers. The analytical balance sheet is divided into investment drivers and financial drivers. Investment drivers include intangible and tangible assets and financial drivers include the net interest bearing debt. The net working capital is decomposed into current assets and non-interest bearing debt.

Income statement

Growth rates and pro forma income statement for 2016-2022 are illustrated in appendix 6.

Revenue

As mentioned in the strategic analysis Europe, Americas and Asia Pacific are PANDORA's three geographic segments. Each area is different in many ways both strategic and historical. Based of this the revenue will be forecasted separately on each of the three geographic segments. By split the forecasting of the revenue into the three segments will give a more precise future budgeting instead of treat PANDORA as a single unit. In PANDORA's financial statement, it is only

[108] Kotler et al., 2010, p. 186
[109] Petersen & Plenborg, 2012, p. 175

revenue, which is split by the three geographical segments. The rest of the elements in the financial statement will not be forecasted separately for the three geographical segments. In below table PANDORA's historical revenue the past five years is illustrated and the annual and compounded average growth rates.

Revenue per geographic segment							
	2010	2011	2012	2013	2014	2015	CAGR
Americas	2914	3144	3312	4156	4959	6537	
Growth rates		*7,9%*	*5,3%*	*25,5%*	*19,3%*	*31,8%*	*15,8%*
Europe	2859	2623	2542	3760	5304	7548	
Growth rates		*-8,3%*	*-3,1%*	*47,9%*	*41,1%*	*42,3%*	*23,5%*
Asia Pacific	893	891	798	1094	1679	2652	
Growth rates		*-0,2%*	*-10,4%*	*37,1%*	*53,5%*	*58,0%*	*24,4%*
Total revenue	6666	6658	6652	9010	11942	16737	
Growth rates		*-0,1%*	*-0,1%*	*35,4%*	*32,5%*	*40,2%*	*20,2%*

Table 5: Revenue per geographic segment 2011 – 2015

Asia Pacific

In the last five years, it was first in 2013 Asia Pacific had a positive growth rate. The revenue has since 2011 increased from DKK 891 million to DKK 2,652 million. This corresponds to a CAGR at 24.4 percent. The past two years the growth rates have been more than 50 percent, which makes Asia Pacific the geographic segment, which has the highest compound annual growth rate. In 2011 and 2012 PANDORA had some rough years in the Asia Pacific market with decreasing revenue. The rough years were especially due to changing trends in Australia, which PANDORA was to slow to follow.[110] PANDORA has the past three years manage to gain market shares in especially Asia Pacific's emerging markets and combined with launch of new products and expanding of brand stores, PANDORA has manage to increase revenue in this geographic segment from DKK 798 million in 2012 to DKK 2653 million in 2015.

As stated in the strategic analysis Asia Pacific is the world largest jewellery industry and has in recent years grow at a steady strong rate. The strong growth is expected to continue in the future, which gives PANDORA the opportunity to gain a larger market share. At the same time the Asia Pacific market is fragmented and there is a lack of truly dominated players, which makes the opportunities for increasing growth higher. It is important to have in mind that since the jewellery

[110] Profitability analysis

market is growing and the market is fragmented, there will be other current and new competitors, who will try to gain market shares.
In recent years goods inside the category 'affordable luxury' made impact in the Asia Pacific markets. This category includes PANDORA's jewelleries. Earlier it was luxury goods, which the Asia Pacific citizens demanded, but now especially the Chinese, Japanese and the emerging markets demand quality jewelleries to lower prices.
The upcoming online sales platform, which PANDORA launches in China in the end of 2016, will probably give a positive growth in PANDORA's revenue in China in the future. The Chinese buy goods online as never before, and together with the increasing demand for 'affordable luxury' jewelleries this can have a positive effect on PANDORA's revenue growth in Asia Pacific.
PANDORA will in the next years have a larger focus on especially the Chinese and Japanese markets. Today PANDORA has seven launches of new products every year, and they can therefore in the future avoid to loose revenue by not follow the newest trend, which was the problem back in 2011 and 2012 in the Asia Pacific market.

Even though PANDORA has had large revenue growth in Asia Pacific the last three years I do not believe this trend will continue in the same level the entire forecast period. It is important to remember that since it is a growing market, there will be more competition. At the same time it is a market where trends can change rapidly and even though PANDORA has the opportunity to change their jewelleries in connection with their launches, it is impossible to forecast if the trend for affordable luxury completely change in a few years.
PANDORA will until 2018 increase the number of PANDORA owned shop in Asia Pacific. At the same time they will increase focus on markets like China and Japan, which has large growth potential. Together with the launch of the new online sales platform in China, the revenue in Asia Pacific is forecasted to be at the CAGR level in 2016 and 2017, which is an annual growth at 24.4 percent. In the rest of the explicit forecast period the annual growth rate will steadily decrease to the jewellery market's CAGR, which is 10.9 percent. In the terminal period the annual growth rate will be 2 percent, which is equal to the overall economy. The decrease in the annual forecasted growth rate is due to changes in trends, increased competition and a more mature jewellery market in the future.

Americas

The geographic segment Americas was the only of the three segments, which had a positive growth rate all five years. The revenue has since 2011 increased from DKK 3,144 million to DKK 6,537 million. This corresponds to a CAGR at 15.8 percent. Especially from 2013 and forward the growth rates in the American market have been high with growth rates larger than 19 percent. The increasing sale in recent years is due to increased demand after new jewelleries and an improved distribution network. From 2014 to 2015 the Americas segment had the highest growth rate the past five years at 31.8 percent, which was due to cooperation with WALT DISNEY and an increased sales of rings.[111]

As stated in the strategic analysis the North American market has in recent years had a healthy steady growth rate and this trend is expected to continue in the future. Until 2020 the North American jewellery and watches market is expected to increase by 24 percent, which give PANDORA opportunity to gain market share and increase the revenue in the segment. The sales of luxury good in the market are highly influenced by currency fluctuations. Since PANDORA's jewelleries are affordable luxury, which is a part of the luxury goods category PANDORA's jewellery sales can be affected by currency fluctuations. As long as the US dollar is strong the sales from tourism will be affected negatively. On the other hand the US dollar is appreciating against the Mexican peso, and this have a positively affect on sales in Mexico. It should be mentioned that the sales in Mexico are not at the same level as the sales from tourism from example China.

Since many retailers from the US are expanding to Canada it may have a positively effect on the demand for luxury goods in Canada. Canada is already one of PANDORA's largest markets measured on revenue. In 2015 the sales in Canada increased moderate. If the demand for luxury goods increases in Canada in the future there will be an opportunity for PANDORA to gain market shares on the other hand, there will probably be other companies who will fight to win the market shares. PANDORA is already large in Canada and therefore it will be difficult to increase sales significantly.

As stated in the strategic analysis the South American jewellery and watches market has had a strong growth rate in recent years, but in the future the growth rates are not expected to be as high. The annual growth rate is expected to be 6.4 percent until 2020. In especially Brazil there is living a large part of South America's high net worth individuals, which makes the opportunities

[111] Profitability analysis

for increasing sales higher. On the other hand there is a high tariff on luxury goods in Brazil, which often increases prices with 50-60 percent. The high tariff in Brazil, which are PANDORA's largest market in South America, can have a negatively effect on sales since PANDORA either has to lower prices or the prices will decrease sales.

Like the Asia Pacific market PANDORA will increase the number of PANDORA owned shops in the American market until 2018. The jewellery and Watches market is expected to grow in both North and South American. As mentioned before their will be more competition in the future and there is an opportunity that the trend is changing. Since PANDORA increase the number of shops and sells affordable luxury, which are not as affected by currency fluctuations like luxury goods, the annual revenue growth in 2016 and 2017 will be at the CAGR level, which is 15.8 percent. The three last years of the explicit period, the annual growth rate will be equal to the market's CAGR, which is 4.4 percent. In the terminal period the annual growth rate will be 2 percent, which is equal to the overall economy.

Europe

In the last five years, it was first in 2013 Asia Pacific had a positive growth rate. The revenue has since 2010 increased from DKK 2,623 million to DKK 7,548 million. This corresponds to a CAGR at 23.5 percent. The past two years the growth rates have been more than 40 percent. Since 2014 Europe has been PANDORA's largest geographic segment measured on revenue. In 2014 and 2015 it accounted for around 45 percent of the overall sales worldwide.[112]

As stated in the strategic analysis Europe accounts for one fifth of the worlds jewellery and watches sales, but at the same time Europe is the largest market worldwide for luxury goods. The European jewellery and watches market is expected to grow at a moderate steady stage.

In recent years jewelleries inside the category affordable luxury have been more popular and has gained market value. This increasing popularity for affordable luxury jewelleries gives PANDORA opportunities to increase sales in Europe. The increasing demands for affordable luxury jewelleries are in the entire Europe even in the mature countries. Italia and France are the two largest jewellery markets in Europe. PANDORA is relatively new in both Italy and France and will therefore in the next years increase their activities in these markets. These two markets

[112] Profitability analysis

have large growth potential for PANDORA, especially since affordably luxury has gained large impact in these countries.

There is an increasing popularity for affordably luxury jewelleries even in the more mature markets. At the same time PANDORA will in the next years increase focus in Italy and France, which are two of the largest jewelleries markets in Europe. The annual revenue growth in Europe in 2016 and 2017 is forecasted to be equal to the CAGR level, which is 23.5 percent. The three last years of the explicit period, the annual growth rate will be equal to the jewellery market's CAGR, which is 4.8 percent. In the terminal period, the annual growth rate will be 2 percent, which is equal to the overall economy.

Conclusion on revenue

Based on above forecasting of the revenue in the three geographical segments, Asia Pacific, Americas and Europe PANDORA's total revenue is forecasted to have an annual growth rate at 20.6 percent in 2016, 20.8 percent in 2017, 5.7 percent in 2018 and 2019, 5.8 percent in 2020 and 2 percent in 2021 and 2022, which is the terminal period.

Cost drivers

Cost of sales

Cost of sales have since 2011 been between 26.8 and 33.1 percent of the revenue with an average of 29.7 percent. In 2015 cost of sales accounted for 26.8 percent of the revenue. Cost of sales includes direct and indirect costs, which are related to obtain the revenue including raw materials and salary to the production staff. The last few years PANDORA has minimized cost of sales related to revenue from 33 percent to 26.8 percent. PANDORA has no larger plans to minimize cost of sales considerably. Prices on raw materials are very unpredictable especially prices on gold and silver, but since the prices are historical high and PANDORA uses commodity future contracts I do not expect PANDORA's raw material prices to increase, and the raw material costs related to the revenue will probably decrease a few in the future. From 2017 PANDORA expects their new production facilities in Thailand to be fully functional, which will lead to more employees and higher salary costs. The higher salary cost to the production staff and the expectations of lower raw material prices in the future, the cost of sales is forecasted to the same level as 2015 in the total explicit and terminal period.

Sales, distribution and marketing expenses

Sales, distribution and marketing expenses have since 2011 been very fluctuating between 25 and 30 percent of the revenue with an average of 27.2 percent. In 2015 the expenses were on 26.7 percent of revenue. The increase in expenses from 2014 to 2015 was primarily due to an increase in PANDORA owned shops. As mentioned in the strategic analysis this development will continue in the future. PANDORA's strategic plan is to open more shops worldwide over the next years.

PANDORA will over the next years have more focus on new markets primarily in Asia. This increasing focus in new markets will increase sales and marketing expenses over the next years. On the other hand sales and marketing expenses will be more stabile or decreasing in PANDORA's establish markets. Due to the large focus on new markets and an increase in the number of PANDORA owned shops over the three next years the sales, distribution and marketing expenses will be forecasted to increase with 0.5 percent every year and thereafter and the rest of the period the expenses will decrease to the 2015 level.

Administrative expenses

The administrative expenses have since 2011 been between 9.4 percent and 12.2 percent of revenue with an average of 10.3 percent. In 2015 the administrative expenses were 9.4 % of the revenue, which was a decrease since 2014. I expect the administrative expenses to be at the 2015 level the entire forecast period.

Depreciation and amortisation

Depreciation and amortisation is forecasted as a part of the tangible and intangible assets. Since 2011 depreciation and amortisation has been between 3.6 percent and 6 percent of the revenue with an average of 4.4 percent. Depreciation and amortisation will be forecasted to the 2015 level the entire forecast period, which is 6 percent. Since PANDORA is building a new production facility in Thailand and increases their shops, I expect the depreciation and amortisation level to be higher than in 2011 to 2014.

Tax rate

PANDORA's has in the past five years had a very fluctuating tax rate. The tax rate has been between 12.4 percent and 30.6 percent with an average of 20.2 percent. In 2015 the tax rate was 30.6 percent, which was due to a tax settlement with the Danish SKAT. Since the different is very large, it is impossible to forecast the effective tax rate for the next seven years. I have therefore in my forecasting used the marginal tax rate in Denmark. The Danish marginal tax rate was in 2015 reduced to 23.5 percent and in 2016 it is reduced to 22 percent.[113] I have therefore used a marginal tax rate at 22 percent for the entire forecasting and terminal period.

Financial costs, net

Net financial costs before tax are calculated in relation to the net interest bearing debt. The net financial costs are very fluctuating the past five years with an average of -35 percent. The fluctuating financial costs are both due to higher finance income than cost from 2011 to 2013 and very low interest-bearing debt and from 2012 to 2014 the net interest-bearing debt are negative, since the total interest-bearing assets are higher than the total interest-bearing debt. In 2015 interest-bearing debt exceeds the interest bearing assets. This is due to higher interest bearing debt in connection with the new production facility in Thailand. In 2015 financial costs are 30 percent in relation to the net interest-bearing debt. Since PANDORA in the future will have a positive net interest-bearing debt, I believe financial costs will be positive and therefore it is forecasted to the 2015 level during the entire forecast period.

Balance sheet

Growth rates and pro forma balance sheet for 2016-2022 are illustrated in appendix 7.

Non-current assets

Non-current assets also called investment drivers consist of intangible assets, tangible assets and deferred tax assets.

Intangible assets

Intangible assets consist of goodwill, brand, distribution network, distribution rights and other intangible assets. Total intangible assets are forecasted related to the revenue. Total intangible assets have been decreasing the past five years in relation to the revenue. All the items under intangible assets except from other intangible assets follow this pattern. Intangible assets have since 2011 been between 32.6 percent and 67.5 percent of the revenue with an average of 51.8 percent. In 2015 intangible assets were 32.6 percent of revenue, which is the lowest the past five years. In 2015 PANDORA made investments in intangible assets related to capital expenditures, and therefore total intangible assets increased from DKK 4859 million to DKK 5449 million.

[113] Pest analysis

According to PANDORA intangible assets value will remain unchanged in the future. Based on this intangible assets are forecasted to be DKK 5449 million the entire forecast period.

Tangible assets

Tangible assets consist only of property, plant and equipment. The tangible assets are considered as a key element in relation to increased revenue. Tangible assets have increased from DKK 429 million in 2011 to DKK 1237 million in 2015. In relation to the revenue tangible assets have increased from 6.4 percent of the revenue in 2011 to 7.4 % of the revenue in 2015 with an average at 6.5 percent. Investments in tangible assets in 2015 consisted primarily of investments in the new production facility in Thailand and decoration of PANDORA shops. PANDORA expects property, plant and equipment will remain on a high level in 2016 and 2017 due to investments in the production facilities in Thailand and opening of several new PANDORA owned shops. Therefore tangible assets are forecasted to be at the 2015 level in 2016 and 2017 and from 2018 and forward it will decrease to the 2014 level, which is 6 percent of revenue.

Deferred tax

Deferred tax assets and liabilities represent a small part of the accounts. Deferred tax assets have been on a stabile level in relation to the revenue the past five years except from 2015, where it increased. Therefore the average of 3.5 percent is used the entire forecast period. Deferred tax liabilities have been steadily declining from 8.3 percent in 2011 to 2.4 percent in 2015. Therefore the average is not used in this item. On the other hand it will be wrong to expect that deferred tax liabilities will continue to decrease against zero. Therefore the 2015 level at 2.4 percent is used in the entire forecast period.

Net working capital

Financial instruments, income tax receivables, other receivables, provisions, other payables, trade payables and income tax payables are forecasted as the average relation to the revenue the past five years. This forecasting is used since all the items are related to the revenue and there has been no trend in the development of the items the past five years.

Inventories are in DKK increased since 2012 from DKK 1318 million to DKK 2357 million, which is due to higher activities and an increase number of PANDORA owned shops. In relation to the revenue inventories has decreased from 24.2 percent to 14.1 percent the past five years.

Both in 2014 and 2015 inventories were on 14.1 percent of revenue. Therefore inventories are forecasted to 14.1 percent of revenue the entire forecast period.
Trade receivables are like inventories steadily declined in relation to the revenue, and therefore the average percent is not used. The decline in trade receivables from sales is due to an increased number of PANDORA owned shops, where the payment is made in connection with the sale. Since there will be an increase in number of PANDORA shops in the future, trade receivables are forested to the 2015 level the entire forecast period.

Net interest bearing debt

The net interest bearing debt is calculated in relation to the invested capital. PANDORA's net interest bearing debt has the five years been very fluctuating. From 2012 to 2014 PANDORA's net interest bearing debt was negative, which was due to higher interest-bearing assets than debt. In 2015 net interest bearing debt increased from DKK -1220 million to DKK 1559 million, which was primarily due to a share buyback program and increased capital expenditures to the new production facilities in Thailand. Since the item is very fluctuating the average percent of the invested capital is not used in the forecast period. PANDORA has announced a new share buyback program in 2016. At the same time the production facilities in Thailand are first totally running in 2017 and therefore there will be larger investment in capital expenditures in 2016. Therefore net interest bearing debt will in 2016 be at the same level as 2015. After 2016 PANDORA has not announced any buyback programs or larger investments except from the increase in PANDORA owned shops. Therefore, net interest bearing debt is forecasted to steadily decrease in connection with the repayment of the debt the rest of the forecast period.

Valuation

Estimating the share price of PANDORA is the last part of the valuation. Before valuing a company you need to know the future income and cash flows and the discount rate. PANDORA's future income the next seven years was estimated in the forecast section. In this case the discount rate is equal to WACC, which was estimated to 6.94 percent in the WACC section. Based of this only PANDORA's future cash flows need to be estimated.

Cash flow to the firm

Cash flow to the firm (FCFF) consists of cash flow from operations minus investments in tangible and intangible assets. Cash flows from operations are calculated as NOPAT plus depreciation and amortization and the changes in net working capital. Investments in intangible and tangible assets are estimated on basis of the intangible and tangible assets end of period plus depreciation and amortisation minus intangible and tangible assets beginning of period. PANDORA's Cash flows to the firm and investment in intangible and tangible assets are illustrated in appendix 8.

Discounted Cash Flow model

As described in the theory section I have chosen to use the DCF model. The DCF model is the most used valuation model among practitioners. This model can be done in two ways either by estimate the enterprise value or the equity value of PANDORA. In the valuation of PANDORA the enterprise value approach is used to estimate the market value of equity. The value of PANDORA is determined by the present value of the future cash flows, which is calculated above. The free cash flow to the firm and the WACC are the ones who affect the market value of PANDORA in the DCF model. The enterprise value is estimated as illustrated below.

$$\sum_{t=1}^{n} \frac{FCFF_t}{(1+WACC)^t} + \frac{FCFF_{n+1}}{WACC-g} * \frac{1}{(1+WACC)^n}$$

The Discounted Cash Flow model estimates enterprise value as opposed to market value of equity. Therefore you need to deduct the market value of net interest-bearing debt from the enterprise value to get the estimated market value of equity.[114] The net interest-bearing debt from 2015 at DKK 1559 million is estimated as the market value of net interest-bearing debt.

PANDORA has deferred tax liabilities in their balance sheet. Since this is not a part of the net interest-bearing debt but still an obligation, I deduct it from the estimated enterprise value. According to Damodaran you should consider deferred tax liabilities as an obligation. This obligation will come due when PANDORA's growth rate moderates, which is in the last year of

[114] Petersen & Plenborg, 2012, p. 216

the forecast.[115] PANDORA's growth rate is moderate seven year from now, and therefore I have discounted the deferred tax liabilities in 2022 back seven years and deducted the amount with the estimated value like the net interest-bearing debt. The calculation of the present value of deferred tax liabilities is illustrated below.

$$PV(deferred\ tax\ liabilities) = 719{,}7 * (1 + 6.94\%)^{-7} = 449.87$$

From above estimations of PANDORA's future cash flows and WACC the enterprise value is estimated and deducted net interest-bearing debt and deferred tax liabilities. Below table illustrates the calculations of the expected market value of equity.

DKK million	**E2016**	**E2017**	**E2018**	**E2019**	**E2020**	**E2021**	**E2022**
Free cash flow to the firm (FCFF)	4118,26	5109,59	6125,88	6490,79	6932,07	7197,66	7360,51
WACC	6,94%	6,94%	6,94%	6,94%	6,94%	6,94%	6,94%
Discount factor	0,94	0,87	0,82	0,76	0,71	0,67	
Present value, FCFF	3850,88	4467,66	5008,52	4962,32	4955,61	4811,42	
NPV of free cash flow	28056,42						
Terminal value	93074,62						
Estimated enterprise value	121131,03						
Net interest-bearing debt	1559,00						
Deferred tax liabilities	449,87						
Expected market value of equity	119122,17						
Number of shares	117,06						
Implied share price (price per share)	1017,62						

Table 6: Calculations of expected market value of equity

As illustrated in the table, PANDORA's enterprise value is estimated to DKK 121131.03 million. After the deduction of net interest-bearing debt at DKK 1559 million and deferred tax liabilities at 449.87 expected market value of equity is DKK 119122.17 million. PANDORA has 117,060,000 shares listed on Nasdaq Copenhagen. An expected market value of DKK 119122.17 million divided by the 117,060,000 shares gives a share price at DKK 1017.62. This indicates that from my estimations of PANDORA's future cash flows and WACC, PANDORA's shares are valued to DKK 1017.62 each. 21 October 2016 PANDORA's share price was DKK 918. The past six months PANDORA share price has been between DKK 999.5 and DKK 782. My estimation of the share price is not far from the share price at DKK 999.5. It is important to notice that the terminal value accounts for 70 percent of the estimated enterprise value, and a change in

[115] Damodaran, 2016f

this value will have the largest effect on the share price. Since the terminal period is seven years into the future my expectations can differ a little from the markets expectations, and this can might explain the difference in stock price.
Based on above I believe that my estimation of the expected share price is a reasonable estimation even though the price is differentiated from the originally share price.

Sensitivity analysis

A sensitivity analysis is important in continuation of a valuation. The sensitivity analysis will show the consequences of changing some of the key value drivers.[116] In PANDORA's case the growth rate and WACC are important key value drivers.

The sensitivity analysis is illustrated below. In the analysis, I have estimated the changes in PANDORA's share price when changing WACC and the growth rate in the terminal period +/- 1.0 percentage-point.

		Growth rate				
		-1,0%	**-0,5%**	**0,0%**	**0,5%**	**1,0%**
	-1,0%	1287,15	1291,10	1295,05	1299,00	1302,95
	-0,5%	1133,78	1137,17	1140,56	1143,95	1147,34
WACC	**0,0%**	1011,72	1014,67	1017,62	1020,96	1023,51
	0,5%	912,33	914,92	917,51	920,10	922,69
	1,0%	829,88	832,18	834,47	836,76	839,06

Table 7: Sensitivity analysis

The sensitivity analysis shows that the share price is sensitive to a change in the key value drivers WACC and growth rate. The share price is especially sensitive when changing WACC with +/- 1.0 percentage-point. The change in WACC with +/-1.0 percentage-point does that the share price increases with +/- DKK 200 comparing to not changing WACC. At the same time a change in WACC by - 1.0 percentage-point have a larger effect on the share price than an increase in WACC by 1 percentage-point.
As illustrated in the table a change in WACC with + 0.5 percent to 7.44 percent and no changing in growth rate will give a share price at 917.51, which is very close to PANDORA's share price 21 October 2016.

[116] Petersen & Plenborg, 2012, p. 241

A change in revenue and not changing WACC has only a small effect on the share price. Changing the growth rate in the terminal value 1.0 percentage-point only change the share price with DKK 7.90.

Discussion

The discussion is only based on my own assumptions and expectations to PANDORA's future. PANDORA has together with the market high expectations to the future. Based on this PANDORA is high-priced. A few downgrades relative to the future expectations can have large effects on the share price. This happened back in 2011 after the IPO, where PANDORA announced that the growth was lower than first expected. After the announcement the PANDORA share price plummeted. It is therefore important to notice that a high-priced share can turn around in a moment.

PANDORA has in the last few years proved that they are not only a regular jewellery company. The have been able to create a world-known brand, which continuous to expand in new and current markets. Today most of Pandora's growth is related to the opening of new shops. I do not believe that PANDORA in the future can continue to create growth by opening more shops. There will be a time horizon where opening new shops no longer are a growth driver. Sometimes in the future the markets will reach the saturation point. Instead I believe that PANDORA is able to be an active player in the competitive jewellery market in the future if they continue to be innovative and manage to follow the trends in the markets. Today and since the launch in 2000 charms have been PANDORA's largest sources of income. Back in 2010 90 percent of revenue derived from the sale of charms, today about 75 percent of revenue derived from charms. I believe that this trend will continue in the future, and therefore it is important for Pandora's future growth that they have focus on other jewellery categories in the future.

Conclusion

The main point in this thesis was to estimate if PANDORA A/S was fairly priced 21 October 2016. The estimation of PANDORA's share price at 21 October 2016 was based on a strategic analysis and a financial analysis.
PANDORA design and sells affordable luxury jewelleries. They manage all links in the value chain, which is one of their core competencies. Charms and charm bracelets are PANDORA's most sold products and this product category accounts for 75 percent of the total revenue, which concludes that PANDORA is very dependent of sales from this one product category.

The strategic analysis concluded that the global jewellery market especially the affordable luxury segment is growing and a fragmented industry together with a lack of truly dominated players makes the opportunities for gaining market shares high for both new and current players. The strategic analysis also concluded that PANDORA has a strong position in the global affordable luxury market and they should focus on designing jewelleries, which follows the market trends.

The financial analysis, which was based on PANDORA's past five historical years, could be a good indicator for PANDORA's development in the future. The development in the financial key ratios concluded that PANDORA after the decline in 2011 and 2012 has been able to create increasing growth, earnings and value for the shareholders.

The estimation of WACC showed that companies where a large proportion of the capital structure consist of equity are less sensitive to changes in the rate or more sensitive to changes in the risk free rate and beta.

The valuation of PANDORA was estimated using the DCF model, which estimated a fair value of DKK 1017.62 compared to a historical closing price of DKK 918 at 21 October 2016. The fair value is estimated based on assumptions and expectations to the future. The assumptions and expectations has some uncertainty in relation to the accuracy of the estimated share price. Growth rate and WACC were estimated as PANDORA's key value drivers. Therefore a sensitivity analysis was made to estimate how sensitive the estimated value is to changes in the key value drivers. The analysis concluded that the estimated value is very sensitive to changes in WACC and less sensitive to changes in the growth rate.

Based on above I can conclude that in comparison with the estimated value PANDORA's share price on 21 October 2016 was undervalued.

Bibliography

Articles

Berlingske, (2013) *PANDORA har købt guld og sølv til resten af året til en høj pris, og det koster selskabet dyrt at være en forsigtig-Per.*

Gagnon, Johansen, Lopez-Salido (2016). *Understanding the New Normal: The Role of Demographics*

PANDORA Press releases (2016). *PANDORA goes online in China on Alibaba's tmall.* From: http://investor.PANDORAgroup.com/releases.cfm?ReleasesType=Press%20Release&showlanguage=English&landing=yes

Books:

Grant, R. (2013) *Contemporary strategy analysis.* Eight edition. Chester, United Kingdom: John Wiley & Sons, Inc.

Koller, T., Goedhart, M., Wessels, D. (2010). *Valuation: Measuring and Managing the Value of Companies*. Fifth edition. McKinsey & Company. Hoboken, New Jersey: John Wiley & Sons, Inc.

Petersen, C., Plenborg, T. (2012) *Financial Statement Analysis: Valuation, Credit analysis, Executive compensation*. First edition. Essex, England: Pearson

Rosenbaum, J., Pearl J. (2009). *Investment banking: valuation, leveraged buyouts, and mergers & acquisitions*. First edition. Hoboken, New Jersey: John Wiley & Sons, Inc.

Reports:

Fernandez et al (2015) *Discount Rate used for 41 countries in 2015: a survey*

Incestindk (2015) *Facts on taxation in Denmark.* www.investindk.com

MarketLine (2016). *Jewelry, Watches & Accessories in Asia-Pacific.* www.marketline.com

MarketLine (2016). *Jewelry, Watches & Accessories in Europe.* www.marketline.com

MarketLine (2016). *Jewelry, Watches & Accessories in USA.* www.marketline.com

MarketLine (2016). *Jewelry, Watches & Accessories in Brazil.* www.marketline.com

MarketLine (2016). *Jewelry, Watches & Accessories in China.* www.marketline.com

MarketLine (2016). *Jewelry, Watches & Accessories in North American.* www.marketline.com

McGRAW hill financial (2014). *S&P Capital IQ*

PANDORA annual reports (2010-2015)

PWC (2016) *Værdiansættelse af virksomheder: Sådan fastlægges afkastkrav I praksis*

Webpages

Damodaran, A. (2016a) *Valuation.* From: stern.nyu.edu/adamodar

Damodaran, A. (2016c) *Country Default Spreads and Risk Premiums.* From:
http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html

Damodaran, A. (2016d) *Estimating Risk Parameters.* From:
http://people.stern.nyu.edu/adamodar/pdfiles/papers/beta.pdf

Damodaran, A. (2016e) *Estimating a synthetic rating and cost of debt.* From:
http://pages.stern.nyu.edu/~adamodar/New_Home_Page/valquestions/syntrating.htm

Damodaran, a. (2016f) *What should you subtract to get to equity value?* From:
http://pages.stern.nyu.edu/~adamodar/New_Home_Page/valquestions/debttosubtract.htm

Danmarks statistic (2016a)
From: www.statistikbanken.dk/statbank5a/default.asp?w=1920

Market risk premia (2016a) *Application of Valuation in Practice.*
From: http://www.market-risk-premia.com/dk.html

Nasdaq OMX (2016) From:
http://www.nasdaqomxnordic.com/aktier/microsite?Instrument=CSE77855&name=PANDORA

Nashdaq OMX (2016b) *Indeks.* From http://www.nasdaqomxnordic.com/indeks

OECD (2016a), *Real GDP forecst.*
From: https://data-oecd-org.esc-web.lib.cbs.dk:8443/gdp/real-gdp-forecast.htm#indicator-chart

Skatteministeriet (2015): Selskabsskattesatserne I EU-landene 1995-2015

www.euroinvestor.com (13.10.2016). *PANDORA.* From
http://www.euroinvestor.com/exchanges/nasdaq-omx-copenhagen/PANDORA-a-s/2632080

Appendix

Appendix 1: Table and figure overview

Appendix 2: Analytical income statement

DKK million	**2011**	**2012**	**2013**	**2014**	**2015**
Revenue	6658	6652	9010	11942	16737
Cost of sales	-1780	-2202	-2970	-3470	-4484
Gross profit	**4878**	**4450**	**6040**	**8472**	**12253**
Sales, distribution and marketing expenses	-1890	-1982	-2314	-3008	-4469
Administrative espenses	-709	-813	-845	-1170	-1570
EBITDA	**2279**	**1655**	**2881**	**4294**	**6214**
Depreciation and amortisation	-221	-180	-200	-222	-400
EBIT	**2058**	**1475**	**2681**	**4072**	**5814**
Income tax expenses	-332	-277	-522	-774	-1671
Tax shield, net financial expenses	77,75	1	15,25	-49	-110,215
NOPAT	**1803,75**	**1199**	**2174,25**	**3249**	**4032,79**
Financial costs, net	311	4	61	-200	-469
Tax on net financial expenses	-77,75	-1	-15,25	49	110,215
Net financial expenses	**233,25**	**3**	**45,75**	**-151**	**-358,785**
Net profit for the year	**2037**	**1202**	**2220**	**3098**	**3674**

Appendix 3: Analytical balance sheet

DKK million	**2011**	**2012**	**2013**	**2014**	**2015**
Goodwill	1928	1922	1904	2080	2424
Brand	1053	1053	1053	1053	1057
Distribution network	336	331	300	268	216
Distribtion rights	1064	1045	1042	1047	1069
Other intangible assets	95	136	318	411	683
Total intangible assets	**4476**	**4487**	**4617**	**4859**	**5449**
Property, plant and equipment	429	472	497	711	1237
Total tangible assets	**429**	**472**	**497**	**711**	**1237**
Deferred tax assets	209	190	276	407	879
Total non-current assets	**5114**	**5149**	**5390**	**5977**	**7565**
Inventories	1609	1318	1490	1684	2357
Financial instruments	0	4	0	99	65
Trade receivables	900	940	895	1110	1360
income tax receivables	41	138	35	52	113
Other receivables	177	498	731	404	803
Total current assets	**2727**	**2898**	**3151**	**3349**	**4698**
Provisions	64	7	35	61	97
Deferred tax liabilities	552	552	471	430	394
Other payables	2	2	3	0	249
Povisions	230	463	471	678	971
Financial instruments	0	47	148	268	214
Trade payables	288	219	539	804	1329
Income tax payable	344	283	546	643	306
Other payables	775	645	551	630	1005
Total non-interest-bearing debt	**2255**	**2218**	**2764**	**3514**	**4565**
Invested capital (net operating assets	**5586**	**5829**	**5777**	**5812**	**7698**
DKK million	**2011**	**2012**	**2013**	**2014**	**2015**
Share capital	130	130	130	128	122
Share premium	1248	1248	1248	1229	0
Treasury shares	-38	-38	-738	-2679	-4152
Reserves	620	652	205	729	1023
Proposed dividend	715	715	823	1088	1511
Retained earnings	2736	3331	4794	6537	7635
Total equity	**5411**	**6038**	**6462**	**7032**	**6139**
Loans and borrowings	375	151	0	0	2350
Loans and borrowings	10	7	49	10	257
Total interest bearing debt	**385**	**158**	**49**	**10**	**2607**
Other financial assets	34	26	48	99	159
Cash	176	341	686	1131	889
Total interest bearing assets	**210**	**367**	**734**	**1230**	**1048**
Total Net-interest bearing debt	**175**	**-209**	**-685**	**-1220**	**1559**
Invested capital	**5586**	**5829**	**5777**	**5812**	**7698**

Appendix 4: Calculated ratios

	2011	2012	2013	2014	2015
ROIC after tax in %	32,29	20,57	37,64	55,90	52,39
ROIC before tax in %	36,84	25,30	46,41	70,06	75,53
Profit margin after tax in %	27,09	18,02	24,13	27,21	24,10
Profit margin before tax in %	30,91	22,17	29,76	34,10	34,74
Turnover rate of invested capital	1,19	1,14	1,56	2,05	2,17
Days	302,04	315,46	230,82	175,21	165,58
ROIC in % = PM * Turnover rate	32,29	20,57	37,64	55,90	52,39
ROIC before tax in % = PM * Turnover rate	36,84	25,30	46,41	70,06	75,53
EBITDA margin in %	34,23	24,88	31,98	35,96	37,13
ROE in %	37,65	19,91	34,35	44,06	59,85
Financial leverage	0,49	0,39	0,44	0,50	1,17
Solvency ratio	0,67	0,72	0,70	0,67	0,46
Current ratio	1,76	1,95	1,67	1,48	1,37

Appendix 5: Growth rates and free cash flows for 2011 – 2015

Growth drivers	2011	2012	2013	2014	2015	*Average*
Revenue	-0,1%	-0,1%	35,4%	32,5%	40,2%	*21,6%*

Cost drivers	2011	2012	2013	2014	2015	*Average*
Cost of sales	26,7%	33,1%	33,0%	29,1%	26,8%	*29,7%*
Gross profit	**73,3%**	**66,9%**	**67,0%**	**70,9%**	**73,2%**	***70,3%***
Sales, distribution and marketing expenses	28,4%	29,8%	25,7%	25,2%	26,7%	*27,2%*
Administrative espenses	10,6%	12,2%	9,4%	9,8%	9,4%	*10,3%*
EBITDA	**34,2%**	**24,9%**	**32,0%**	**36,0%**	**37,1%**	***32,8%***
Depreciation and amortisation	4,5%	3,6%	3,9%	4,0%	6,0%	*4,4%*
EBIT	**30,9%**	**22,2%**	**29,8%**	**34,1%**	**34,7%**	***30,3%***
Tax rate	12,4%	18,7%	18,9%	20,2%	30,6%	*20,2%*
NOPAT	**27,1%**	**18,0%**	**24,1%**	**27,2%**	**24,1%**	***24,1%***
Finance costs	-177,7%	-1,9%	-8,9%	-16,4%	30,1%	*-35,0%*
Tax on net financial expenses	12,4%	18,7%	18,9%	20,2%	30,6%	*20,2%*
Net financial expenses	**133,3%**	**1,4%**	**6,7%**	**12,4%**	**23,0%**	***35,4%***
Net profit for the year	**30,6%**	**18,1%**	**24,6%**	**25,9%**	**22,0%**	***24,2%***

Analytical balance sheet (growth rates)	2011	2012	2013	2014	2015	*Average*
Investment drivers						
Goodwill	29,0%	28,9%	21,1%	17,4%	14,5%	*22,2%*
Brand	15,8%	15,8%	11,7%	8,8%	6,3%	*11,7%*
Distribution network	5,0%	5,0%	3,3%	2,2%	1,3%	*3,4%*
Distribtion rights	16,0%	15,7%	11,6%	8,8%	6,4%	*11,7%*
Other intangible assets	1,4%	2,0%	3,5%	3,4%	4,1%	*2,9%*
Total intangible assets	**67,2%**	**67,5%**	**51,2%**	**40,7%**	**32,6%**	***51,8%***
Property, plant and equipment	6,4%	7,1%	5,5%	6,0%	7,4%	*6,5%*
Total Tangible assets	**6,4%**	**7,1%**	**5,5%**	**6,0%**	**7,4%**	***6,5%***
Deferred tax assets	3,1%	2,9%	3,1%	3,4%	5,3%	*3,5%*
Deferred tax liabilities	8,3%	8,3%	5,2%	3,6%	2,4%	*5,6%*

Net working capital decomposed into:	2011	2012	2013	2014	2015	*Average*
Inventories	24,2%	19,8%	16,5%	14,1%	14,1%	*17,7%*
Financial instruments	0,0%	0,1%	0,0%	0,8%	0,4%	*0,3%*
Trade receivables	13,5%	14,1%	9,9%	9,3%	8,1%	*11,0%*
income tax receivables	0,6%	2,1%	0,4%	0,4%	0,7%	*0,8%*
Other receivables	2,7%	7,5%	8,1%	3,4%	4,8%	*5,3%*
Provisions	1,0%	0,1%	0,4%	0,5%	0,6%	*0,5%*
Other payables	0,0%	0,0%	0,0%	0,0%	1,5%	*0,3%*
Povisions	3,5%	7,0%	5,2%	5,7%	5,8%	*5,4%*
Financial instruments	0,0%	0,7%	1,6%	2,2%	1,3%	*1,2%*
Trade payables	4,3%	3,3%	6,0%	6,7%	7,9%	*5,7%*
Income tax payable	5,2%	4,3%	6,1%	5,4%	1,8%	*4,5%*
Other payables	11,6%	9,7%	6,1%	5,3%	6,0%	*7,7%*
Total	**66,5%**	**68,6%**	**60,4%**	**53,9%**	**53,0%**	***60,5%***

Appendix 5: Growth rates and free cash flows for 2011 – 2015

Financial drivers (as a % of Invested Capital)	**2011**	**2012**	**2013**	**2014**	**2015**	***Average***
Loans and borrowings	6,7%	2,6%	0,0%	0,0%	30,5%	*8,0%*
Loans and borrowings	0,2%	0,1%	0,8%	0,2%	3,3%	*0,9%*
Other financial assets	0,6%	0,4%	0,8%	1,7%	2,1%	*1,1%*
Cash	3,2%	5,9%	11,9%	19,5%	11,5%	*10,4%*
NIBD	**3,1%**	**-3,6%**	**-11,9%**	**-21,0%**	**20,3%**	***-2,6%***

Casflow statement in DKK million	**2012**	**2013**	**2014**	**2015**
Nopat	1199	2174,25	3249	4032,79
Depreciation and amortisation	180	200	222	400
Changes in inventory	291	-172	-194	-673
Changes in financial instruments	-4	4	-99	34
Changes in Trade receivables	-40	45	-215	-250
Changes in income tax receivables	-97	103	-17	-61
Changes in other receivables	-321	-233	327	-399
Changes in provisions	-57	28	26	36
Changes in other payables	0	1	-3	249
Changes in provisions	233	8	207	293
Changes in financial instruments	47	101	120	-54
Changes in trade payables	-69	320	265	525
Changes in income tax payable	-61	263	97	-337
Changes in other payables	-130	-94	79	375
Cash flow from operations	**1171**	**2748,25**	**4064**	**4170,79**
Investment, non-current assets	-234,0	-355,0	-678,0	-1516,0
Free cash flow to the firm	**937**	**2393,25**	**3386**	**2654,79**

Investments, non-current assets (in DKK million)	2012	2013	2014	2015
Intangible and tangible assets, end of period	4959	5114	5570	6686
+ Depreciation and amortisation	180	200	222	400
- Intangible and tangible assets, beginning of period	4905	4959	5114	5570
= Investments in intangibel and tangible assets	234	355	678	1516

Appendix 6: Growth rates and pro forma income statement 2016-2022

Growth drivers	E2016	E2017	E20178	E2019	E2020	E2021	E2022
Revenue	20,6%	20,8%	5,7%	5,7%	5,8%	2%	2%
Asia pacific	24,40%	24,40%	10,90%	10,90%	10,90%	2%	2%
Americas	15,80%	15,80%	4,40%	4,40%	4,40%	2%	2%
Europe	23,50%	23,50%	4,80%	4,80%	4,80%	2%	2%

Cost drivers	E2016	E2017	E20178	E2019	E2020	E2021	E2022
Cost of sales	26,8%	26,8%	26,8%	26,8%	26,8%	26,8%	26,8%
Gross profit	**73,2%**	**73,2%**	**73,2%**	**73,2%**	**73,2%**	**73,2%**	**73,2%**
Sales, distribution and marketing expenses	27,2%	27,7%	28,2%	26,7%	26,7%	26,7%	26,7%
Administrative espenses	9,4%	9,4%	9,4%	9,4%	9,4%	9,4%	9,4%
EBITDA	**36,6%**	**36,1%**	**35,6%**	**37,1%**	**37,1%**	**37,1%**	**37,1%**
Depreciation and amortisation	6%	6%	6%	6%	6%	6%	6%
EBIT	**34,5%**	**34,3%**	**34,0%**	**35,5%**	**35,6%**	**35,6%**	**35,7%**
Tax rate	22%	22%	22%	22%	22%	22%	22%
NOPAT	**26,4%**	**26,4%**	**26,2%**	**27,4%**	**27,5%**	**27,6%**	**27,6%**
Finance costs	30,1%	30,1%	30,1%	30,1%	30,1%	30,1%	30,1%
Tax on net financial expenses	22%	22%	22%	22%	22%	22%	22%
Net profit for the year	**24,6%**	**24,9%**	**25,0%**	**26,4%**	**26,7%**	**26,9%**	**27,0%**

In DKK million	E2016	E2017	E20178	E2019	E2020	E2021	E2022
Asia Pacific	3299,1	4104,1	4551,4	5047,5	5597,7	5709,6	5823,8
Americas	7569,8	8765,9	9151,6	9554,3	9974,6	10174,1	10377,6
Europe	9321,8	11512,4	12065,0	12644,1	13251,0	13516,1	13786,4
Revenue	**20190,7**	**24382,3**	**25768,0**	**27245,9**	**28823,4**	**29399,8**	**29987,8**
Cost of sales	-5411,1	-6534,5	-6905,8	-7301,9	-7724,7	-7879,2	-8036,7
Gross profit	**14779,6**	**17847,9**	**18862,2**	**19944,0**	**21098,7**	**21520,7**	**21951,1**
Sales, distribution and marketing expenses	-5491,9	-6753,9	-7266,6	-7274,6	-7695,8	-7849,8	-8006,7
Administrative espenses	-1897,9	-2291,9	-2422,2	-2561,1	-2709,4	-2763,6	-2818,9
EBITDA	**7389,8**	**8802,0**	**9173,4**	**10108,2**	**10693,5**	**10907,3**	**11125,5**
Depreciation and amortisation	-416,5	-435,1	-419,0	-424,3	-429,9	-432,0	-434,1
EBIT	**6973,3**	**8367,0**	**8754,4**	**9684,0**	**10263,6**	**10475,4**	**10691,4**
Income tax expenses	-1534,1	-1840,7	-1926,0	-2130,5	-2258,0	-2304,6	-2352,1
Tax shield, net financial expenses	-104,9	-100,8	-87,5	-78,2	-68,6	-56,2	-56,6
NOPAT	**5334,3**	**6425,5**	**6740,9**	**7475,2**	**7937,0**	**8114,6**	**8282,7**
Finance costs	-476,9	-458,1	-397,9	-355,6	-311,9	-255,4	-257,2
Tax on net financial expenses	104,9	100,8	87,5	78,2	68,6	56,2	56,6
Net financial expenses	**-372,0**	**-357,3**	**-310,3**	**-277,4**	**-243,3**	**-199,2**	**-200,6**
Net profit for the year	**4962,3**	**6068,2**	**6430,6**	**7197,9**	**7693,7**	**7915,4**	**8082,1**

Appendix 7: Growth rates and pro forma balance sheet 2016-2022

Investment drivers	E2016	E2017	E2018	E2019	E2020	E2021	E2022
Goodwill	14,5%	14,5%	14,5%	14,5%	14,5%	14,5%	14,5%
Brand	6,3%	6,3%	6,3%	6,3%	6,3%	6,3%	6,3%
Distribution network	1,3%	1,3%	1,3%	1,3%	1,3%	1,3%	1,3%
Distribtion rights	6,4%	6,4%	6,4%	6,4%	6,4%	6,4%	6,4%
Other intangible assets	4,1%	4,1%	4,1%	4,1%	4,1%	4,1%	4,1%
Total intangible assets	**32,6%**	**32,6%**	**32,6%**	**32,6%**	**32,6%**	**32,6%**	**32,6%**
Property, plant and equipment	7,4%	7,4%	6,0%	6,0%	6,0%	6,0%	6,0%
Total Tangible assets	**7,4%**	**7,4%**	**6,0%**	**6,0%**	**6,0%**	**6,0%**	**6,0%**
Deferred tax assets	3,5%	3,5%	3,5%	3,5%	3,5%	3,5%	3,5%
Deferred tax liabilities	2,4%	2,4%	2,4%	2,4%	2,4%	2,4%	2,4%

Net working capital decomposed into:	E2016	E2017	E2018	E2019	E2020	E2021	E2022
Inventories	14,1%	14,1%	14,1%	14,1%	14,1%	14,1%	14,1%
Financial instruments	0,3%	0,3%	0,3%	0,3%	0,3%	0,3%	0,3%
Trade receivables	8,1%	8,1%	8,1%	8,1%	8,1%	8,1%	8,1%
income tax receivables	0,8%	0,8%	0,8%	0,8%	0,8%	0,8%	0,8%
Other receivables	5,3%	5,3%	5,3%	5,3%	5,3%	5,3%	5,3%
Provisions	0,5%	0,5%	0,5%	0,5%	0,5%	0,5%	0,5%
Other payables	0,3%	0,3%	0,3%	0,3%	0,3%	0,3%	0,3%
Povisions	5,4%	5,4%	5,4%	5,4%	5,4%	5,4%	5,4%
Financial instruments	1,2%	1,2%	1,2%	1,2%	1,2%	1,2%	1,2%
Trade payables	5,7%	5,7%	5,7%	5,7%	5,7%	5,7%	5,7%
Income tax payable	4,5%	4,5%	4,5%	4,5%	4,5%	4,5%	4,5%
Other payables	7,7%	7,7%	7,7%	7,7%	7,7%	7,7%	7,7%
Total	**54,0%**	**54,0%**	**54,0%**	**54,0%**	**54,0%**	**54,0%**	**54,0%**
Financial drivers (as a % of Invested Capital)	**E2016**	**E2017**	**E2018**	**E2019**	**E2020**	**E2021**	**E2022**
NIBD	**20,3%**	**18,30%**	**16,30%**	**14,30%**	**12,30%**	**10%**	**10%**

DKK million	E2016	E2017	E2018	E2019	E2020	E2021	E2022
Goodwill	2424	2424	2424	2424	2424	2424	2424
Brand	1057	1057	1057	1057	1057	1057	1057
Distribution network	216	216	216	216	216	216	216
Distribtion rights	1069	1069	1069	1069	1069	1069	1069
Other intangible assets	683	683	683	683	683	683	683
Total intangible assets	**5449**	**5449**	**5449**	**5449**	**5449**	**5449**	**5449**
Property, plant and equipment	1492,3	1802,1	1534,2	1622,2	1716,1	1750,4	1785,4
Total tangible assets	**1492,3**	**1802,1**	**1534,2**	**1622,2**	**1716,1**	**1750,4**	**1785,4**
Deferred tax assets	715,5	864,0	913,1	965,5	1021,4	1041,8	1062,7
Total non-current assets	**7656,8**	**8115,1**	**7896,3**	**8036,7**	**8186,5**	**8241,2**	**8297,1**
Inventories	2846,9	3437,9	3633,3	3841,7	4064,1	4145,4	4228,3
Financial instruments	51,6	62,3	65,8	69,6	73,6	75,1	76,6
Trade receivables	1640,6	1981,2	2093,8	2213,9	2342,1	2388,9	2436,7
income tax receivables	169,2	204,3	215,9	228,3	241,5	246,3	251,3
Other receivables	1067,6	1289,3	1362,6	1440,7	1524,1	1554,6	1585,7
Total current assets	**5775,9**	**6975,0**	**7371,4**	**7794,2**	**8245,5**	**8410,4**	**8578,6**
Provisions	102,8	124,1	131,2	138,7	146,7	149,7	152,7
Deferred tax liabilities	484,6	585,2	618,4	653,9	691,8	705,6	719,7
Other payables	63,8	77,1	81,5	86,2	91,1	93,0	94,8
Povisions	1095,2	1322,6	1397,7	1477,9	1563,5	1594,7	1626,6
Financial instruments	237,1	286,3	302,6	320,0	338,5	345,3	352,2
Trade payables	1141,7	1378,7	1457,1	1540,7	1629,9	1662,5	1695,7
Income tax payable	916,4	1106,6	1169,5	1236,6	1308,2	1334,4	1361,1
Other payables	1564,1	1888,8	1996,1	2110,6	2232,8	2277,4	2323,0
Total non-interest-bearing debt	**5605,7**	**6769,4**	**7154,1**	**7564,5**	**8002,4**	**8162,5**	**8325,7**
Invested capital (net operating assets	**7827,0**	**8320,7**	**8113,6**	**8266,4**	**8429,5**	**8489,1**	**8549,9**
Total Net-interest bearing debt	**1585,1**	**1522,7**	**1322,5**	**1182,1**	**1036,8**	**848,9**	**855,0**

Appendix 8: Cash flows and investment in intangible and tangible assets

Casflow statement in DKK million	E2016	E2017	E2018	E2019	E2020	E2021	E2022
Nopat	5334,3	6425,5	6740,9	7475,2	7937,0	8114,6	8282,7
Depreciation and amortisation	-416,5	-435,1	-419,0	-424,3	-429,9	-432,0	-434,1
Changes in inventory	-489,9	-591,0	-195,4	-208,4	-222,4	-81,3	-82,9
Changes in financial instruments	13,4	-10,7	-3,5	-3,8	-4,0	-1,5	-1,5
Changes in Trade receivables	-280,6	-340,6	-112,6	-120,1	-128,2	-46,8	-47,8
Changes in income tax receivables	-56,2	-35,1	-11,6	-12,4	-13,2	-4,8	-4,9
Changes in other receivables	-264,6	-221,6	-73,3	-78,1	-83,4	-30,5	-31,1
Changes in provisions	5,8	21,3	7,1	7,5	8,0	2,9	3,0
Changes in other payables	-185,2	13,3	4,4	4,7	5,0	1,8	1,9
Changes in provisions	124,2	227,4	75,2	80,2	85,6	31,3	31,9
Changes in financial instruments	23,1	49,2	16,3	17,4	18,5	6,8	6,9
Changes in trade payables	-187,3	237,0	78,4	83,6	89,2	32,6	33,2
Changes in income tax payable	610,4	190,2	62,9	67,1	71,6	26,2	26,7
Changes in other payables	559,1	324,7	107,3	114,5	122,2	44,7	45,5
Cash flow from operations	**4790,0**	**5854,5**	**6277,0**	**7003,0**	**7455,9**	**7663,9**	**7829,6**
Investment, non-current assets	-671,7	-744,9	-151,1	-512,3	-523,8	-466,3	-469,1
Free cash flow to the firm	**4118,3**	**5109,6**	**6125,9**	**6490,8**	**6932,1**	**7197,7**	**7360,5**

Investments, non-current assets (in DKK million)	E2016	E2017	E2018	E2019	E2020	E2021	E2022
Intangible and tangible assets, end of period	6941,3	7251,1	6983,2	7071,2	7165,1	7199,4	7234,4
+ Depreciation and amortisation	416,5	435,1	419,0	424,3	429,9	432,0	434,1
- Intangible and tangible assets, beginning of period	6686	6941,3	7251,1	6983,2	7071,2	7165,1	7199,4
= Investments in intangibel and tangible assets	671,7	744,9	151,1	512,3	523,8	466,3	469,1