CATÓLICA LISBON
BUSINESS & ECONOMICS

Equity Valuation of Hugo Boss AG

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Dissertation written under the supervision of José Carlos Tudela Martins

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HUGO BOSS AG		Recommendation	Buy	
Deutsche Börse AG		Current Share Price	€ 62.50	*(07.03.2019)*
Premium Apparel		Target Share Price	€ 87.86	*(31.12.2018)*

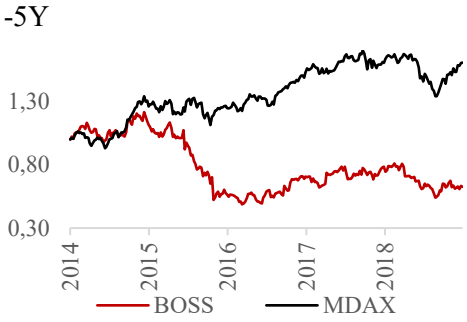
Valuation Metrics

	2019E
EV/EBITDA	82.96
WACC	6.09%
Cost of Equity	6.34%
Cost of Debt	0.62%
Tax Rate	29.55%
Perpetuity Growth Rate	2.16%
5-Year EBIT Margin (avg.)	12.66%

Capital Market Data

	as of 07/03/2019
Share Price (€)	62.5
52 Weeks High (€)	81.4
52 Weeks Low (€)	52.54
Annualized Volatility	27.44%
Shares Issued (mil.)	69.02
Free Float (mil.)	61.89
Market Cap (€, bil.)	3.66

Indexed Weekly Performance



Stock Performance

Close Pr.	BOSSn.DE	MDAX
1 Week	-7.50%	-1.52%
1 Months	-16.18%	-4.87%
1 Year	-32.23%	-5.89%
5 Years	-34.71%	46.16%

INVESTMENT SUMMARY

Buy

A buy recommendation is issued to Hugo Boss AG due to a target price between €81.15/share to €87.86/share which reflects an upside of 29.84% to 40.57% to the current market price of €62.50/share.

Market

The luxury and premium apparel market is expected to grow especially due to higher demand in Asia. Hugo Boss benefits from this particular development and a 5year CAGR of 2.82% is expected. This development is underpinned by Hugo Boss achievment of reaching its targets in 2018 besides the difficult market situation for european retailers.

Distribution Channel

Hugo Boss will keep on improving their own retail sales by opening new retail stores and restructuring old ones. Furthermore, they will keep on investing into their online-channel, which should be rewarded with higher sales. However, decreasing wholesales are likely to offset the positive effects of its new ditribution strategy. Therefore, the managements forecast of a 15% EBIT-margin until 2022 seems too ambitious.

Key Financials

€, million	2016	2017	2018	2019E	2020E	2021E	2022E	2023E
Revenue	2,693	2,733	2,796	2,872	2,960	3,058	3,166	3,278
EBIT	263	341	347	364	375	387	401	415
as % of sales	9.77%	12.48%	12.41%	12.66%	12.66%	12.66%	12.66%	12.66%
EBITDA	402	474	470	504	519	535	553	571
FCFF	120	325	160	184	210	207	212	247
EPS (€)	2.80	3.35	3.42	3.57	3.69	3.81	3.94	4.07
ROA	17.63%	13.40%	12.61%	12.55%	12.52%	12.46%	12.37%	12.31%
ROE	35.74%	25.18%	23.90%	23.93%	23.54%	23.21%	22.87%	22.58%

Abstract

The purpose of this dissertation is to evaluate the fair price per share of the German premium apparel manufacturer Hugo Boss AG and issue a buy, hold or sell recommendation. The valuation will take into account the current macroeconomic environment, several industry outlooks and trends, the company's historical financial performance and its future strategy. Hugo Boss is evaluated by the intrinsic Discounted Cash Flow method, and complemented by the relative method of Multiples. Thus, a fair value between €81.15/share to €87.86/share is issued. This reflects an upside of 29.84% to 40.57% compared to the traded price of €62.50/share and concludes a buy recommendation.

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Resumo

O objetivo desta dissertação é avaliar o "fair value" por ação do produtor Alemão de roupas premium Hugo Boss AG e emitir uma recomendação para "comprar, manter ou vender". A avaliação da empresa terá em conta o ambiente macroeconómico atual, várias perspetivas e tendências do setor, o desempenho financeiro histórico da empresa e a sua futura estratégia. Hugo Boss é avaliada pelo método de Fluxo de Caixa Descontado intrínseco e complementado pelo método de Múltiplos relativo. Assim, um justo valor entre €81.15/ação e €87.86/ação é emitido. Isto reflete um aumento de 29.84% para 40.57% em relação ao preço negociado de €62.50/ação e conclui uma recomendação de "compra".

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Table of Contents

Table of Formulas

Table of Figures

Table of Tables

Table of Abbrevations

APV	Adjusted Present Value
CAPM	Capital Asset Pricing Model
CAPEX	Capital Expenditures
COGS	Cost of Goods Sold
CRP	Country Risk Premium
D&A	Depreciation and Amortisation
DAX30	Deutscher Aktienindex
DCF	Discounted Cash Flow
DSO	Days Sales Outstanding
DPO	Days Payables Outstanding
DPS	Dividend per Share
EBIT	Earnings Before Interest and Taxes
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortisation
EPS	Earnings per Share
ERP	Equity Risk Premium
EV	Enterprise Value
FCF	Free Cash Flow
FCFE	Free Cash Flow to the Equity
FCFF	Free Cash Flow to the Firm
g	Growth Rate
GDP	Gross Domestic Product
HNWI	High Net Worth Individual
IMF	International Monetary Fund
Kd	Cost of Debt
Ke	Cost of Equity
LTM	Last Twelve Month
MDAX	Mid-Cap DAX
MRP	Market Risk Premium
MVD	Market Value of Debt
MVE	Market Value of Equity
NOPLAT	Net Operating Profit Less Adjusted Taxes
NPV	Net Present Value
NWC	Net Working Capital
OECD	Organisation for Economic Co-operation and Development
PPE	Property Plant & Equipment
PVTS	Present Value of Tax Shield
r	Discount Rate
ROA	Return on Assets
ROE	Return on Equity
ROIC	Return on Invested Capital
Rf	Risk Free Rate
SGA	Selling General and Administrative Expenses
SWOT	Strenght, Weaknesses, Opportunities, Threats
TS	Tax Shield
TV	Terminal Value
WACC	Weighted Average Cost of Capital

1. Introduction

The main purpose of this dissertation is to estimate the fair value per share of the German based premium apparel manufacturer Hugo Boss AG.

1.1. Motivation

My motivation for this thesis originates from the rapid changes observable in the textile industry. New players like H&M, Zara or Amazon are changing the way clothes are produced, distributed, and even perceived by the customers. In addition, newly rising trends from increased ESG awareness or digitalization are highly impacting the fashion industry, especially in the upper premium segment Hugo Boss is operating in. For that reason, I am curious how these new trends are affecting a well established company like Hugo Boss.

1.2. Methodology

First this dissertation will give an overview of up-to-date valuation techniques in the literature review and discuss their up- and downsides.

Secondly, I will present the current macroeconomic environment as well as giving a detailed overview of the industry, including an outlook for upcoming trends, chances and threats.

In addition, Hugo Boss will be presented with regards to their business model, strategy and financial situation, which will be concluded with a a SWOT-Analysis.

Subsequently I will determine the fair value of Hugo Boss by adopting different valuation techniques, which will be concluded by a comparison to an equity report from Pareto Securities.

2. Literature Review

This section will give an overview of the state-of-the-art valuation methods. A more detailed analysis is granted to those methods best suited to derive the value of Hugo Boss.

2.1. Valuation Methodologies

In order to evaluate a company, it is necessary to understand the economic environment in which a company operates as well as its financial situation. Hence, a proper valuation needs to analyze broader fields like the macro economy, or a company's industry, but also company specific details, like the business model(s) or management strategies (Pinto, 2015). Good valuation models are supposed to take all of the above mentioned into account, which can be achieved by a vast variety of methodologies. However, it is possible to cluster three main approaches: Discounted Cash Flow valuation, Relative valuation and Option valuation (Damodaran, 2011).

2.2. Discounted Cashflow Valuation Methodologies

Discounted Cash Flow valuation methodologies (DCF) state, that all future cash flows generated are included in the present value of an asset. Therefore, intrinsic, or DCF valuation methods evaluate an asset by all its expected future free cash flows (FCF) and their certainty throughout the life-span of the asset (Damodaran, 2011). The asset's todays value can be derived by discounting the forecasted cash flows at a discount rate. The present value of an asset is displayed in Formula 1 (Fernández, 2007a):

Formula 1: Net Present Value

$$Value = \sum_{t=1}^{t=n} \frac{CF_t}{(1+r)^t}$$

$n = Number\ of\ cash\ flows\ in\ an\ asset's\ life$

$CF_t = Cash\ flow\ forecast\ at\ time\ t$

$r = discount\ rate\ including\ the\ riskiness\ of\ the\ cash\ flows$

The valuation of Hugo Boss will be based on the DCF method, since the company's capital structure is already at its target level. Therefore, using any other method would add more noise than accuracy to the valuation.

2.2.1. Free Cash Flow Methods

Even though plenty of different DCF methods exist, it is possible to differentiate three main approaches to derive the free cash flow used in formula 1 in order to calculate the net present value (NPV). The methods are: Free Cash Flow to the Firm (FCFF), Free Cash Flow to the Equity (FCFE) and Adjusted Present Value (APV) (Rosenbaum & Pearl, 2013).

2.2.1.1. Free Cashflow to the Firm

The Free Cash Flow to the Firm is the amount of cash flow that is available to all its stakeholders, after operating expenses and investment expenses have been completely deducted (Pinto, 2015). FCFF takes into account the equity stakeholders and other non-equity stakeholders as for instance preferred stockholders or bondholders (Damodaran, 2011). Various paths of deriving the FCFF exist. However, typically one starts with the sales projections. The calculation starting with sales is presented in formula 2 (Rosenbaum & Pearl, 2013):

Formula 2: Free Cash Flow to the Firm

Sales
- Costs of Goods Sold (COGS)
- Selling, General and Administrative Expenses (SGA)
= **Earnings Before Interest and Taxes (EBIT)**
- Tax
= **Net Operating Profits After Taxes (NOPAT)**
+ Depreciation & Amortisation
- Capital Expenditures (CAPEX)
-/+ Increase/Decrease in Net Working Capital (Change NWC)
= **Free Cash Flow to the Firm (FCFF)**

In order to compute the Firm Value, the FCFF needs to be discounted as already presented in formula 1. In case of the FCFF, the proper discount rate is the Weighted Average Cost of Capital (WACC), which will be discussed in section 2.2.5.2. Furthermore, we have to add and discount the Terminal Value (TV), which will be highlighted in section 2.2.3. (Luehrman, 1997).

I will use the FCFF method to forecast the FCF's of Hugo Boss.

2.2.1.2. Free Cashflow to the Equity

Contrary to FCFF, Free Cash Flow to the Equity evaluates solely the free cash flow that is determined for the equity stake of a company (Koller, Goedhart, & Wessels, 2015). However, it is possible to derive the FCFE, once the FCFF is known by formula 3 :

Formula 3: Free Cash Flow to the Equity, starting at FCFF

Free Cash Flow to the Firm (FCFF)
- Interest * (1-Tax)
+ Net Borrowings
= **Free Cash Flow to the Equity (FCFE)**

Formula 4 displays how to compute FCFE starting with Net Income as the first variable :

Formula 4:Free Cashflow to the Equity, starting with Net Income

Sales
- Costs of Goods Sold (COGS)
- Selling, General and Administrative Expenses (SGA)
= **Earnings Before Interest and Taxes (EBIT)**
- Interest
- Tax
= **Net Operating Profits Less Adjusted Taxes (NOPLAT)**
+ Depreciation & Amortisation
- Capital Expenditures (CAPEX)
-/+ Increase/Decrease in Net Working Capital (Change NWC)
+ Net Borrowings
= **Free Cash Flow to the Firm (FCFE)**

To preserve the Equity Value of a firm, the FCFE has to be discounted to receive the Net Present Value (Formular 1). Contrary to the process of computing the Firm Value, the discount rate for FCFE is the Cost of Equity, which will be presented in Section 2.2.5.2.1. Furthermore, we need to add and discount a Terminal Value (Damodaran, 2001).

Due to a very low level of debt, I will not use the FCFE method.

2.2.1.3. Adjusted Present Value

Adjusted Present Value (APV) first evaluates a firm as if it has no debt. Afterwards the benefits, drawbacks and the value of debt, as well as other non-equity influences are added (Damodaran, 2011).

The starting point of APV is the FCFF, which needs to be discounted at the unlevered Cost of Equity (Ke) to get the value of the unlevered firm (Fernández, 2007b). Thus, the company is treated as if it was 100% equity financed (Koller et al., 2015). Formula 5 displays how to get the unlevered Cost of Equity.

Formula 5: Unlevered Cost of Equity

$$K_e = K_u + \frac{D - TS}{E} * (K_u - K_d)$$

$K_e = Unlevered\ cost\ of\ equity$

$D = Debt\ level$

$E = Equity\ level$

$TS = Tax\ Shield$

$K_u = Unlevered\ cost\ of\ assets$

$K_d = Cost\ of\ debt$

By discounting the FCFF with the Cost of Equity, one can obtain the unlevered firm value. In a next step, the benefits of debt, namely, the present value of the interest tax shield (PVTS) needs to be added. The formula for the TS is (Fieten et al., 2005):

Formula 6: Present Value of Interest Tax Sield

$$PVTS = \frac{D * K_d * T}{(1 + K_d)^t}$$

$PVTS = Present\ Value\ of\ the\ Interest\ Tax\ Shield$

$D = Debt\ level$

$K_d = Cost\ of\ Debt$

$T = Tax\ Rate$

After adding the benefits of the tax shield, the drawbacks need to be subtracted from the unlevered firm value. The biggest drawback is the cost of bankruptcy, which increases with a higher debt-ratio. It can be computed as presented in formula 7 (Damodaran, 2012):

Formula 7: PV Expected Bankruptcy Cost

$$PV\ Expected\ Bankruptcy\ Cost = Probability\ of\ Default * PV\ of\ Bankruptcy\ Cost$$

The evaluation in Formula 7 is a major shortcoming of the APV, since it is hard to estimate the correct direct and indirect bankruptcy cost and probability of default (Altman & Kishore, 1998).

Finally, the Adjusted Present Value of a company is the sum of the PV of the unlevered firm value, the PV of the tax shield, and the PV of Expected Bankruptcy Cost (Koller et al., 2015).

2.2.2. Perpetuitiy Terminal Value

If a company is not going to be liquidated, all DCF models need a Terminal Value (TV) in order to compute the NPV of the Free Cash Flows. It covers all future cash flows which are so far in the future, that they are very hard to forecast. To compute the Terminal Value of a company it has to be in steady state. Hence, its cash flows are expected to stay stable for the next years (Damodaran, 2011). Formula 8 shows the computation of the Present Value of the Terminal Value (Fernández & Bilan, 2013).

Formula 8: Present Value of Terminal Value

$$PVTV = \frac{FCF}{r - g}$$

$PVTV = Present\ Value\ of\ the\ Terminal\ Value$

$FCF = Free\ Cash\ Flow$

$g = Growth\ Rate$

$r = Discount\ Rate$

The Discount Rate varies, depending on the chosen Free Cash Flow Method. For the FCFF in a Firm Valuation it is the WACC. Equity Valuations – FCFE and APV – require the Cost of Equity as Discount Rate (Damodaran, 2011).

2.2.3. Exit Multiple Terminal Value

The Exit Multiple Method calculates the Terminal Value of a company by usig the LTM trading Multiple of comparable companies. It is of utmost importance, that the selected EBITDA or EBITA are normalized – especially in cyclical companies – since they will otherwise bias the obtained TV significantly (Rosenbaum & Pearl, 2013). Multiples will be discussed in depth in chapter 2.5.

2.2.3. Growth Rate

Three different methods exist for estimating the growth rate for a firm.

First, it can be estimated by looking at past earnings – the historical growth rate. However, this may not be accurate, especially if the evaluated company is unstable (Harris, 1986).

Second, an analyst's growth rate can be taken as an estimator (Harris, 1986).

Third, by analyzing a firm's fundamentals. This method states that the growth rate is a function of the quantity and quality of investments into assets, including acquisitions, mergers or new distribution channels (Damodaran, 2012).

2.2.4. Discount Rate

Since a majority of the differences in the DCF valuation methods become evident in the discount rates, they will be discussed in this section.

The discount rate (r) contains the risk free rate (rf) and a premium, that depends on the riskiness of the cash flows. Therefore, it is a function of the riskiness of the estimated cash (Damodaran, 2012).

2.2.4.1. Risk Free Rate

The risk free rate is the interest rate at which an investor's actual return equals her expected return after the holding period of the asset. Since the variance between actual and expected

return is zero, this interest rate can be addressed as risk free (Damodaran, 2008). Thus, risk free rates are in most circumstances government bonds of highly rated countries, since their risk of default is minimal. The risk free rate's maturity should be similar to the one of the expected cash flows from the asset – hence, in most cases a long-term rate. Moreover, the risk free rate used in DCF models should be issued in the same currency as the cash flows to exclude exchange risk (Fernández & Bilan, 2013).

2.2.4.2. Weighted Average Cost of Capital

Weighted Average Cost of Capital is a common discount rate for several intrinsic valuation methods. It relates the Cost of Equity and Cost of Debt according to the company's debt and equity structure. Furthermore it includes the effective tax rate a company has to pay (Farber, Gillet, & Szafarz).

Formula 9: Weighted Average Cost of Capital

$$WACC = K_E * \frac{E}{V} + K_D * \frac{D}{V} * (1 - t)$$

$WACC = Weighted\ Average\ Cost\ of\ Capital$

$K_E = Cost\ of\ Equity$

$K_D = Cost\ of\ Debt$

$\frac{E}{V} = Equity\ Ratio$

$\frac{D}{V} = Debt\ Ratio$

$t = Tax\ Rate$

2.2.4.2.1. Cost of Equity

Investors demand an Equity Risk Premium (ERP) for holding any asset different to the risk free. Therefore, it is a premium for taking risk. The equity risk premium itself can be further diversified into asset-specific risk, and systematic risk (Damodaran, 2012). The two most

common methodologies of computing the equity risk premium are the Capital Asset Pricing Model and the Fama-French three-factor model (Pinto, 2015).

2.2.4.2.1.1. Capital Asset Pricing Model

The Capital Asset Pricing Model assumes that the relation between the observed asset and the market portfolio affects the equity risk premium (Jagannathan & WANG, 1996).

Formula 10: Capital Asset Pricing Model

$K_e = r_f + \beta_e(r_m - r_f)$

$k_e = Cost\ of\ Equity$

$r_f = Riskfree\ Rate$

$r_m = Market\ Risk\ Premium$

2.2.4.2.1.2. Fama French Three Factor Model

Fama and French expand CAPM by the factors size, value and growth. Thus, it incorporates more factors than CAPM and is regarded to be more accurate in predicting stock returns (Fama & French, 2012).

Formula 11: Fama French Three Factor Model

$$R_i(t) - RF(t) = a_i + b_i[RM(t) - RF(t)] + s_i SMB(t) + h_i HML(t) + e_i(t)$$

$R_i(t) = Return\ of\ asset\ i\ for\ month\ t$

$RF(t) = Risk\ Free\ Rate$

$RM(t) = Market\ Returns$

$SMB(t) = Difference\ between\ returns\ on\ diversified\ portfolios\ of\ small\ and\ large\ stocks$

HML(t)= Difference between the returns of diversified portfolios of high book to market stocks and low book to market stocks (growth and value)

2.2.4.2.1.3. Beta

Both, CAPM and Fama French's Three Factor Model include β as a factor that expresses an assets' exposure to the market risk (Pinto, 2015). A β higher than 1 implicates, that the asset is more risky than the market, whereas a β below 1 reflects a lower risk compared to the market. The β is computed by a regression with the market – which is usually the according index. The values received may differ due to different choices of index or different observation periods (Fernández, 2004).

Formula 12: Regression for Beta

$$r_i = \alpha + \beta * r_m$$

$r_i = Asset\ Return$

$r_m = Market\ Return$

An unlevered β reflects the pure exposure of an assets' equity to its market risk. A levered β adds financial risk, which becomes evident when a company is levering with debt. Hence, the levered β is generally higher, when the company has debt (Damodaran, 2011). The unlevered β_u can be computed when the Debt to Equity ratio is known (Fernández, 2004).

Formula 13: Unlevered Beta

$$\beta_u = \frac{\beta_L}{1 + ((1 - Tax) * (D/E))}$$

$\beta_u = Unlevered\ Beta$

$\beta_L = Beta\ Levered$

$(D/E) = Debt\ to\ Equity\ Ratio$

According to Blume betas have the tendency to converge towards the market beta of 1. Thus, adjustments have to be made, in order to capture this effect (Blume, 1975).

Formula 14: Blume Beta Adjustment

$$Adjusted\ \beta = \frac{2}{3} * Raw\ \beta + \frac{1}{3} * 1$$

$Raw\ \beta = Beta\ computed\ by\ regression$

2.2.4.2.1.4. Equity Risk Premium

Equity Risk Premium is the additional risk investors take, when they invest in portfolios, different to the risk-free rate. Therefor, β_e presented in Formula 2 (CAPM) is the coefficient for the equity risk premium (Anwar & Kumar, 2018). According to equity valuation literature the equity risk premium is between 5% to 7% (Dimson, Marsh, & Staunton, 2003).

2.2.4.2.1.5. Country Risk Premium

The Country Risk Premium is an additional premium that reflects country specific risk. It takes into account macroeconomic effects as for instance inflation, war, political instability, currency volatility etc. (Damodaran, 2012).

Since Hugo Boss is mainly operating in developed markets I will not use the Country Risk Premium.

2.2.4.2.2. Cost of Debt

Cost of Debt is the counterpart to Cost of Equity and refers to the interest rate a company has to pay on its debt. The debt needs to be evaluated at market prices, not its book-values. Cost of Debt is the effective interest rate paid on the current debt (Rosenbaum & Pearl, 2013).

2.5. Relative Valuation Methodologies

Relative valuation methods are based on the concept, that comparable companies can be used to find the relative position of the target company among its peer group. Thus, they provide a market benchmark against which it is possible to assess a company's value at a given point in time. Best accuracy can be achieved by using forward looking Multiples (Rosenbaum & Pearl, 2013).

It is of the utmost importance to find a fitting peer group which is similar to the target company to make comparable valuation methodologies meaningful (Koller, Goedhart, & Wessels, 2005). Furthermore, the size of the peer group does not matter as much as its quality. Therefore, the companies in the peer group should have similar financial statements, especially regarding the

Return of Invested Capital (ROIC) and Growth Rate, Size, Debt to Equity Ratio and market. In general, it is possible to find similar companies within the same industry as the target because they are facing similar chances, opportunities, limitations and risks. However, the target company might be very unique making it impossible to use companies within the same industry (Koller et al., 2005).

The most common Multiples are the Price-Earnings-Ratio (PER), its iteration Price-Earnings-Growth (PEG), and the two Asset evaluations EV/EBIT and EV/EBITDA (Koller et al., 2005).

To complement the intrinsic DCF valuation of Hugo Boss, I will use the PER and EV/EBITDA multiples.

2.5.1. Price-Earnings-Ratio

Price-Earnings-Ratio is one of the most common Multiples, since it connects company value to profit. It is an equity multiple, that analyzes the relation between earnings and price. Furthermore, it takes into account risk and the Earnings-per-Share growth. However, a major drawback of PER is, that it declines with increasing leverage, even though a company might be highly profitable (Fernández, 2001).

Formula 15: Price-Earnings-Ratio

$$PER = \frac{Current\ Market\ Price}{Earnings\ per\ Share}$$

2.5.2. Price-Earnings to Growth

Price-Earnings to Growth divides the before mentioned PER by the expected growth rate. Thus, it can more accurately display whether a stock is over- or underpriced (Fernández, 2001). However, predicting the correct growth rate is an error-prone task that has a high impact on the valuations. In order to maintain as accurate as possible, I will not use the PEG Multiple.

Formula 16: Price-Earnings to Growth

$$PEG = \frac{PER}{g}$$

PEG = Price-Earnings to Growth

g = Growth Rate

2.5.3. EV/EBIT & EV/EBITDA

EV/EBIT and *EV/EBITDA* are Multiples that also take into account the debt-level of a company. Hence, they are not distorted by the limitations of a sole equity analysis as it occurs in PER and PEG (Foushee, Koller, & Mehta, 2012).

2.6. Option Valuation Methodologies

Option valuation or contingent valuation can be used to evaluate a company's assets that have option-like features, like patents or undeveloped reserves. In this case, the assets only pay off, if they exceed a predefined value, similar to a Call-option. Vice versa, an asset can also be evaluated similar to a Put-option, inferring, that it only pays off if it drops below a predefined level (Damodaran, 2012). Since Hugo Boss is a classical consumer retail company, without option-like features, I will not use option valuation.

3. Industry Analysis

In order to evaluate Hugo Boss, it is inevitable to analyze past performance of the apparel and luxury goods industry and give a macroeconomic outlook. Furthermore, I will present the most significant trends and threats that lie ahead of the industry.

3.1. Macroeconomic Outlook

The global economy is expected to slow down in 2019. The IMF justifies its assumption with on-going uncertainties in the trade conflict between America and China and the punitive tariffs related with it. Further contributions are the low growth prospects in many countries in Europe and the deteriorated sentiment in the financial markets (IMF, 2019b).

Slightly lower growth rates are expected for both developed countries and emerging markets for 2019 compared to 2018. Nevertheless, country specific growth rates may differ considerably from one another. A possible “hard Brexit”, escalating trade conflicts and a steeper-than-expected decline in economic growth in China are potential threats to the global economy in 2019 (IMF, 2019b).

The Eurozone’s growth rate is expected to further decline due to weaker private consumption, lower industrial production and the weakening of the Italian economy, where the debt conflict with the EU puts a strain on domestic demand.

The IMF's slightly more positive growth forecast for the British economy is fraught with uncertainties and is based on the assumption that there will be an orderly Brexit and that the announced fiscal policy measures will be implemented.

The growth rate of the United States is forecasted to decrease due to the dwindling positive effect of the tax reform and the rise of the interest rates. According to IMF Latin America is expected to recover further.

China’s growth is expected to decrease despite countering instruments of the Chinese government. The main reason for this pessimistic outlook is the on-going trade conflict with the United States.

Figure 1 shows the forecasted growth rates for Hugo Boss’ main markets – Germany and the Euro area, USA and China – and the whole world (IMF, 2019a).

Figure 1: IMF GDP growth rates

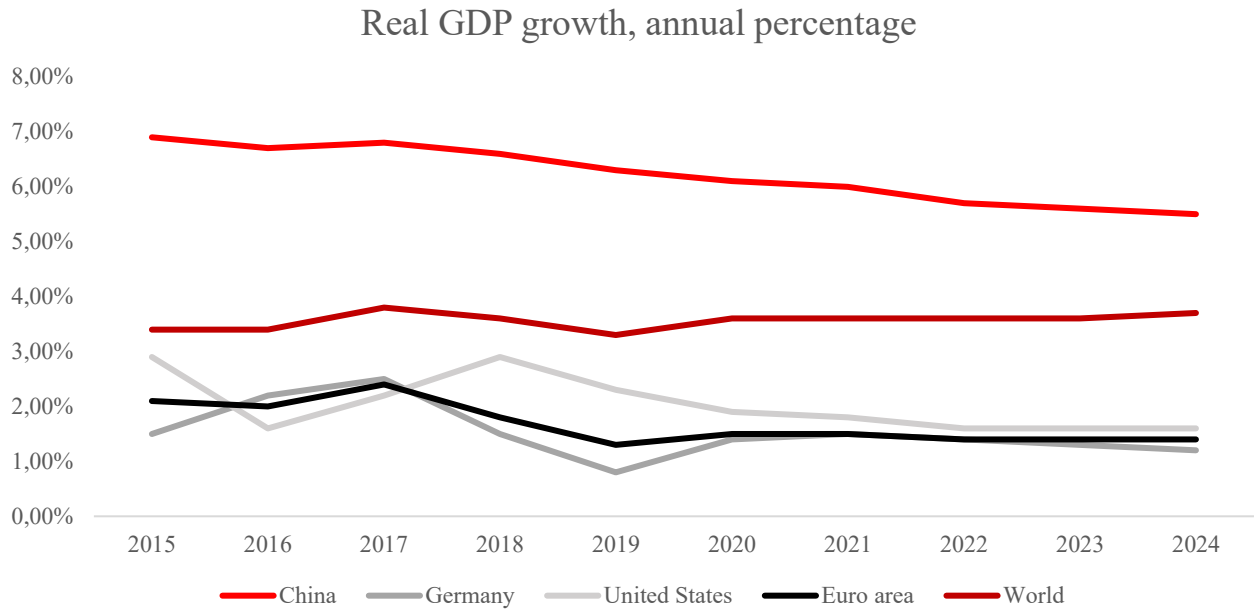
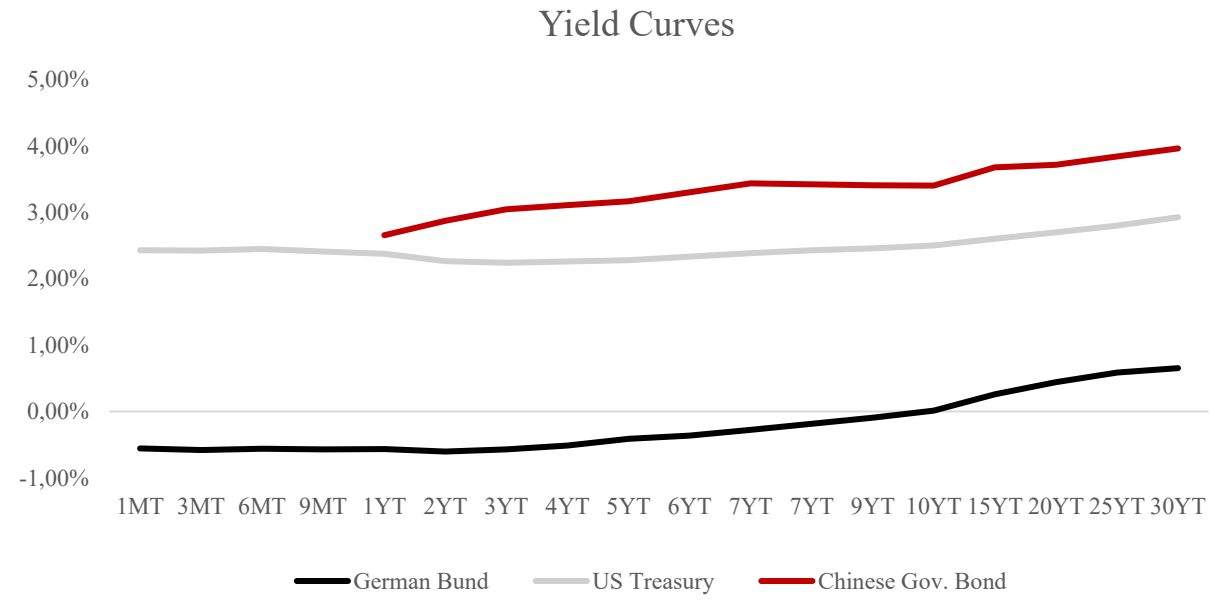


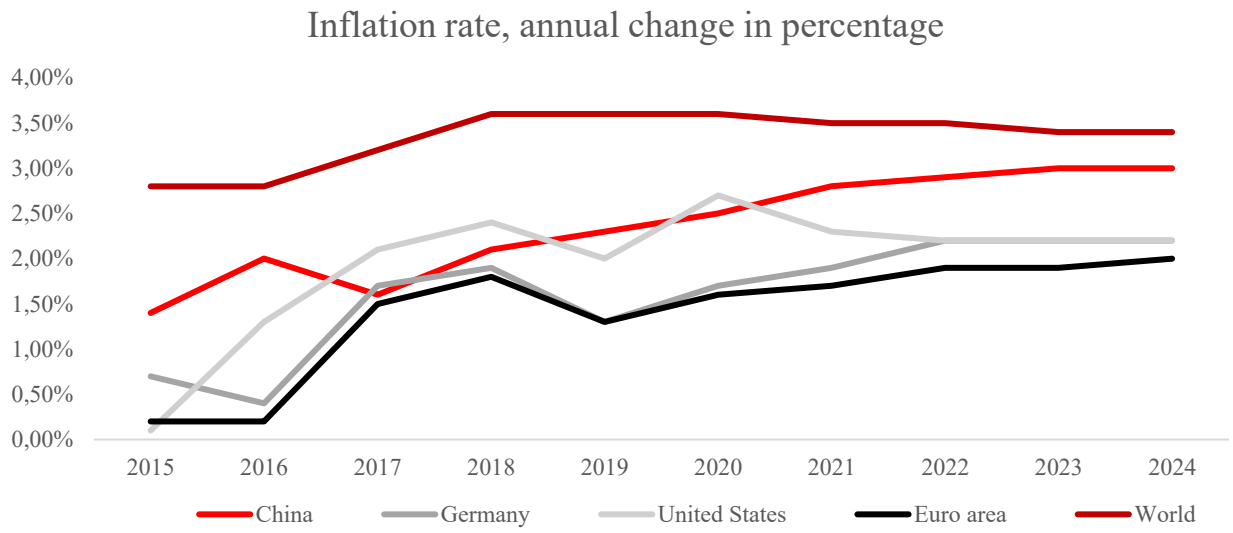
Figure 2 shows the current yield curves for the German Bund, US Treasury and the Chinese Government Bonds. Especially the flattening US yield curve fosters the remote growth outlooks since it is an indicator for a recession inferring the slowdown of economic growth (Reuters, 2019).

Figure 2: Current Yield Curves



Since I will forecast my sales in nominal values, the inflation rate of Germany is needed, in order to compute the nominal GDP. In order to give a fully outlook of inflation rates, the Chinese, US, world, and Euro area rates are also shown in figure 3 (IMF, 2019a).

Figure 3: Inflation Rates

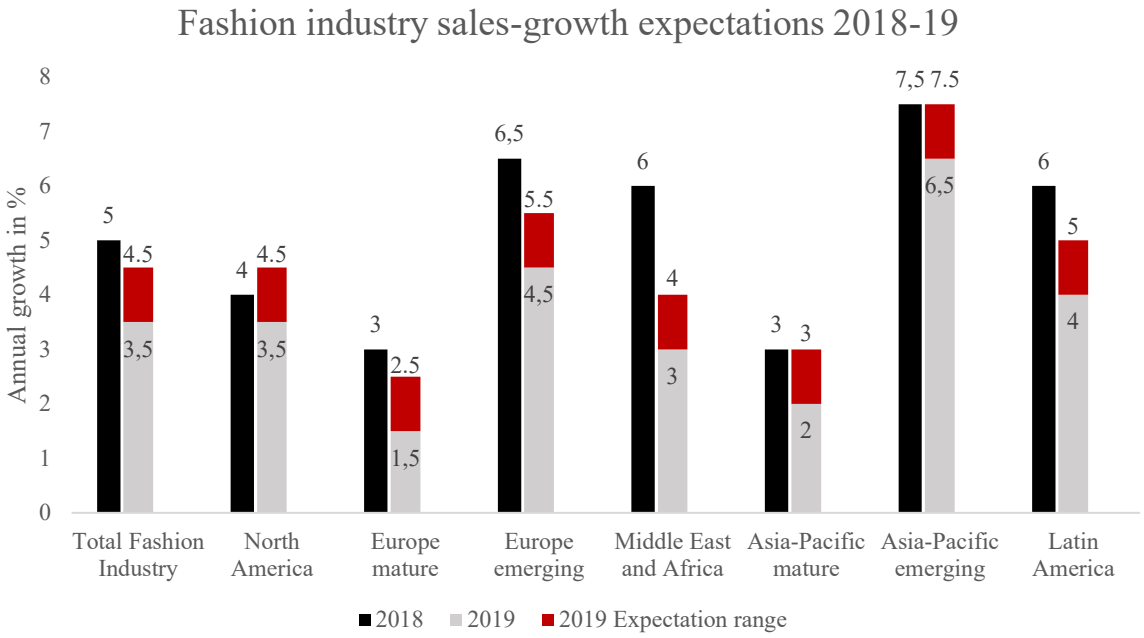


3.2. Industry Outlook

Most of 2018 was characterized by modest optimism within the apparel and luxury markets, resulting in a 6% growth and an estimated €260 billion in sales globally that were mainly driven by increasing local consumption (+4%). The generated sales through tourists remained flat on average (Bain & Company, 2019).

China was the main driver for the globally positive growth trend, which is reflected in an increase to 33% of the global total spendings in luxury goods in 2018, compared to 32% in 2017. Thus, China's growth rate in 2018 was at 9%. The United States reached €80 billion, denoting a 5% growth rate that was fostered by a positive US economy. Due to a strong currency and limited tourists' purchasing power, Europe fell back compared to the USA and China. However, local consumption was still positive, lifting retail sales up 3% to a total amount of €84 billion. Figure 4 shows the geographical distribution of sales growth expectations for the apparel industry (McKinsey & BoF, 2018):

Figure 4: Fashion Industry Sales Growth (McKinsey & BoF, 2018)

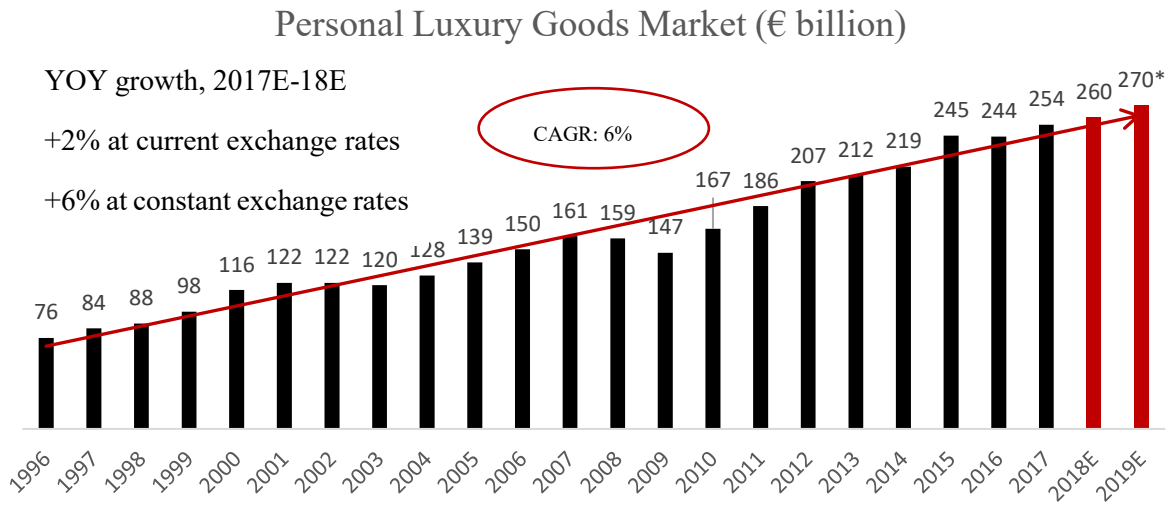


In contrast to the positive year of 2018, a potential shift in the global economic cycle causes uncertainty for the global economy in 2019 (McKinsey & BoF, 2018). Since the financial crisis in 2009 global growth has averaged about 2.5% per annum, but several signs indicate a decline or flattening in the upcoming years. The monetary policy of Federal Reserve started to raise interest rates again, increasing the cost of borrowing for companies. Furthermore, IMF and OECD forecast a flattening growth curve in developed countries (McKinsey & BoF, 2018).

Therefore, the apparel industry will have to start focusing on cutting costs. They will most likely try to achieve that by organizational restructuring and end-to-end efficiency optimization.

Despite the uncertainty in the short-term, a stable CAGR for 2018-2025 of 3-5% is expected, totaling in €320 - €365 billion (Bain & Company, 2019).

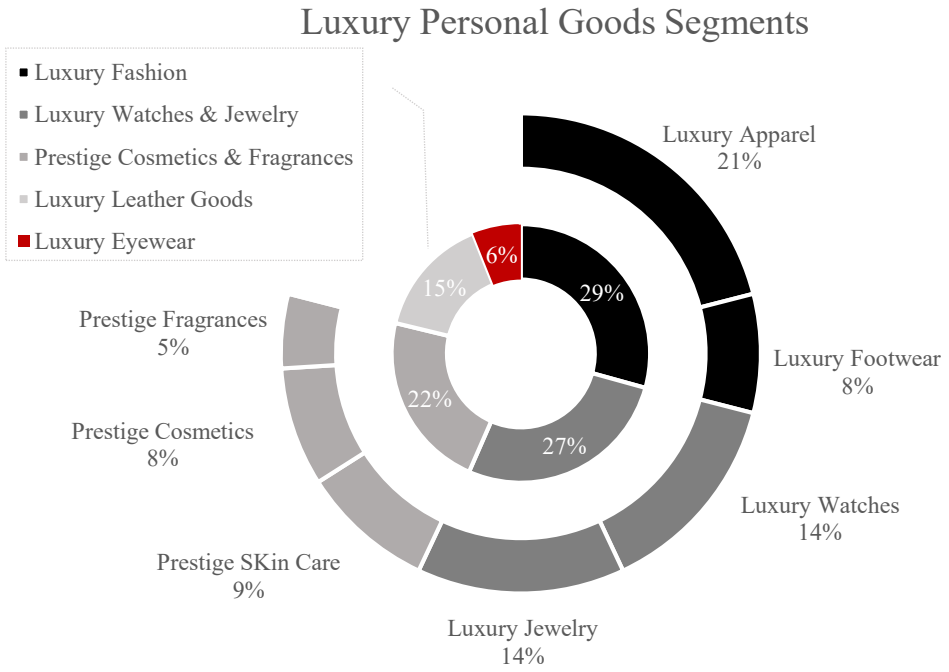
Figure 5: Personal luxury goods industry (Bain & Company, 2019)



*Forecast for 2019 added by Denis Zimmerer based on historical CAGR of 6%

3.3. Definition of Apparel and Luxury Goods Industry

The Apparel and Luxury Goods industry represents companies, that offer premium consumer goods like watches, clothes, jewelry or accessories (Bian & Forsythe, 2012). These products are highly desired due to the perception of prestige and high quality associated with them. Figure 6 shows the personal luxury goods segments and their sub-segments.Figure 6: Luxury personal goods segments (Statista 2019)



There is no exact definition of the Apparel and Luxury Goods industry, but most premium brands fulfill three characteristics that have psychological, pricing and quality effects (Husic & Cicic, 2009), (Vigneron & Johnson, 2004).

3.3.1. Psychological

The display of luxury goods gives consumers a feeling of power and confidence and the possibility to show their wealth and style in public. Therefore, persons who consume these goods are concerned about how they are perceived by others (Atwal & Williams, 2017).

3.3.2. Pricing

Apparel and luxury goods incorporate premium prices, which makes them more exclusive than other peer-products. Thus, they cannot be purchased by masses, since they have financial restrictions. Customers validate these high prices by the image of exclusivity and prestige, those products promise (Okonkwo, 2016).

3.3.3. Quality

Consumers expect a high quality product when purchasing luxury goods. High quality can be seen in the choice of materials, their durability or good craftmanship. Consumers are more willing to pay high prices if they are justified by high quality (Kapferer & Bastien, 2009)..

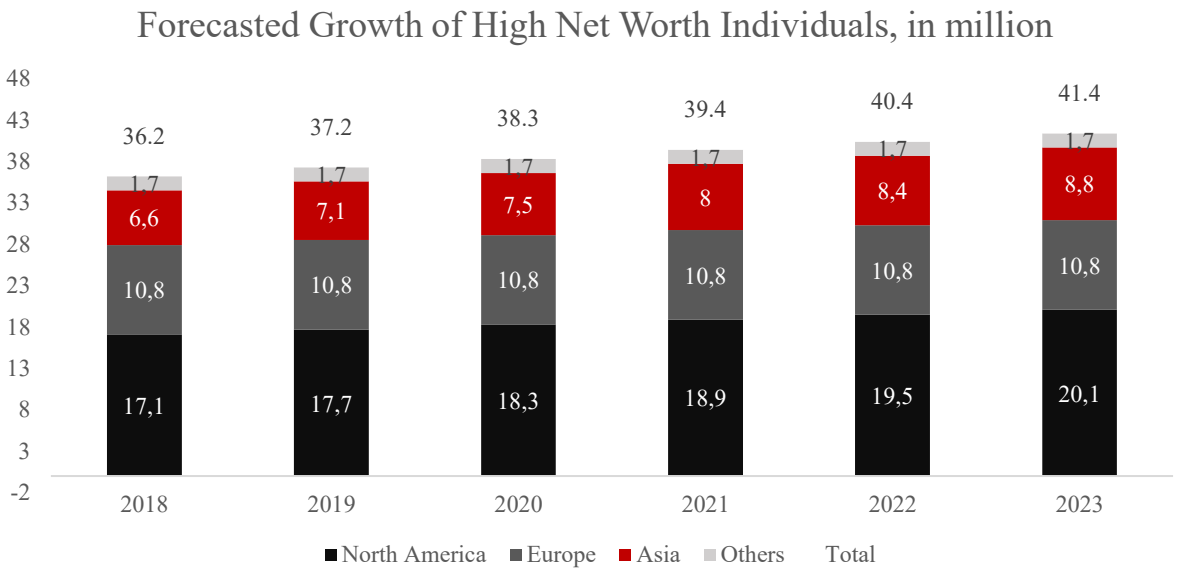
3.4. Industry Drivers

Several drivers for the apparel and luxury goods industry do exist. They are external factors that have an impact on the overall industry.

First, the global luxury goods market is driven by High Net Worth Individuals (HNWI) since they are able to afford the premium products. Hence, they are the target customers for apparel brands like Hugo Boss. Statista and Credit Swiss estimate that the number of HNWI will grow

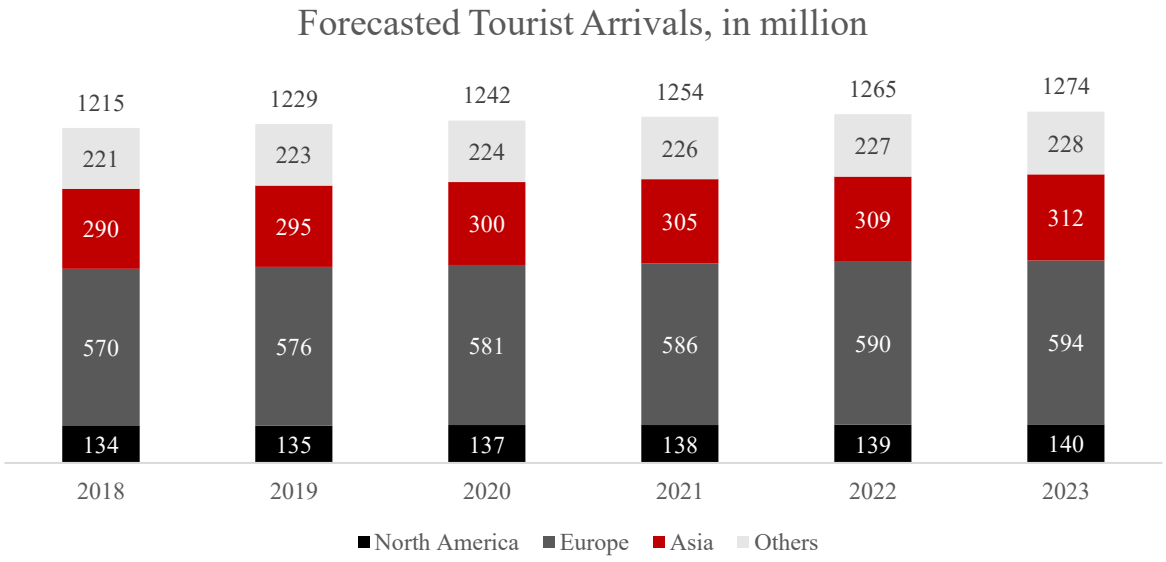
to more than 41 million people by 2023 with Asia witnessing the highest increase, displayed in figure 7:

Figure 7: Forecasted Growth of HNWI (Statista 2019)



Secondly, 2017 approximately 31% of all luxury products were purchased while travelling due to a survey of Deloitte. Therefore, tourism – especially to Europe – affects the sales figures of apparel brands. Figure 8 shows a forecast for worldwide tourist arrivals by the World Tourism Organization, inferring that Europe will remain the most anticipated continent by tourists (Statista, 2019).

Figure 8: Forecast tourist arrivals (Statista, 2019)



3.5. Industry Trends

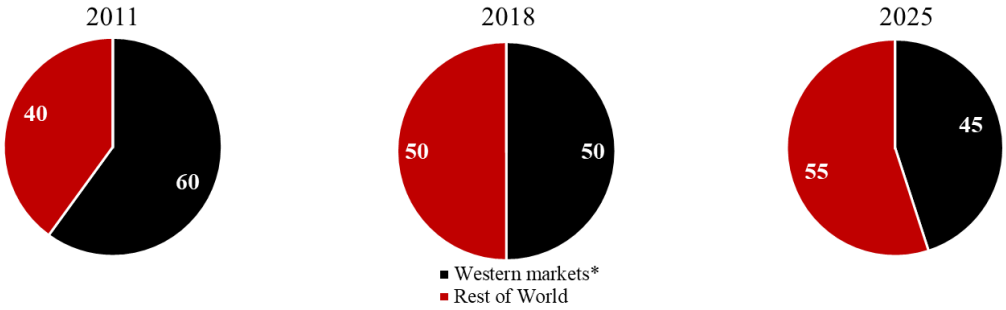
The apparel and luxury goods industry is facing several challenges and opportunities in the upcoming years. The biggest trends are a sales shift to emerging markets – especially China, digitalization, expansion of omnichannel presence and last but not least attracting millennials and generation z.

3.5.1. Sales Shift towards Emerging Markets

Historically, western markets were the most important ones for the luxury industry. However, recent years indicate that economic growth is shifting from the saturated western markets towards emerging markets in Asia and Latin America. Forecasts by McKinsey and Deloitte predict that by 2025 sales in emerging markets will be higher than in traditional western markets, as shown in figure 9 (Deloitte, 2017; McKinsey & BoF, 2017; McKinsey & BoF, 2018; Myers, 1974):

Figure 9: Global apparel and footwear sales forecast (McKinsey and BoF 2018)

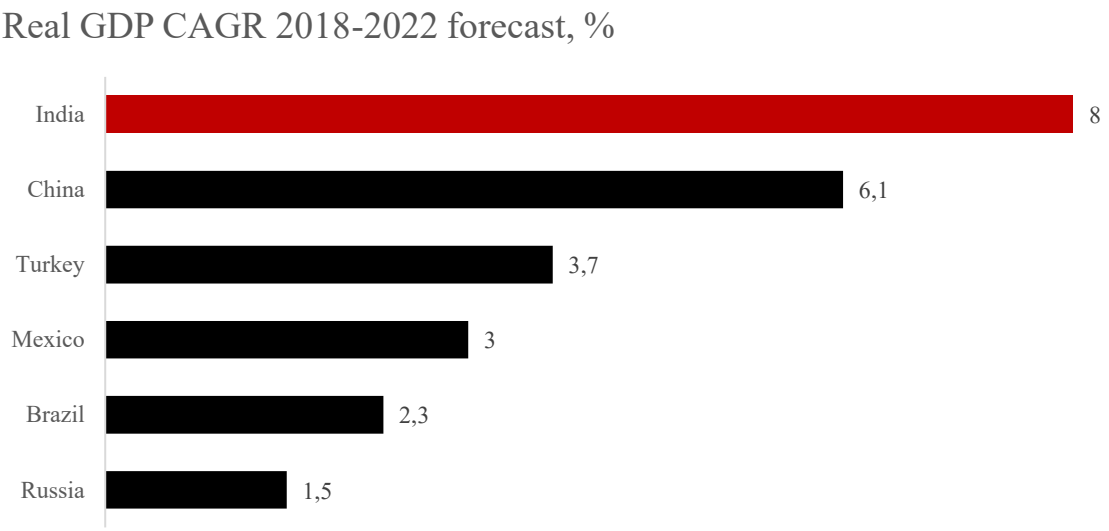
Global apparel and footwear sales forecast 2011-2025, in percentage



* includes North America and Europe (Mature and Emerging)

The development of emerging markets contributes to a positive growth outlook for luxury companies. Especially in fast growing urban regions, upwardly mobile consumers demand more and more premium products instead of black market substitutes. However, many industry analysts contribute the shift towards emerging markets not only to the development of those countries, but also to the adoption of innovative retail concepts and business models (Deloitte, 2017). Moreover, the growth in emerging markets has been supported by optimizing the supply chain. Especially Chinese consumers will account approximately for 46% of the global apparel market by 2025, and their local consume will rise from currently 24% to 50% (Bain & Company, 2019). Furthermore India's rapid growth in CAGR – shown in figure 10 – offers opportunities for apparel brands. Urban, upwardly mobile, tech-affine Indian millennials increase their demand for luxury products. However, the Indian market is still highly fragmented, which makes it difficult for apparel brands to establish successful strategies (McKinsey & BoF, 2018). In addition, luxury goods manufacturing countries increase their local consumption, whereas formerly the majority of goods were shipped to North America or Europe (McKinsey & BoF, 2017).

Figure 10: Real GDP CAGR forecast (McKinsey and BoF 2019)

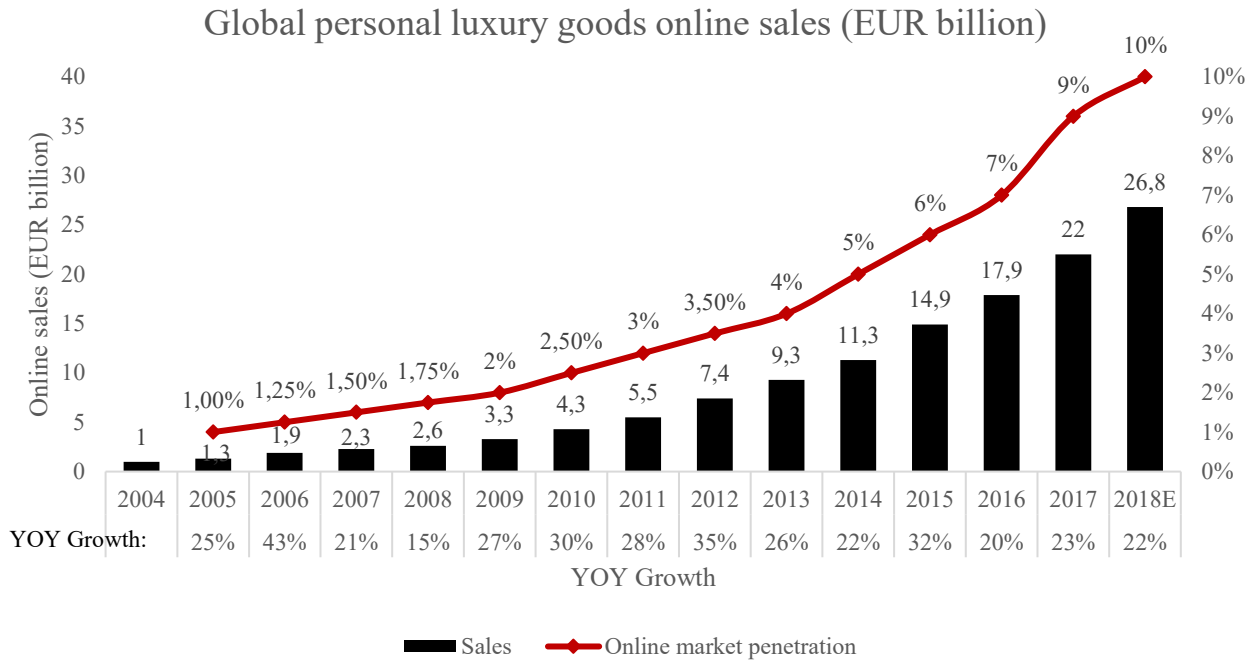


3.5.2. Omni-Channel Presence and Distribution

Luxury apparel brands are late to adopt digitalization trends. The premium companies were reluctant to integrate e-commerce services in their distribution channels because they were afraid of jeopardizing their luxury image. Yet, nowadays customers expect a coherent customer experience across all channels – no matter if it is physically in a store or online (Deloitte, 2017). Thus, a challenge for the luxury market is to widen their channel presence and align the channels to fulfill the demand of unique customer experience (McKinsey & BoF, 2018).

Within the different channels of distribution wholesale remains the most dominant one which accounts for sales of 62% and growth of 1%. However, retail sales increased 4% throughout 2018, continuing the trend of apparel brands to control their customers in-store experience. A CAGR (2010-2018) of 9% for retail compared to 4% for wholesale underlines this development. Online sales persist to be the fastest growing channel, growing at 22% and reaching a market penetration of 10%. America contributed 44% to the total online sales, but growth was mainly due to Europe and China (Bain & Company, 2019). Figure 11 shows the sales by online channel, its YOY growth and the total market penetration of online sales.

Figure 11: Online sales (Bain & Company 2019)



3.5.3. New Generation

Millennials and generation z will represent between 40% - 50% of the overall luxury market until 2025 compared to 25% in 2016. Thus, millennials and generation z are driving growth in the upcoming years for apparel companies (Bain & Company, 2019; Deloitte, 2017). In fact, almost the whole market's growth can be contributed to the new generation, compared with 85% in 2017. The new Generation differs to the previous in two fundamental aspects. They are digital pioneers and value driven consumers (McKinsey & BoF, 2018).

3.5.3.1. Digital Pioneers

First, they are digital pioneers who are more comfortable with new distribution channels like e-commerce or social media platforms. This has an impact on the fashion industry, since millennials are influenced by peer ratings, social media advertisement and influencers. Thus, they are more flexible to switch brands due to fashion trends and price sensitivity. Moreover, the new generation is more keen to purchase products online than any previous generation (McKinsey & BoF, 2017). This effect is displayed within the growth numbers of luxury online

shopping, which grew 22% in 2018 to $27 billion – representing 10% of all luxury sales. Therefore, one of the biggest challenges is developing smooth online services that simplify the purchase of goods. So far the luxury industry was reluctant to integrate online shopping into their business model, because they were afraid to damage their image of exclusivity (Deloitte, 2017). However, online-giants like Amazon or Alibaba accustom consumers to shorter delivery times and set new standards for online shopping. Luxury companies realized the importance of new distribution channels for the new generation and are now heavily investing into digitalization processes.

Nevertheless, millennials expect a holistic brand experience not only at the online platforms but also in physical stores (Deloitte, 2017). Therefore, the bar for customer satisfaction has been raised.

3.5.3.2. Value driven Consumers

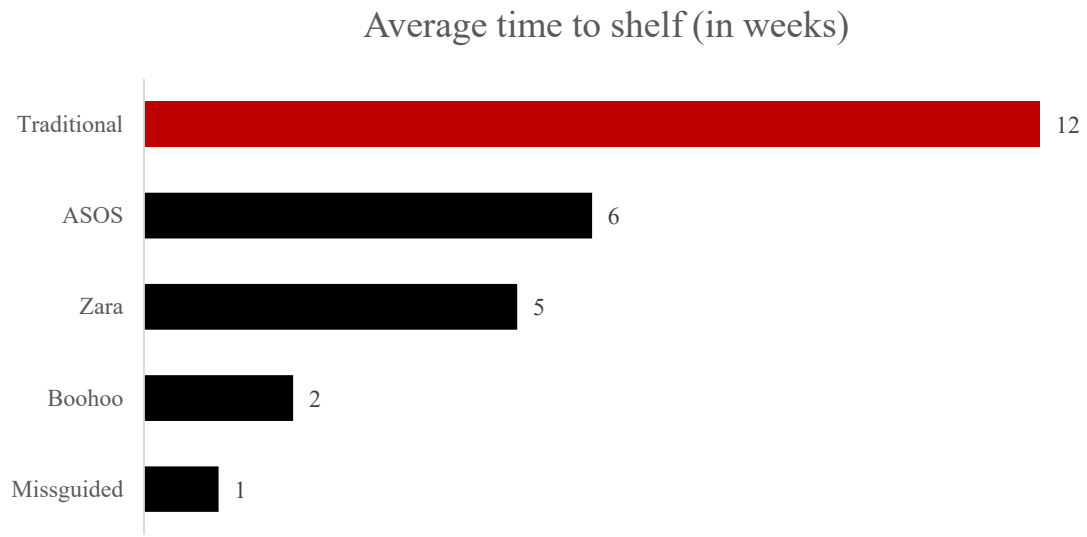
The new generation consumes value driven. Companies in the luxury sector need to communicate their mission and practices in order to convince millennials from purchasing goods. Thus, the luxury sector has to pay attention to this new variable and align with its customers morals (McKinsey & BoF, 2017).

3.5.4. Design to Shelf

It is a competitive advantage for the apparel and luxury sector to have short “design to shelf”-time (McKinsey & BoF, 2017). This enables the companies to offer the latest fashion trends before the majority of the market. Moreover, it reduces store operating costs and excess inventory induced by fashion risk (McKinsey & BoF, 2017). New players are constantly accelerating the “design to shelf”-time, putting pressure on more traditional companies like Hugo Boss to optimize their supply chain. Furthermore, the new competitors already generate revenue mainly through new distribution channels like e-commerce or social media platforms, especially digital native companies like Alibaba or Amazon.

The digital shift is responsible for a steep decline of sales in traditional wholesale stores (McKinsey & BoF, 2017).

Figure 12: Average time to shelf (McKinsey and BoF 2018)



4. Company Analysis

Equity valuations are only as strong as their underlying assumptions. Hence, its crucial to understand a company's business in order to evaluate its up- and downsides as well as risks and chances accurately. Therefore, I am giving an overview of Hugo Boss' mission and strategy, its past financial performance and a future outlook – concluding in a SWOT analysis to minimize distortions.

4.1. Company Overview

Hugo Boss is a German clothing company, dedicated to men's and women's premium apparel fashion and accessories. They develop, distribute and market their products internationally. It's product portfolio consists of apparel, sportswear, shoes, accessories, fragrances, eyewear, watches, children's fashion, home textiles and writing instruments. Hugo Boss markets two brands: BOSS and HUGO. BOSS focuses on business wear, leisure wear, watches, eyewear and fragrances, whereas HUGO contains more casual clothing like urban casual wear, sportswear, sneakers, children's fashion or accessories (Reuters).

Hugo Boss currently employs 14.685 people in 129 countries, and accounts €2.8 billion sales generating an EBIT of €347 million in 2018. The company's main distribution channel are its 1.113 own retail shops around the world, of which 585 are located in Europe.

The company is listed at Deutsche Börse's XETRA with 69 mil. outstanding shares of which are 61.9 mil. free floating. Its shareholder structure is highly diversified with the Zignago Holding S.p.A. being the top investor with 7.1 mil. shares which account for 10.1% of Hugo Boss total shares. Hugo Boss is currently listed in the Mid-Cap-DAX (MDAX) which is Germany's second biggest index behind DAX30, and consists of the 60 biggest companies according to market capitalization and volume behind DAX30.

4.2. Share Price Evolution

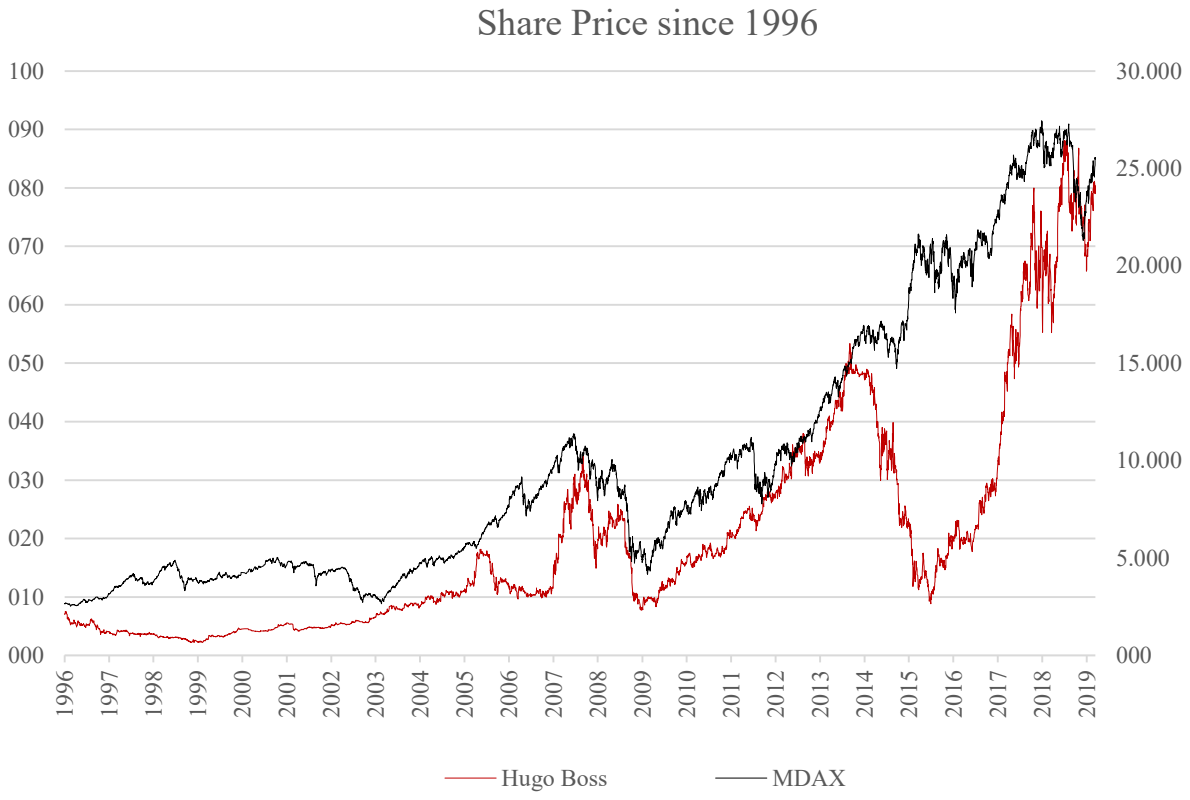
Hugo Boss was founded in 1924 by Hugo Ferdinand Boss. The company was first listed at 20 December 1985 issuing preferred shares. The first trading day for the ordinary shares was 22 May 1989. On 22 March 1999 Hugo Boss AG was initially included in the MDAX. The

preferred shares were replaced by ordinary shares in June 2012, when the share classes were merged (Hugo Boss, 2019b).

Around 88% of Hugo Boss' shares are in free float and primarily held be institutional investors mainly from America and Europe. Due to a share buyback scheme from 2004 to 2007 Hugo Boss holds roughly 2% of its own shares. The biggest shareholders are Zignago Holding S.p.A. (10%), Black Rock Institutional Trust Company (5%) and Norges Bank Investment Management (3%). Thus, the strategic power is highly scattered between different shareholders (Hugo Boss, 2019b).

The performance of Hugo Boss' share compared to its index can be seen in figure 13 (Reuters).

Figure 13: Share price development Hugo Boss and MDAX (Reuters)



Furthermore Hugo Boss' relative return for the last 5 years compared to MDAX is shown in figure 14 (Reuters). It indicates, that Hugo Boss underperformed its benchmark index.

Figure 14: Comparison Hugo Boss and MDAX

4.3. Hugo Boss Mission and Strategy

"We want to be the most desirable premium fashion and lifestyle brand globally." (Hugo Boss, 2019a)

To achieve the above mentioned mission Hugo Boss AG announced the business plan until 2022 which will be presented in this chapter.

After the successful strategic merger of the brand's BOSS Orange and BOSS Green into the brand HUGO, the company set two new main strategic goals until 2022. They want to personalize their products and increase the design to shelf speed through accelerating central processes. Simultaneously, the company wants to increase its profitability by growing sales 5-7% and EBIT to a 15% margin – which would beat the relevant market segment. The earnings growth shall result in expected free cash flows of between €250 million and €350 million per year in the coming years. Furthermore, improvements in the net working capital are planned – which would contribute to higher free cash flows. The free cash flow will mainly be used to fund dividend distribution. Through the healthy financial position and the ambitious growth outlook, Hugo Boss set a goal of distributing 80% of its free cash flow to its shareholders.

Four factors will be crucial for Hugo Boss to accomplish this challenging goal. They want to grow their online business, improve the retail sales productivity, fully exploit the growth

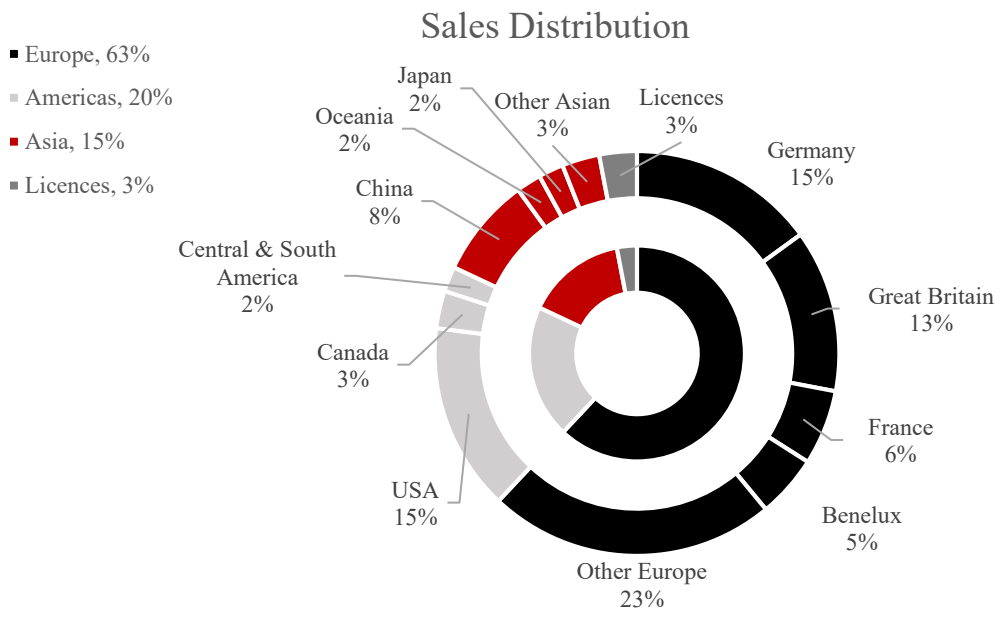
potential in Asia, and an above average increase of sales of the newly formed brand HUGO in the contemporary fashion segment (Hugo Boss, 2019a).

4.4. Financial Performance

4.4.1. Historical Sales Performance

Hugo Boss currently sells its products in 129 countries. Their distribution activities are divided into three sales regions: Europe, Americas, and Asia. 63% of the total sales are generated within six core markets: Germany, USA, Great Britain, China, France and Benelux (Hugo Boss, 2019a).

Figure 15: Sales Distribution Hugo Boss (Hugo Boss, 2019a)



Hugo Boss' main distribution channel is the groups own retail business which consists of directly operated stores, outlets and the online channel. Table 1 shows that sales grew throughout all distribution channels besides licenses. The increased distribution via online channels reflects Hugo Boss strategy to grow its e-commerce business and aligns with the industry trends mentioned in the previous chapter (Hugo Boss, 2019a).

Table 1: Sales by segment and Distribution Channels Hugo Boss

SALES HUGO BOSS

						Phase I				Phase II	
Explicit Period						1	2	3	4	5	6
Year	**2014**	**2015**	**2016**	**2017**	**2018**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**
Net sales (in EUR million)	**2572**	**2809**	**2693**	**2733**	**2796**	**2872**	**2960**	**3058**	**3166**	**3278**	**3393**
Growth	5.76%	9.21%	-4.13%	1.49%	2.3%	2.70%	3.10%	3.30%	3.53%	3.52%	3.52%
Net sales by segments											
Europe incl. Middle East and Africa	**1,566**	**1683**	**1660**	**1681**	**1736**	**1776**	**1827**	**1883**	**1945**	**2010**	**2076**
Europe (% of total)	*60.89%*	*59.91%*	*61.64%*	*61.51%*	*62.09%*	*62%*	*62%*	*62%*	*61%*	*61%*	*61%*
Growth (in %)	*7.48%*	*7.47%*	*-1.37%*	*1.27%*	*3.27%*	*2.32%*	*2.83%*	*3.06%*	*3.33%*	*3.31%*	*3.30%*
Americas	**587**	**671**	**582**	**577**	**574**	**583**	**592**	**602**	**613**	**625**	**637**
Americas (% of total)	*22.82%*	*23.89%*	*21.61%*	*21.11%*	*20.53%*	*20%*	*20%*	*20%*	*19%*	*19%*	*19%*
Growth (in %)	*2.98%*	*14.31%*	*-13.26%*	*-0.86%*	*-0.52%*	*1.50%*	*1.60%*	*1.73%*	*1.88%*	*1.88%*	*1.88%*
Asia/Pacific	**361**	**393**	**382**	**396**	**410**	**434**	**461**	**490**	**522**	**555**	**590**
Asia/Pacific (% of total)	*14.04%*	*13.99%*	*14.18%*	*14.49%*	*14.66%*	*15.13%*	*16%*	*16%*	*16%*	*17%*	*17%*
Growth (in %)	*4.03%*	*8.86%*	*-2.80%*	*3.66%*	*3.54%*	*5.95%*	*6.20%*	*6.33%*	*6.40%*	*6.33%*	*6.26%*
Licenses	**58**	**62**	**69**	**79**	**76**	**78**	**81**	**83**	**86**	**88**	**91**
Licences (% of total)	*2.26%*	*2.21%*	*2.56%*	*2.89%*	*2.72%*	*2.73%*	*2.72%*	*2.72%*	*2.70%*	*2.69%*	*2.67%*
Growth (in %)	*0.00%*	*6.90%*	*11.29%*	*14.49%*	*-3.80%*	*3.00%*	*3.00%*	*3.00%*	*3.00%*	*3.00%*	*3.00%*
Net sales by distribution channel											
Group's own retail business	**1471**	**1689**	**1677**	**1732**	**1768**	**1844**	**1931**	**2026**	**2129**	**2237**	**2349**
Retail (% of total)	*57.19%*	*60.13%*	*62.27%*	*63.37%*	*63.23%*	*64.23%*	*65.23%*	*66.23%*	*67.23%*	*68.23%*	*69.23%*
Growth (in %)		*14.82%*	*-0.71%*	*3.28%*	*2.08%*	*4.33%*	*4.70%*	*4.89%*	*5.09%*	*5.06%*	*5.04%*
Wholesale	**1043**	**1058**	**947**	**922**	**952**	**949**	**949**	**950**	**951**	**952**	**952**
Wholesale (% of total)	*40.55%*	*37.66%*	*35.17%*	*33.74%*	*34.05%*	*33.05%*	*32.05%*	*31.05%*	*30.05%*	*29.05%*	*28.05%*
Growth (in %)		*1.44%*	*-10.49%*	*-2.64%*	*3.25%*	*-0.31%*	*-0.02%*	*0.08%*	*0.20%*	*0.08%*	*-0.04%*
Licenses	**58**	**62**	**69**	**79**	**76**	**78**	**81**	**83**	**86**	**88**	**91**
Licences (% of total)	*2.26%*	*2.21%*	*2.56%*	*2.89%*	*2.72%*	*2.73%*	*2.72%*	*2.72%*	*2.70%*	*2.69%*	*2.67%*
Growth (in %)	*0.00%*	*6.90%*	*11.29%*	*14.49%*	*-3.80%*	*3.00%*	*3.00%*	*3.00%*	*3.00%*	*3.00%*	*3.00%*

4.4.2. Historical Costs Performance

In 2018 selling and distribution expenses were below 2017 mainly due to a slowdown in retail expansion and positive effects from renegotiating rental contracts. Furthermore, marketing expenses decreased and expenses for logistics increased due to stronger performance of the online business. In addition, Hugo Boss limited the increase in administrative expenses, even though digital transformation processes were initiated (Hugo Boss, 2019a). Hugo Boss announced to decrease their COGS by up to 50 basispoints.

Table 2: Costs (Hugo Boss, 2019a)

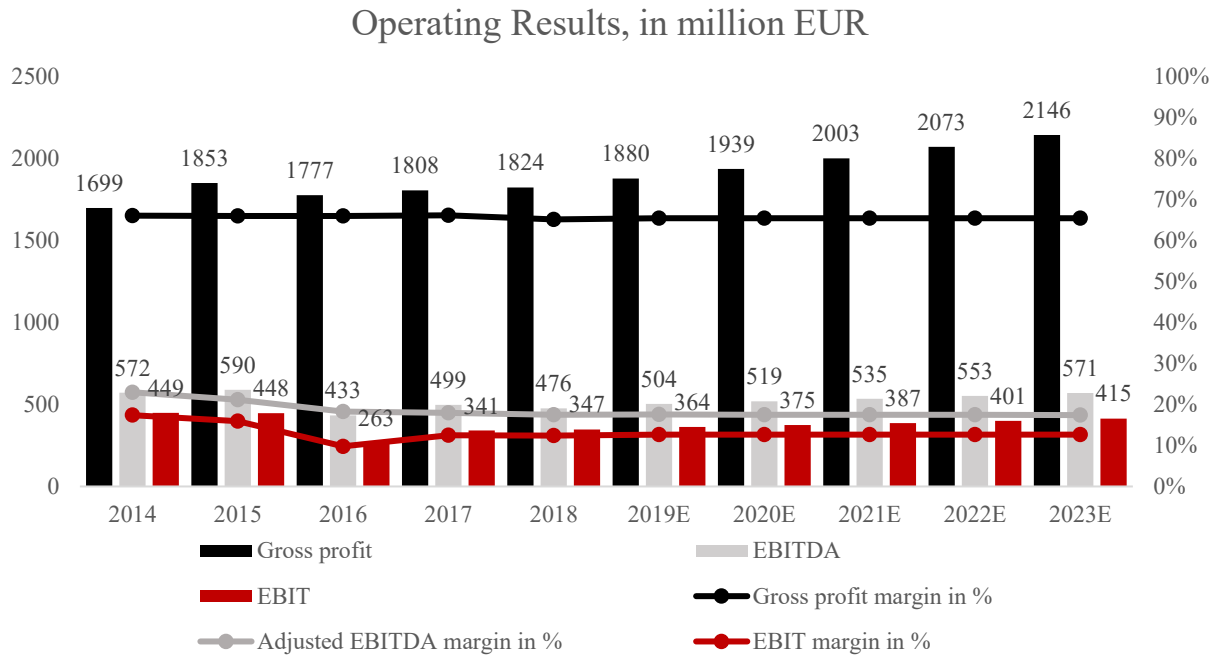
Costs of Hugo Boss

						Phase I				**Phase II**	
Eplicit Period						1	2	3	4	5	6
	2014	**2015**	**2016**	**2017**	**2018**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**
Net Sales	**2,572**	**2,809**	**2,693**	**2,733**	**2,796**	**2,872**	**2,960**	**3,058**	**3,166**	**3,278**	**3,393**
Cost of Sales	-873	-956	-915	-924	-972	-991	-1,022	-1,056	-1,093	-1,131	-1,171
YoY Change		*9.51%*	*-4.29%*	*0.98%*	*5.19%*	*1.96%*	*3.10%*	*3.30%*	*3.53%*	*3.52%*	*3.52%*
Gross Profit	**1,699**	**1,853**	**1,777**	**1,809**	**1,824**	**1,880**	**1,939**	**2,003**	**2,073**	**2,146**	**2,222**
SG&A (excl. D	-1,250	-1,405	-1,514	-1,334	-1,477	-1,517	-1,564	-1,615	-1,672	-1,731	-1,792
YoY Change		*12.37%*	*7.75%*	*-11.87%*	*10.69%*	*2.70%*	*3.10%*	*3.30%*	*3.53%*	*3.52%*	*3.52%*

4.4.3. Operating Results

Hugo Boss gross profit margin has been stable at 65% - 66% over the past 5 years. Nevertheless, its EBIT and adjusted EBITDA margins have both declined since 2014 due to the development of a new IT infrastructure for better online-distribution and the roll out of a new store concept for its retail stores (Hugo Boss, 2019b).

Figure 16: Operating Results (Hugo Boss, 2019a)



Hugo Boss' EBITDA and EBIT margins are close to the industry average, which is probably a reason for the company's efforts to increase their operating margins, even though they are already decent. (Statista, 2018)

4.4.4. Assets

Total assets rose 8% compared to 2017, which is mainly due to higher inventories and an increase in property, plant and equipment (PPE) and intangible assets. The share of current assets increased by 2% compared to the one of non-current through increased inventories that are aimed at supporting sales momentum in the group's own retail business. Trade receivables and payables both increased at the same rate.

Other assets and liabilities did not significantly change compared to the previous year.

4.5. Capital Structure

Hugo Boss book value of debt accounts for 47% of total assets as of 31 December 2018. Current and non-current financial liabilities account for 20% with a total book-value of €176 million. Furthermore the company has €147 million cash and cash equivalents at its disposal. Hugo Boss does not intend to change its capital structure.

4.6. SWOT Analysis

Figure 17: SWOT Analysis

Strength: - Strong **financial performance** and margins enable Hugo Boss to further diversify its distribution channel and exploit online sales. - The well **established brand** ensures Hugo Boss a loyal customer base that is willing to pay a higher premium for their products. - Hugo Boss already has a **strong footprint** in the uprising **Asian markets**, which gives it a heads up position compared to competitiors.	Weaknesses: - Declining sales in the **wholesale channel** put pressure on the financial performance. - The main brand BOSS has a **narrow customer base** which makes it difficult to attract new customer segments. - High **Design-to-Shelf** times comprise the risk of supplying the demanded products in time.
Opportunities: - Growing **demand in emerging markets** (especially China) presents new sales opportunities for Hugo Boss. - The new casual wear **brand HUGO** might unlock new customer segments.	Threats: - **Saturation in developed countries** makes it difficult to increase and maintain the marketshare. - Customer needs for **ESG friendly** products. - **Macroeconomic environment** is dominated by uncertainty.

5. Valuation

In this section I will assess the fair value of Hugo Boss. My evaluation is mainly based on the DCF model which estimates the intrinsic value of the company. Furthermore, I will complement my findings with the relative valuation technique of the Multiples approach.

5.1. DCF Valuation

5.1.1. Free Cash Flows Projection

I expect Hugo Boss to reach a mature state in 2025. Therefore Free Cash Flows will be forecasted for 6 periods. In addition, the Terminal Value will be added. Furthermore, the FCF projections are split in three phases that will be explained in the next chapter. Towards the end of the explicit period my forecasted FCF aligns with Hugo Boss' management announcement to generate €250 mil. to €350mil. FCF per year. However, reaching this FCF at the end of the explicit period reflects a more restrictive view compared to the management. The FCF is displayed in table 3. The complete DCF is shown in table 4.

Table 3: Free Cash Flow to Hugo Boss

FREE CASH FLOW (in €, million)

Free Cash Flow													**Average (-3Y)**	**CAGR (19E-24E)**
						Phase I				**Phase II**		**Phase III**		
Explicit Period						1	2	3	4	5	6	6		
Year	**2014**	**2015**	**2016**	**2017**	**2018**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**	**TV**		
Net sales	**2,572**	**2,809**	**2,693**	**2,733**	**2,796**	**2,872**	**2,960**	**3,058**	**3,166**	**3,278**	**3,393**			**2.82%**
Net sales growth (%)	*5.76%*	*9.21%*	*-4.13%*	*1.49%*	*2.31%*	*2.70%*	*3.10%*	*3.30%*	*3.53%*	*3.52%*	*3.52%*		*-0.11%*	
COGS	(873)	(956)	(915)	(924)	(972)	(991)	(1,022)	(1,056)	(1,093)	(1,131)	(1,171)			
% of Sales	*-33.94%*	*-34.03%*	*-33.98%*	*-33.81%*	*-34.76%*	*-34.51%*	*-34.51%*	*-34.51%*	*-34.51%*	*-34.51%*	*-34.51%*		*-34.18%*	
SGA	(1,250)	(1,405)	(1,514)	(1,467)	(1,477)	(1,517)	(1,564)	(1,615)	(1,672)	(1,731)	(1,792)			
% of Sales	*-48.61%*	*-50.02%*	*-56.22%*	*-53.69%*	*-52.82%*	*-52.82%*	*-52.82%*	*-52.82%*	*-52.82%*	*-52.82%*	*-52.82%*		*-54.24%*	
EBIT	**449**	**448**	**263**	**341**	**347**	**364**	**375**	**387**	**401**	**415**	**430**			
Ebit (% sales)	*17.40%*	*15.90%*	*9.80%*	*12.50%*	*12.41%*	*12.66%*	*12.66%*	*12.66%*	*12.66%*	*12.66%*	*12.66%*		*11.57%*	
Effective Tax Rate	(132)	(132)	(78)	(101)	(103)	(107)	(111)	(114)	(118)	(123)	(127)			
Taxes Rate (29,55%)	*-29.50%*	*-29.50%*	*-29.50%*	*-29.55%*	*-29.55%*	*-29.55%*	*-29.55%*	*-29.55%*	*-29.55%*	*-29.55%*	*-29.55%*		*-29.53%*	
NOPAT	**317**	**316**	**185**	**240**	**244**	**256**	**264**	**273**	**282**	**292**	**303**			
D&A	123	104	139	133	123	140	144	148	152	156	161			
DA (% of PPE)	*8.28%*	*8.53%*	*9.82%*	*8.80%*	*8.01%*	*8.88%*	*8.88%*	*8.88%*	*8.88%*	*8.88%*	*8.88%*		*8.88%*	
DA (% sales)	*4.78%*	*3.70%*	*5.16%*	*4.87%*	*4.40%*	*4.88%*	*4.86%*	*4.84%*	*4.80%*	*4.77%*	*4.73%*		*4.81%*	
CAPEX	(135)	(220)	(157)	(128)	(155)	(180)	(186)	(192)	(198)	(180)	(161)			
CAPEX (% sales)	*-5.25%*	*-7.83%*	*-5.83%*	*-4.68%*	*-5.54%*	*-6.27%*	*-6.27%*	*-6.27%*	*-6.27%*	*-5.50%*	*-4.73%*		*-5.35%*	
(Increase)/Decrease in NWC	(98)	(61)	(47)	80	(53)	(32)	(12)	(22)	(24)	(22)	(22)			
NWC margin	*-3.80%*	*-2.18%*	*-1.76%*	*2.93%*	*-1.89%*	*-1.11%*	*-0.41%*	*-0.71%*	*-0.75%*	*-0.67%*	*-0.64%*	**TV**	*-0.24%*	
Free Cash Flow	**207**	**139**	**120**	**325**	**160**	**184**	**210**	**207**	**212**	**247**	**281**	**7,147**		**7.27%**
FCF growth	*8.04%*	*4.93%*	*4.46%*	*11.91%*	*5.71%*	*6.42%*	*7.10%*	*6.78%*	*6.70%*	*7.52%*	*8.28%*	**NPV TV**	*7.36%*	
NPV FCFF						**174**	**187**	**174**	**167**	**183**	**197**	**5012**		

Table 4: DCF Valuation Hugo Boss

DCF ANALYSIS HUGO BOSS (in million €)

Free Cash Flow						**Phase I**				**Phase II**		**Phase III**	**CAGR (19E-24E)**
Explicit Period						1	2	3	4	5	6	6	
Year	**2014**	**2015**	**2016**	**2017**	**2018**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**	**TV**	
Net sales	**2 572**	**2 809**	**2 693**	**2 733**	**2 796**	**2 872**	**2 960**	**3 058**	**3 166**	**3 278**	**3 393**		**2,82%**
EBIT	**449**	**448**	**263**	**341**	**347**	**364**	**375**	**387**	**401**	**415**	**430**		
Effective Tax Rate	(132)	(132)	(78)	(101)	(103)	(107)	(111)	(114)	(118)	(123)	(127)		
NOPAT	**317**	**316**	**185**	**240**	**244**	**256**	**264**	**273**	**282**	**292**	**303**		
D&A	123	104	139	133	123	140	144	148	152	156	161		
CAPEX	(135)	(220)	(157)	(128)	(155)	(180)	(186)	(192)	(198)	(180)	(161)		
(Increase)/Decrease in NWC	(98)	(61)	(47)	80	(53)	(32)	(12)	(22)	(24)	(22)	(22)		
Free Cash Flow	**207**	**139**	**120**	**325**	**160**	**184**	**210**	**207**	**212**	**247**	**281**	**7 147**	**7,27%**
NPV FCFF						174	187	174	167	183	197	5012	

	Perpetuity Growth Method	**Exit Multiple Method (10,41x)**
NPV Explicit Period (PI&PII)	1082,40	1082,40
NPV Terminal Value (PIII)	5012,13	4309,18
Enterprise Value	**6094,53**	**5391,59**
Net Debt	(30,06)	(30,06)
Preferred shares	-	-
Noncontrolling Interest	(0,48)	(0,48)
Equity Value	**6063,99**	**5361,04**
Number of Shares	69,02	69,02
Price per Share	**87,86**	**77,67**
Share price (07 March 2019)	62,50	62,50
Delta to Shareprice	40,57%	24,28%

EXIT Multiple TV	10,41x	6145
NPV Exit Multiple TV		**4309**

Sensitivity Analysis		**Growth Rate**					
		1,36%	1,76%	2,16%	2,56%	2,96%	3,36%
	5,89%	79,07	85,24	92,73	102,01	113,83	129,39
	5,99%	77,29	83,15	90,23	98,96	109,99	124,38
WACC	6,09%	75,58	81,15	87,86	96,08	106,40	119,74
	6,19%	73,95	79,25	85,61	93,36	103,03	115,43
	6,29%	72,38	77,43	83,46	90,79	99,86	111,42
	6,39%	70,88	75,69	81,42	88,35	96,88	107,67
	6,49%	69,43	74,03	79,48	86,03	94,07	104,16

5.1.1.1. Sales Projection

My projections for Sales are divided in three phases and consist of 6 explicit periods until the mature state is reached. In Phase I they are based on the GDP growth rate. In Phase II they converge to the mature state. Phase III marks the steady-state of Hugo Boss, and is used to calculate the terminal value. GDP growth rates are displayed in Appendix 3.

In **Phase I**, the correlations between Hugo Boss' historical sales and the real GDP growth rate were computed. The sales showed a significant correlation of 73,76% to the real GDP growth rates of the countries it is operating in. Further correlation tests were conducted regarding the industry growth and consumer goods growth rates, but due to lower correlations real GDP growth was considered to be the best driver. Therefore, I forecast the sales of Hugo Boss based on the weighted real GDP growth expectations of their three sales regions: Europe, Asia/Pacific and Americas. In addition all growth rates are adjusted by a factor of 73% to take into account recent struggles of Hugo Boss to increase its sales. Furthermore, the inflation rate of Germany is added to the according forecasts to adjust the rates to the nominal GDP.

Europe's growth rate is a weighted average of the core markets growth expectations, Germany, France, United Kingdom, and Netherlands (as a proxy for Benelux). "Other European" countries are covered by the IMF forecast for "developed Europe" since premium apparel products are still mainly consumed in developed, instead of emerging markets.

The growth rates of Asia/Pacific and Americas are based on IMF's real GDP growth rates for China and USA, since they represent Hugo Boss' core markets in these regions and account for the majority of sales. Hence, they are the main drivers in these regions. Furthermore, adjustments of -1,5% were made to the USA, since Hugo Boss' continuously underperformed in this market and improvements are not in sight.

According to the management of Hugo Boss licenses will grow in a mid-single-digit percentage, which I estimate as being a realistic forecast. Hence, licenses are projected to grow constantly 3% througout the projection period.

In **Phase II** sales are forecasted applying the same methodology as used in Phase I. However, it is clearly visible, that the sales expectations have stabilized at a 3,52% growth rate per annum. Consequently, I assume that the company is in a steady state by the end of Phase II. Therefore, I proceed to **Phase III** which is the terminal value of the last FCF in 2024E with a growth rate of 2.16%.

Figure 18: Sales Hugo Boss

SALES HUGO BOSS

Year	2014	2015	2016	2017	2018	2019E	2020E	2021E	2022E	2023E	2024E
Net sales (in EUR million)	**2572**	**2809**	**2693**	**2733**	**2796**	**2872**	**2960**	**3058**	**3166**	**3278**	**3393**
Growth	5.76%	9.21%	-4.13%	1.49%	2.3%	2.70%	3.10%	3.30%	3.53%	3.52%	3.52%
Net sales by segments											
Europe incl. Middle East and Africa	**1,566**	**1683**	**1660**	**1681**	**1736**	**1776**	**1827**	**1883**	**1945**	**2010**	**2076**
Europe (% of total)	*60.89%*	*59.91%*	*61.64%*	*61.51%*	*62.09%*	*62%*	*62%*	*62%*	*61%*	*61%*	*61%*
Growth (in %)	*7.48%*	*7.47%*	*-1.37%*	*1.27%*	*3.27%*	*2.32%*	*2.83%*	*3.06%*	*3.33%*	*3.31%*	*3.30%*
Americas	**587**	**671**	**582**	**577**	**574**	**583**	**592**	**602**	**613**	**625**	**637**
Americas (% of total)	*22.82%*	*23.89%*	*21.61%*	*21.11%*	*20.53%*	*20%*	*20%*	*20%*	*19%*	*19%*	*19%*
Growth (in %)	*2.98%*	*14.31%*	*-13.26%*	*-0.86%*	*-0.52%*	*1.50%*	*1.60%*	*1.73%*	*1.88%*	*1.88%*	*1.88%*
Asia/Pacific	**361**	**393**	**382**	**396**	**410**	**434**	**461**	**490**	**522**	**555**	**590**
Asia/Pacific (% of total)	*14.04%*	*13.99%*	*14.18%*	*14.49%*	*14.66%*	*15.13%*	*16%*	*16%*	*16%*	*17%*	*17%*
Growth (in %)	*4.03%*	*8.86%*	*-2.80%*	*3.66%*	*3.54%*	*5.95%*	*6.20%*	*6.33%*	*6.40%*	*6.33%*	*6.26%*
Licenses	**58**	**62**	**69**	**79**	**76**	**78**	**81**	**83**	**86**	**88**	**91**
Licences (% of total)	*2.26%*	*2.21%*	*2.56%*	*2.89%*	*2.72%*	*2.73%*	*2.72%*	*2.72%*	*2.70%*	*2.69%*	*2.67%*
Growth (in %)	*0.00%*	*6.90%*	*11.29%*	*14.49%*	*-3.80%*	*3.00%*	*3.00%*	*3.00%*	*3.00%*	*3.00%*	*3.00%*
Net sales by distribution channel											
Group's own retail business	**1471**	**1689**	**1677**	**1732**	**1768**	**1844**	**1931**	**2026**	**2129**	**2237**	**2349**
Retail (% of total)	*57.19%*	*60.13%*	*62.27%*	*63.37%*	*63.23%*	*64.23%*	*65.23%*	*66.23%*	*67.23%*	*68.23%*	*69.23%*
Growth (in %)		*14.82%*	*-0.71%*	*3.28%*	*2.08%*	*4.33%*	*4.70%*	*4.89%*	*5.09%*	*5.06%*	*5.04%*
Wholesale	**1043**	**1058**	**947**	**922**	**952**	**949**	**949**	**950**	**951**	**952**	**952**
Wholesale (% of total)	*40.55%*	*37.66%*	*35.17%*	*33.74%*	*34.05%*	*33.05%*	*32.05%*	*31.05%*	*30.05%*	*29.05%*	*28.05%*
Growth (in %)		*1.44%*	*-10.49%*	*-2.64%*	*3.25%*	*-0.31%*	*-0.02%*	*0.08%*	*0.20%*	*0.08%*	*-0.04%*
Licenses	**58**	**62**	**69**	**79**	**76**	**78**	**81**	**83**	**86**	**88**	**91**
Licences (% of total)	*2.26%*	*2.21%*	*2.56%*	*2.89%*	*2.72%*	*2.73%*	*2.72%*	*2.72%*	*2.70%*	*2.69%*	*2.67%*
Growth (in %)	*0.00%*	*6.90%*	*11.29%*	*14.49%*	*-3.80%*	*3.00%*	*3.00%*	*3.00%*	*3.00%*	*3.00%*	*3.00%*

5.1.1.2. COGS Projection

Hugo Boss' costs are divided into Costs of Goods Sold and Selling, General and Administration Expenses.

Costs of Goods Sold are strongly correlated to the development of sales, since they reflect the production cost per item sold. Thus, the COGS/sales-ratio is stable and unlikely to change significantly in the upcoming years. Therefore, I am **forecasting COGS as a percentage of sales**, based on the last available margin of 34.76% in 2018. This margin was further adjusted down, since Hugo Boss' management announced to reduce COGS up to 50 basispoints in 2019. This statement is taken into account by reducing COGS/sales by 25 basispoints for the explicit period and thereby calculating with a 34.51% margin of COGS/sales. Further upward or downward movements are unlikely since Hugo Boss' COGS/sales margins are very stable, which is why I do not expect any other significant changes. COGS are displayed in figure 19.

5.1.1.3. SGA Projection

Since the management did not commit to specific improvements in SGA it is unlikely that SGA's will drop. This observation is underlined by Hugo Boss' efforts in increasing their footstep in the Asian market, which is more capital intense than operations in the western world. Furthermore, shifts from the wholesale channel to the retail channel will cause additional SGA. However, negative impacts on SGA are likely to be offset by the further development of Hugo Boss online sales channel which is less SGA extensive than the traditional ones. Taking these effects into account, as well as the historical development of SGA, I conclude to project **SGA constantly as a percentage of sales**, using the latest available SGA/sales margin of 52.82% from 2018. SGA are displayed in figure 19.

Figure 19: Projections of COGS and SGA

DCF ANALYSIS HUGO BOSS (in million €)

Free Cash Flow													**Average (-3Y)**	**CAGR (19E-24E)**
						Phase I				**Phase II**		**Phase III**		
Explicit Period						1	2	3	4	5	6	6		
Year	**2014**	**2015**	**2016**	**2017**	**2018**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**	**TV**		
Net sales	**2 572**	**2 809**	**2 693**	**2 733**	**2 796**	**2 872**	**2 960**	**3 058**	**3 166**	**3 278**	**3 393**	**3 465**		**2,82%**
Net sales growth (%)	*5,76%*	*9,21%*	*-4,13%*	*1,49%*	*2,31%*	*2,70%*	*3,10%*	*3,30%*	*3,53%*	*3,52%*	*3,52%*	*2,13%*	*-0,11%*	
COGS	(873)	(956)	(915)	(924)	(972)	(991)	(1 022)	(1 056)	(1 093)	(1 131)	(1 171)	(1 196)		
% of Sales	*-33,94%*	*-34,03%*	*-33,98%*	*-33,81%*	*-34,76%*	*-34,51%*	*-34,51%*	*-34,51%*	*-34,51%*	*-34,51%*	*-34,51%*	*-34,51%*	*-34,18%*	
SGA	(1 250)	(1 405)	(1 514)	(1 467)	(1 477)	(1 517)	(1 564)	(1 615)	(1 672)	(1 731)	(1 792)	(1 830)		
% of Sales	*-48,61%*	*-50,02%*	*-56,22%*	*-53,69%*	*-52,82%*	*-52,82%*	*-52,82%*	*-52,82%*	*-52,82%*	*-52,82%*	*-52,82%*	*-52,82%*	*-54,24%*	

Improvement of COGS of 25 Basispoints compared to 2018, due to management report

5.1.1.4. CAPEX, Depreciation and Amortisation

Capital expenditures of Hugo Boss are historically in a range between 4.68 to 7.83 as a percentage of sales. Due to that stability in CAPEX/Sales, I am forecasting CAPEX as a percentage of sales.

In Phase 1 CAPEX are constantly projected at a rate of 6.27%/sales, which is 98 basispoints higher than the -3Y average capex of 5.35%. This “above-average-CAPEX” is caused by two factors. First, the management announced to have CAPEX around €180 mil. in 2019, which I consider to be realistic. Therefore, capex in 2019 is projected to be equal to €180 mil. Second, the strategy of shifting sales from wholesale to retail, as well as the penetration of the Asian market are capital intensive. In order to execute this strategy, Hugo Boss has to invest more in PPE.

In Phase II CAPEX will drift to the historical average level, since the demand for investment will normalize at the historical average again and reach the D&A level.

D&A are forecasted based on the historical 3 years average percentage of Property, Plant, Equipment and Intangible Assets.

Capex and D&A margins and absolute values are shown in figure 20. The PPE and D&A plan is displayed in figure 21.

Figure 20: Capex and Depreciation Amortisation

DCF ANALYSIS HUGO BOSS (in million €)

Free Cash Flow													**Average (-3Y)**
						Phase I				**Phase II**		**Phase III**	
Explicit Period						1	2	3	4	5	6	6	
Year	**2014**	**2015**	**2016**	**2017**	**2018**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**	**TV**	
NOPAT	**317**	**316**	**185**	**240**	**244**	**256**	**264**	**273**	**282**	**292**	**303**		
D&A	123	104	139	133	123	140	144	148	152	156	161		
DA (% of PPE)	*8,28%*	*8,53%*	*9,82%*	*8,80%*	*8,01%*	*8,88%*	*8,88%*	*8,88%*	*8,88%*	*8,88%*	*8,88%*		*8,88%*
DA (% sales)	*4,78%*	*3,70%*	*5,16%*	*4,87%*	*4,40%*	*4,88%*	*4,86%*	*4,84%*	*4,80%*	*4,77%*	*4,73%*		*4,81%*
CAPEX	(135)	(220)	(157)	(128)	(155)	(180)	(186)	(192)	(198)	(180)	(161)		
CAPEX (% sales)	*-5,25%*	*-7,83%*	*-5,83%*	*-4,68%*	*-5,54%*	*-6,27%*	*-6,27%*	*-6,27%*	*-6,27%*	*-5,50%*	*-4,73%*		*-5,35%*
(Increase)/Decrease in NWC	(98)	(61)	(47)	80	(53)	(32)	(12)	(22)	(24)	(22)	(22)		
NWC margin	*-3,80%*	*-2,18%*	*-1,76%*	*2,93%*	*-1,89%*	*-1,11%*	*-0,41%*	*-0,71%*	*-0,75%*	*-0,67%*	*-0,64%*	**TV**	*-0,24%*
Free Cash Flow	**207**	**139**	**120**	**325**	**160**	**184**	**210**	**207**	**212**	**247**	**281**	**7 147**	
FCF growth	*8,04%*	*4,93%*	*4,46%*	*11,91%*	*5,71%*	*6,42%*	*7,10%*	*6,78%*	*6,70%*	*7,52%*	*8,28%*	NPV TV	*7,36%*
NPV FCFF						174	187	174	167	183	197	5012	

Figure 21: D&A and PPE plan

Depreciation and Amortisation Plan (in million €)

							Phase I				**Phase II**		**Phase III**	
							1	**2**	**3**	**4**	**5**	**6**		**Avg (-**
Explicit Period	Year	**2014**	**2015**	**2016**	**2017**	**2018**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**	**TV**	**3Y)**
Net sales		**2,572**	**2,809**	**2,693**	**2,733**	**2,796**	**2,872**	**2,960**	**3,058**	**3,166**	**3,278**	**3,393**		
PPE		1219	953	1096	1165	1165	1197	1230	1263	1298	1335	1372		
Intangible Assets		266	266	319	346	371	381	392	402	413	425	437		
Total		**1485**	**1219**	**1415**	**1511**	**1536**	**1578**	**1621**	**1666**	**1712**	**1760**	**1809**		
Total (% sales)		*57.74%*	*43.40%*	*52.54%*	*55.29%*	*54.94%*	*54.95%*	*54.76%*	*54.47%*	*54.07%*	*53.69%*	*53.32%*		*54.26%*
D&A		**123**	**104**	**139**	**133**	**123**	**140.08**	**144**	**148**	**152**	**156**	**161**		
D&A (% PPE)		*8.28%*	*8.53%*	*9.82%*	*8.80%*	*8.01%*	*8.88%*	*8.88%*	*8.88%*	*8.88%*	*8.88%*	*8.88%*		*8.88%*
D&A (% sales)		*4.78%*	*3.70%*	*5.16%*	*4.87%*	*4.40%*	*4.88%*	*4.86%*	*4.84%*	*4.80%*	*4.77%*	*4.73%*		*4.81%*

5.1.1.5. Net Working Capital

Items in the Net Working Capital (NWC) are calculated using -3Y historical average data of percentage of sales, Inventory Turns, DSO or DPO Ratios.

An adjumstent was made for the inventory in 2019, since the hot summer 2018 lead to a strong increase in inventory in 2018. Hugo Boss' management announced to keep the inventory level broadly stable in 2019 despite increasing sales, which seems reasonable.

Table 5: Net Working Capital:

"Other current assets" contain refund claims from returns in the amount of €20,973 thousand (2017: €22,765 thousand), bonus receivables from supplier arrangements and prepayments for service agreements and leases. In fiscal year 2018, as in prior year, no impairments were recognized.

"Other current liabilities" consist of accruals of rental obligations for the Group's own retail business, taxes, and social security, accrued vacation, wages and salaries

NET WORKING CAPITAL

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Average (-3Y)
Inventories	**507**	**560**	**568**	**537**	**618**	**618**	**629**	**650**	**673**	**694**	**715**	
change %	*15.10%*	*10.27%*	*1.51%*	*-5.48%*	*15.11%*	*0.00%*	*1.86%*	*3.30%*	*3.53%*	*3.12%*	*3.00%*	*7.30%*
Inventory Turns	*1.72*	*1.71*	*1.61*	*1.72*	*1.57*	*1.62*	*1.64*	*1.64*	*1.64*	*1.64*	*1.64*	*1.64*
Trade receivables	**251**	**240**	**228**	**208**	**214**	**227**	**234**	**242**	**250**	**258**	**266**	
change %	*10.75%*	*-4.36%*	*-4.77%*	*-9.01%*	*3.14%*	*6.07%*	*3.10%*	*3.30%*	*3.53%*	*3.12%*	*3.00%*	*-3.55%*
DSO Ratio	*35.55*	*31.14*	*30.93*	*27.73*	*27.95*	*28.87*	*28.87*	*28.87*	*28.87*	*28.87*	*28.87*	*28.87*
Other current assets	**83**	**105**	**96**	**109**	**123**	**114**	**118**	**122**	**126**	**130**	**134**	
% of sales	*3.23%*	*3.72%*	*3.58%*	*4.00%*	*4.39%*	*3.99%*	*3.99%*	*3.99%*	*3.99%*	*3.99%*	*3.99%*	*3.99%*
Current tax receivables	**8**	**21**	**43**	**49**	**39**	**46**	**47**	**49**	**50**	**52**	**53**	
% of sales	*0.32%*	*0.76%*	*1.58%*	*1.81%*	*1.38%*	*1.59%*	*1.59%*	*1.59%*	*1.59%*	*1.59%*	*1.59%*	*1.59%*
Deferred tax assets	**100**	**115**	**125**	**94**	**90**	**108**	**112**	**115**	**119**	**123**	**127**	
% of sales	*3.90%*	*4.10%*	*4.63%*	*3.45%*	*3.22%*	*3.77%*	*3.77%*	*3.77%*	*3.77%*	*3.77%*	*3.77%*	*3.77%*
Trade payables	**255**	**272**	**272**	**286**	**295**	**303**	**312**	**322**	**334**	**344**	**355**	
change %	*8.36%*	*6.49%*	*0.08%*	*5.17%*	*3.26%*	*2.00%*	*3.10%*	*3.30%*	*3.53%*	*3.12%*	*3.00%*	*2.84%*
DPO Ratio	*106.60*	*103.66*	*108.40*	*112.89*	*110.82*	*110.70*	*110.70*	*110.70*	*110.70*	*110.70*	*110.70*	*110.70*
Other current liabilities	**97**	**125**	**115**	**112**	**123**	**122**	**126**	**130**	**135**	**139**	**143**	
change %	*3.77%*	*4.47%*	*4.27%*	*4.12%*	*4.40%*	*4.26%*	*4.26%*	*4.26%*	*4.26%*	*4.26%*	*4.26%*	*4.26%*
Deferred tax liabilities	**10**	**8**	**9**	**11**	**13**	**11**	**12**	**12**	**12**	**13**	**13**	
% of sales	*0.39%*	*0.28%*	*0.34%*	*0.39%*	*0.45%*	*0.39%*	*0.39%*	*0.39%*	*0.39%*	*0.39%*	*0.39%*	*0.39%*
Income tax payables	**60**	**46**	**27**	**32**	**44**	**36**	**37**	**38**	**40**	**41**	**42**	
% of sales	*2.33%*	*1.65%*	*1.02%*	*1.18%*	*1.56%*	*1.25%*	*1.25%*	*1.25%*	*1.25%*	*1.25%*	*1.25%*	*1.25%*
NWC	**528**	**589**	**636**	**556**	**609**	**641**	**653**	**675**	**699**	**720**	**742**	
Change in NWC	**98**	**61**	**47**	**-80**	**53**	**32**	**12**	**22**	**24**	**22**	**22**	

5.1.2. Hugo Boss' Discount Rate

In order to calculate the net present value of the free cash flows with formula 1 stated in the literature review chapter 2.2.1. , a discount factor has to be estimated.

Therefore, I compute a WACC of 6,09% by using formula 6 stated in chapter 2.2.4.2. of the literature review. I describe the inputs for Hugo Boss' WACC in the following chapters.

Table 6: WACC Inputs

WACC	
Cost of Debt (Kd)	0,62%
Cost of Equity (Ke)	6,34%
Effective Tax Rate (t)	-29,55%
Market Value of Debt (MVD)	177 339,88
Market Value of Equity (MVE)	4 277 622,03
WACC	**6,09%**

5.1.2.1. Hugo Boss' Cost of Equity

The CAPM model was used to compute the Cost of Equity, presented in figure 18:

Figure 22: Cost of Equity Inputs

COST OF EQUITY	
Risk Free rate (rf)	0,03%
Beta Levered (BetaLMDAX)	0,91
Equity Risk Premium (rm)	7%
Cost of Equity (Ke)	**6,34%**

I used the 10Y German Bund as Risk Free rate. As Beta I used the Blume-adjusted 5Y levered Beta (Appendix 7) between Hugo Boss and the index it is listed in – the German MDAX. Furthermore, I use an Equity Risk Premium of 7% according to equity valuation theories discussed in chapter 2.2.4.2.1.4.

5.1.2.2. Hugo Boss' Market Value of Equity

The Market Value of Equity is calculated by the number of outstanding shares times the closing share price at the release date of the Annual Report 2018 – 7 March 2019.

5.1.2.3. Hugo Boss' Cost of Debt

Since Hugo Boss does not issue bonds, I used the credit spread of similar rated German companies to estimate the market cost of debt. According to Reuters Hugo Boss has an A-Rating. I calculated the spread between the 2Y German Bund and 2Y German Corporate Bund for A rated companies because the average maturity of Hugo Boss' debt is 2,32 years. By adding the 10Y German Bund as risk free and the credit spread I derive a cost of debt of 0.62% for Hugo Boss.

Figure 23: Inputs Cost of Debt

INPUTS COST OF DEBT	
2Y German Corporate Bond for A rated company	-0,01%
2Y German Bund	-0,60%
10Y German Bund (rf)	0,03%
Effective Tax Rate (t)	29,55%
Credit Spread (CS)	0,59%
Cost of Debt	**0,62%**

5.1.2.4. Hugo Boss' Market Value of Debt

As before mentioned, Hugo Boss has no bonds issued. Their interest bearing debt mainly consists of liabilities due to banks, of which 54% are short term. The exact division of debt can be found in Appendix 8.

I discounted the book-value of debt and its interest by the previously presented Cost of Debt to compute the Market Value of Debt.

5.1.3. Hugo Boss' Terminal Value

I use the perpetuity growth model to determine my Terminal Value. In addition, I calculate an Exit Multiple TV to provide a vice-versa sanity check whether the assumptions are reasonable.

Figure 24: Terminal Value Calculation

Terminal Value		
Perpetuity TV		7 147
NPV Perpetuity TV		**5012**
EXIT Multiple TV	10,41x	6145
NPV Exit Multiple TV		**4309**

5.1.3.1. Hugo Boss' Perpetuity Growth Terminal Value

For the perpetuity growth model, I use the last available FCF in 2024E and discount it according to formula 8 mentioned in the literature review chapter 2.2.3., using the WACC and terminal growth rate. It is important to state, that the TV needs to be discounted at the same time to maturity as the last FCF in the explicit period in order to derive the correct NPV of TV. Since this evaluation uses 6 years as explicit period, the NPV of TV is also computed by using 6 years.

5.1.3.1.1. Hugo Boss' Terminal Growth Rate

The Terminal Growth Rate is an equally weighted average of three components.

Figure 25: Terminal Growth Rate Computation

Inputs	**Weight**	**Growth Rate**
Consensus	33,33%	2%
Implied Growth Rate Exit Mulitple	33,33%	1,45%
GDP Forecast	33,33%	3,03%
Perpetuity Growth Rate	**100%**	**2,159%**

The first component is the analyst consensus growth rate of 2% for Hugo Boss, extracted from several equity reports.

Secondly, I use the implied growth rate of the Exit Multiple. Further information to the Exit Multiple can be found in the next chapter.

Last but not least, I applied the same approach used for forecasting the sales. Therefore, the sales of Hugo Boss are projected based on the weighted real GDP growth expectations of their three sales regions: Europe, Asia/Pacific and Americas, applying the same methodology as used before for the specific regions within those segments. In order to ensure appropriate long-term growth rates, I used the average real GDP growth data forecast until 2060 from OECD as a basis. The German inflation rate is once again added to the obtained value, in order to adjust to the nominal GDP. The calculations for this can be found in the Appendix 10.

By blending these three methods, I am ensuring to take different influences on the long-term growth rate into account, arriving at a reasonable growth rate of 2.159%.

5.1.3.2. Hugo Boss' Exit Multiple Terminal Value

As a sanity check I computed an Exit Multiple for the TV. Therefore, I used the same peer group as for the comparables analysis which will be presented in chapter 5.2.2. Thus, I received an EV/EBITDA Multiple of 10.41x which translates into an implied growth rate of 1.71%. All further steps taken to derive the equity value are similar to those of the perpetuity growth model. Hence, they are presented together in the next chapter.

5.1.4. Hugo Boss' Equity Value

Since I applied two different methods for estimating the TV, the final steps of the valuation are performed twice – once for the main model, the perpetuity growth model, and once for the Exit Multiple.

In order to estimate Hugo Boss' Enterprise Value, the NPV of FCF and NPV of TV are calculated by formula 1 presented in the literature review. I subtracted the Net Debt (Appendix 9) and non-controlling interest to calculate the Equity Value. Thus, by using the perpetuity

growth TV I conclude a fair value of €87.86/share, which represents an upside of 40.57% to the traded €62.50/share. Therefore the DCF valuation indicates a buy recommendation. Furthermore, the exit multiple method provides a fair value of €77.67/share which also concludes a buy recommendation, and supports my findings in the perpetuity growth.

Table 7: Equity Value and share price

Equity Value		
	Perpetuity Growth Method	**Exit Multiple Method (10,41x)**
NPV Explicit Period (PI&PII)	1082,40	1082,40
NPV Terminal Value (PIII)	5012,13	4309,18
Enterprise Value	**6094,53**	**5391,59**
Net Debt	(30,06)	(30,06)
Preferred shares	-	-
Noncontrolling Interest	(0,48)	(0,48)
Equity Value	**6063,99**	**5361,04**
Number of Shares	69,02	69,02
Price per Share	**87,86**	**77,67**
Share price (07 March 2019)	62,50	62,50
Delta to Shareprice	40,57%	24,28%

5.1.5. Hugo Boss' Sensitivity Analysis

To test the results for robustness I conducted a sensitivity analysis for the perpetuity growth model by adapting the two values with the highest impact on the valuation – the WACC and the growth rate in perpetuity. The sensitivity analysis in figure 23 fosters my findings of issuing a buy recommendation, since the fair value does not fall below the current share price in any tested scenario.

Table 8: Sensitivity Analysis

Sensitivity Analysis		Growth Rate					
		1,36%	1,76%	2,16%	2,56%	2,96%	3,36%
WACC	5,89%	79,07	85,24	92,73	102,01	113,83	129,39
	5,99%	77,29	83,15	90,23	98,96	109,99	124,38
	6,09%	75,58	81,15	87,86	96,08	106,40	119,74
	6,19%	73,95	79,25	85,61	93,36	103,03	115,43
	6,29%	72,38	77,43	83,46	90,79	99,86	111,42
	6,39%	70,88	75,69	81,42	88,35	96,88	107,67
	6,49%	69,43	74,03	79,48	86,03	94,07	104,16

In addition, I forecasted the Income Statement and Balance Sheet as a plausiblity test. The reasonable development of these financial statements underpins that my assumptions are sufficient. The Income Statement is presented in Appendix 1, the Balance Sheet in Appendix 2.

5.2. Hugo Boss' Relative Valuation

In this section I will evaluate Hugo Boss using the relative valuation technique of Multiples. This approach is used as an additional valuation that underpins the findings of before presented DCF model.

5.2.1. Selection of Peer Group

In order to find a fitting peer group, I compared 39 companies to Hugo Boss based on their industry, size, profitability, growth and leverage. In each category the 14 to 16 best fitting companies were selected and received a point each time they appear in one of the categories. The long list of observed companies is presented in figure 26. Furthermore, the best preselected companies were evaluated as fitting or not with regards to their business model. Thus, the final peer group consists of 12 companies.

5.2.2. Peer Evaluation

The forward Multiples were computed as stated in the literature review for 2019 and 2020. The company specific multiples are weighted according to their size, to take into account size differences between the companies.

Figure 27 shows the according prices obtained by using the peer multiples. For EV/EBITDA I deducted Net Debt and Non controlling interest before computing the final share price.

Figure 26: Long List Peer Companies Selection

		INDUSTRY	SIZE			PROFITABILITY				GROWTH	LEVERAGE		TOP 15
No	Company Name	GICS Industry Name	Market Cap (Millions, EUR)	Revenue (FY0, EUR, Millions)	EBITDA (FY0, EUR, Millions)	ROIC - Mean (FY1)	EPS - Mean (FY1, EUR)	EPS - Mean (FY2, EUR)	Dividend Yield	LT Growth	Net Debt (FY0, EUR, Millions)	Net Debt / EBITDA	Score from 1-4
1	**Hugo Boss AG (not included)**		**4 318**	**2 795,96**	**493,92**	**19,3%**	**3,80**	**4,24**	**4,4%**	**8,3%**	**-5,33**	-1%	
2	Abercrombie & Fitch Co	Specialty Retail	1 729	3 134	271	10,1%	1,28	1,38	2,8%	2,4%	-372	-137%	1
3	Adidas AG	Textiles, Apparel & Luxury Goods	50 135	21 915	2 948	29,2%	9,76	10,97	1,3%	15,2%	-1 192	-40%	-
4	American Eagle Outfitters Inc	Specialty Retail	3 488	3 523	446	16,3%	1,42	1,57	2,4%	7,5%	-371	-83%	4
5	Brunello Cucinelli SpA	Textiles, Apparel & Luxury Goods	2 157	553	96	19,0%	0,79	0,82	0,9%	7,3%	14	15%	3
6	Burberry Group PLC	Textiles, Apparel & Luxury Goods	9 269	3 109	695	35,6%	0,95	0,99	2,1%	5,0%	-1 015	-146%	2
7	Burlington Stores Inc	Specialty Retail	9 954	5 822	682	17,5%	6,22	7,13	-	15,1%	763	112%	1
8	Capri Holdings Ltd (former Michael Kors)	Textiles, Apparel & Luxury Goods	5 653	3 830	887	16,8%	4,40	4,42	-	6,8%	577	65%	4
9	Compagnie Financiere Richemont SA	Textiles, Apparel & Luxury Goods	33 021	10 979	2 401	16,1%	2,99	3,24	2,6%	12,3%	-5 269	-219%	1
10	Gala Global Products Ltd	Commercial Services & Supplies	45	10	1	-	-	-	-	-	0	-22%	1
11	H & M Hennes & Mauritz AB	Specialty Retail	22 723	20 423	2 443	18,4%	0,73	0,77	5,9%	-2,4%	795	33%	1
12	Hermes International SCA	Textiles, Apparel & Luxury Goods	64 607	5 966	2 303	57,9%	14,41	15,83	0,7%	8,5%	-3 429	-149%	1
13	Industria de Diseno Textil SA	Specialty Retail	79 462	26 145	5 454	43,8%	1,22	1,31	3,5%	5,9%	-6 726	-123%	1
14	J C Penney Company Inc	Multiline Retail	356	10 493	483	3,2%	-0,69	-0,45	-	-	3 219	667%	-
15	Kering SA	Textiles, Apparel & Luxury Goods	64 089	13 665	4 447	27,0%	26,40	29,73	2,1%	12,6%	1 651	37%	-
16	Kohls Corp	Multiline Retail	9 847	17 661	2 121	11,7%	5,40	5,60	4,0%	10,2%	2 239	106%	2
17	L Brands Inc	Specialty Retail	5 986	11 557	1 770	19,9%	2,13	2,27	4,9%	13,0%	3 854	218%	1
18	Lululemon Athletica Inc	Textiles, Apparel & Luxury Goods	20 254	2 871	722	37,0%	4,14	4,88	-	18,9%	-769	-107%	1
19	LVMH Moet Hennessy Louis Vuitton SE	Textiles, Apparel & Luxury Goods	169 343	46 826	11 945	14,6%	14,51	15,80	1,8%	10,2%	5 737	48%	1
20	Macy's Inc	Multiline Retail	6 278	22 472	2 136	10,8%	2,77	2,61	6,6%	-5,5%	3 133	147%	1
21	Malwa Cotton Spinning Mills Ltd	Textiles, Apparel & Luxury Goods	-	-	-	-	-	-	-	-	-	-	1
22	Moncler SpA	Textiles, Apparel & Luxury Goods	9 181	1 420	500	43,4%	1,45	1,56	1,1%	11,1%	-450	-90%	3
23	Nike Inc	Textiles, Apparel & Luxury Goods	115 936	31 135	4 464	33,7%	2,26	2,70	1,1%	14,0%	-1 228	-27%	-
24	Nordstrom Inc	Multiline Retail	5 452	13 847	1 317	16,2%	3,35	3,57	3,8%	8,9%	1 509	115%	2
25	Pandora A/S	Textiles, Apparel & Luxury Goods	3 775	3 054	994	29,5%	5,17	5,40	6,4%	-	707	71%	2
26	Prada SpA	Textiles, Apparel & Luxury Goods	6 745	3 142	551	7,5%	0,11	0,12	2,3%	17,5%	309	56%	2
27	Puma SE	Textiles, Apparel & Luxury Goods	8 285	4 648	420	25,8%	16,57	20,38	0,6%	26,0%	-300	-71%	2
28	PVH Corp	Textiles, Apparel & Luxury Goods	8 181	8 431	1 125	10,8%	9,32	10,23	0,1%	11,8%	2 078	185%	1
29	Ralph Lauren Corp	Textiles, Apparel & Luxury Goods	8 706	5 018	778	15,6%	6,25	6,77	2,0%	11,9%	-935	-120%	2
30	Salvatore Ferragamo SpA	Textiles, Apparel & Luxury Goods	3 228	1 347	216	15,4%	0,62	0,71	1,8%	11,9%	-171	-79%	3
31	Signet Jewelers Ltd	Specialty Retail	1 069	5 454	257	7,4%	2,66	2,80	6,4%	-	465	181%	3
32	Tapestry Inc	Textiles, Apparel & Luxury Goods	7 961	5 033	814	15,5%	2,31	2,55	4,4%	4,7%	300	37%	4
33	Ted Baker PLC	Textiles, Apparel & Luxury Goods	792	714	106	14,1%	1,52	1,62	3,9%	-	143	135%	3
34	The Swatch Group AG	Textiles, Apparel & Luxury Goods	13 859	7 530	1 464	9,1%	15,63	17,32	2,8%	11,8%	-898	-61%	1
35	Tiffany & Co	Specialty Retail	11 281	3 882	891	13,9%	4,43	4,83	2,1%	9,0%	178	20%	3
36	TJX Companies Inc	Specialty Retail	57 991	34 026	4 467	34,1%	2,33	2,55	1,7%	9,4%	-483	-11%	2
37	Tod's SpA	Textiles, Apparel & Luxury Goods	1 451	950	116	1,9%	1,47	1,69	2,3%	13,9%	75	65%	2
38	Ulta Beauty Inc	Specialty Retail	17 975	5 864	990	25,6%	11,48	13,29	-	18,1%	-357	-36%	1
39	Urban Outfitters Inc	Specialty Retail	2 617	3 452	436	14,0%	2,34	2,53	-	10,7%	-557	-128%	4
40	VF Corp	Textiles, Apparel & Luxury Goods	33 105	2 472	-	21,2%	3,34	3,83	2,2%	13,4%	2 486	-	1

Figure 27: Peer Evaluation

PEER EVALUATION (as of 07 March 2019)

Score	Peergroup	Close Share	Mcap in mil.	EV/EBITDA		P/E		Weight
				2019E	2020E	2019E	2020E	
	Hugo Boss (not included)	**62,50**	**4 400**	**8,63 x**	**8,02 x**	**15,94 x**	**14,40 x**	
3	Burberry	21,76	8 951	12,15 x	11,63 x	23,04 x	22,10 x	14%
3	Ralph Lauren	110,21	8 665	8,65 x	8,16 x	17,60 x	16,28 x	13%
3	Salvatore Ferragamo	18,35	3 096	13,93 x	13,20 x	30,20 x	27,43 x	5%
3	Brunello Cucinelli	34,80	2 366	25,08 x	22,78 x	47,85 x	42,94 x	4%
4	Tapestry Inc	30,54	8 856	8,18 x	7,39 x	13,34 x	12,07 x	13%
3	Ted Baker PLC	21,48	957	10,14 x	8,86 x	15,97 x	13,60 x	1%
4	American Eagle Outfitters	18,98	3 348	6,19 x	5,79 x	13,19 x	12,04 x	5%
4	Urban Outfitters Inc	26,47	2 796	5,16 x	4,87 x	11,41 x	10,56 x	4%
3	Moncler SpA	35,85	9 163	15,83 x	14,01 x	25,10 x	23,30 x	14%
3	Capri Holdings Ltd (former Michael Kors)	39,94	6 019	8,11 x	7,50 x	9,11 x	9,11 x	9%
3	Signet Jewelers Ltd	23,25	1 207	6,16 x	6,23 x	7,38 x	8,35 x	2%
3	Tiffany & Co	84,43	10 291	11,86 x	11,28 x	20,49 x	19,36 x	16%
	Median		8 665,18	12,15 x	11,63 x	23,04 x	22,10 x	
	Mean		6 904,32	11,58 x	11,00 x	23,62 x	21,93 x	
	Weighted Mean		7 085,32	**11,06 x**	**10,25 x**	**19,47 x**	**18,15 x**	
	Enterprise Value			5870,38	5951,19			
	Net Debt			(30,06)	(30,06)			
	Non-controlling interest			(0,48)	(0,48)			
	Equity Value			**5839,84**	**5920,65**			
	Number of Shares (in million)			69,02	69,02			
	Fair Value per share of Hugo Boss			**84,61 €**	**85,78 €**	**73,86 €**	**76,46 €**	

5.2.3. Peer Conclusion

The forward looking Multiples show that the fair price of Hugo Boss is in a range between €73.86/share to €85.78/share, which is consistent with the findings from the DCF model. Hence, according to relative valuation techniques the buy recommendation is also justified.

6. Comparison with Investment Bank

I am comparing my valuation with the equity research report from Pareto Securities AS.

Pareto Securities issued a buy recommendation and estimated a share price of 80 Euro. This is in line with my own findings, as well as the consensus estimates of analysts, presented in figure 27:

Figure 28: Analysts' Recommendations

Recommendation & Price Target Detail (as of 21 May 2019)			
Contributor	**Current Recommendation**	**Target Price**	**% Diff from Current Price**
PARETO SECURITIES AS	2–BUY	80	28%
JYSKE BANK	2–BUY	75	20%
DZ BANK	1–BUY	70	12%
SOCIETE GENERALE	3–HOLD	66	6%
BAADER HELVEA EQUITY RESEARCH	3–HOLD	67	7%
WARBURG RESEARCH GMBH	1–BUY	90	44%
LANDESBANK BADEN-WUERTTEMBERG	1–BUY	74	18%
HAUCK & AUFHAEUSER PRIVATBANKIERS AG	2–BUY	78	25%
COMMERZBANK CORPORATES & MARKETS	1–BUY	75	20%
BERENBERG	2–BUY	74	18%
EQUITA SIM	1–BUY	83	33%
CREDIT SUISSE - EUROPE	3–NEUTRAL	69	10%
MACQUARIE RESEARCH	2–OUTPERFORM	84	34%
BRYAN GARNIER	3–NEUTRAL	78	25%
MORNINGSTAR, INC.	–--	-	
Mean	**1,93**	**72,85**	**21%**

6.1. DCF Comparison

The first difference arises by different explicit periods. Pareto forecasts 10 periods instead of 6 before assuming that Hugo Boss is in a mature state. The investment bank does not justify or comment in their report why they use 10 years.

Furthermore, there are different assumptions regarding the sales growth. Pareto Securities expects stronger sales growth of up to 5.2% until 2021. Afterwards they expect them to constantly fall until they reach 3.7% in 2027. My assumptions are more restrictive, since I

expect high sales growth for Hugo Boss mainly in the region Asia/Pacific, whereas most other regions are unlikely to increase their sales growth rates.

Pareto does not explicitly forecast COGS and SGA, but forecasts EBIT as a percentage of sales. They expect the EBIT margin to constantly increase until it reaches 14.9% in the mature state due to improvements in the gross margin stemming from advancements in the distribution channel mix and product complexity reduction. I do not expect the EBIT margin to grow significantly. My restrictive view is mainly due to Hugo Boss' new strategy of shifting sales from wholesales to their own retail stores. Thus, increased sales margins are offset by the higher cost of operating the retail stores. Furthermore expanding to Asia generates new costs and challenges to the company, that dampen EBIT growth margins.

D&A, CAPEX and change in NWC are forecasted as percentage of sales and do not differ significantly from my own assumptions. Even though I project D&A as percentage of PPE, the absolute values difference are neglectible. Paretos' higher CAPEX rates than usual are also justified by the higher expenses for restructuring purposes and entering the Asian market. However, CAPEX and D&A are 150 basispoints apart in Pareto's Terminal Value. To be aligned with equity valuation literature, I assumed that CAPEX will converge to my D&A rate in maturity.

Last but not least, Pareto assumes different input values for the WACC that are not further explained or justified. A comparison of our input values is presented in table 8:

Table 9: Input Differences Discount Rate

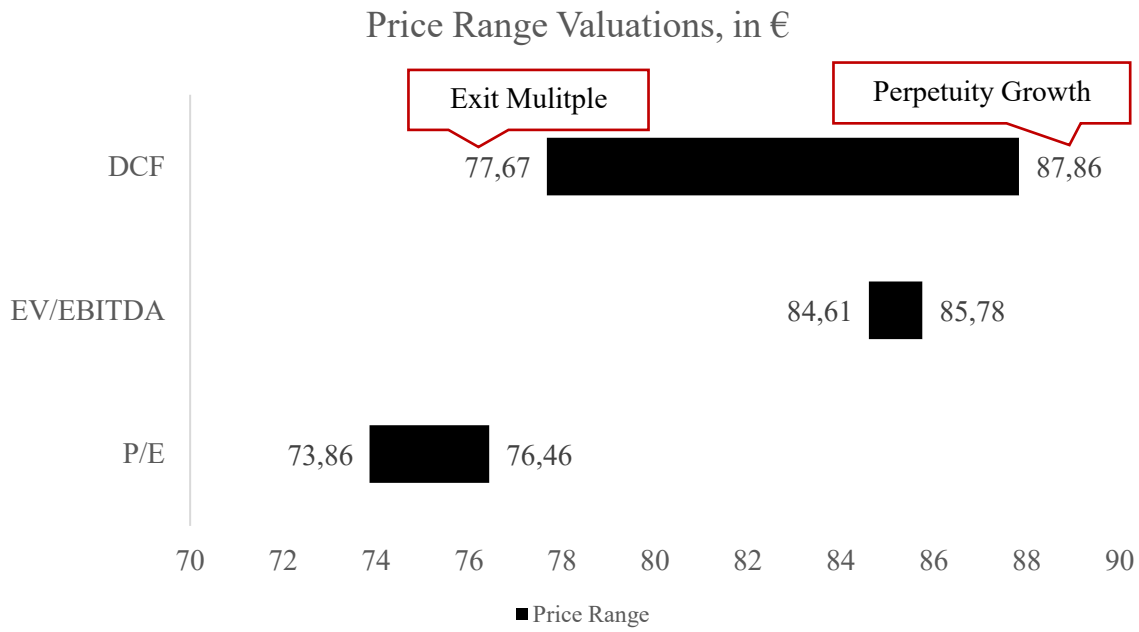
Inputs	**Own Values**	**Pareto**
Risk Free rate	0,03%	3,50%
Risk Premium	7%	5%
Beta	0,91	1,00
Debt Ratio	4%	20%
Equity Ratio	96%	80%
WACC	**6,09%**	**7,70%**

The differences in the WACC are mainly due to differences in the input values for the cost of equity: The Risk Free rate, Risk Premium, and Beta. Furthermore, Pareto assumes an equity ratio of 80%. I kept this value stable, since the management announced to keep the debt to equity level stable.

In conclusion, Pareto has a slightly more positive outlook regarding the FCFF's due to higher sales growth and an increasing EBIT margin. However, due to a higher discount factor the NPVs of Hugo Boss are stronger discounted than in my model. Thus, my valuation is to some extent higher than Pareto's.

7. Conclusion

The DCF valuation for Hugo Boss implies a fair value between €81.15/share to €87.86/share which reflects an upside of 29.84% to 40.57% compared to the traded price of €62.50/share. Therefore, a buy recommendation is issued.



My growth predictions for Hugo Boss' sales are in line with the fashion industry forecasts, despite being slightly lower. This discount is mainly due to Hugo Boss' distribution of sales, which are still primarily generated in Europe and America, where growth expectations are lower than in the uprising Asian market.

Furthermore, the conducted valuation estimates the share price higher compared to Pareto Securities as well as other analysts' estimations, which might be explained by the fact that I am using current observable market data to compute the discount rates. By taking into account the economic environment I derive at a lower discount rate than typically used by analysts. Nevertheless, most analysts issue a buy recommendation as well, which aligns with my findings.

Finally, it is important to state, that this valuation has its limitations due to the foreward looking assumptions, even though a sensitivity analysis was conducted.

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Appendix

Appendix 1: Forecasted Income Statement

Forecasted Income Statement

	2014	2015	2016	2017	2018	2019E	2020E	2021E	2022E	2023E
Net Sales	**2 572**	**2 809**	**2 693**	**2 733**	**2 796**	**2 872**	**2 960**	**3 058**	**3 166**	**3 278**
Cost of Sales	-873	-956	-915	-924	-972	-991	-1 022	-1 056	-1 093	-1 131
Gross Profit	**1 699**	**1 853**	**1 777**	**1 809**	**1 824**	**1 880**	**1 939**	**2 003**	**2 073**	**2 146**
SG&A (incl. DA)	-1 250	-1 405	-1 514	-1 334	-1 477	-1 517	-1 564	-1 615	-1 672	-1 731
Depreciation & Amortisation	123	104	139	133	123	140	144	148	152	156
EBITDA	**572**	**552**	**402**	**475**	**470**	**504**	**519**	**535**	**553**	**571**
Operating Result (EBIT)	**449**	**448**	**263**	**342**	**347**	**364**	**375**	**387**	**401**	**415**
Interest Income	1	1	2	1	2	2	2	2	2	3
Interest Expenses	-6	-7	-4	-4	-5	-5	-5	-5	-6	-7
Net interest	**-5,0**	**-6,0**	**-2,0**	**-3,0**	**-3,0**	**-2**	**-2**	**-3**	**-4**	**-4**
Other financial items	-7	-22	-6	-7	-7	-7	-7	-7	-7	-7
Financial result	-12,0	-28,0	-8,0	-10,0	-10,0	-9,50	-9,50	-9,52	-10,59	-11,29
Earnings before taxes	437	420	255	332	337	354	365	378	390	404
Income taxes	-103	-101	-62	-101	-103	-107	-111	-114	-118	-123
Net income	**334**	**319**	**317**	**231**	**235**	**247**	**255**	**263**	**272**	**281**
EPS reported	4,83	4,63	2,80	3,35	3,42	3,57	3,69	3,81	3,94	4,07
DPS	3,62	3,62	2,60	2,65	2,70	2,86	2,95	3,05	3,15	3,26
Distribution of Net income	250	250	179	183	187	197	204	211	217	225
Dividend Payout Ratio	75%	78%	57%	79%	80%	80%	80%	80%	80%	80%

Appendix 2: Forecasted Balance Sheet, Assets

Forecasted Balance Sheet

	2014	2015	2016	2017	2018	2019E	2020E	2021E	2022E	2023E
Assets										
Property plant & equipment & intangibles	531	622	601	548	574	614	656	699	746	770
Deferred tax assets	100	115	125	94	90	108	112	115	119	123
Non-current financial assets	20	22	22	21	19	20	20	21	22	22
Other non-current assets	9	4	4	4	3	3	3	3	3	4
Non-current assets	**660**	**763**	**752**	**667**	**686**	**745**	**790**	**839**	**890**	**919**
Inventories	507	560	568	537	618	618	629	650	673	694
Trade receivables	250	240	228	208	214	227	234	242	250	258
Current tax receivables	8	21	43	49	39	46	47	49	50	52
Current financial assets	23	29	28	39	32	32	32	32	32	32
Other current assets	83	107	96	109	123	114	118	122	126	130
Cash and cash equivalents	129	81	83	116	147	183	183	181	176	198
Current assets	**1001**	**1038**	**1046**	**1058**	**1172**	**1220**	**1244**	**1276**	**1308**	**1365**
Total	**1661**	**1801**	**1798**	**1722**	**1860**	**1965**	**2034**	**2114**	**2198**	**2283**

Appendix 3: Forecasted Balance Sheet, Equity and liabilities

Forecasted Balance Sheet

	2014	2015	2016	2017	2018	2019E	2020E	2021E	2022E	2023E
Equity and liabilities										
Subscribed capital	70	70	70	70	70	70	70	70	70	70
Own shares	-42	-42	-42	-42	-42	-42	-42	-42	-42	-42
Capital reserve	1	1	1	1	1	1	1	1	1	1
Retained earnings	801	873	812	869	926	975	1026	1079	1133	1190
Accumulated other comprehensive income	14	55	45	18	26	26	26	26	26	26
Equity attributable to equity hodlers of the parent company	**844**	**957**	**886**	**916**	**981**	**1030**	**1081**	**1134**	**1188**	**1245**
Non-controlling interests	0	0	1	0,5	0,4	0,4	0,4	0,4	0,4	0,4
Group Equity	**844**	**957**	**887**	**917**	**981**	**1031**	**1082**	**1134**	**1189**	**1245**
Non-current provisions	71	72	79	70	69	69	69	70	70	70
Non-current financial liabilities	154	135	134	63	83	129	136	142	149	156
Deferred tax liabilities	10	8	9	11	13	11	12	12	12	13
Other non-current liabilities	37	42	49	55	60	60	60	60	60	60
Non-current liabilities	**272**	**257**	**271**	**199**	**225**	**270**	**277**	**284**	**292**	**299**
Current provisions	116	103	149	107	98	98	98	98	98	98
Current financial liabilities	18	41	77	69	93	98	103	107	113	118
Income tax payables	60	46	27	32	44	44	36	37	38	40
Trade payables	255	272	272	286	295	303	312	322	334	344
Other current liabilities	97	125	115	112	123	122	126	130	135	139
Current liabilities	**546**	**587**	**640**	**606**	**653**	**664**	**675**	**695**	**718**	**739**
Total	**1661**	**1801**	**1798**	**1722**	**1860**	**1965**	**2034**	**2114**	**2198**	**2283**

Appendix 4: Real GDP growth used to forecast sales of segments for Phase I and II (IMF 2019)

Real GDP growth (Annual percent change)	Weight World	Weight Europe	2014	2015	2016	2017	2018	2019E	2020E	2021E	2022E	2023E	2024E
		62%											
China, People's Republic of	15%		7,30%	6,90%	6,70%	6,80%	6,60%	6,30%	6,10%	6,00%	5,70%	5,60%	5,50%
France	6%	10%	1,00%	1,10%	1,20%	2,20%	1,50%	1,30%	1,40%	1,50%	1,50%	1,50%	1,50%
Germany	15%	24%	2,20%	1,50%	2,20%	2,50%	1,50%	0,80%	1,40%	1,50%	1,40%	1,30%	1,20%
Netherlands	5%	8%	1,40%	2,00%	2,20%	2,90%	2,50%	1,80%	1,70%	1,50%	1,50%	1,50%	1,50%
United Kingdom	13%	21%	2,90%	2,30%	1,80%	1,80%	1,40%	1,20%	1,40%	1,50%	1,60%	1,60%	1,60%
United States	18%		2,50%	2,90%	1,60%	2,20%	2,90%	2,30%	1,90%	1,80%	1,60%	1,60%	1,60%
Advanced economies	23%	37%	2,10%	2,30%	1,70%	2,40%	2,20%	1,80%	1,70%	1,70%	1,60%	1,60%	1,60%
Emerging market and developing economies			4,70%	4,30%	4,60%	4,80%	4,50%	4,40%	4,80%	4,90%	4,80%	4,90%	4,90%
World			3,60%	3,40%	3,40%	3,80%	3,60%	3,30%	3,60%	3,60%	3,60%	3,60%	3,70%
Europe weighted growth			2,13%	1,97%	1,83%	2,32%	1,82%	1,38%	1,54%	1,57%	1,53%	1,51%	1,49%
Total weighted growth			**2,87%**	**2,78%**	**2,43%**	**2,85%**	**2,64%**	**2,22%**	**2,21%**	**2,20%**	**2,09%**	**2,06%**	**2,03%**

Appendix 5: Inflation Rate used to adjust from real GDP growth to nominal GDP growth (IMF 2019)

Inflation rate, average consumer prices (Annual percentage change)	2014	2015	2016	2017	2018	2019E	2020E	2021E	2022E	2023E	2024E
Germany	0,80%	0,70%	0,40%	1,70%	1,90%	**1,30%**	**1,70%**	**1,90%**	**2,20%**	**2,20%**	**2,20%**

Appendix 6: Nominal GDP Rates used for the three segments Europe, America, and Asia/Pacific to forecast sales (IMF 2019).

Nominal GDP growth rates are computed by taking the real GDP growth rates and adding the inflation rate of Germany presented in Appendix 5 to it.

Nominal GDP	2014	2015	2016	2017	2018	2019E	2020E	2021E	2022E	2023E	2024E
China	9,30%	8,30%	8,70%	8,40%	8,70%	8,60%	8,60%	8,80%	8,60%	8,60%	8,50%
France	1,60%	1,20%	1,50%	3,40%	3,60%	2,60%	2,90%	3,10%	3,20%	3,30%	3,40%
Germany	3,00%	2,20%	2,60%	4,20%	3,40%	2,10%	3,10%	3,40%	3,60%	3,50%	3,40%
Netherlands	1,70%	2,20%	2,30%	4,20%	4,10%	4,10%	3,30%	3,20%	3,30%	3,40%	3,50%
United Kingdom	4,40%	2,30%	2,50%	4,50%	3,90%	3,00%	3,40%	3,50%	3,60%	3,60%	3,60%
United States	4,10%	3,00%	2,90%	4,30%	5,30%	4,30%	4,60%	4,10%	3,80%	3,80%	3,80%
Advanced economies	3,50%	2,60%	2,50%	4,10%	4,20%	3,40%	3,80%	3,60%	3,60%	3,60%	3,60%
Emerging market and developing economies	9,40%	9,00%	8,80%	9,10%	9,30%	9,30%	9,50%	9,40%	9,20%	9,20%	9,10%
World	6,80%	6,20%	6,20%	7,00%	7,20%	6,90%	7,20%	7,10%	7,10%	7,00%	7,10%
Weighted Growth Europe	3,24%	2,27%	2,41%	4,15%	3,88%	2,98%	3,42%	3,45%	3,54%	3,53%	3,52%

Appendix 7: 5Y Beta Computation

5Y Beta Hugo Boss / MDAX

BETA Levered	MDAX/5y
BetaL	0,86
R-squared	0,21
Adjusted Beta (Blume)	**0,91**

HUGO BOSS weekly

Exchange Date	Close	Return
26-apr-2019	61,80	-1,12%
19-apr-2019	62,50	3,96%
12-apr-2019	60,12	-3,03%
05-apr-2019	62,00	1,84%
29-mar-2019	60,88	1,00%
22-mar-2019	60,28	-4,07%
15-mar-2019	62,84	2,08%
08-mar-2019	61,56	-7,54%
01-mar-2019	66,58	2,53%
22-feb-2019	64,94	4,37%
15-feb-2019	62,22	1,77%
08-feb-2019	61,14	-4,65%
01-feb-2019	64,12	-0,12%
25-jan-2019	64,20	10,01%
18-jan-2019	58,36	-1,02%
11-jan-2019	58,96	6,81%
04-jan-2019	55,20	2,37%
28-dec-2018	53,92	1,13%
21-dec-2018	53,32	-6,26%
14-dec-2018	56,88	-5,29%
07-dec-2018	60,06	-1,54%
30-nov-2018	61,00	-2,46%
23-nov-2018	62,54	-1,45%
16-nov-2018	63,46	1,99%
09-nov-2018	62,22	-3,23%
02-nov-2018	64,30	5,86%
26-oct-2018	60,74	1,23%
19-oct-2018	60,00	-3,72%
12-oct-2018	62,32	-6,26%
.	.	.
.	.	.
.	.	.

MDAX weekly

Exchange Date	Close	Return
26-abr-2019	25 894,09	0,15%
19-abr-2019	25 855,72	1,55%
12-abr-2019	25 461,69	-0,33%
05-abr-2019	25 544,72	3,33%
29-mar-2019	24 722,02	0,04%
22-mar-2019	24 711,11	-1,75%
15-mar-2019	25 150,78	3,50%
08-mar-2019	24 300,16	-1,45%
01-mar-2019	24 657,69	1,21%
22-fev-2019	24 362,51	0,16%
15-fev-2019	24 324,40	4,82%
08-fev-2019	23 205,78	-2,28%
01-fev-2019	23 746,71	-0,32%
25-jan-2019	23 822,92	2,80%
18-jan-2019	23 175,11	2,23%
11-jan-2019	22 669,27	2,86%
04-jan-2019	22 038,06	2,08%
28-dez-2018	21 588,09	-0,08%
21-dez-2018	21 605,17	-3,04%
14-dez-2018	22 281,45	-1,13%
07-dez-2018	22 535,45	-3,91%
30-nov-2018	23 453,53	1,05%
23-nov-2018	23 210,66	-2,07%
16-nov-2018	23 700,89	-1,98%
09-nov-2018	24 178,74	-1,21%
02-nov-2018	24 473,93	4,24%
26-out-2018	23 478,22	-2,78%
19-out-2018	24 148,60	1,16%
12-out-2018	23 870,99	-5,56%
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Appendix 8: Cost of Debt

COST OF DEBT

The following tables show the terms and conditions of financial liabilities:

	2018		2018	2018	2018			
Remaining term	**Weighted average interest rate**	**Carrying amount in EUR. Thousands**	**Weighted amount in percent**	**Weighted average maturity**	**Average interest rate**			
Liabilities due to banks								
Up to 1 year	0,30%	90 609	51,44%	1,00	271,83			
1 to 5 years	1,21%	72 394	41,10%	3,50	875,97			
More than 5 years	3,35%	5 722	3,25%	8,50	191,69			
Other financial liabilities								
Up to 1 year	2,69%	2 752	1,56%	1,00	74,03	**Historical Cost of Debt**	**Market Cost of Debt**	**Market Value of Debt**
1 to 5 years	4,27%	4 659	2,65%	3,50	198,94			
More than 5 years	0%	0	0,00%	8,50	0,00			
Total		**176 136**	**100%**	**2,34**	**1 612,45**	**0,64%**	**0,62%**	**177 340**

Appendix 9: Net Debt

NET DEBT (in thousand €)

Assets	**Book Value**	**Market Value**
Cash and cash equivalents	146717	146717
Other financial assets	49281	49281
Thereof: Positive marketvalues from hedges	*560*	*560*
Cash and cash equivalents	**147277**	**147277**

Liabilities	**Book Value**	**Market Value**
Interest Bearing Debt	176 136	177340
Net debt		**30063**

Appendix 10: Perpetuity Growth Rate Weighted Computation and adjustment to Nominal values

Perpetuity Growth Rate

			Real GDP Growth Rates (adjusted to Nominal)										
Country	**Weight World**	**Weight Europe (61%)**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**…**	**2060**	**LT Growth Average**
United States	**20%**		2,05%	0,89%	0,70%	0,75%	0,84%	0,93%	1,00%	1,05%	1,08%	…	1,62%	1,01%
Benelux		**8%**	2,31%	1,14%	0,95%	0,98%	1,06%	1,15%	1,22%	1,27%	1,30%	…	2,19%	1,35%
Germany		**24%**	1,75%	0,81%	0,78%	0,84%	0,91%	0,98%	1,04%	1,08%	1,11%	…	1,69%	1,07%
France		**10%**	1,49%	1,07%	0,94%	0,91%	0,96%	1,05%	1,13%	1,18%	1,21%	…	2,43%	1,26%
Other Europe		**37%**	1,81%	1,07%	0,95%	0,96%	1,01%	1,09%	1,15%	1,20%	1,23%	…	2,15%	1,16%
United Kingdom		**21%**	0,60%	0,65%	0,80%	0,92%	1,02%	1,08%	1,15%	1,22%	1,29%	…	2,16%	1,20%
China	**18%**		6,07%	5,16%	4,68%	4,40%	4,18%	4,01%	3,86%	3,71%	3,57%	…	2,04%	2,74%
Europe	**62%**		1,55%	0,93%	0,88%	0,92%	0,99%	1,06%	1,13%	1,18%	1,22%	…	2,07%	1,17%
Real Weighted Growth Rate (adjusted by 0.73)			2,46%	1,68%	1,53%	1,51%	1,53%	1,56%	1,59%	1,61%	1,61%	…	1,98%	1,03%
Inflation Rate Germany			1,30%	1,70%	1,90%	2,20%	2,20%	2,20%	2,00%	2,00%	2,00%	…	2,00%	1,99%
Nominal Weighted Growth Rate														**3,04%**