LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER OF SCIENCE IN FINANCE

MASTERS FINAL WORK PROJECT

EQUITY RESEARCH: HUGO BOSS AG

EMANUEL ANTÓNIO BARBOSA LOURENÇO

OCTOBER 2019

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Abstract

The present document is a detailed valuation of Hugo Boss AG in accordance with ISEG's Master in Finance Final Work Project.

The Equity Research follows the format recommended by the CFA Institute (Pinto, Henry, Robinson and Stowe, 2010). The information presented in this report only reflects public information issued by or about Hugo Boss AG until 30th of September 2019, thus any event or circumstance after this date is not considered.

Hugo Boss AG is a Fashion Company known worldwide by its luxurious products, mainly apparel products. Recently, the company has adopted a new brand segmentation, respectively Boss and Hugo, in order to expande and tackle a new range of consumers.

Hugo Boss AG was the company choosen to become the subject of the present master thesis final project, once the author is interested in the Personal Luxury Market and because the author had knowledge of Hugo Boss products.

By performing an in-depth analysis on the company's management, financials, and risks as well as overall market and macroeconomics conditions, several assumptions were made to proper estimate the Hugo Boss AG price target by the year-end of 2020. With the use of the Free Cash Flow to the Firm Method from the Discounted Cash Flow Models as the main valuation methodology, we estimate a price target of €66 for 2020YE. This will lead to an upside potential of around 27% when comparing with price of €49.15 from 30th of September 2019, meaning a BUY recommendation with Medium Risk. Complementary valuation methodologies were used to support our recommendation.

JEL classification: G10; G30; G32; G34; L10; L67

Keywords: Equity Research; Valuation; DCF; DDM; Relative Valuation; Hugo Boss AG; Personal Luxury Market

Resumo

O presente documento apresenta uma avaliação detalhada da Hugo Boss AG, e foi realizado de acordo com o Projeto de Trabalho Final do Programa de Mestrado em Finanças do ISEG.

Esta *Equity Research* segue o formato recomendado pelo CFA Institute (Pinto, Henry, Robinson and Stowe, 2010). As informações apresentadas neste relatório apenas refletem informação pública emitida sobre a Hugo Boss AG até 30 de Setembro de 2019, pelo que qualquer evento ou circunstância após esta data não foi considerada.

Hugo Boss AG é uma empresa de moda luxuosa reconhecida mundialmente principalmente pelos seus produtos de vestuário. Recentemente, a empresa adotou uma nova segmentação das suas marcas, nomeadamente as marcas Hugo e Boss, com o objetivo de expandir e explorar um novo leque de consumidores.

A Hugo Boss AG foi a empresa escolhida para ser o objeto do presente projeto final de mestrado uma vez que o autor da mesma não só tem interesse no Mercado de Bens Pessoais de Luxo, também como este tem conhecimento sobre os produtos da Hugo Boss AG.

Ao realizar uma análise detalhada sobre aos dados de gestão, finanças e risco da empresa bem como das condições do mercado e macroeconómicas, várias premissas foram consideradas para estimar o preço alvo da Hugo Boss AG no final do ano de 2020. Com o uso do método *Free Cash Flow to the Firm* dos Modelos de Fluxo de Caixa Descontados como a principal metodologia de avaliação, nós estimamos um preço alvo de €66 para o final de 2020. Isto significa uma potencial valorização de 27% em comparação com o valor de €49.15 observado no dia 30 de Setembro de 2019, que indica um recomendação de COMPRA com Risco Médio. Outras metodologias de avaliação foram usadas para apoiar a recomendação dada no presente documento.

Classificação JEL: G10; G30; G32; G34; L10; L67

Palavras-Chave: Equity Research; Avaliação de Empresas; DCF; DDM; Relative Valuation; Hugo Boss AG; Mercado de Bens Pessoais de Luxo

Acknowledgements

Being on the last stage of the Master of Science in Finance at ISEG, I would like to emphasize the commitment and hard work dedicated to not only the present document but also the entire master’s program. Personally, I feel proud of all the work developed and the present document marks the end of a very important life stage. Nevertheless, this only became possible with the support of my family, professors and friends.

First, I would like to thank my father, António, and my mother, Elisa, for providing me the conditions and the opportunity to be here today, and for the unconditional support in each step of my life. Also, my brother, António and his family, for the guidance provided throughout this process.

To my girlfriend, Margarida, who has always been there to assist me throughout challenging times, offering me the care and comfort necessary during my masters, and to her family.

Last but not least, I would like to extend my gratitude to my supervisor Victor Barros for the assistance, patience, support and valuable insights provided throughout the process of writing the present final project.

To finalize, I would like to dedicate this project to my father, António Pinto Lourenço

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Hugo Boss AG

Personal Luxury Goods Industry

Buy recommendation
w/ Medium Risk

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Master's in Finance

1. Research Snapshot

Our final recommendation for Hugo Boss AG stands for BUY with a price target for 2020YE of €66/sh leading to an upside potential of ~27% when compared with the closing price from 30th September 2019, with medium risk.

Figure 1 - Share Price
Source: Yahoo Finance

The DCF model through the FCFF method was used to reach the 2020YE price target. Moreover, to strengthen our analysis two other methodologies were used – DDM and Relative Valuation using the Multiple Approach – Table 3.

We believe that the company is currently undervalued due to the restructuring implemented in the previous years with the takeover of selling spaces from wholesale parterns. The goal was and continues to be to improve customer experience. For the future we see Hugo Boss persuing strategies that are strickly in line with the industry expectation which also fundament our recommendation.

The Group's Own Retail Segment is the main driver of sales with a share of 63.3% 2018YE in which 59.3% comes from Brick-and-Mortal Retail and 3.9% from the own Online Retail applications. Considering that the company's main strategies include further investments in this segment and that this market continues to show growth opportunities, we expect this segment to continue to be the main driver of revenue – Figure 2. EBIT by 2024YE is projected to be €424 million, with an increase of €78 million comparing with 2018YE (~3.5% CAGR). However, the increase of EBIT does not follow the increase in Sales due to an expected increase in Sales, Marketing and Advertsing Expenses.

The Personal Luxury Goods Industry has been experiencing constant changes in the near past. Firstly, the online segment is now a key sales channel in this industry, as such Hugo Boss AG has implemented the necessary measures for a digital transformation. In fact, the company has already presented positive results, by reporting an increase in online sales volume by 40% in 2018YE when compared with 2017YE.

Secondly, the levels of demand are increasing in the premium casual wear apparel industry. To follow such trend, Hugo Boss has launched a new brand Hugo focusing in the market.

In order to continue being a serious competitor at this changing market, Hugo Boss AG is expected to make considerable investments. Namely, it is expect a significant Capital Expenditures on Intangible Assets (15% YoY), which include items such as software and licenses, due to necessity of such tools to enable the digital transformation.

Table 1 - Analyst Risk Assessment
Source: Author

Risk		
Low	**Medium**	High

HUGO BOSS AG is classified to be a Medium Risk Investment. Our risk assessment is based mainly on the changing market conditions.

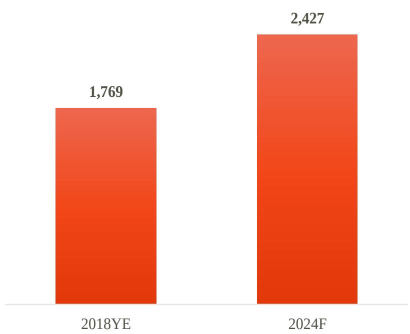
Table 2 - 2020YE Price Target Estimates
Source: Author

Price on 30st of September 2019		
	49.15	
Valuation Model	**2020YE Price Target**	**Upside Potential**
DCF FCFF	66.02	26.6%
DDM	74.04	38.8%
Multiples AVG	64.61	24.5%

Table 3 - Hugo Boss AG Market Profile
Source: Yahoo Finance

Market Profile	
Values as of 30/09/2019	
Closing Price (€)	49.15
Volume	525,335
Shares Outstanding	69 Millions
Market Capitalization (€)	3.411 Billions
1Year Return	-25%
Other Information	
52-week price range (€)	49.15 To 65.31
Bloomberg Ticker	BOSS GY
ISIN	DE000A1PHFF7

Figure 2 - Retail Sales (in €millions) & Weight
Source: Company Data & Author

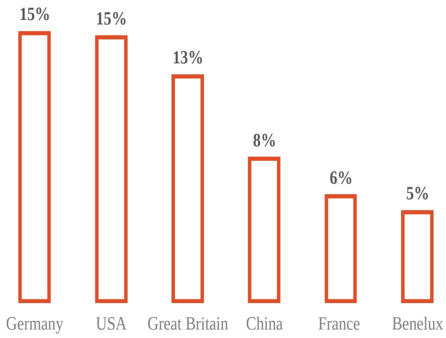


2. **Business Description**

Hugo Boss AG, a German clothing company that operates on the €260 billion worth industry of personal luxury goods, according to Bain & Company (2019), the company was founded by Hugo Ferdinand Boss, a German fashion designer and businessman, in 1924 in Metzingen, southwest Germany. The founder's political background brought dark early years to the company's history. In fact, Hugo Boss was a follower of the National Socialism movement, and the company not only supplied uniforms to the Nazi Party during the period of the Second World War but also forced workers and war prisoners to work in its factory during the War. A study conducted in 2011 proved these events, and as a result, the company decided to make donations to an international institution set to compensate war oppression.

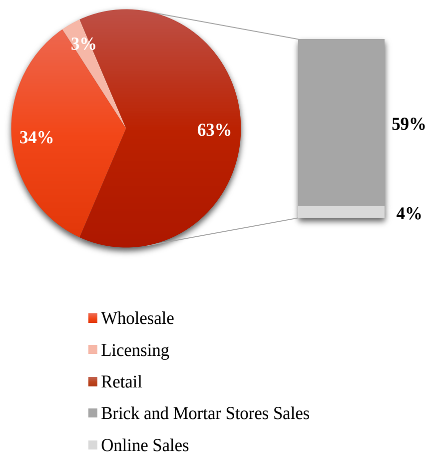
Nowadays, Hugo Boss Group is a leading luxury apparel business with a global presence in 129 countries. In 2018, the group generated a €2.8 billion on sales with its six-core markets, namely Germany, Great Britain, France, Benelux, the United States and China, that jointly represented around 63% of the sales – Figure 3.

Figure 3 - Core Markets Sales Distribution
Source: Company Data



Sales are divided into three main segments and also in three main regions. The segments are Retail, Wholesale and Licensing. Retail accounts for 63%, Wholesale for 34% and Licensing accounts only for 3% – Figure 4. The company also provides data in which we can understand the sales distribution within Retail, 3.9% comes from the Groups Own Online platforms and 59.3% comes from Brick-and-Mortar stores composed by Freestanding Stores, Shop-in-shops and Outlets. As for the geographic regions, they are Europe [1], Americas and Asia/Pacific. Europe is where the group has a higher sales percentage reaching 62% of sales; the Americas account for 21% of sales, while Asia/Pacific for 15%. The Licensing % of sales are seen in a worldwide manner with this geographic breakdown – Figure 5.

Figure 4 - Sales Distribution by Segment
Source: Company Data

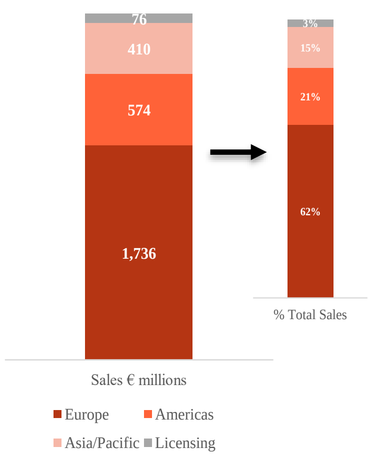


In terms of production, the group can produce 18% of its total volume in their own facilities which are located in Europe, Izmir (Turkey), Metzingen (Germany), Morrovalle (Italy) and Radom (Poland). The remaining 82% accounts for external contracts for suppliers or procured merchandising, located around Eastern Europe and Asia.

During the 2018 launch of Spring and Summer collection, the group presented a new segmentation of two brands: Hugo and Boss. Boss represents sophistication with modern collections, with a total focus on high-quality materials and designs to create a flawless look, whereas Hugo represents a combination of casual pieces and tailoring assuming a fashion-forward attitude. This new brand was an innovative approach to respond to the changes in the market. The group believes that this new brand segmentation will increase sales and product lines in both brands, especially when it comes to the casual wear market as the company has not yet intensively explored this market.

The group's strategic focus is to increase the appeal of its brands with personalization and speed based on the following four pillars: Digital, Global, Agile and Sustainable.

Figure 5 - Sales by Region & Weights
Source: Company Data



When it comes to ***personalization,*** the group will focus on personalized products, in order to increase its individualized customer approach substantially. To do so, the company will:

"*Refocus the Brand*" – In order to respond to a broader range of consumers, the group is now using two brands, Boss and Hugo – Figure 6 and 7. The brand Boss targets the upper premium segmentation with a strong entry-level price range. Moreover, the group is taking into strong consideration the improvement of Boss Tailored, as it offers the consumer a "Made to Measure" experience. The strategy chosen to improve sales of the Boss brand is mainly based on sponsoring premium sports (e.g. golf, sailing and football), events and campaigns, taking special attention to social media campaigns that capture interactions with digital channels. When considering only the Hugo brand, one can observe that it is oriented to customers who are fashion-conscious, open-minded and spontaneous with a strong need to express their

[1] Europe includes Middle East and Africa, when talking about Company Data.

personality through the way they dress. To capture this type of clientele not only are the brand products significantly lower than Boss's products, presenting price gaps up to 30%, but also the brand itself will focus on events, campaigns and social media targeted for bloggers and influencers to boost the brand's awareness and creditability within this new segment.

In addition, a special attention captured by the need to increase sales into Womenswear segment, in 2018 only, accounted for 10% of Groups Sales – Figure 8. Thus, the group thinks that this new brand segmentation, with the exploration of new types of consumers, will allow the increase of sales in this market.

"*Refine the way we sell*" – Here the group wants to focus on improving selling space productivity, exploit the potential of the online segment and create greater integration of sales channels. The own retail section of the group is considered to be the one with a higher opportunity to grow, thus until 2022 the company wants to increase the sales per square meter (or selling space productivity) by 4% YoY – Figure 9.

In order to achieve such goal, the group will expand the distribution of both brands by opening new stores in selective locations. The group sees great potential, especially in the Chinese market with the opening of Boss stores for the coming years. As for Hugo, the new stores are to be launched in selective European metropolitan areas like Amsterdam, London and Paris.

The online business offers an excellent potential for sales growth, thus the company has focused its attention on a more friendly user website with functionalities like "Online Fit Finder" or the "Online Stylist". Boss and Hugo have now seperate pages within the company's website in order to define a clear message and set a differentiation line between both brands.

In addition, the physical stores' strategy is not only to expand the distribution of Boss stores and conduct new openings of Hugo stores in Europe, but also to build partnerships with wholesale shops.

When it to comes to ***speed,*** Hugo Boss wants to turn its business processes more agile in order to be able to react to fast changes in customer needs and market trends.

"*Drive the digital transformation*" – Hugo Boss intends to drive a digital transformation mainly for production lines. An example of this is the use of digital prototypes to shortening time of developing new products, especially using the 3D virtual softwares. Moreover, the implementation of a "smart factory" will bring a significant digital transformation to the largest production factory of the firm located in Turkey.

Regarding the own retail business, the group intends to proceed to a digital optimization of inventory planning to sharpen the response to customer demand, while providing flexibility in terms of allocation or reallocation of goods. A digital showroom was on the group's strategies for 2018 in order to complement the order process and simplify, in a substantial manner, the wholesale selling process.

"*Innovate the way we operate*" – Shipping is one important factor for this particular market, since companies have to be able to have a fast reaction to short-term trends. As such, Hugo Boss AG has implemented a fast track concept that enables the company to conduct rapid shipment that answers consumer needs.

To accelerate the decision-making process, widen operations, and elaborate suitable concepts and instruments, the group's Human Resources department took some measures such as the formation of cross-functional teams and the delegation of responsibilities, in order to enable the necessary change.

Figure 6 - Two Brand Segmentation
Source: Company

Figure 7 - 2018 Sales by Brand
Source: Company Data

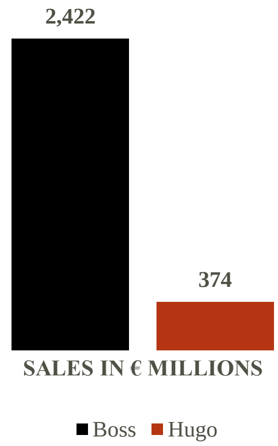


Figure 8 - Womenswear Sales
Source: Company Data

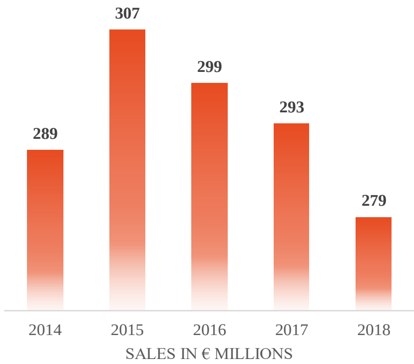
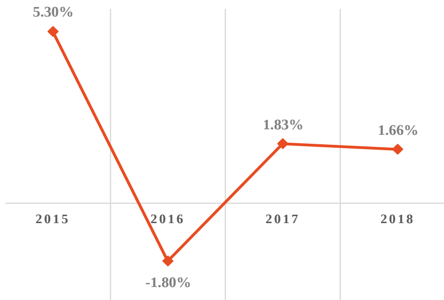
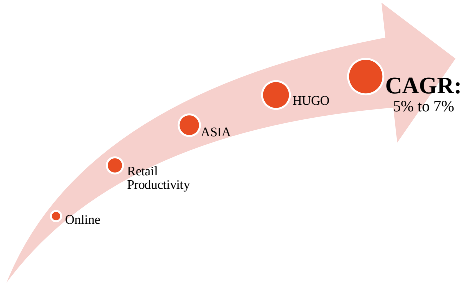


Figure 9 - Sales per SQM YoY Growth
Source: Author & Company Data



Hugo Boss acknowledges the need for active transformation on corporate culture, therefore the company encourages its workers to embrace innovation to create customer value. The global luxury market is continually changing, therefore in order for the company to respond to rapid changes, new and innovative structures must be created to establish an environment focused on customers.

Figure 10 – Business Plan 2022 Sales Objective
Source: Company



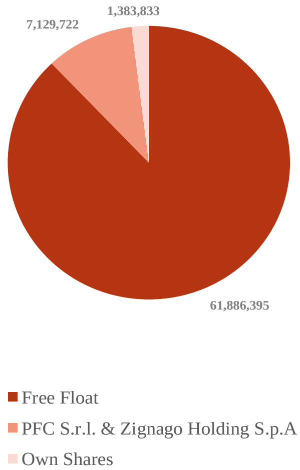
Business Plan 2022

The group aims to create long-term value for its shareholders. Hence, the 2018 Hugo Boss AG annual report presents a Business Plan with some targets to fulfil until 2022.

In the mentioned report, the company is expected to have a sales growth of 5% to 7% CAGR in 2022. The four key assumptions to support such growth are: the expansion of the online segment, the improvement in retail productivity, the Asia growth opportunity and the establishment of Hugo in the contemporary fashion sector – Figure 10.

The other main target presented by the company is the potential growth of EBIT Margin reaching a value of 15%. This represents a growth of +2.6% when compared with 2018YE. The key factor to justify such target is the implementation of an efficiency program that intends to optimize the marketing expenditures, by reducing the complexity of both brands collections. The digital transformation plan for the near future is expected to partially revert the effects mentioned before.

Figure 11 - Shareholders Structure
Source: Company



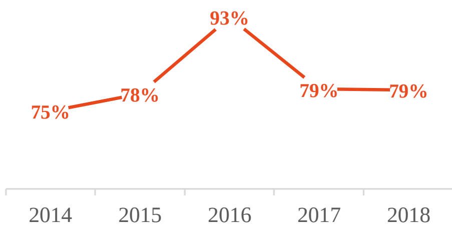
Shareholder Structure

Marzotto family with the two companies PFC S.r.l. and Zignago Holding S.p.A. holds 10% of the voting rights of Hugo Boss AG, being the largest private shareholder. The company holds around 2% of its own shares which were repurchased from 2004 to 2007 – Figure 11. The following 88% of the company shares are in free float and are held mainly by institutional investors from Europe and the Americas.

In 2015, on the Annual Shareholders' meeting, the Managing Boards were authorized to acquire own shares up to a total share of no more than 10% of the share capital outstanding as of May 12, 2015. But if the observed value is lower, the share capital outstanding at the time of the authorization is exercised. The authorization is valid until May 11, 2020.

The Managing Board can make the acquisition through the stock exchange, public offer to all shareholders, or by equity derivatives, for example by granting put options to the current shareholders. In addition, this authorization also consents that Hugo Boss AG can confine the principle of equal treatment of all shareholders.

Figure 12 - Payout Ratio
Source: Company



Dividend Pay-out Policy

The group follows a profit-based dividend policy where between 60% and 80% of the observed Net Income is paid to the companies' shareholders on a regular basis – Figure 12. For 2018, the boards' plan was to have a dividend of €2.70 per share and an increase of €0.05 in comparison to 2017, which is equivalent to a distribution of €186 million in accordance with the shares outstanding in 2017YE. This proposal is equivalent to a payout ratio of 79% from the Net Income of 2018.

3. Management and Corporate Governance

Hugo Boss AG follows the requirements of the German Corporate Governance Code (GCGC) which requires German stock corporations to have a dual management and a control structure – Figure 13. In accordance with the GCGC, these structures' goals are to be duty bounders, to ensure the company's on-going concern and to have a transparent corporate governance policy. To comply with the GCGC Hugo Boss AG is a corporation with two boards.

Figure 13 - Board Duties
Source: Author

On the one hand, the company has the Managing Board which is responsible for the Group's strategy and management. Therefore, this board is in charge of the corporate strategy, corporate finance, risk management, development and implementation of collections, sales network, and financial reports. The Board is now composed by 3 members, Mark Langer (CEO), Yves Muller (CFO), and Ingo Wilts (CBO). Bernd Hake (CSO) decided to step down from the Managing Board July 2019 to pursue a new challenge according to a statement issued by the company. Overall the board has a high level of tenure within the industry as well as within the company – Table 4.

Table 4 - Managing Board Experience
Source: Author

Managing Board	Position	Experience	Company Tenure
Mark Langer	*CEO*	24Y	16Y
Yves Muller	*CFO*	25Y	2Y
Ingo Wilts	*CBO*	28Y	22Y

On the other hand, the company has the Supervisory Board where, in accordance with the GCGC requirements, the members should be independent of their functions. The Supervisory Board takes a more secondary role in advising and monitoring of the Managing Board activities. Bylaws were adopted to govern the supervisory duties and responsibilities, for that equal representation will be taken in the composition of all committees. I) Audit Committee – Ernst & Young; II) Personnel Committee; III) Working Committee; IV) Nomination Committee; V) Mediation Committee;

Table 5 - Supervisory Board Members
Source: Author

Supervisory Board
Shareholder Representatives
Michel Perraudin
Kristen Kistermann-Christophe
Geatano Marzotto
Luca Marzotto
Axel Salzmann
Herman Waldemer
Employee Representatives
Antonio Simina
Tanja Silvana Grzesch
Anita Kessel
Fridolin Klumpp
Sinan Piskin
Martin Sambeth

Overall, we believe that the German Corporate Governance Code is a strong governance model to follow. The objective of the Code is to make sure that the German Corporate Governance system is transparent and understandable, while promoting confidence in the management and supervision of German listed corporations to international and national investors, customers, employees and the general public.

Also, the GCGC promotes Shareholders to overstep in the teaming of the Supervisory Board since the members of this type of board are elected by them in the company's general meetings.

Executive Compensation

The Managing Board receives not only a fixed compensation which is paid as a monthly salary, but also a sum of fringe benefits has a company car, supplementary payments to health insurance and other services or equipment required to fulfil their duties. The variable compensation is divided into short-term incentive program (STI) and long-term incentive program (LTI). STI is linked to certain short-term quantities targets and the LTI is linked to a company's performance versus external components, over a period of two years, an example is the Hugo Boss AG shareholders return vs the MSCI World Textiles, Apparel & Luxury Goods index performance.

Table 6 - Boards Compensation
Source: Company Data & Author

Compensation	Supervisory Board	Managing Board
Fixed	755	2,890
Variable	709	4,409
Total	**1,464**	**7,299**

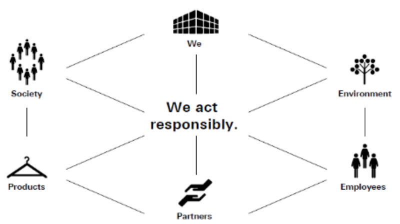
In € thousands

The Supervisory Board compensation is split into fixed and variable components based on the company size and scope of work. The variable factor is dependent on the amount of earnings per share presented in the consolidated financial statements. Both fixed and variable compensations are paid out after the Annual Shareholders' meeting, where they are approved for the fiscal year under discussion – Table 6.

Sustainability Awareness

Hugo Boss AG perceives sustainability as an interplay between quality, innovation and responsibility. Thus, within this perception the group defined the guideline principle of "We Act Responsible". The strategic fields of action presented by the company are: We, Environment, Employees, Partners, Products and Society. With these fields the company intends to generate value to its shareholders, employees, business partners and society in general – Figure 14.

Figure 14 - Sustainability Relation
Source: Hugo Boss AG, 2018 Annual Report



4. Industry Overview and Competitive Positioning

The Personal Luxury Goods can be defined as an industry where products are used for self-grooming purposes such as apparels, shoes, hard luxury, beauty products and jewelry. The industry has been facing several changes in the past decades, where economic trends, rapid digital transformation and evolving consumer preferences have hugely impacted its path.

With the potential turn in the economic cycle, the industry is concerned with the prospects for the coming years. The recent past was of growth and rising costs, however, the future strategic priorities are expected to be focused on boosting productivity.

Market Structure

Globally, this industry tends to be classified as monopolistic competition in a multiregional business sphere. The personal luxury goods market can be segmented by product basis (beauty items, hard luxury, apparel and accessories), distribution (wholesale and retail) and channel (offline and online).

According to Bain & Company – Luxury Goods Worldwide Market Study (2019), the Global Luxury Market will reach a value of €1,171billions by 2018YE representing a 5% YoY growth over 2017YE, and the Personal Luxury Market, the segment, in which we are focusing, will represent 22% of the global luxury market in 2018, reaching a net worth of €260billion – Table 7.

In the individual product basis, the market share of the Personal Luxury Market is divided in Accessories, which represent 33% of the market, followed by the Apparel Products (CAGR 2010 – 2018: 4%) with 23% and then Beauty and Hard Luxury Products with 22%.

Considering now the Retail segment, it represents 38% and it continues to grow steadily, rising 4% in 2018. The Wholesale segment, which represents 62% of the market, grew only 1%, as the strong performance of speciality stores was partially offset by the disappointing performance of department stores – Figure 15.

The poor performance of the Wholesale market can be explained by online sales jumping by 22% in 2018, increasing at a 24% CAGR 2013-2017, reaching a market share of 10%. McKinsey & Company – The age of digital Darwinism (2018) supports that ~80% are influenced by digital platforms – Figure 16. Overall, it is observable that a continuous and sustainable upward trend of the industry has reinforced its position, as one of the most profitable, stable and attractive industries to invest in, worldwide**.**

Macroeconomic Outlook

According to the IMF World Economic Outlook (2019), the global economy continues to expand but uncertainties start to arise, and the economic momentum has been softening. Political crises such as Brexit, and US and China trade war are considered the main reasons for uncertainty. Even, given all these facts, the IMF forecasts that in global terms the economy will grow but at a weakening pace.

The projection for the global economy for 2019 indicates a forecasted growth of 3.5%. In terms of GDP growth by region, the European Union is expected to grow at a rate of 1.6% in 2019, the USA as a benchmark for the Americas region is expected to experience a growth of 2.3% and in Asia, the continent with the fastest growth in the world and the main engine of global economy mainly because of China, is expected to grow 6.3% – Figure 17.

China has been the main driver for the growth in the Asia economy, in 2018 the Asian continent economy grew 6.5% and the People's Republic of China economy by itself grew 6.6%. China has been one of the most important regions for companies within this industry for the past years. According to Bain & Company (2019), in 2018 the Chinese consumers were the leaders on global luxury purchases with 33% followed by the American consumers with 22% – Figure 18. In 2019, the IMF forecast the economic growth in the region to be of 6.3%, a significant decrease from the growth of 6.6% in the previous year. This decrease is mainly explained by the tension of the trade war between the USA and China, and the needed financial regulatory tightening for the banking sector. The China slowdown is seen as a weakening of the global economy, considering that for over the past 30 years China, on

Table 7 - Luxury Markets Share
Source: Bain & Company (2019)

Luxury Markets	Market Share
Luxury Cars	42%
Personal Luxury Goods	**22%**
Luxury Hospitality	16%
Fine Wine & Spirits	6%
Gourmet Food & Dining	4%
Fine Art	4%
High-End Furniture & Housewares	4%
Other Luxury Markets	2%

Figure 15 - Retail & Wholesale Performance
Source: Bain & Company (2019)

Figure 16 - Online Influence
Source: McKinsey & Company (2018)

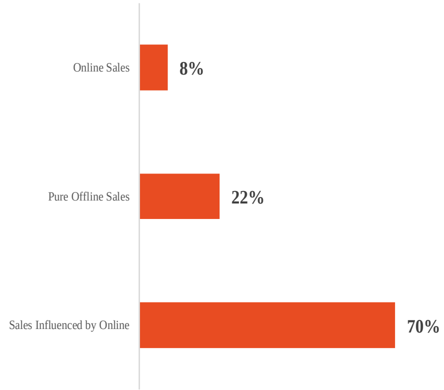
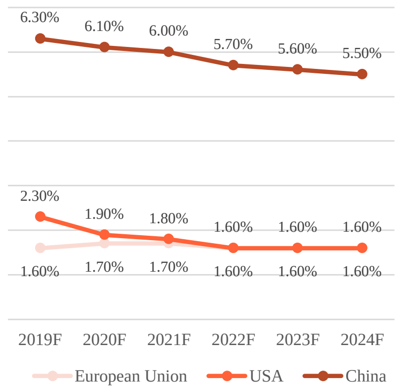


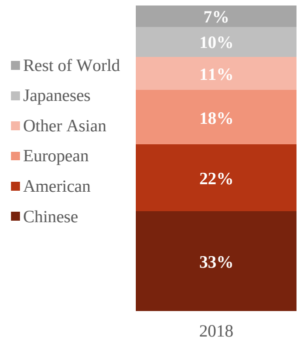
Figure 17 - GDP Growth Forecast
Source: IMF (2019)



average, has grown 6% YoY boosting not only the continental economy growth as well as the worldwide economy.

Additionally, India is starting to be a focal growth region for industry as well. The rapid growth of the middle-class linked with the overall strong economic fundaments is making this new region appealing to industry. According to the McKinsey & Company - The State of Fashion 2019 (2019), the region is expected to have a GDP CAGR of 8% from 2018 to 2022, outperforming all the other countries in the continent, and that India's apparel market will be worth $59.3 billion as of 2022, which will make it the sixth largest market in the world right behind Germany and the United Kingdom with $63.1 and 65.1$ worth respectively.

Figure 18 - Personal Luxury Consumers Purchases
Source: Bain & Company (2019)

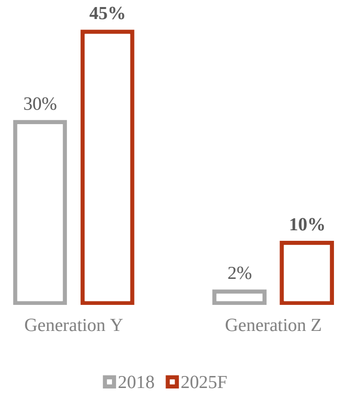


Key Drivers

Revenues

In the past, Hugo Boss has been a company that targeted the business class but now with the two brand segmentation implemented the company has a broader target consumer base, especially with the Hugo brand focus on the tendencies of generation Y and Z – Figure 19.

Figure 19 - Generation Y & Z Market Share
Source: Bain & Company (2019)



As the market raises in sophistication, the integration of different retail channels allied with the evident development of the digital luxury experience in e-commerce platforms and the retail evolution through the opening of single-brand stores, where the customers can enjoy the luxury experience, are also driving the sustained growth in the industry.

In this specific distribution channel, Hugo Boss AG believes in huge growth potential by that the group plans to quadruple its online sales by 2022. For that to happen, the group has focused on differentiation with the Boss and Hugo independent online stores. In addition, the group has been developing partnerships in this market primarily with well-known online retailer Zalando.

In a more macroeconomic outlook, worldwide revenues are mostly driven by the high-end sustained growth of demand in key regions, reflecting the rise in consumption. Also, the rise in the number of high-net-worth-individuals, which is directly related with the growing net household affluence, will have a positive impact in this industry – Table 8 and Figure 20.

Table 8 - HNWI Population & Wealth
Source: Capgemini (2019)

	HNWI Popultation	HNWI Wealth
	Millions	*$ Trillions*
2014	14.7	56.4
2015	15.4	58.7
2016	16.5	63.5
2017	18.1	70.2
2018	18.0	68.1

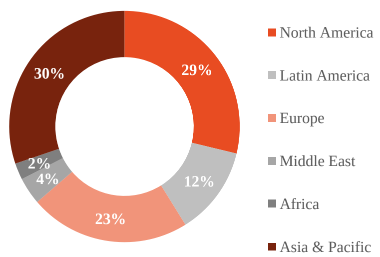
Costs

Luxury is an innovation-driven industry, thus for any competitor to stay on the market, it must not only be able to innovate and produce ground-breaking, artistic and modern products but also continuously expect to improve its distribution and logistics channels.

Additionally, luxury brands must focus on strengthening its image and effectively communicate its value to consumers, which implies great marketing-related expenditures, in order to improve, or at least maintain, its brand equity and consumer perception.

Considering now the outstanding development of the online channel, physical stores need to reinvent themselves and become an experience rather than a store where the consumer simply goes to and buys some products. Thus, the focus should be on delivering a distinctive and emotional luxury experience that younger generations, local consumers and tourists search for. To achieve this, companies are now investing enormously not only in physical stores but also in recruiting young talents with higher specialization on the requirements needed to win in this luxury era.

Figure 20 - HNWI 2018 Global Distribution
Source: Capgemini (2019)



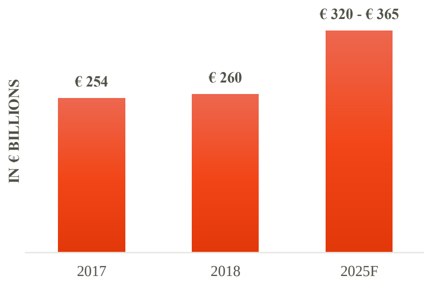
Demand & Supply

Supplying with Higher Quality and in Higher Quantity

Understanding supply-forces are essential to the rise of luxury brands. A better-educated company regarding its consumer will have better-designed operations, hence it will create a more efficient supply chain process and potentially reduce costs. Moreover, global sourcing, lower transportation costs, decreasing trade barriers and rising standards of offshore manufacturing is allowing the production of appealing and high-quality products.

Thus, although Hugo Boss AG charges reasonably high prices, new-luxury products can generate high levels of profitability and growth. Accordingly, increasing supply is proportional to the increasing demand, although slightly inferior given the exclusivity of luxury goods.

Figure 21 - Personal Luxury Market Value Source: Bain & Company (2019)

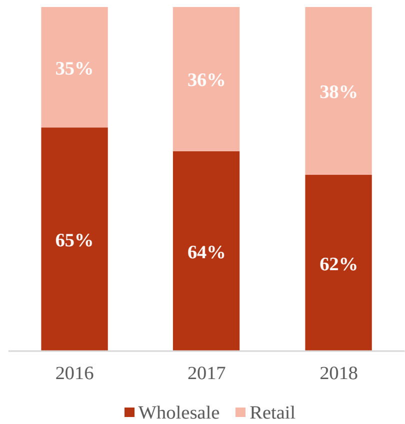


High-end Demand Outlook

According to Bain & Company (2019), the personal luxury goods market outperformed the overall market growing 6% in 2018. This industry estimated value is of €260 billion, an increase of €6 billion in value when compared to 2017. In addition, the report also mentioned that a CAGR from 3% up to 5% is expected to the global personnel luxury market by 2025 – Figure 21.

An overall YoY improvement, with a solid performance justified by the increasing demographics and solid GDP growth, is reflected in the rise of the purchasing power of the middle class, especially in emerging markets. Such behavior leads to an increase in consumer demand for luxury goods. Moreover, one can also argue that the growth in demand in this industry is also explained by the development in the communication systems, which have greatly influenced market trends, such as luxury brands collaborations and the boom in the streetwear fashion statement.

Figure 22 - Retail & Wholesale Market Share Source: Bain & Company (2019)

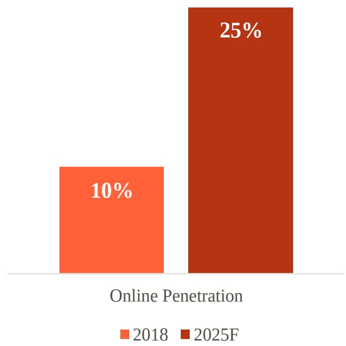


Demand by Segments 2018

The Retail segment has been gaining market share over the Wholesale segment on the overall Personal Luxury Market over the past years – Figure 22. According to Bain & Company, in 2014 the Retail Sales accounted for 32% of market share whereas in 2018 the value was of 38%. From 2014 to 2018 the CAGR of this segment was 9%, with a YoY growth of 4% when comparing to 2017. The observed market share increase of this segment is mainly explained by the companies' seeking control on the customer experience that they offer.

Wholesale, even with the facts overstated, is still the segment with the higher concentration, 62% in 2018. From 2017 to 2018 the YoY growth of the Wholesale market was only 1% and the CAGR from 2014 to 2018 was 4%. Evidence supports that the Wholesale growth of only 1% is mainly explained by the impact of the Online Channel in the Specialty Stores.

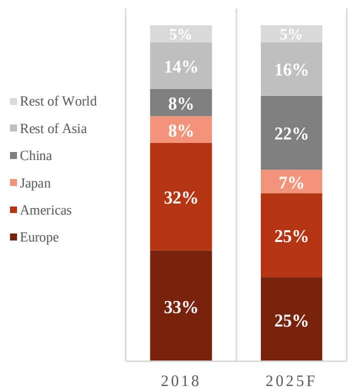
Figure 23 - Online Market Penetration Source: Bain & Company (2019)



The Online Channel remains the momentum of fast-growing with a growth of 22%. Overall this channel reached a market share of 10% within the Personal Luxury Market. This channel, that in 2014 was worth €11.3billion, presents a CAGR of 24% up to 2018 leading to a value of €26.8billion. The online influence on the overall sales of this market has reached a staggering 80% according to McKinsey & Company – The age of digital Darwinism (2018).

According to Luxury Goods Worldwide Market Study from Bain & Company (2019), the Personal Luxury Market is expected to grow until 2025 at 3% up to 5% annually. The report defines the key factors that will shape the future of this industry as following:

Figure 24 - Personal Luxury Market by Region
Source: Bain & Company (2019)



- Digital Transformation, with the expectation that the Online channel will reach a penetration of 25% – Figure 23;
- The development of the Chinese Market which is expected to keep up with the current momentum reaching a market share of 22% – Figure 24;
- Retail Consolidation, improving the consumer experience on physical stores is also expected to shape the future;
- The growth of a new consumer base with the Generation Y and Z expected to reach a market penetration of 55% by 2025.

Demand by Region 2018

In Europe, the monetary policies adopted by the ECB lead to a falling Euro when compared with other currencies – Figure 25 and 26, which could indicate a possible increase in consumption. However, we should contemplate the low growth of only 1% from 2017 to 2018 for the European Personal Luxury Goods Market. Nevertheless the region still holds a larger share in the market.

In the Americas, the U.S. is still the world largest luxury goods market in gross revenue, and it is expected to remain this way. U.S luxury market benefitted from an increase in income for local consumers – Figure 27. In terms of tourism, the purchasing power was weaker considering the strong dollar. Overall the market in this continent experiences a growth in sales of 5%.

Across Asia (excluding Japan), the region was able to comply with the forecast and the growth in sales was of 9% in 2018. China was the main driver for the overall growth of the personal luxury goods industry in 2018. In the same period the Chinese consumers accounted for 33% of global luxury purchases and the forecast point to a market share of 46% by 2025. Brands are learning how to cater to local consumers, taking advantage of the Daigou Effect and the increasing and robust presence of e-commerce. Chinese luxury consumers represent a high proportion of the global market and the uprising of a more affluent and fashion-savvy middle class is reinforcing the will for luxury consumption in the region. Japan, a fashion capital, saw a growth of 6% in sales especially increased by the consumption of tourism in the main cities of the country, Tokyo, Kyoto and Osaka.

Main Competitors

Hugo Boss AG with the new brand segmentation will have a broader focus on the luxury apparel market. With Boss the group will focus on the high-end of the market, whereas for Hugo the focus will be on the lower-end of the luxury market. By doing so, the group will have competitors in both spheres of the market.

The main competitive companies of Hugo Boss AG are Ralph Lauren, PVH Corp especially with Tommy Hilfiger and Calvin Klein, Lacoste, and Hackett London.

Competitive Position

To better understand the strategic position in the Personal Luxury Goods Industry of Hugo Boss AG, a Porter's Five Forces Analysis – Figure 28 and SWOT Analysis – Table 9 was performed.

Porter's Five Forces Analysis

Bargaining Power of Suppliers - Low

Most companies in this industry rely on third parties to produce the raw materials used to manufacture new products. There are some producers of raw materials and the prices are not expected to rise substantially.

Companies also rely on many independent non-exclusive manufacturers to produce a clear majority of their products. The high number of alternative manufacturers and the low wages paid to the employees makes the bargaining power of suppliers low.

Bargaining Power of Buyers – Medium

The final consumer does hold some bargaining power: given the opportunity to choose between the wide variety of stores and brands, which could be described as poorly differentiated from each other in products and prices, the consumer does have the opportunity to choose the one that fits their preferences the best. This problem is aggravated by the online market where a buyer can see a vast number of products in a matter of minutes.

Figure 25 - EURUSD (Jan18 to Sep19)
Source: Investing

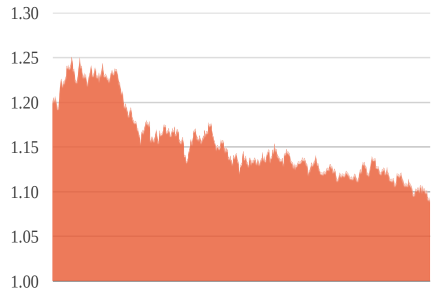


Figure 26 - EURCNY (Jan18 to Sep19)
Source: Investing

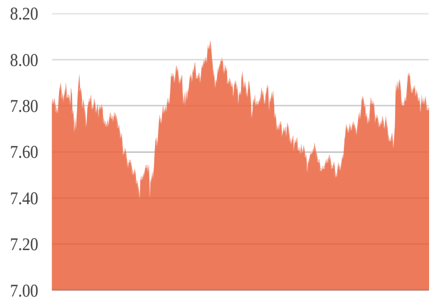


Figure 27 - USA Personal Income
Source: Statista

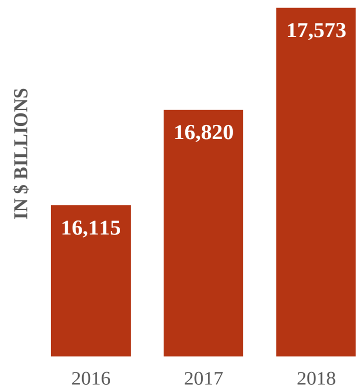


Figure 28 - Porter's Five Forces
Source: Author

Regardless, taking a closer look towards the company perspective, its inventories are sold in an exclusive manner, to only a few selected large wholesale customers, making them dependent on these arrangements.

Threat of Substitutes Products – Medium/Low

There is no substitute product to replace the function of dress, but the consumers of this industry buy luxury apparel clothing for fashion, trend, status and appearance and not for their basic needs. This means that the existent "substitutes" are nothing but the competition. On the one hand, big players have a strong reputation and brand recognition that creates loyalty among their clients. On the other, the companies follow the same fashion trends and so, offer similar products.

Rivalry Among Existing Companies – High

The industry is very competitive as a result of its fashion orientation, where it holds a mix of large and small producers and a wide diversity of retailing choices. Companies compete worldwide with numerous designers, brands, manufacturers and retailers of apparels, shoes, hard luxury, beauty products and jewelry.

Also, the rise of the online shopping results into more companies entering this industry given the low barriers to entry and increased level of transparency in pricing products and product comparison.

Threat of New Entrants - Medium

There are not many real barriers to enter, but there is little space for innovation in this industry and when it does occur, new companies might not have the immediate recognition to endure its presence in the industry, being this the reason why few companies have joined in recently with success.

That said, new firms might find unique ways to enter the industry through marketing, especially online, as was the case of Farfetch. Therefore, if new companies are able to effectively promote and popularize their products, while creating a brand reputation with a clear positioning in the market, it is fair to conclude that there is a reasonable level of threat of new entrants.

Table 9 - SWOT Analysis
Source: Author

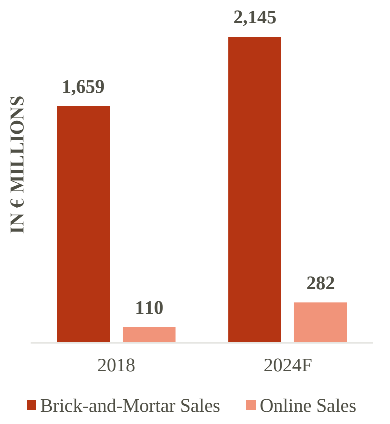
S Strenghts	Brand recognition & loyalty; Broad product portfolio; Wide distribution network; Engagement in CSR activities.	**W** Weaknesses	Over-dependence on designers; High costs of advertising.
O Opportunities	Shift of consumer preferences; New markets (Online & China); Partnerships (specially on the online segment); Growth in Net Worth Individuals;	**T** Threats	Increase in labor wages; Counterfeiting; Political Instability; Rise in raw materials price.

5. Investment Summary

Following the in-deep analysis we issue a BUY recommendation with a target price for 2020YE of €66 leading to an upside potential of ~27% when compared with that of 30th Septemb er 2019, with medium risk.

The developments of the Own Retail Segment in both the Brick-and-Mortar and Online channel will be the main driver to boost revenues in the near future – Figure 29. Furthermore, the company's past developments in the emerging markets of Asia/Pacific and the macroeconomic outlook for the area are expected to rise sales volume. For the forecasted period, we expect a Sales CAGR of 4.7% from 2018 to 2024. The Retail segment will be the

Figure 29 - Retail Sales Development
Source: Company Data & Author



main driver of this expected growth reaching an estimated sales value of €2,427 million by 2024YE, representing a CAGR 5.4% from 2018 until 2024.

The company's EBITDA Margin is 17.2% by 2024YE, up +0.2% comparing to 2018YE. The EBITDA Margin increase is mainly contained by the expected increase of SMA expenses (Sales Marketing, and Advertising expenses) especially in the expenses generated by the Group's Own Retail Business – Appendix 9.

It is predictable that the company will continue to examine its Dividend Policy with a payout ratio ranging from 60% up to 80%. For the forecasted period, we assume that the payout ratio will be of ~74.5% which represents the median payout ratio for the past decade – Figure 30.

Valuation Methods

The final price target of €66.02 was computed using the Free Cash Flow to the Firm (FCFF) from the DCF Models as the primary valuation method. In addition, we used other methodologies such as Dividend Discount Model (DDM) and Relative Valuation and even within the DCF models we computed the price target using the Adjusted Present Value Method – Table 10.

Investments Risks

Based on the risk analysis performed, we classified Hugo Boss AG has a medium risk investment. This classification is supported by the changing market structure that will be experienced in the near future, with the online taking the leading role, and the intense competition. The investor should be aware that Hugo Boss AG is subject to numerous risks that cannot be controlled by the Management and Supervisory Board. We performed several sensitivity analysis to have a clearer understating of the impact of changing inputs in the models. The investors can find a more in-depth analysis of the inherent risks in section 8 - Investment Risks.

6. Valuation

The equity value per share was estimated using the DCF through the FCFF as the primary method to reach the price target of €66.02 at 2020YE. We used this method because it represents the total amount of cash flow from operations available for distribution after taxes, D&A, CAPEX and ΔNWC. Since we are expecting higher Capex values for the forecasted period, and the increase of both days of sales outstanding and payables outstanding that will affect the Net Working Capital, we believe that this model will provide a more accurate price target estimate.

In addition to this method, we also estimated the price target using the other DCF methods, the APV, the DDM and Relative Valuation using the Multiple Approach.

The FCFF Method accounts with 5 forecasted periods from 2020F up to 2024F plus the perpetuity estimate. The main drivers of the method are the following:

Sales

Due to the complexity of the business, a Bottom-Up Approach was used to forecast the sales. Henceforth, the sales were distributed by their segments, Retail, Wholesale and Licensing.

Starting with the Own Retail Segment, we were able to divide it into two main categories, Brick-and-Mortar Store Sales and Online Sales. Here, Brick-and-Mortar Stores include Freestanding Stores, Shop-in-Shops and Outlets, by 2018YE this type of sales represented 59.3% of the Groups Sales. Aditionally, we analyzed the past data from the company statements and defined the potential new openings per year for each store type to estimate the number of total stores for the forecasted period – Table 11 (Note that Shop-in-Shops is presented with a negative number, meaning that in this case we expect store closing on YoY basis). Then, using the Selling Space per Store average from 2014YE to 2018YE we

Figure 30 – Dividend & DPS Development
Source: Author

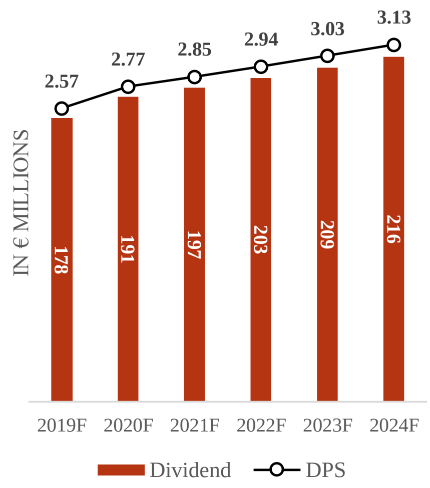


Table 10 - Price Target (Various Methods)
Source: Author

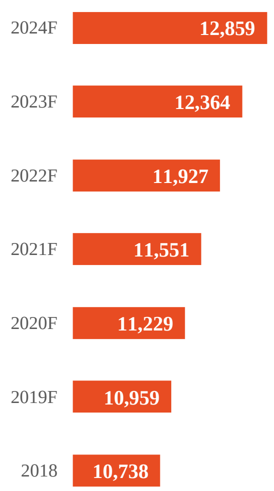
Price on 30st of September 2019
49.15

Price on 31st of December 2020		
Model	*Price 2020YE*	*Annualized Return*
FCFF	**66.02**	**26.63%**
APV	62.48	21.16%
DDM	74.04	38.79%
EV/Sales	67.87	29.46%
P/E	61.35	19.40%

Table 11 - Brick-and-Mortar Openings
Source: Author

	Retail Stores	New Openings	Basis
Brick-and-Mortar	Free Standing Stores	8	YoY
	Shop-in-Shops	-6	YoY
	Outlets	13	YoY

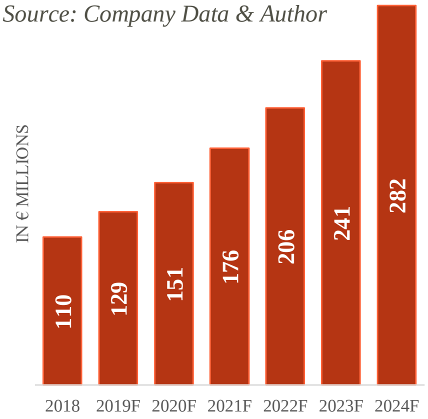
Figure 31 - Selling Space Productivity
Source: Company Data & Author



estimated the Selling Space for the forecasted period. The Selling Space Productivity (or sales per square meter) in 2018YE presented a YoY growth of ~1.7% and we believe that the company strategy of reaching a YoY increase of 4% will only be attainable by 2024YE – Figure 31. More information can be found in Appendix 8.

For the Online Channel within the Groups' Own Retail Segment we expect a growth of 17% YoY from 2018 onwards, in line with the overall expectations for the online luxury market – Figure 32.

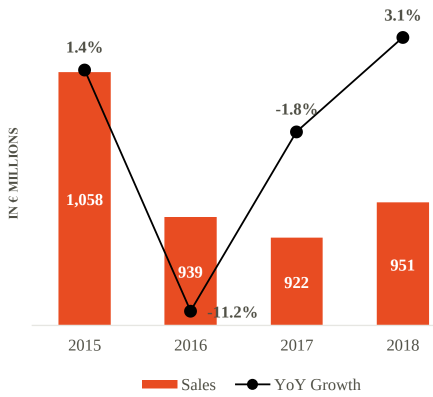
Figure 32 - Online Sales
Source: Company Data & Author



For the Wholesale Segment, due to the lack of information we were not able to breakdown its composition. The wholesale segment had a CAGR decrease from 2014 to 2018 of 2%. This underperformance is mainly explained by the fact the company has, on the past few years, taken over selling spaces from wholesales partners and made a more careful selection of the wholesale's partners for the Boss brand.

In 2018, the Wholesale returned to growth rates on an YoY analysis, namely an increase of 3% – Figure 33, where the region that grew more was the Asia & Pacific with a 10% YoY growth. This is a clear indicator that the restructuring of these segments is reaching its end and accordingly we can conclude that in an overall manner this segment will move in the direction of the overall market. Based on these assumptions, for the forecasted period we used an YoY increase of 3%, that corresponds to the expectations of growth from 3% to 5% for Personal Luxury Apparel Market presented by Bain & Company – Luxury Goods Worldwide Market Study (2019). We are using the lower spectrum of the growth rate to control political and economic instabilities that are arising, as mentioned in the Industry Overview.

Figure 33 - Wholesale Past Performance
Source: Company Data

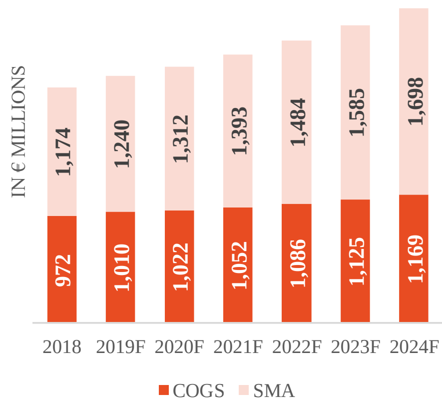


Regarding Licensing segment, we expect that in the future it will continue to have a similar impact on the Group Sales as in previous year, ~3%. Thus, we used an YoY growth rate of ~7.4% (the average of the previous years, 2014 to 2018) to ensure the previous statement.

Main Costs

Under the Income Statement the main costs are COGS and SMA expenses, both representing 35% and 42% of Sales in 2018YE. Under our analysis COGS are expected to have a slight decrease in their weight on Sales, 150bps YoY, justified by the development on the groups own production planned. When considering SMA expenses, 78% of these represent expenses on the Group's Own Retail Business in 2018YE, and are expected to have YoY growth of 200bps, leading to an SMA weight of 46% of Sales. This rise is explained by the company's development in the groups own retail segment, with the opening of new stores – Figure 34.

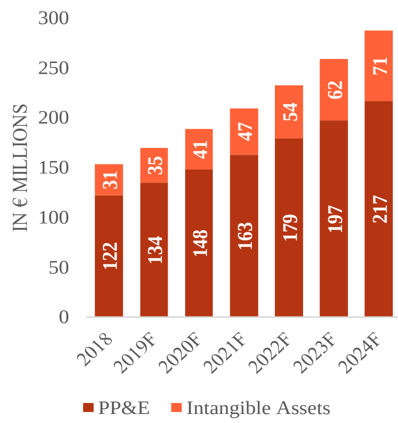
Figure 34 - COGS & SMA Expenses
Source: Company Data & Author



CAPEX and D&A.

To drive the necessary digital transformation, Hugo Boss AG is expected to enhance its investments in Intangible Assets, especially in software, licensing and other rights departments. CAPEX for the Intangible Assets is expected to grow 15% YoY reaching a value of €71 million by 2024YE (2018YE: €31 million). For PP&E, the CAPEX is expected to grow at 10% YoY, one of the justifications being the expected new stores' openings – Figure 35.

Figure 35 - CAPEX by Item
Source: Company Data & Author

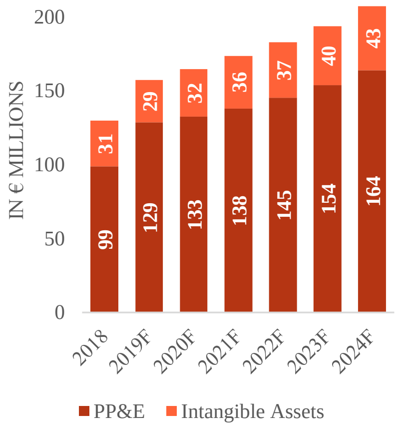


Depreciation and Amortization of both the Intangible Assets and Property Plant & Equipment follow the information provided by the company on their useful life. The D&A is 10% and 12% of the gross value of the Intangible Assets and PP&E, respectively – Figure 36.

Net Working Capital

The Net Working Capital is expected to increase in the long run. This growth is mainly explained by the increase in Sales combined with an expected increase in the days of sales outstanding. By 2024YE it is expected that the DSO will be close to the industry's median of 43 days, according to Thomson Reuters. Thus, in 2024 the accounts receivables are expected to be €430 million, representing an increase of €215 million when comparing with 2018YE. This effect is partially reversed by an increase in days of payables outstanding from 111days to the industry's median of 117days, according to Thomson Reuters.

Figure 36 - D&A by Item
Source: Company Data & Author



WAAC

To discount the operational cash flow, we used the WACC Method. At a risk-free rate of 1.2% correspondent to the montly average yields from on a 10y German Bund. The country risk premium is 0% as expected since the German Equity Market is a mature one, and for the market risk premium a rate of 5.70% was considered. The unlevered Beta of 0.74 based on Aswath Damodaran's calculations as of January 2019, led to a levered beta of around 0.83 for the forecasted period. The tax rate used was of 29.5% – Table 12.

The cost of equity was estimated using the Capital Asset Pricing Model (CAPM) leading to a R_E ranging from 5.91% up to 5.94%. The cost of debt is assumed to remain unchanged at 5.04% – Figure 37. This value is the 5y average implied interest rate paid on long-term debt. Even tought 5.04% is a significant number it represents the implied cost of debt on the company statements and goes in line with the company's financial statement notes on the Annual Report.

Table 12 - WACC Inputs
Source: Author

WACC Assumptions		
T_C	29.50%	*Company Data*
R_F	1.21%	*Monthly Avg 10y Yield on German Bunds*
R_D	5.04%	*Company Data*
β_U	0.74	*Aswath Damodaran*
MRP	5.70%	*Pablo Hernandez*
CRP	0.00%	*Aswath Damodaran*

Terminal Growth Rate

The terminal growth rate used (g) was of 2% achieved by the Stable Growth Model, which in perpetuity we believe that it is in line with the company's strategy and the overall industry. In perpetuity we expect a Reinvestment Rate of 16% and ROA of ~12% – Appendix 12.

Market-Based Approach – Multiples Valuation

To further complement the DCF model, one enterprise-value multiple and one price multiple were used: EV/SALES; P/E RATIO. The EV/SALES multiple leads to a price target of €67.87 to 2020YE meaning a BUY recommendation with an upside potential of 29.5%. On the other hand, the price multiple, Price-to-Earnings, leads to a similar target price, in this case, it is €61.35 with an upside potential of 19.4% still a BUY recommendation – Appendix 15 and 16.

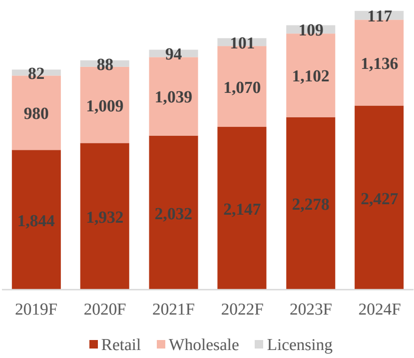
Figure 37 - Equity and Debt Weights
Source: Author

Nevertheless, note that from our point of view this is the least reliable valuation model since we are comparing firms, which are the best representation of direct peers of Hugo Boss AG, but each company follows its guidelines and by using the ratios approach we are disregarding some key variables such as company risks and growth potential. Moreover, the multiples valuations are known to follow the market attitude, hence an undervalued market to its peers can lead to an undervalued price target for our company.

Dividend Discount Model

The dividend discount model was used to strengthen the price target obtained by the previous models. This model leads to a price target of €74.04 by 2020YE, an upside potential of 38.79% when compared with the share price of €49.15 in 30th September 2019 - Appendix 14.

Figure 38 - Sales (In € Million)
Source: Author



The difference between both models, DDM and the FCFF, can be explained by the new capital expenditures required in the future as well as the changes in net working capital. As mentioned before, these are the main reasons why we choose the FCFF method.

7. Financial Analysis

Profitability

The Groups' Total Sales presented a CAGR of 2.1% from 2014 to 2018, with the Own Retail segment to be the main driver of such growth with a CAGR of 4.7% - Appendix 8. For the forecasted period, total sales are expected to reach a CAGR of ~4.7% from 2018 to 2024. Once again, the main driver on this expected growth will be the company's own retail business with the Brick-and-Mortar and Online Sales – Figure 38. By 2024YE it is expected a gross profit margin of 68%, with an increase of 300bps when comparing to 2018YE.

EBITDA and EBIT Margin are expected to remain with the same range as of 2018YE. Growth in these factors was contained by the expected growth of the SMA expenses. SMA over sales will pass from 41.97% in 2018YE to 46.13% in 2024YE, this rise is explained by the projected increase in investment for the retail segment.

ROE will decrease ~3% when comparing with 2018YE, reaching a value of 20.9% by 2024YE. This decrease is explained by the increase of Retained Earnings motivated by the lower Payout Ratio of ~74.5% in 2024YE (2018YE: 78.95%). From 2014 to 2018 the ROE has been developing in the same direction – Figure 39.

On the other hand, we have the EPS developing upwards since 2016YE and reaching an estimated value of €4.21 by 2024YE.

Efficiency

Account Receivables have been impacted by the new strategy of the company focusing on its own retail, leading to the takeover of selling spaces from their wholesale clients and a more careful selection of their business partners. For that same reason, the DSO experienced the same effect, in 2014YE it were 36 days and in 2018YE only 28 days. Thus, we expect the Wholesale market to pick up in the future, resulting in an increase of around 3 days per year of the DSO, leading to a value of 43 days by 2024YE corresponding to the Industry's Median, according to Thomson Reuters.

For the DPO linked to Accounts Payable, we expect an increase of 1day per year reaching a value of 116 days in 2024YE, once again alongside with the Industry's Median, according to Thomson Reuters. In this case, the DPOs have been rising being in 2014YE were at 107 days and in 2018YE at 111 days.

Fixed Assets and Intangible Assets Turnover are likely to experience a slight decline in the forecasted period, passing from 7.18 and 15.12 in 2018YE to 6.51 and 13.28 in 2024YE, respectively. This decrease is justified by the likely increases on capital expenditures of both and PP&E and Intangible Assets in the long-run, in order to enable the company to drive the digital transformation that was targeted as a strategic goal by Hugo Boss AG in the long-run – Figure 40.

Liquidity

Hugo Boss AG has maintained a stable liquidity profile, the Current and Quick Ratio ranging from 1.80 to 1.60 and 0.70 to 0.91, respectively. The Quick Ratio is affected by the weight of inventories in current assets, around 50%, nevertheless the company's ratio is in line with the industry (industry median: 0.93). For the forecasted period we do not expect significant changes in both metrics – Figure 41.

On the other hand, the cash ratio is expected to experience a downward effect, with a decrease of 0.10, leading to a 2024YE ratio of 0.12. This decrease is justified by the CAPEX requirements expected in the near future for the group that will affect negatively the cash & cash equivalents item – Figure 41.

Solvency

The Long-Term and Short-Term Debt Ratios decreased by ~0.9% from 2014YE to 2018YE, reaching a value of 9.5%. For the forecasted period we expect a similar slightly minor effect leading to a value of 8.9%. The Long-Term Ratio tells us that the company has been restricting its long-term financing needs since the value of 9.2% at 2014YE was substantial

Figure 39 - ROE & Payout Ratio
Source: Company Data

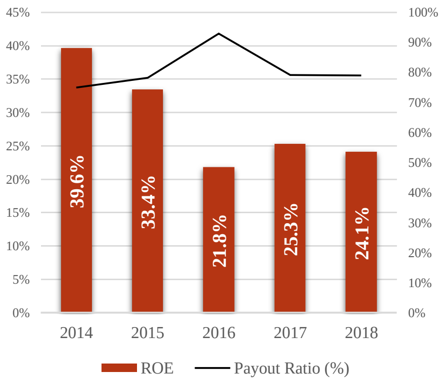


Figure 40 - Fixed & Intangibles Assets Turnover
Source: Company Data & Author

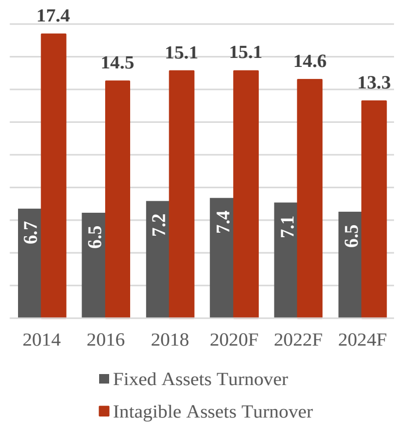


Figure 41 - Liquidity Ratios
Source: Company Data & Author

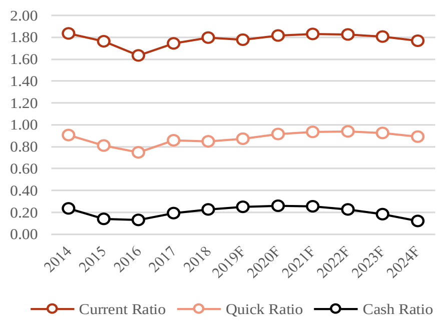


Figure 42 - Debt Ratio & Total Assets
Source: Company Data & Author

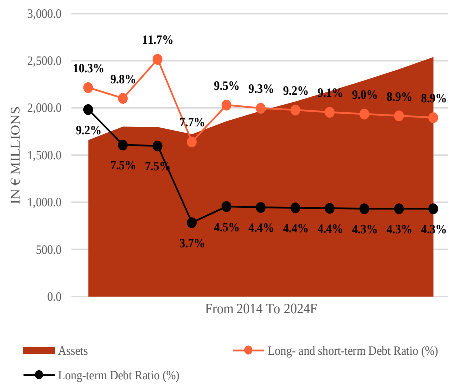
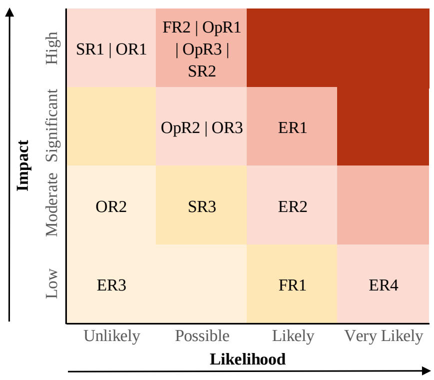


Figure 43 - Risk Matrix
Source: Author



reduced to around 4% by 2017YE, value that is also observed in 2018YE. From 2019YE to 2024YE our expectations are that this value will be stable around the values of 2018YE with a slight decrease in decimal points.

Overall, both of these decreases on solvency ratios are explained by the observed increase in Total Assets, from €1,859 million at 2018YE to €2,540 million at 2024YE – Figure 42.

8. Investment Risks

The investor should be aware that Hugo Boss AG is subjected to several risks that cannot be controlled such as external, strategic, financial, operative and organizational forces – Figure 43.

ER1 → External Risks | Global Economy

Given the slight weakening in the global economic growth and further escalation of political problems, as the Chinese vs American trade war, the 2019 fiscal year is seen with some uncertainties about the global economy. An economic downturn always impacts demand, bringing a decline in the premium and luxury goods net sales and earnings growths.

ER2 → External Risks | Political and Social

The consumer behavior can change given to political and/or social changes and by that the company is highly exposed to this type of risks. In America and Asia, the main tension is regarding the Chinese vs American trade war that in the worst case scenario can lead to a noticeably negative effect on the global economy. In Europe the uncertainties are more diverse with the ongoing threat of terrorist attacks, the fiscal instability of Italy and the rise of anti-European political groups in member states, such as Brexit.

Looking further into the Brexit situation, Great Britain is a core market for Hugo Boss AG. In 2018 from 62% of the group sales accomplished in Europe, 13% were on this market being only surpassed by Germany with a 15% share. In the event of a "no-deal" Brexit companies and consumers will lose confidence in both Great Britain and the European market in general that will lead to a negative impact on the overall European economy. Thus, Hugo Boss AG faces risks related with short-term merchandise bottlenecks in Great Britain, for example, the delay of products arrivals can become the main risk regarding the seasonal products as it can lead to losses on sales opportunities, which will create short-term increases in inventories. The group has developed a cross-department that is closely monitoring the exit process and reporting directly to the group risk management department.

ER3 → External Risks | Environmental and health risks

Being the group represented around the globe, the value chain is exposed to environmental and health risk that may arise from environmental and natural catastrophes as well as climate changes. Water scarcity is one main risk in this area. In the long-term, water scarcity can negatively impact cotton farming production, which may reduce the availability of this important raw material. Hugo Boss AG has a central emergency management system to counter promptly and appropriately to any environmental, natural and health risks.

ER4 → External Risks | Product Piracy & Competitive Environment

Immaterial risk, product piracy and the competitive environment that is shared in the premium and luxury goods industry are also considered by Hugo Boss AG as an external risk.

SR1 → Strategic Risks | Collection and Industry

Deviations in fashion and lifestyle trends can arise as a risk for the company, especially nowadays where companies must rapidly adapt to consumer's desired changes. Proximity to customers is key to understand the market. In fact, a change is observed in the targeted segments for the premium and luxury goods industry in the past few years as casual and athletics clothes have become the trend of fashion. Therefore, apparel companies were forced to move in this direction.

SR2 → Strategic Risks | Brand and Corporate Image

The economic success of luxury companies depends highly on Brand and Corporate Image, furthermore in this industry considering that image is critical. Inadequate distribution channels, un-even pricing and discount policy, inadequate quality of products or services in the groups own retail's, unappealing marketing campaigns and lack of social awareness are some factors that could lead to the loss of brand and corporate image, which can bring really challenging times for any luxury corporation.

SR3 → Strategic Risks | Investments Risk

Investment risk is related to the group's own retail stores, modernization, expansion and digitalization. For critical investments, the group has developed a central investment controlling system that analyses and supports the planning of these investments.

FR1 → Financial Risks | Currency Exposure

Given the nature of the worldwide activities of Hugo Boss AG, the company is exposed to currency risks. Operationally, these risks arise due to the fact that these products are sourced and sold in different currencies. Financially they result from loans in foreign currencies to finance the group companies as well as receivables and liabilities held in different currencies worldwide. The Group's central Treasury department is responsible for managing this currency risk-taking hedging position on the financial market with products such as forward contracts, swaps and plain vanilla options.

FR2 → Financial Risks | Taxes

Once again, given the worldwide nature of the business, the group is exposed to a large variety of tax laws and regulations. The impact of changes in this topic is high given the effect that it can take into tax payments, deferred taxes and liabilities. The group's tax department is responsible for monitoring this topic and in addition the group also attends to local experts such as lawyers and tax advisories in some geographic regions to be fully informed.

OpR1 → Operational Risks | Suppliers and Sourcing Markets

Overdependence on suppliers and producers could lead to disturbances in the group's supply chain and therefore have a significant impact on sales. To fight this excessive dependence on suppliers and producers, the group closely monitors and evaluates the relationship with the aim to identify risks at the earliest possible opportunity.

The company largest production site is located in Turkey and given the ongoing political uncertainties and other types of risks related to this geographic area such as terrorism or natural disasters, the group has implemented measures to cover this risk as insurance and emergency plans, if needed, to transfer the production to other producers rapidly.

The increase of wages and raw materials, such as cotton, wool and leather, also represent a risk to the companies since they can lead to an unexpected increase in cost that can narrow the margin of certain products.

OpR2 → Operational Risks | Quality & Logistics

Hugo Boss AG is seen as a high-end quality producer and when sourcing materials and producers there is a possible quality risk arising. Quality controls are implemented in both the group's own production sites and in the partners, which are also closely and regularly monitored.

Logistics risk arises given the rapid change in consumer trends and the group decided that the storage of raw materials, as well as finished goods, would be in a few chosen locations. The largest warehouse is located in the group's headquarters in Metzingen, so the need for a good logistics management is required to rapidly transfer the products or raw materials worldwide.

OpR3 → Operational Risks | Sales and Distribution

In the wholesale segment, the main risks arise from possible over-dependency. To control this, the group created a control mechanism considering the following key indicators: order intakes, sales and supply rates to avoid this potential risk. Additionally, from this segments another type of risk related to bad debt also arise given the possible insolvency of business partners. Again, to control this risk the group has establish some intern regulation such as credit rating of partners that are used to establish some credit limits on the wholesale partners.

On the group's own retails, the risk arises from the inventory management. Downturns in demand and wrong estimations of sell rates can lead to an impact on inventory turnover. In addition, the longer the items are in storage the higher the potential reduction of their market value, leading to impairments. Impairments are recognized accordingly with the net realizable value principle and are monitored on a monthly basis.

OR1 → Organizational Risks | IT

Nowadays, operations and processes are strongly dependent on IT infrastructures. Failures in IT infrastructures can lead to significant and unexpected losses. Furthermore, cyber-attacks can also lead to losses, especially when confidential information is the main target of such attacks, and the leak of this type of information can damage the brand image to business partners. To prevent this possible risk on the forward periods the group implemented SIEM (Security Information and Event Management) System in 2018.

OR2 → Organizational Risks | Personnel

This type of risk is related to recruitments blocks, personnel excessive turnover and shortage of specialists. The group tends to fight these risks with a forward-looking human resources policy which included development and training as well as the continuous progress in its performance-based compensation system providing a healthy work-life balance to its employees.

OR3 → Organizational Risks | Governance & Compliance

Code of conduct and compliance rules are applicable to all employees of the group. The main risk arising from this area is the data protection laws. The group deals with this risk with a strong system that not only complies with the data protection laws but also enforces the group security and data privacy controls. The compliance department is responsible to educate all employees in the matters of data protection as well as the code of conduct.

Figure 44 - Recommendation Scheme
Source: BPI

Level of Risk	High Risk	Medium Risk	Low Risk
SELL	0%≤	**-5%≤**	-10%≤
REDUCE	>0% & ≤10%	**>-5% & ≤5%**	>-10% & ≤0%
HOLD/NEUTRAL	>10% & ≤20%	**>5% & ≤15%**	>0% & ≤10%
BUY	>20% & ≤45%	**>15% & ≤30%**	>10% & ≤20%
STRONG BUY	>45%	**>30%**	>20%

Risk to Price Target

In order to assess the impact of the main investments' risks to the price target, we performed several risk analyses using both Sensitivity Analysis as well as Monte Carlo Simulation. The risks embrace the main inputs on the DCF model as well as other core drivers on the company performance.

Sensitivity Analysis

Starting with the main inputs of DCF, the Terminal Growth Rate (g) and the Perpetuity WACC, a decrease on the terminal growth rate to 1.25% would generate a different recommendation, in this case a Hold recommendation and the same is applied to a rate of 6.3% on the Perpetuity WACC, analyzing the variables independently. As expected, both these inputs generate significant changes to the price target, being the worst case a price target of €48.62.

Table 13 - Sensitivity Analysis - g & WACC
Source: Author
Note: The percentage represents the annualized return comparing to Sep19 and the color represents the recommendation in accordance with Figure 44.

	g - Terminal Growth Rate							
	66.02	**1.25%**	**1.50%**	**1.75%**	**2.00%**	**2.25%**	**2.50%**	**2.75%**
Perpetuity WACC	6.3%	48.62	50.59	52.77	55.21	57.94	61.02	64.54
		-0.86%	*2.34%*	*5.85%*	*9.74%*	*14.06%*	*18.90%*	*24.35%*
	6.1%	50.95	53.15	55.61	58.36	61.48	65.03	69.11
		2.92%	*6.46%*	*10.38%*	*14.73%*	*19.61%*	*25.10%*	*31.34%*
	5.8%	53.53	56.01	58.79	61.94	65.52	69.64	74.43
		7.07%	*11.02%*	*15.41%*	*20.32%*	*25.86%*	*32.15%*	*39.37%*
	5.6%	56.42	59.23	62.41	**66.02**	70.18	75.02	80.70
		11.67%	*16.10%*	*21.05%*	*26.63%*	*32.97%*	*40.25%*	*48.69%*
	5.3%	59.67	62.88	66.53	70.73	75.61	81.35	88.20
		16.79%	*21.78%*	*27.41%*	*33.80%*	*41.14%*	*49.64%*	*59.64%*
	5.1%	63.35	67.04	71.28	76.21	82.00	88.92	97.31
		22.52%	*28.19%*	*34.64%*	*42.03%*	*50.60%*	*60.68%*	*72.71%*
	4.8%	67.56	71.84	76.81	82.66	89.64	98.12	108.62
		28.98%	*35.48%*	*42.93%*	*51.58%*	*61.73%*	*73.85%*	*88.59%*

To have further insight on the importance of the WACC inputs on the final price we decided to study the sensitivity over the Unlevered Beta and Market Risk Premium. Following the previous analysis, we understood that a higher WACC will generate a lower price target. Considering Table 14, we see that the price target is not very sensitive to the variables independently but an increase in both the MRP and β_U could lead to a different recommendation.

Table 14 - Sensitivity Analysis - MRP & Unlevered Beta
Source: Author
Note: The percentage represents the annualized return comparing to Sep19 and the colour represents the recommendation in accordance with Figure 44.

	Market Risk Premium - MRP							
	66.02	**5.10%**	**5.30%**	**5.50%**	**5.70%**	**5.90%**	**6.10%**	**6.30%**
Unlevered Beta - βU	0.71	78.06	74.80	71.81	69.06	66.52	64.16	61.98
		44.79%	*39.93%*	*35.44%*	*31.27%*	*27.39%*	*23.77%*	*20.38%*
	0.72	76.86	73.66	70.72	68.02	65.52	63.21	61.06
		43.00%	*38.21%*	*33.79%*	*29.68%*	*25.86%*	*22.29%*	*18.95%*
	0.73	75.69	72.55	69.66	67.00	64.55	62.28	60.16
		41.26%	*36.55%*	*32.18%*	*28.13%*	*24.36%*	*20.85%*	*17.56%*
	0.74	74.56	71.47	68.63	**66.02**	63.61	61.38	59.30
		39.57%	*34.92%*	*30.62%*	*26.63%*	*22.91%*	*19.45%*	*16.20%*
	0.75	73.47	70.43	67.64	65.07	62.70	60.50	58.46
		37.93%	*33.34%*	*29.10%*	*25.17%*	*21.50%*	*18.08%*	*14.88%*
	0.76	72.40	69.42	66.67	64.15	61.81	59.65	57.64
		36.33%	*31.81%*	*27.63%*	*23.75%*	*20.13%*	*16.76%*	*13.60%*
	0.77	71.37	68.43	65.74	63.25	60.96	58.83	56.85
		34.77%	*30.31%*	*26.19%*	*22.36%*	*18.79%*	*15.47%*	*12.35%*

In accordance to the risk matrix, for the performance indicators we decided to analyze the Sales, COGS, and Tax Effects.

For the sales we decided to study the impact on the Group's Own Retail, by analyzing the net store new openings, selling space productivity and growth on the online channel. Note that, as mentioned before, we defined a number of new openings per type of store but here we studied the net new openings impact on the price target.

Table 15 - Sensitivity Analysis - Net New Openings | Sales per SQM | Online Channel Impact
Source: Author
Note: The percentage represents the annualized return comparing to Sep19 and the colour represents the recommendation in accordance with Figure 44.

Δ New Openings	5.00	7.00	9.00	11.00	13.00	15.00	17.00	19.00	21.00
Price Target	58.68	60.15	61.62	63.09	64.55	**66.02**	67.49	68.96	70.42
Annualized Return	15.23%	17.53%	19.83%	22.10%	24.37%	26.63%	28.88%	31.11%	33.34%
Sales Per SQM Impact	-0.1%	0.0%	0.1%	0.2%	0.3%	0.4%	0.5%	0.6%	0.7%
Price Target	62.48	63.17	63.87	64.58	65.28	**66.02**	66.92	67.54	67.93
Annualized Return	21.16%	22.24%	23.32%	24.41%	25.49%	26.63%	28.00%	28.95%	29.55%
Online Channel Impact	2%	5%	8%	11%	14%	17%	20%	23%	26%
Price Target	62.76	63.31	63.91	64.56	65.26	**66.02**	66.84	67.71	68.64
Annualized Return	21.60%	22.45%	23.38%	24.38%	25.46%	26.63%	27.88%	29.21%	30.62%

As one can see, the price target is not very sensitive to changes in key metrics of the Retail Segment. Only an increase of 4 or 6 stores and a 9% increase in the YoY growth rate of the Online channel will lead to a different recommendation, in both cases a Strong Buy recommendation.

COGS, as mentioned before, are expected to decrease by 150bps YoY, given the importance of this item under the company's operation we decided to perform the following sensitivity analysis.

Table 16 - Sensitivity Analysis - COGS YoY Impact
Source: Author
Note: The percentage represents the annualized return comparing to Sep19 and the colour represents the recommendation in accordance with Figure 44.

COGS YoY Impact	0.3%	0.5%	0.7%	0.9%	1.1%	1.3%	1.5%	1.7%	1.9%
Price Target	46.32	49.68	53.00	56.30	59.57	62.81	**66.02**	69.21	72.36
Annualized Return	-4.64%	0.85%	6.22%	11.48%	16.63%	21.68%	26.63%	31.49%	36.27%

As it can be seen, the COGS impacts the valuation of the company, therefore an unexpected increase on raw materials represents a significant risk for the company and in this case the valuation itself.

One of the identified risks for global companies is the potential rise in taxes due to new laws and regulations. For our price target, since we are using the FCFF method the investor should understand that an increase on Taxes will have two main effects on our valuation, a decrease on FCFF due to impact on EBIT, and a decrease on WACC. A +/-150bps impact was applied on the tax rate expected for Hugo Boss AG:

Table 17 - Sensitivity Analysis - Tax Rate Impact
Source: Author
Note: The percentage represents the annualized return comparing to Sep19 and the colour represents the recommendation in accordance with Figure 44.

Tax Rate Impact	26.5%	28.0%	29.5%	31.0%	32.5%	34.0%	35.5%	37.0%	38.5%
Price Target	70.14	68.09	**66.02**	63.93	61.83	59.70	57.54	55.37	53.17
Annualized Return	32.91%	29.79%	26.63%	23.42%	20.15%	16.83%	13.44%	10.00%	6.50%

The effects are notorious, nevertheless only an increase of 6% or higher would generate an annualized return of 13.4% or less which will generate a different recommendation in accordance with our risk level for the company.

Other sensitivity analysis can be found in Appendix 17.

Monte Carlo Simulation

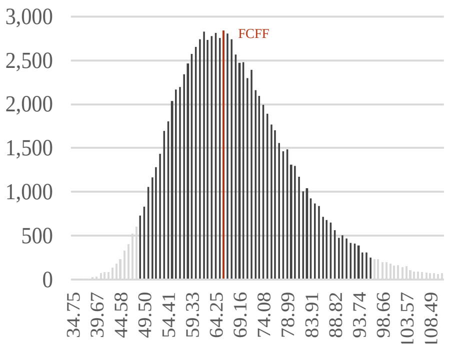
To complement the previous analysis, we performed a Monte Carlo Simulation using the Oracle Crystal Ball Software where we covered 100,000 simulations. The variables analyzed were the MRP and Unlevered Beta from the WACC inputs, the growth rate in perpetuity, the tax rate and COGS YoY impact (the 1.5% YoY improvement expected in term of Sales) – Table 18.

The output indicated a mean for the price target of €67.91 by 2020YE representing a 29.5% upside potential leading to a recommendation in line with ours. More information in Appendix 18.

Table 18 - Monte Carlo Inputs
Source: Author

Variable	**Mean**	**Std. Dev.**
MRP	5.70%	0.57%
βU	0.74	0.07
Tax Rate	29.50%	2.95%
g	2.00%	0.20%
COGS YoY Impact	1.50%	0.15%

Figure 45 - Monte Carlo Price Distribution
Source: Author



Appendices

Appendix 1: Statement of Financial Position

Balance Sheet	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	2019F	2020F	2021F	2022F	2023F	2024F
Current Assets	**1,003**	**1,036**	**1,047**	**1,058**	**1,172**	**1,247**	**1,315**	**1,381**	**1,439**	**1,487**	**1,526**
Inventories	507	560	568	537	618	634	653	675	699	726	756
Account Receivables	251	240	228	208	214	242	273	306	343	384	430
Taxes Receivable	9	22	43	49	39	34	36	37	39	41	44
Financial Assets	24	30	28	39	32	32	34	35	37	39	41
Other Current Assets	83	105	96	109	123	127	132	136	141	146	151
Cash and Equivalents	129	81	83	116	147	176	188	191	179	150	104
Noncurrent Assets	**659**	**764**	**752**	**662**	**686**	**724**	**753**	**795**	**852**	**925**	**1,014**
Intangible Assets	148	183	185	183	185	192	200	211	227	249	277
Property Plant & Equipment	383	440	416	366	389	395	411	435	469	512	565
Deferred Tax Assets (Long-Term)	100	115	125	94	90	112	117	122	128	135	142
Financial Assets	20	22	21	18	19	22	22	23	25	26	27
Other Noncurrent Assets	8	4	4	1	3	3	3	3	3	3	3
Total Assets	**1,662**	**1,800**	**1,799**	**1,720**	**1,859**	**1,971**	**2,069**	**2,177**	**2,291**	**2,412**	**2,540**
Current Liabilities	**546**	**588**	**640**	**607**	**653**	**702**	**725**	**755**	**787**	**823**	**862**
Current Provisions	116	103	149	107	98	125	132	139	148	158	168
Current Financial Liabilities	18	41	77	69	93	97	100	104	107	111	115
Income Taxes Payables	60	46	27	32	44	43	45	47	49	51	54
Accounts Payables	255	272	272	286	295	309	316	328	342	357	374
Other Current Liabilities	97	125	115	112	123	127	132	137	141	146	151
Non Current Liabilities	**272**	**257**	**271**	**199**	**225**	**227**	**237**	**248**	**260**	**273**	**288**
Non Current Provisions	71	72	79	70	69	77	80	84	88	93	98
Non Current Financial Liabilities (Long-Term Debt)	154	135	134	63	83	87	91	95	100	105	110
Deferred Tax Liabilities	10	8	9	11	13	11	11	12	12	13	14
Other Noncurrent Liabilities	38	42	49	55	61	52	55	57	60	63	66
Total Liabilities	**818**	**845**	**911**	**805**	**878**	**929**	**962**	**1,002**	**1,047**	**1,096**	**1,150**
Stockholder Equity	**844**	**956**	**888**	**915**	**981**	**1,042**	**1,107**	**1,174**	**1,244**	**1,316**	**1,390**
Common Stock (Subscribed Capital)	70	70	70	70	70	70	70	70	70	70	70
Treasury Stock	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)
Capital Reserves	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Retained Earnings	816	928	858	887	953	1,013	1,079	1,146	1,216	1,288	1,362
Minority/Non Controlling Interest	(0.5)	(0.5)	1.0	(0.4)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)
Total Equity + Liabilities	**1,662**	**1,800**	**1,799**	**1,720**	**1,859**	**1,971**	**2,069**	**2,177**	**2,291**	**2,412**	**2,540**

Note: The values presented in this appendix are in € Million.

Appendix 2: Income Statement

Income Statement	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	2019F	2020F	2021F	2022F	2023F	2024F
Sales	**2,573**	**2,808**	**2,686**	**2,733**	**2,796**	**2,906**	**3,028**	**3,166**	**3,319**	**3,490**	**3,680**
Retail	**1,472**	**1,688**	**1,678**	**1,732**	**1,769**	**1,844**	**1,932**	**2,032**	**2,147**	**2,278**	**2,427**
Brick and Mortar Stores Sales	**1,404**	**1,605**	**1,603**	**1,653**	**1,659**	**1,716**	**1,781**	**1,856**	**1,941**	**2,037**	**2,145**
Online Sales	**68**	**83**	**76**	**79**	**110**	**129**	**151**	**176**	**206**	**241**	**282**
Wholesale	**1,043**	**1,058**	**939**	**922**	**951**	**980**	**1,009**	**1,039**	**1,070**	**1,102**	**1,136**
Licensing	**58**	**62**	**69**	**79**	**76**	**82**	**88**	**94**	**101**	**109**	**117**
Cost of Sales *(COGS)*	(873)	(956)	(915)	(924)	(972)	(1,010)	(1,022)	(1,052)	(1,086)	(1,125)	(1,169)
Gross Profit	**1,699**	**1,853**	**1,777**	**1,808**	**1,824**	**1,895**	**2,007**	**2,114**	**2,233**	**2,365**	**2,511**
Operating Expenses	**(1,250)**	**(1,405)**	**(1,514)**	**(1,467)**	**(1,477)**	**(1,547)**	**(1,633)**	**(1,728)**	**(1,835)**	**(1,954)**	**(2,087)**
Sales/Marketing/Advertising Expenses	(995)	(1,137)	(1,175)	(1,195)	(1,174)	(1,240)	(1,312)	(1,393)	(1,484)	(1,585)	(1,698)
General and Administrative Expenses	(236)	(264)	(272)	(280)	(290)	(287)	(299)	(312)	(328)	(344)	(363)
Other Operating Income and Expenses	(19)	(4)	(67)	8	(13)	(21)	(21)	(22)	(23)	(25)	(26)
Operating Income *(EBIT)*	**449**	**448**	**264**	**341**	**347**	**348**	**374**	**386**	**398**	**411**	**424**
Non-Operating Expenses	**(12)**	**(28)**	**(8)**	**(10)**	**(10)**	**(10)**	**(10)**	**(11)**	**(11)**	**(12)**	**(13)**
Interest Expense	(6)	(7)	(4)	(4)	(5)	(4)	(4)	(5)	(5)	(5)	(5)
Interest Income	2	1	2	2	2	2	2	2	2	2	2
Other Financial Income and Expenses	(7)	(22)	(6)	(7)	(7)	(8)	(8)	(8)	(9)	(9)	(10)
Income Before Taxes *(EBT)*	**437**	**420**	**256**	**331**	**337**	**338**	**364**	**375**	**386**	**399**	**412**
Income Taxes	(103)	(101)	(62)	(100)	(100)	(100)	(107)	(111)	(114)	(118)	(121)
Net Income	**334**	**319**	**194**	**231**	**236**	**238**	**256**	**264**	**272**	**281**	**290**

Note: The values presented in this appendix are in € Million.

Appendix 3: Cash Flow Statement

Cash Flow Statement	2019F	2020F	2021F	2022F	2023F	2024F
Operating Activities	**382**	**397**	**415**	**429**	**445**	**464**
+ EBIT	348	374	386	398	411	424
+ D&A	157	165	174	183	194	207
- Income Tax	(100)	(107)	(111)	(114)	(118)	(121)
- ΔNWC	1	(36)	(35)	(39)	(43)	(48)
+ ΔOther Operating Items	(24)	1	1	1	2	2
+ Δ Noncurrent Provisions	8	3	4	4	5	5
+ ΔDeferred Taxes	(24)	(4)	(5)	(5)	(6)	(7)
+ ΔOther Noncurrent Itens	(8)	2	2	3	3	3
Investment Activities	**(179)**	**(197)**	**(218)**	**(242)**	**(269)**	**(299)**
- CAPEX	(170)	(189)	(209)	(233)	(259)	(288)
+/- Other Investing Itens	(9)	(8)	(9)	(10)	(10)	(11)
Interest Income	*2*	*2*	*2*	*2*	*2*	*2*
Other Financial Income and Expenses	*(8)*	*(8)*	*(8)*	*(9)*	*(9)*	*(10)*
- ΔFinancial Assets	*(3)*	*(2)*	*(3)*	*(3)*	*(3)*	*(4)*
Financing Activities	**(174)**	**(188)**	**(194)**	**(199)**	**(206)**	**(212)**
- Interest paid	(4)	(4)	(5)	(5)	(5)	(5)
- Dividends	(178)	(191)	(197)	(203)	(209)	(216)
- ΔDebt	8	7	8	8	9	9
Change in Cash	**30**	**12**	**3**	**(12)**	**(29)**	**(47)**
Cash and Cash Equivalents (Beg. of Period)	147	176	188	191	179	150
Cash and Cash Equivalents (End of Period)	176	188	191	179	150	104

Note: The values presented in this appendix are in € Million.

Appendix 4: Key Financial Ratios

Key Financial Ratios	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	2019F	2020F	2021F	2022F	2023F	2024F
Liquidity Ratios											
Current Ratio (x)	1.84	1.76	1.64	1.74	1.80	1.78	1.82	1.83	1.83	1.81	1.77
Quick Ratio (x)	0.91	0.81	0.75	0.86	0.85	0.87	0.91	0.94	0.94	0.92	0.89
Cash Ratio (x)	0.24	0.14	0.13	0.19	0.22	0.25	0.26	0.25	0.23	0.18	0.12
Efficiency Ratios											
Total Assets Turnover (x)	1.55	1.56	1.49	1.59	1.50	1.47	1.46	1.45	1.45	1.45	1.45
Accounts Receivables Turnover (x)	10.27	11.72	11.77	13.16	13.06	12.01	11.11	10.34	9.67	9.08	8.56
Collection Period (days)	35.54	31.15	31.00	27.73	27.95	30.40	32.85	35.30	37.75	40.20	42.65
Inventory Turnover (x)	1.72	1.71	1.61	1.72	1.57	1.59	1.56	1.56	1.55	1.55	1.54
Days in Inventory (days)	212.26	213.64	226.47	212.00	231.99	229.21	233.41	234.12	234.83	235.54	236.26
Payables Turnover (x)	10.09	10.34	9.89	9.56	9.48	9.39	9.59	9.65	9.71	9.78	9.84
Payables Period (days)	106.66	103.67	108.35	112.85	110.79	111.79	112.79	113.79	114.79	115.79	116.79
Operating Cycle (days)	247.81	244.78	257.47	239.73	259.94	259.61	266.26	269.42	272.58	275.75	278.91
Cash Cycle (days)	141.15	141.11	149.12	126.87	149.15	147.82	153.47	155.63	157.79	159.96	162.13
Fixed Assets Turnover	6.71	6.39	6.45	7.47	7.18	7.35	7.37	7.27	7.07	6.81	6.51
Intagible Assets Turnover	17.38	15.38	14.49	14.94	15.12	15.17	15.14	14.99	14.60	14.01	13.28
Profitability Ratios											
Gross Profit Margin (%)	66.0%	66.0%	66.2%	66.2%	65.2%	65.2%	66.3%	66.8%	67.3%	67.8%	68.2%
EBITDA Margin (%)	22.2%	21.0%	16.1%	18.3%	17.0%	17.4%	17.8%	17.7%	17.5%	17.3%	17.2%
EBIT Margin (%)	17.4%	15.9%	9.8%	12.5%	12.4%	12.0%	12.4%	12.2%	12.0%	11.8%	11.5%
Net Profit Margin (%)	13.0%	11.4%	7.2%	8.5%	8.4%	8.2%	8.5%	8.3%	8.2%	8.1%	7.9%
ROA (%)	20.1%	17.7%	10.8%	13.4%	12.7%	12.1%	12.4%	12.1%	11.9%	11.7%	11.4%
ROCE (%)	40.2%	36.9%	22.7%	30.6%	28.8%	27.4%	27.8%	27.1%	26.5%	25.9%	25.3%
ROE (%)	39.6%	33.4%	21.8%	25.3%	24.1%	22.9%	23.2%	22.5%	21.9%	21.4%	20.9%
EPS (x)	4.85	4.63	2.81	3.35	3.42	3.46	3.71	3.83	3.95	4.07	4.21
SMA/Sale (%)	-38.7%	-40.5%	-43.8%	-43.7%	-42.0%	-42.7%	-43.3%	-44.0%	-44.7%	-45.4%	-46.1%
Payout Ratio (%)	74.9%	78.2%	92.9%	79.1%	78.9%	74.5%	74.5%	74.5%	74.5%	74.5%	74.5%
Solvency Ratios											
Long- and short-term Debt Ratio (%)	10.3%	9.8%	11.7%	7.7%	9.5%	9.3%	9.2%	9.1%	9.0%	8.9%	8.9%
Long-term Debt Ratio (%)	9.2%	7.5%	7.5%	3.7%	4.5%	4.4%	4.4%	4.4%	4.3%	4.3%	4.3%
Debt to Equity Ratio (x)	0.20	0.18	0.24	0.14	0.18	0.18	0.17	0.17	0.17	0.16	0.16
Equity Multiplier (x)	1.97	1.88	2.03	1.88	1.90	1.89	1.87	1.85	1.84	1.83	1.83
Debt to EBITDA	0.30	0.30	0.49	0.26	0.37	0.36	0.35	0.36	0.36	0.36	0.36
Interest Coverage Ratio (x)	38.77	16.14	33.49	34.94	34.21	34.97	35.74	35.26	34.73	34.13	33.46

Appendix 5: Common-Size Statement of Financial Position

Common-Size Balance Sheet	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	2019F	2020F	2021F	2022F	2023F	2024F
Current Assets	**39.0%**	**36.9%**	**39.0%**	**38.7%**	**41.9%**	**42.9%**	**43.4%**	**43.6%**	**43.3%**	**42.6%**	**41.5%**
Inventories	19.7%	19.9%	21.1%	19.6%	22.1%	21.8%	21.6%	21.3%	21.1%	20.8%	20.6%
Accounts Receivable	9.7%	8.5%	8.5%	7.6%	7.7%	8.3%	9.0%	9.7%	10.3%	11.0%	11.7%
Taxes Receivable	0.4%	0.8%	1.6%	1.8%	1.4%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
Financial Assets	0.9%	1.1%	1.1%	1.4%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
Other Current Assets	3.2%	3.7%	3.6%	4.0%	4.4%	4.4%	4.3%	4.3%	4.2%	4.2%	4.1%
Cash and Equivalents	5.0%	2.9%	3.1%	4.2%	5.2%	6.1%	6.2%	6.0%	5.4%	4.3%	2.8%
Noncurrent Assets	**25.6%**	**27.2%**	**28.0%**	**24.2%**	**24.5%**	**24.9%**	**24.9%**	**25.1%**	**25.7%**	**26.5%**	**27.6%**
Intangible Assets	5.8%	6.5%	6.9%	6.7%	6.6%	6.6%	6.6%	6.7%	6.9%	7.1%	7.5%
Property Plant & Equipment	14.9%	15.7%	15.5%	13.4%	13.9%	13.6%	13.6%	13.8%	14.1%	14.7%	15.4%
Deferred Tax Assets (Long-Term)	3.9%	4.1%	4.6%	3.5%	3.2%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%
Financial Assets	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%
Other Noncurrent Assets	0.3%	0.1%	0.2%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Total Assets	**64.6%**	**64.1%**	**67.0%**	**62.9%**	**66.5%**	**67.8%**	**68.3%**	**68.8%**	**69.0%**	**69.1%**	**69.0%**
Current Liabilities	**21.2%**	**20.9%**	**23.8%**	**22.2%**	**23.3%**	**24.1%**	**23.9%**	**23.8%**	**23.7%**	**23.6%**	**23.4%**
Current Provisions	4.5%	3.7%	5.5%	3.9%	3.5%	4.3%	4.3%	4.4%	4.5%	4.5%	4.6%
Current Financial Liabilities	0.7%	1.5%	2.9%	2.5%	3.3%	3.3%	3.3%	3.3%	3.2%	3.2%	3.1%
Income Taxes Payables	2.3%	1.7%	1.0%	1.2%	1.6%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Accounts Payables	9.9%	9.7%	10.1%	10.5%	10.6%	10.6%	10.4%	10.4%	10.3%	10.2%	10.2%
Other Current Liabilities	3.8%	4.5%	4.3%	4.1%	4.4%	4.4%	4.4%	4.3%	4.3%	4.2%	4.1%
Non Current Liabilities	**10.6%**	**9.2%**	**10.1%**	**7.3%**	**8.1%**	**7.8%**	**7.8%**	**7.8%**	**7.8%**	**7.8%**	**7.8%**
Non Current Provisions	2.7%	2.6%	2.9%	2.6%	2.5%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%
Non Current Financial Liabilities (Long-Term Debt)	6.0%	4.8%	5.0%	2.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Deferred Tax Liabilities	0.4%	0.3%	0.3%	0.4%	0.5%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Other Noncurrent Liabilities	1.5%	1.5%	1.8%	2.0%	2.2%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
Total Liabilities	**31.8%**	**30.1%**	**33.9%**	**29.5%**	**31.4%**	**32.0%**	**31.7%**	**31.7%**	**31.5%**	**31.4%**	**31.3%**
Stockholder Equity	**32.8%**	**34.0%**	**33.0%**	**33.5%**	**35.1%**	**35.8%**	**36.6%**	**37.1%**	**37.5%**	**37.7%**	**37.8%**
Common Stock (Subscribed Capital)	2.7%	2.5%	2.6%	2.6%	2.5%	2.4%	2.3%	2.2%	2.1%	2.0%	1.9%
Treasury Stock	-1.6%	-1.5%	-1.6%	-1.6%	-1.5%	-1.5%	-1.4%	-1.3%	-1.3%	-1.2%	-1.2%
Capital Reserves	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Retained Earnings	31.7%	33.0%	31.9%	32.4%	34.1%	34.9%	35.6%	36.2%	36.6%	36.9%	37.0%
Minority/Non Controlling Interest	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Equity + Liabilities	**64.6%**	**64.1%**	**67.0%**	**62.9%**	**66.5%**	**67.8%**	**68.3%**	**68.8%**	**69.0%**	**69.1%**	**69.0%**

Appendix 6: Common-Size Income Statement

Common-Size Income Statement	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	2019F	2020F	2021F	2022F	2023F	2024F
Sales	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Retail	**57.2%**	**60.1%**	**62.5%**	**63.4%**	**63.3%**	**63.5%**	**63.8%**	**64.2%**	**64.7%**	**65.3%**	**66.0%**
Brick and Mortar Stores Sales	**54.6%**	**57.2%**	**59.7%**	**60.5%**	**59.3%**	**59.0%**	**58.8%**	**58.6%**	**58.5%**	**58.4%**	**58.3%**
Online Sales	**2.6%**	**2.9%**	**2.8%**	**2.9%**	**3.9%**	**4.4%**	**5.0%**	**5.6%**	**6.2%**	**6.9%**	**7.7%**
Wholesale	**40.5%**	**37.7%**	**35.0%**	**33.7%**	**34.0%**	**33.7%**	**33.3%**	**32.8%**	**32.3%**	**31.6%**	**30.9%**
Licensing	**2.2%**	**2.2%**	**2.6%**	**2.9%**	**2.7%**	**2.8%**	**2.9%**	**3.0%**	**3.1%**	**3.1%**	**3.2%**
Cost of Sales (COGS)	-33.9%	-34.0%	-34.1%	-33.8%	-34.8%	-34.8%	-33.7%	-33.2%	-32.7%	-32.2%	-31.8%
Gross Profit	**66.0%**	**66.0%**	**66.2%**	**66.2%**	**65.2%**	**65.2%**	**66.3%**	**66.8%**	**67.3%**	**67.8%**	**68.2%**
Operating Expenses	**-48.6%**	**-50.0%**	**-56.4%**	**-53.7%**	**-52.8%**	**-53.2%**	**-53.9%**	**-54.6%**	**-55.3%**	**-56.0%**	**-56.7%**
Sales/Marketing/Advertising Expenses	-38.7%	-40.5%	-43.8%	-43.7%	-42.0%	-42.7%	-43.3%	-44.0%	-44.7%	-45.4%	-46.1%
General and Administrative Expenses	-9.2%	-9.4%	-10.1%	-10.3%	-10.4%	-9.9%	-9.9%	-9.9%	-9.9%	-9.9%	-9.9%
Other Operating Income and Expenses	-0.8%	-0.2%	-2.5%	0.3%	-0.5%	-0.7%	-0.7%	-0.7%	-0.7%	-0.7%	-0.7%
Operating Income (EBIT)	**17.4%**	**15.9%**	**9.8%**	**12.5%**	**12.4%**	**12.0%**	**12.4%**	**12.2%**	**12.0%**	**11.8%**	**11.5%**
Non-Operating Expenses	**-0.4%**	**-1.0%**	**-0.3%**	**-0.4%**	**-0.4%**	**-0.3%**	**-0.3%**	**-0.3%**	**-0.3%**	**-0.3%**	**-0.3%**
Interest Expense	-0.2%	-0.3%	-0.1%	-0.2%	-0.2%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
Interest Income	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Other Financial Losses	-0.3%	-0.8%	-0.2%	-0.3%	-0.2%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%
Income Before Taxes (EBT)	**17.0%**	**15.0%**	**9.5%**	**12.1%**	**12.0%**	**11.6%**	**12.0%**	**11.8%**	**11.6%**	**11.4%**	**11.2%**
Income Taxes	-4.0%	-3.6%	-2.3%	-3.7%	-3.6%	-3.4%	-3.5%	-3.5%	-3.4%	-3.4%	-3.3%
Net Income	**13.0%**	**11.4%**	**7.2%**	**8.5%**	**8.4%**	**8.2%**	**8.5%**	**8.3%**	**8.2%**	**8.1%**	**7.9%**

Appendix 7: Forecasting Assumptions

- **Statement of Financial Position:**

Balanca Sheet Items	Unit	2019F	2020F	2021F	2022F	2023F	2024F	Description
Assets								
Current Assets								
Inventories	%	21.8%	21.6%	21.3%	21.1%	20.8%	20.5%	In 2018 the inventories percentage in term of sales were at 22%, explained by the underperformance of the HUGO brand in this year (YoY Growth: -6%) that led to an increase in value of ending inventories. We project a YoY decrease of 1.2% leading to decline to the average values observed from 2014 to 2018 of 20.5% of sales by 2024F.
Accounts Receivables	Days	30.4	32.9	35.3	37.8	40.2	42.7	HUGO BOSS AG Statements (Annual Report 2018) "Trade receivables are non-interest-bearing and are generally due between 30 and 90 days." In the long-term we project that DSO will converge to the industry median of 43days, according to Thomson Reuters.
Taxes Receivable	%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	Taxes Receivable have been stable in the previous years in the relation with sales. With that, our projection is based on a 5y average as a percentage of sales.
Financial Assets	%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	Financial Assets have been stable in the previous years in the relation with sales. With that, our projection is based on a 5y average as a percentage of sales.
Other current assets	%	3.6%	3.6%	3.5%	3.5%	3.4%	3.4%	Nominal Value of 2018 with na YoY growth represented by the Global Expected Inflation Rate, according to Statista.
Noncurrent Assets								
PP&E	B/S Value	395	411	435	469	512	565	Obtained using the following formula: PP&ED-1 + CAPEX - D&A
Intangible Assets	B/S Value	192	200	211	227	249	277	Obtained using the following formula: Intagible AssetsD-1 + CAPEX - D&A
Other Noncurrent assets	%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	Other Noncurrent Assets have been stable in the previous years in the relation with sales. With that, our projection is based on a 5y average as a percentage of sales.
Deferred Tax Assets (Long-Term)	%	3.86%	3.86%	3.86%	3.86%	3.86%	3.86%	Deferred Tax Assets (Long-Term) have been stable in the previous years in the relation with sales. With that, our projection is based on a 5y average as a percentage of sales.
Financial Assets	%	0.74%	0.74%	0.74%	0.74%	0.74%	0.74%	Financial Assets have been stable in the previous years in the relation with sales. With that, our projection is based on a 5y average as a percentage of sales.
Liabilities								
Current Liabilities								
Accounts Payable	Days	111.8	112.8	113.8	114.8	115.8	116.8	In the long-term we project that the DPO will converge to the industry median of 116days, according to Thomson Reuters.
Current Provisions	%	8.1%	8.1%	8.1%	8.1%	8.1%	8.1%	Current provisions are mainly to cover personnel expenses (65% at 2018YE), which are recognized under Operating Expenses in the Income Statement. We projected that Current Provision would develop on they 5y average weight on Operating Expenses.
Current Financial Liabilities	%	3.6%	3.6%	3.5%	3.5%	3.4%	3.4%	Nominal Value of 2018 with na YoY growth represented by the Global Expected Inflation Rate, according to Statista.
Income Taxes Payables	%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	Income Tax Payables have been stable in the previous years and by that we projected for the forecast periods we will use the average from 2014 to 2018 % of sales.
Other Current Liabilities	%	3.6%	3.6%	3.5%	3.5%	3.4%	3.4%	Nominal Value of 2018 with na YoY growth represented by the Global Expected Inflation Rate, according to Statista.
Non-Current Liabilities								
Non Current Provisions	%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	Noncurrent Provisions have been stable in the previous years in the relation with sales. With that, our projection is based on a 5y average as a percentage of sales.
Non Current Financial Liabilities (Long-Term Debt)	%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	The company has been decreasing the amount of Long-Term Debt from the previous year with that being we projected that Long-Term Debt will keep the weight of 3% in term of sales presented in 2018.
Deferred Tax Liabilities	%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	Deferred Tax Liabilities have been stable in the previous years in the relation with sales. With that, our projection is based on a 5y average as a percentage of sales.
Other Noncurrent Liabilities	%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	Other Noncurrent Liabilities have been stable in the previous years in the relation with sales. With that, our projection is based on a 5y average as a percentage of sales.
Stockholder Equity								
Common Stock (Subscribed Capital)	B/S Value	70.40	70.40	70.40	70.40	70.40	70.40	Projected to remain unchanged. (Values as of 2018)
Treasury Stock	B/S Value	-42.36	-42.36	-42.36	-42.36	-42.36	-42.36	Projected to remain unchanged. (Values as of 2018)
Capital Reserves	B/S Value	0.40	0.40	0.40	0.40	0.40	0.40	Projected to remain unchanged. (Values as of 2018)
Retained Earnings	B/S Value	1,013	1,079	1,146	1,216	1,288	1,362	Obtained by using the Retained Earnings Formula.
Minority/Non Controlling Interest	B/S Value	-0.30	-0.30	-0.30	-0.30	-0.30	-0.30	Projected to remain unchanged. (Values as of 2018)

- ## Income Statement:

Income Statement Items	Unit	2019F	2020F	2021F	2022F	2023F	2024F	Description
Sales								
Retail								
Brick and Motar Stores	*I/S Value*	*1,716*	*1,781*	*1,856*	*1,941*	*2,037*	*2,145*	*Please see appendix 8*
Online	*%*	*17.0%*	*17.0%*	*17.0%*	*17.0%*	*17.0%*	*17.0%*	*Projected YoY growth on this segment based on the projections for the Online Channel, according to Bain & Company.*
Wholesale	%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	Projected YoY growth on this segment based on the projections for the Personal Luxury Market, according to Bain & Company.
Licensing	%	7.4%	7.4%	7.4%	7.4%	7.4%	7.4%	Projected YoY growth on this segment based on the past perfomance of this segment within Hugo Boss AG.
COGS	%	-34.2%	-33.7%	-33.2%	-32.7%	-32.2%	-31.8%	Projected decrease of 1.5% YoY on the COGS relation to sales justified by the Companys strategies for the future.
Operating Expenses								
Sales/Marketing/Advertising Expenses	%	-42.7%	-43.3%	-44.0%	-44.7%	-45.4%	-46.1%	Projected increase of 2% YoY on the Groups Own Retail Expenses, comprehended in this item, relation to sales justified by the future developments on the Retail Segment.
General and Administrative Expenses	%	-9.9%	-9.9%	-9.9%	-9.9%	-9.9%	-9.9%	General and administrative expenses have been stable in the previous years in the relation with sales. With that, our projection is based on a 5y average as a percentage of sales.
Other Operating Income and Expenses	%	-0.7%	-0.7%	-0.7%	-0.7%	-0.7%	-0.7%	Other operational expenses have been stable in the previous years in the relation with sales. With that, our projection is based on a 5y average as a percentage of sales.
Non Operating Expenses								
Interest Expense	%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	Interest Expense have been stable in the previous years in the relation with Long-Term Debt. With that, our projection is based on a 5y average as a percentage of Long-Term Debt.
Interest Income	%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	Interest Income have been stable in the previous years in the relation with Financial Assets. With that, our projection is based on a 5y average as a percentage of Financial Assets.
Other Financial Income and Expenses	%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	Other Financial Losses have been stable in the previous years in the relation with sales. With that, our projection is based on a 5y median as a percentage of sales.
Others								
Tax Rate	%	29.5%	29.5%	29.5%	29.5%	29.5%	29.5%	HUGO BOSS AG Statements (Annual Report 2018) "At HUGO BOSS AG, the domestic income tax rate comes to 29.5% (2017: 29.5%)."

- ## Cash Flow Statement:

Cash Flow Statement Items	Unit	2019F	2020F	2021F	2022F	2023F	2024F	Description
Operating Activities								
D&A PP&E	%	-11.8%	-11.8%	-11.8%	-11.8%	-11.8%	-11.8%	HUGO BOSS AG Statements (Annual Report 2018) "In terms of property, plant and equipment, (...) and other facilities and operating and office equipment over 2 to 15 years.". By assuming lifetime of 9 years, which represents the average between 2 to 15 the Depreciation rate would be ~12% being this our projection.
D&A Intangible Assets	%	-8.7%	-9.4%	-10.0%	-10.0%	-10.0%	-10.0%	HUGO BOSS AG Statements (Annual Report 2018) " In addition, the line item “Software, licenses and other rights” contains intangible assets (…) with a useful life of 1 to 10 years were included.” By assuming lifetime of 5.5 years, which represents the average between 1 to 10 the Depreciation rate would be 10% since the average rate from to 2014 to 2018 is 7% we project a YoY growth until 2021F.
Investment Activities								
CAPEX								
CAPEX for PP&E	%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	Projected YoY growth on requirments of CAPEX for this Item.
CAPEX for Intangible Assets	%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	Projected YoY growth on requirments of CAPEX for this Item.
Financing Activities								
Payout Ratio	%	74.5%	74.5%	74.5%	74.5%	74.5%	74.5%	HUGO BOSS AG Statements (Annual Report 2018) "To ensure that you will benefit from our Company’s long-term success, we will continue to focus strongly on a sustainable dividend policy in coming years. We intend to continue distributing between 60 and 80 percent of the Group’s net income as dividends to our shareholders annually." We project the Payout Ratio to be the 10y average.

Appendix 8: Sales in-depth analysis

- **Sales from 2014 to 2018 breakdown:**

    - By Segments:

Revenue By Segments	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	CAGR 2014 To 2018
Retail (Brick-and-Mortar + Online)	1,472	1,688	1,678	1,732	1,769	4.70%
Brick and Mortar Stores Sales	1,404	1,605	1,603	1,653	1,659	4.26%
% of Total Sales	*54.6%*	*57.2%*	*59.7%*	*60.5%*	*59.3%*	
Online Sales	68	83	76	79	110	12.86%
% of Total Sales	*2.6%*	*2.9%*	*2.8%*	*2.9%*	*3.9%*	
Wholesale	1,043	1,058	939	922	951	-2.28%
% of Total Sales	*40.5%*	*37.7%*	*35.0%*	*33.7%*	*34.0%*	
Licensing	58	62	69	79	76	7.21%
% of Total Sales	*2.2%*	*2.2%*	*2.6%*	*2.9%*	*2.7%*	
Total Sales	**2,573**	**2,808**	**2,686**	**2,733**	**2,796**	**2.10%**

Note: The values regarding Sales are presented in € Million.

- By Region:

Revenue By Regions	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	CAGR 2014 To 2018
Europe	1,567	1,683	1,660	1,681	1,736	2.59%
% of Total Sales	*60.9%*	*59.9%*	*61.8%*	*61.5%*	*62.1%*	
Americas	587	670	578	577	574	-0.56%
% of Total Sales	*22.8%*	*23.9%*	*21.5%*	*21.1%*	*20.5%*	
Asia & Pacific	361	393	379	396	410	3.23%
% of Total Sales	*14.0%*	*14.0%*	*14.1%*	*14.5%*	*14.7%*	
Licensing	58	62	69	79	76	7.21%
% of Total Sales	*2.2%*	*2.2%*	*2.6%*	*2.9%*	*2.7%*	
Total Sales	**2,573**	**2,808**	**2,686**	**2,733**	**2,796**	**2.10%**

Note: The values regarding Sales are presented in € Million.

- **Retail Analysis:**

Retail Analysis	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Free-Standing Stores	**388**	**430**	**442**	**439**	**442**
Europe	*183*	*183*	*191*	*192*	*199*
Americas	*83*	*92*	*94*	*90*	*89*
Asia & Pacif	*122*	*155*	*157*	*157*	*154*
Shop-in-Shops	**531**	**549**	**533**	**538**	**500**
Europe	*363*	*363*	*354*	*351*	*317*
Americas	*75*	*86*	*89*	*99*	*92*
Asia & Pacif	*93*	*100*	*90*	*88*	*91*
Outlets	**122**	**134**	**149**	**162**	**171**
Europe	*49*	*57*	*63*	*65*	*69*
Americas	*46*	*48*	*49*	*50*	*50*
Asia & Pacif	*27*	*29*	*37*	*47*	*52*
Total Stores	**1,041**	**1,113**	**1,124**	**1,139**	**1,113**
Selling Space	**140,000**	**152,000**	**154,500**	**156,500**	**154,500**
Retail Sales	***1,472,000,000***	***1,688,000,000***	***1,678,000,000***	***1,732,000,000***	***1,769,000,000***
Online Sales	*67,800,000*	*82,600,000*	*75,500,000*	*79,000,000*	*110,000,000*
Brick and Mortar Store Sales	*1,404,200,000*	*1,605,400,000*	*1,602,500,000*	*1,653,000,000*	*1,659,000,000*
Effective Selling Space Productivity	**10,030**	**10,562**	**10,372**	**10,562**	**10,738**
YoY Growth	*n.a.*	*5.30%*	*-1.80%*	*1.83%*	*1.66%*
Average YoY 2015 to 2018	*1.75%*	-	-	-	-
Median YoY 2015 to 2018	*1.75%*	-	-	-	-
Selling Space Per Store	**134**	**137**	**137**	**137**	**139**
YoY Growth	*n.a.*	*1.55%*	*0.65%*	*-0.04%*	*1.03%*
Average Space 2015 to 2018	*136.9*				
Median Median 2015 to 2018	*137.4*				

Note: The values regarding Sales are presented in €.

➢ Net New Openings Analysis

Net New Opennings	2015	2016	2017	2018	Average	Median
Free-Standing Stores	**42**	**12**	**(3)**	**3**	**14**	**8**
Europe	*0*	*8*	*1*	*7*	*4*	*4*
Americas	*9*	*2*	*(4)*	*(1)*	*2*	*1*
Asia & Pacif	*33*	*2*	*0*	*(3)*	*8*	*1*
Shop-in-Shops	**18**	**(16)**	**5**	**(38)**	**(8)**	**(6)**
Europe	*0*	*(9)*	*(3)*	*(34)*	*(12)*	*(6)*
Americas	*11*	*3*	*10*	*(7)*	*4*	*7*
Asia & Pacif	*7*	*(10)*	*(2)*	*3*	*(1)*	*1*
Outlets	**12**	**15**	**13**	**9**	**12**	**13**
Europe	*8*	*6*	*2*	*4*	*5*	*5*
Americas	*2*	*1*	*1*	*0*	*1*	*1*
Asia & Pacif	*2*	*8*	*10*	*5*	*6*	*7*
Total	**72**	**11**	**15**	**(26)**	**18**	**13**

Note: This values represent the new opennings per story type and region.

For the forecast period, the new openings per store type are projected using the observed median for the period from 2015 to 2018.

- **Sales Forecast**

Sales Forecast	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	2019F	2020F	2021F	2022F	2023F	2024F
Retail Breakdown											
Freestanding stores	388	430	442	439	442	450	458	466	474	482	490
Shop-in-Shops	531	549	533	538	500	494	488	482	476	470	464
Outlets	122	134	149	162	171	184	197	210	223	236	249
Total Retail Stores	**1,041**	**1,113**	**1,124**	**1,139**	**1,113**	**1,128**	**1,143**	**1,158**	**1,173**	**1,188**	**1,203**
Net New Openings		*72*	*11*	*15*	*(26)*	*15*	*15*	*15*	*15*	*15*	*15*
Selling Space											
Selling Space	140,000	152,000	154,500	156,500	154,500	156,554	158,608	160,663	162,717	164,771	166,825
Selling Space/Store	134	137	137	137	139	139	139	139	139	139	139
Selling Space Productivity	10,030	10,562	10,372	10,562	10,738	10,959	11,229	11,551	11,927	12,364	12,859
YoY Growth	n.a	5.30%	-1.80%	1.83%	1.66%	2.06%	2.46%	2.86%	3.26%	3.66%	4.00%
Revenues Forecast											
Retail	**1,472**	**1,688**	**1,678**	**1,732**	**1,769**	**1,844**	**1,932**	**2,032**	**2,147**	**2,278**	**2,427**
Brick and Mortar Stores	*1,404*	*1,605*	*1,603*	*1,653*	*1,659*	*1,716*	*1,781*	*1,856*	*1,941*	*2,037*	*2,145*
Online Sales	*68*	*83*	*76*	*79*	*110*	*129*	*151*	*176*	*206*	*241*	*282*
Wholesale	**1,043**	**1,058**	**939**	**922**	**951**	**980**	**1,009**	**1,039**	**1,070**	**1,102**	**1,136**
Licensing	**58**	**62**	**69**	**79**	**76**	**82**	**88**	**94**	**101**	**109**	**117**
Total Sales	**2,573**	**2,808**	**2,686**	**2,733**	**2,796**	**2,906**	**3,028**	**3,166**	**3,319**	**3,490**	**3,680**

Note: The values regarding Sales are presented in € Million.

The Brick-and-Mortar Stores Sales are computed by multiplying the Selling Space by the Selling Space Productivity (or Sales per Square Meter). Online, Wholesale and Licensing Sales are computed using a YoY growth rate.

Appendix 9: Main Cost Breakdown

- **SMA Expenses**

SMA Expenses Breakdown	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	2019F	2020F	2021F	2022F	2023F	2024F
Expenses for Group's Own Retail Business	(764)	(873)	(922)	(928)	(912)	(967)	(1028)	(1096)	(1172)	(1257)	(1352)
Growth YoY	*n.a.*	*14.2%*	*5.6%*	*0.7%*	*-1.7%*	*6.0%*	*6.3%*	*6.6%*	*6.9%*	*7.3%*	*7.6%*
%Sales	*-29.7%*	*-31.1%*	*-34.3%*	*-34.0%*	*-32.6%*	*-33.3%*	*-33.9%*	*-34.6%*	*-35.3%*	*-36.0%*	*-36.7%*
Marketing Expenses	(163)	(190)	(179)	(185)	(174)	(191)	(199)	(208)	(218)	(229)	(241)
Growth YoY	*n.a.*	*16.8%*	*-5.8%*	*3.1%*	*-5.7%*	*9.3%*	*4.2%*	*4.5%*	*4.8%*	*5.2%*	*5.4%*
%Sales	*-6.3%*	*-6.8%*	*-6.7%*	*-6.8%*	*-6.2%*	*-6.6%*	*-6.6%*	*-6.6%*	*-6.6%*	*-6.6%*	*-6.6%*
Logistics Expenses	(68)	(74)	(74)	(82)	(87)	(82)	(86)	(89)	(94)	(99)	(104)
Growth YoY	*n.a.*	*8.5%*	*1.2%*	*10.4%*	*5.6%*	*-5.3%*	*4.2%*	*4.5%*	*4.8%*	*5.2%*	*5.4%*
%Sales	*-2.6%*	*-2.6%*	*-2.8%*	*-3.0%*	*-3.1%*	*-2.8%*	*-2.8%*	*-2.8%*	*-2.8%*	*-2.8%*	*-2.8%*

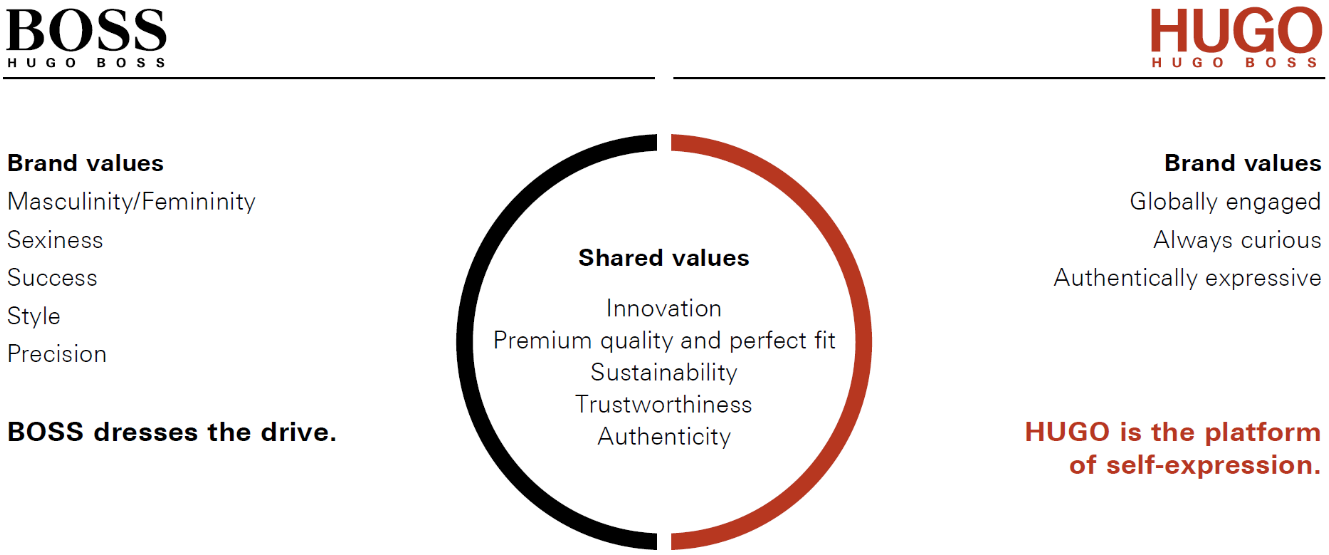
- **D&A and CAPEX**

D&A & CAPEX	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	2019F	2020F	2021F	2022F	2023F	2024F
D&A											
Of PP&E	(89)	(104)	(113)	(105)	(93)	(122)	(126)	(131)	(138)	(147)	(157)
Of Intangible Assets	(19)	(21)	(26)	(29)	(31)	(29)	(32)	(36)	(37)	(40)	(43)
Other D&A	(15)	(18)	(30)	(25)	(6)	(6)	(7)	(7)	(7)	(7)	(7)
Total D&A	**(123)**	**(142)**	**(169)**	**(159)**	**(130)**	**(157)**	**(165)**	**(174)**	**(183)**	**(194)**	**(207)**
CAPEX											
For PP&E	104	154	121	91	122	134	148	163	179	197	217
For Intangible Assets	25	40	31	28	31	35	41	47	54	62	71
Total CAPEX	**130**	**194**	**153**	**119**	**153**	**170**	**189**	**209**	**233**	**259**	**288**

Note: The values presented in this appendix are in € Million.

Appendix 10: Business Structure

- **Two Brand Segmentation:**



Source: Hugo Boss AG, 2018 Annual Report

- **Worldwide Structure:**

AMERICAS

~1,600
Points of sale

89
Freestanding retail stores

2
Showrooms

13% Employees

USA (New York)
Headquarters Americas,
Design studio Womenswear

USA (Midway)
Distribution center

EUROPE
(including Middle East and Africa)

~5,500
Points of sale

199
Freestanding retail stores

10
Showrooms

74% Employees

Germany (Metzingen and surrounding area)
Headquarters Group and Europe,
development and pattern design,
production, distribution center

Switzerland (Coldrerio)
Development and pattern design

Turkey (Izmir)
Production

Italy (Morrovalle and Scandicci)
Development and pattern design, production

Poland (Radom)
Production

ASIA/PACIFIC

~500
Points of sale

154
Freestanding retail stores

1
Showroom

13% Employees

China (Shanghai; Hong Kong)
Headquarters, Asia/Pacific

Source: Hugo Boss AG, 2018 Annual Report

Appendix 11: Valuation Methodologies

Analysts use a wide range of models to value assets in practice, ranging from the simple to the sophisticated. These models often make very different assumptions about pricing, but they do share some common characteristics and can be classified in broader terms. There are several advantages to such a classification it makes it easier to understand where individual models fit into the big picture, why they provide different results and when they have fundamental errors in logic. (Damodaran, 2002).
In the case of this valuation we used methods comprehended in the Discounted Cash Flow and Relative Valuation Models.

Discounted Cash Flow Models: In this type of models, the fair market value of a Company is computed based on the NPV, at a certain discount rate, of their future cash flows.

$$NPV = \sum_{t=1}^{n} \frac{FCF_t}{(1+r)^t}$$

where,

n, life of the asset;

FCF_t, Free Cash Flow at time t;

r, discount rate.

Within this model we used the following approaches: Free Cash Flow to the Firm, Free Cash Flow to Equity, Adjusted Present Value and the Dividend Discount Model.

- **Free Cash Flow to the Firm:**

This was the model that supports our buy recommendation. We believe that this model will capture better the future developments of the company such as the increase in CAPEX.

The FCFF valuation approach estimates the value of the firm as the present value of future FCFF discounted at the weighted average cost of capital: (Pinto, Henry, Robinson and Stowe, 2010)

$$Firm\ Value = \sum_{t=1}^{\infty} \frac{FCFF_t}{(1+WACC)^t} + \frac{TV}{(1+WACC)^t}$$

where,

$FCFF_t$, is the Free Cash Flow to the Firm at time t;

$WACC$, the Weighted Average Cost of Capital;

TV, the Terminal Value using the Stable-Growth Model is defined:

$$TV = \frac{FCFF_T \times (1+g)}{(WACC-g)}$$

After computing the Firm Value, one can estimate the Equity Value per Share using the following formula:

$$Equity\ Value\ per\ Share = \frac{(Firm\ Value - Market\ Value\ of\ Debt)}{Shares\ Outstanding}$$

Model Inputs:

The FCFF indicates the amount of cash surplus available to the company's suppliers of capital after all operating and investments expenses:

$$FCFF = EBIT \times (1 - Tc) + D\&A - \Delta NWC - CAPEX$$

where,

$EBIT$, is the Earnings Before Interest and Taxes;

Tc, is the Tax Rate;

$D\&A$, is the Tax Rate;

ΔNWC, is the Net Working Capital ($Current\ Operating\ Assets - Current\ Operating\ Liabilities$);

$CAPEX$, Capital Expenditures.

The discount rate used in the FCFF method is the WACC which represents the rate of return that investors require to the company.

$$WACC = R_E \times \frac{E}{E + D} + R_D \times \frac{D}{E + D} \times (1 - Tc)$$

where,

R_E, is the Cost of Equity;

R_D, is the Cost of Debt;

E, is the Equity;

D, is the Debt;

Tc, is the Tax Rate;

WACC Inputs:

Cost of Equity, R_E, represents the minimum rate of return required by investors to buy the company's equity. The estimation of R_E was performed using the Capital Asset Pricing Model (CAPM) which describes the relationship between systematic risk and expected return.

$$R_E = R_f + \beta \times MRP$$

where,

R_f, is the Risk-Free Rate;

β, is the Beta of the Investment;

MRP, is the Market Risk Premium;

The R_f represents the theoretical return on a zero-risk investment. In practice, the risk-free rate is not attainable because all investments have some type risk. To perform these calculations, normally the R_f represents the yield of a Treasury Bond. MRP, is the expected return on a market minus the risk-free rate. The beta coefficient, β, defines if the investment is more or less volatile than its market. β is defined in lower, equal or higher than 1, coefficients lower means that the investment is less risky than the market, a coefficient of higher than 1 is the opposite and a coefficient of 1 means that the investment bears the same risk as the market.

$$\beta = \beta_U \times \left[1 + \left((1 + Tc) * \frac{D}{E}\right)\right]$$

where,

β_U, is the Unlevered Beta;

Tc, is the Tax Rate;

$\frac{D}{E}$, is the Debt-to-Equity.

- **Adjusted Present Value;**

We use the APV as a method to test the robustness of the FCFF method.

In the adjusted present value (APV) approach, we begin with the value of the firm without debt. As we add debt to the firm, we consider the net effect on value by considering both the benefits and the costs of borrowing. (Damodaran, 2002)

To value the firm as it was unleveraged, we discount the expected FCFF at the unleveraged cost of equity (R_U), then by adding the present value of the interest tax savings we reach the firm value with leverage. Then we can easily reach the Equity Value per Share just by deducting the Debt and divide by the total amount of shares outstanding.

- **Dividend Discount Model;**

Hugo Boss AG follows a dividend policy with a payout ratio of 60% up to 80% annually.

In the strictest sense, the only cash flow you receive from a firm when you buy publicly traded stock is the dividend. The simplest model for valuing equity is the dividend discount model the value of a stock is the present value of expected dividends on it. (Damodaran, 2002)

Under the assumption for the forecasted period that the company will achieve a payout ratio just under 75%, we are able to reach the dividend payments. Thus, under the mentioned above, we are able to estimate the present value of this dividends using the Cost of Equity as the discount rate.

Relative Valuation: Among the most familiar and widely used valuation tools are price and enterprise value multiples. Price multiples are ratios of a stock' s market price to some measure of fundamental value per share. Enterprise value multiples, by contrast, relate the total market value of all sources of a company's capital to a measure of fundamental value for the entire company. (Pinto, Henry, Robinson and Stowe, 2010).

To have a diversity of methods we decided to use one Price multiple, P/E, and one Enterprise Value Multiplies, EV/SALES.

Due to the limitations on this Valuation Method, such as find a comparable company for Hugo Boss with similar strategies and business structure, we only used this method to complement the DCF analysis.

Appendix 12: Valuation Assumptions

To apply the FCFF Method we had to estimate the WACC for Hugo Boss AG. The main assumptions were the following:

Item	Assumption	Description
Risk-Free Rate (R_F)	1.21%	10y monthly average Yield from the 10y German Bunds - Source: Thomson Reuters
Market Risk Premium (MRP)	5.70%	Pablo Hernandez 2019 Survey - MRP for Germany.
Country Risk Premium (CRP)	0.00%	Aswath Damodaran as of January 2019 - CRP for Germany.
Unlevered Beta (β_U)	0.74	Aswath Damodaran as of January 2019 - βU for the Apparel Industry.
Cost of Debt (R_D)	5.04%	Given by the company's 5y (2014 to 2018) average of interest expenses over long-term financial liabilities.
Terminal Growth Rate (g)	2.00%	Computed using the Stable Growth Model - Below are the detailed computations.

- **WACC:**

Cost of Equity	2020F	2021F	2022F	2023F	2024F	Perpetuity
R_F	1.21%	1.21%	1.21%	1.21%	1.21%	1.21%
β_U	0.74	0.74	0.74	0.74	0.74	0.74
β_L	0.83	0.83	0.83	0.83	0.82	0.83
MRP	5.70%	5.70%	5.70%	5.70%	5.70%	5.70%
CRP	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
R_E	**5.94%**	**5.93%**	**5.92%**	**5.91%**	**5.91%**	**5.93%**

Cost of Debt	2020F	2021F	2022F	2023F	2024F	Perpetuity
R_D	**5.04%**	**5.04%**	**5.04%**	**5.04%**	**5.04%**	**5.04%**
T_C	29.50%	29.50%	29.50%	29.50%	29.50%	29.50%
After-tax RD	3.55%	3.55%	3.55%	3.55%	3.55%	3.55%

WACC	2020F	2021F	2022F	2023F	2024F	Perpetuity
Weight of Equity	85.00%	85.28%	85.53%	85.74%	85.92%	85.49%
Weight of Debt	15.00%	14.72%	14.47%	14.26%	14.08%	14.51%
Pre-tax WACC	5.81%	5.80%	5.79%	5.79%	5.79%	5.80%
WACC	**5.58%**	**5.58%**	**5.58%**	**5.58%**	**5.58%**	**5.59%**

- **Growth Rate:**

Reinvestment Rate	2020F	2021F	2022F	2023F	2024F	Perpetuity
Capex	188.56	209.44	232.72	258.68	287.64	207.08
D&A	164.63	173.76	182.67	193.75	207.08	207.08
Changes in NWC	35.98	34.76	38.65	43.07	47.87	47.87
EBIT (1-t)	263.74	271.82	280.44	289.60	299.22	299.22
Reinvestment Rate	**22.71%**	**25.92%**	**31.63%**	**37.29%**	**42.92%**	**16.00%**

Return on Equity	2020F	2021F	2022F	2023F	2024F	Perpetuity
ROA	12.75%	12.49%	12.24%	12.01%	11.78%	11.78%
D/E	17.26%	16.91%	16.63%	16.39%	16.20%	16.20%
Cost of debt	5.04%	5.04%	5.04%	5.04%	5.04%	5.04%
Taxes	29.50%	29.50%	29.50%	29.50%	29.50%	29.50%
ROE	14.34%	14.00%	13.69%	13.39%	13.11%	13.11%
Growth Rate	**3.26%**	**3.63%**	**4.33%**	**4.99%**	**5.63%**	**2.00%**

Aux:

Year	**2020F**	**2021F**	**2022F**	**2023F**	**2024F**
EBIT	374.10	385.57	397.78	410.78	424.43
Tax Rate	0.30	0.30	0.30	0.30	0.30
EBIT (1-t)	263.74	271.82	280.44	289.60	299.22
Total Assets	2,068.54	2,176.59	2,290.80	2,411.82	2,539.95
ROA	12.75%	12.49%	12.24%	12.01%	11.78%

Appendix 13: DCF Valuation

- **FCFF:**

Period	*0*	*1*	*2*	*3*	*4*	*5*
FCFF	2020F	2021F	2022F	2023F	2024F	TV
EBIT*(1-Tc)	263.74	271.82	280.44	289.60	299.22	299.22
D&A	164.63	173.76	182.67	193.75	207.08	207.08
ΔNWC	35.98	34.76	38.65	43.07	47.87	47.87
CAPEX	188.56	209.44	232.72	258.68	287.64	287.64
FCFF	203.84	201.37	191.74	181.60	170.80	170.80
PV of FCFF	203.84	190.73	172.01	154.32	137.47	130.15

FCFF Model (Discount FCFF with WACC)	
Total PV of FCFF	858.36
TV	4,857.34
PV of TV	3,701.31
Entity Value	**4,559.67**
Debt at 2020	191.06
Cash at 2020	188.03
Net Debt at 2020	**3.02**
Instrinsic Value of Equity	**4,556.64**
# Shares Outstanding	69.02
Share Price at 2020YE	**66.02**

- **APV:**

Period	0	1	2	3	4
	2020F	2021F	2022F	2023F	2024F
FCFF	203.84	201.37	191.74	181.60	170.80
PV FCFF unlevered	**203.84**	**190.34**	**171.31**	**153.39**	**136.38**
PVt	654.47	489.64	325.23	161.77	0.00
Debt Capacity (Dt)	112.95	82.82	54.07	26.52	0.00
Interest Payments	0.00	5.69	4.17	2.73	1.34
Interest Tax Shield (ITS)	0.00	1.68	1.23	0.80	0.39
PV ITS	**0.00**	**1.59**	**1.10**	**0.68**	**0.31**

APV Model (Discount FCFF with RU and add PV[ITS])	
EV Unlevered	855.26
Total PV (ITS)	3.68
TV	4,581.81
PV of TV	3,455.91
Entity Value	**4,314.85**
Debt at 2020	191.06
Cash at 2020	188.03
Net Debt at 2020	**3.02**
Instrinsic Value of Equity	**4,311.82**
# Shares Outstanding	69.02
Share Price at 2020YE	**62.48**

Appendix 14: DDM Valuation

Period	0	1	2	3	4
	2020F	2021F	2022F	2023F	2024F
Dividend	191	197	203	209	216
PV of Dividends	190.91	185.68	180.78	176.20	171.82

DDM Model	
Total PV (D)	905.40
TV	5,608.43
PV of TV	4,204.51
Entity Value	5,109.90
# Shares Outstanding	**69.02**
Share Price at 2020YE	**74.04**

Appendix 15: Relative Valuation – Peers Selection & Analysis

Hugo Boss AG is a company that is located in the medium range of the premium apparel market. The company has been known for targeting the Businessman class and that is something that the company is working on but still in 2018 only 10% of the Groups Sales were from Womenswear.

With that in mind we tried to define a list of comparable companies in order to perform a relative valuation to complement the DCF valuation. In our understanding, the following companies follow a similar approach to the personal luxury apparel market.

- Ralph Lauren;

- PVH Corp., due to Calvin Klein and Tommy Hilfiger;
- Lacoste;
- Hackett London;

All this companies have a worldwide exposure, are in the medium range of premium apparel.

For the relative valuation we need financial information from the companies and since both Lacoste and Hackett London are not quoted, we had to disregard them from our analysis. We were left to Ralph Lauren and PVH Corp to perform the Relative Valuation.

Ralph Lauren

Ralph Lauren is an American fashion corporation, founded in 1967, is mainly known by their apparel products, but the company also presents home, accessories and fragrances to their consumers. The company is widely known by the Polo by Ralph Lauren brand which was launched in 1967 only for Men. In 2014 the company launched Women's Polo.

In accordance with Ralph Lauren Corporation 2018 Annual Report, the company was defined the following long-term strategies to ensure value-creation to its shareholders as well as sustainable, profitable growth for the company:

- Elevation of their brand by promoting improvements in quality of sales, distribution, and product;
- Development of product, marketing and shopping experience to attract new consumers;
- Escalating both digital and international presence;
- Exploring new innovative ways to drive productivity and agility.

Relevant financial data about the Ralph Lauren Corporation:

Shares Outstanding	Share Price	Market Cap.	Revenues	EPS
51.84M	$ 101.58	$ 5,265B	$ 6,182M	$ 1.99

PVH Corp:

PVH Corp., once known as the Phillips-Van Heusen Corporation, is an American fashion corporation which holds companies as Calvin Klein, Tommy Hilfiger and other Heritage brands. The company history goes back to 1857 when a Prussian immigrant named Dramin Jones founded a shirt manufacturing company.

According to PVH Corp. 2018 Annual Report, Tommy Hilfiger represented 45% of the groups worldwide sales, followed by Calvin Klein with 39% and the Heritage Brands only represented 16%.

In their statement the corporation presents a group of strategies for future growth:

- Driving consumer engagement through innovative designs, brand personalization and shopping experiences;
- Exploring the development of the worldwide presence through organic growth and acquisitions;
- Change the way they operate through leveraging technology developments in operations;
- Developing the talent and skilled workforce with the corporation core values.

Relevant financial data about the PVH Corp.:

Shares Outstanding	Share Price	Market Cap.	Revenues	EPS
74.91M	$ 92.84	$ 6,955B	$ 8,915M	$ 6.71

Appendix 16: Relative Valuation

EV/Sales	2020F
EV/Sales PEER	1.55
Hugo Boss Revenues	3,028.46
Hugo Boss EV	4,687.48
Net Debt	3.02
Equity Value	4,684.46
Shares Outstanding	69.02
Equity Value per Share	67.87
Price on 31st of December 2020	**67.87**

P/E	2020F
P/E PEER	16.52
Hugo Boss EPS	3.71
Shares Outstanding	69.02
Equity Value per Share	61.35
Price on 31st of December 2020	**61.35**

Appendix 17: Sensitivity Analysis

Others sensitivity analysis were performed to assess the impact of certain assumptions in the price target and the recommendation.

- **Sales:**

  ➢ Retail → Independent analysis on the impact of new openings per story type:

Freestanding New Openings	-2.00	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00
Price Target	63.58	64.07	64.55	65.04	65.53	**66.02**	66.51	67.00	67.49
Annualized Return	*22.86%*	*23.62%*	*24.37%*	*25.13%*	*25.88%*	*26.63%*	*27.38%*	*28.13%*	*28.88%*

Note: We only display the sensitivity result for the Freestanding New Stores since if we apply the same impact on both the Shop-in-Shops and Outlets the same results will be the same.

  ➢ Wholesale → Analysis on the YoY growth applied to the Wholesale Segment

Wholesale YoY	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%	4.50%	5.00%
Price Target	62.99	63.73	64.49	65.25	**66.02**	66.81	67.61	68.42	69.24
Annualized Return	*21.96%*	*23.10%*	*24.26%*	*25.44%*	*26.63%*	*27.83%*	*29.05%*	*30.29%*	*31.54%*

  ➢ Licensing → Analysis on the YoY growth applied to the Licensing Segment

Licensing YoY	1.43%	2.93%	4.43%	5.93%	7.43%	8.93%	10.43%	11.93%	13.43%
Price Target	65.24	65.42	65.61	65.81	**66.02**	66.24	66.47	66.70	66.95
Annualized Return	*25.43%*	*25.71%*	*26.00%*	*26.31%*	*26.63%*	*26.96%*	*27.31%*	*27.67%*	*28.05%*

- **SMA Expenses**

SMA YoY	1.40%	1.60%	1.80%	2.00%	2.20%	2.40%	2.60%	2.80%	3.00%
Price Target	75.84	72.59	69.32	**66.02**	62.70	59.36	55.99	52.59	49.17
Annualized Return	*41.48%*	*36.61%*	*31.66%*	*26.63%*	*21.51%*	*16.29%*	*10.98%*	*5.56%*	*0.03%*

- **CAPEX:**

We performed a sensitivity analysis to understand the impacts on changing CAPEX YoY growth of both PP&E and Intangible Assets.

Intangible Assets CAPEX \ PP&E CAPEX		7.0%	8.0%	9.0%	10.0%	11.0%	12.0%	13.0%
66.02								
12.0%	Price Target	78.50	75.52	72.39	69.10	65.66	62.05	58.26
	Annualized Return	*45.43%*	*41.00%*	*36.31%*	*31.34%*	*26.07%*	*20.49%*	*14.58%*
13.0%	Price Target	76.49	73.51	70.38	67.10	63.65	60.04	56.26
	Annualized Return	*42.45%*	*37.99%*	*33.27%*	*28.28%*	*22.98%*	*17.37%*	*11.41%*
14.0%	Price Target	77.51	74.54	71.41	68.12	64.68	61.07	57.28
	Annualized Return	*43.98%*	*39.53%*	*34.83%*	*29.84%*	*24.56%*	*18.97%*	*13.03%*
15.0%	Price Target	75.41	72.43	69.31	**66.02**	62.58	58.97	55.18
	Annualized Return	*40.85%*	*36.38%*	*31.64%*	*26.63%*	*21.32%*	*15.68%*	*9.70%*
16.0%	Price Target	74.29	71.31	68.18	64.90	61.45	57.84	54.06
	Annualized Return	*39.16%*	*34.68%*	*29.93%*	*24.90%*	*19.57%*	*13.92%*	*7.91%*
17.0%	Price Target	73.12	70.14	67.01	63.72	60.28	56.67	52.88
	Annualized Return	*37.40%*	*32.90%*	*28.14%*	*23.09%*	*17.74%*	*12.06%*	*6.03%*
18.0%	Price Target	71.89	68.91	65.78	62.50	59.05	55.44	51.66
	Annualized Return	*35.55%*	*31.04%*	*26.26%*	*21.19%*	*15.82%*	*10.11%*	*4.06%*

As we expected the price target is more sensitivity to the YoY growth rate applied on the CAPEX for PP&E, in 2018 this represented around 80% of total CAPEX. In accordance with our risk assessment, the return interval of 15% to 30% indicates a Buy recommendation so a change of CAPEX for Intangible Assets by itself will not change our recommendation but the same does not apply to CAPEX for PP&E.

- **Net Debt**

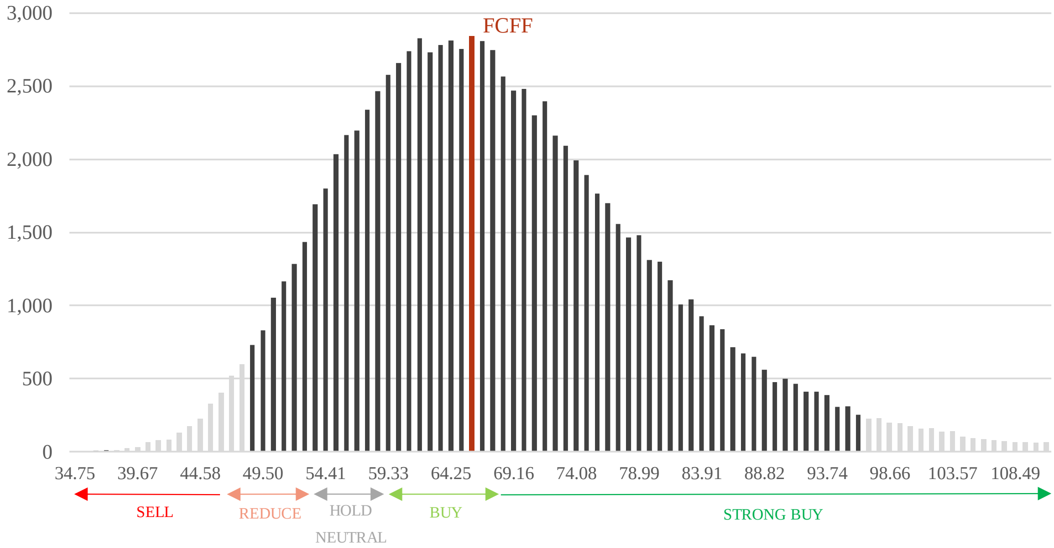
Net Debt	3.02	35.00	65.00	95.00	125.00	155.00	185.00	215.00	245.00
Price Target	**66.02**	65.56	65.12	64.69	64.26	63.82	63.39	62.95	62.52
Annualized Return	*26.63%*	*25.92%*	*25.25%*	*24.58%*	*23.91%*	*23.24%*	*22.57%*	*21.89%*	*21.22%*

Appendix 18: Monte Carlo Simulation

The Monte Carlo Simulation through the software of Oracle Crystal Ball was used to verify the sensitivity of the Price Target on certain variables. The table below shows the variables used as well as the assumptions taken to perform the simulation:

Variable	Mean	Std. Dev.	Distribution	Description
MRP	5.70%	0.57%	Normal	Checks the sensitivity change of Market Risk Premium on the Price Target.
βU	0.74	0.07	Normal	Checks the sensitivity change of Unlevered Beta on the Price Target.
Tax Rate	29.50%	2.95%	Normal	Checks the sensitivity change of Tax Rate on the Price Target.
g	2.00%	0.20%	Normal	Checks the sensitivity change of Perpetuity Growth Rate on the Price Target.
COGS YoY Impact	1.50%	0.15%	Normal	Checks the sensitivity change of COGS YoY Impact on the Price Target.

According to the analysis performed using the Oracle Crystal Ball software we can say that the price range will be from €47.62 to €97.70 with 95% certainty.

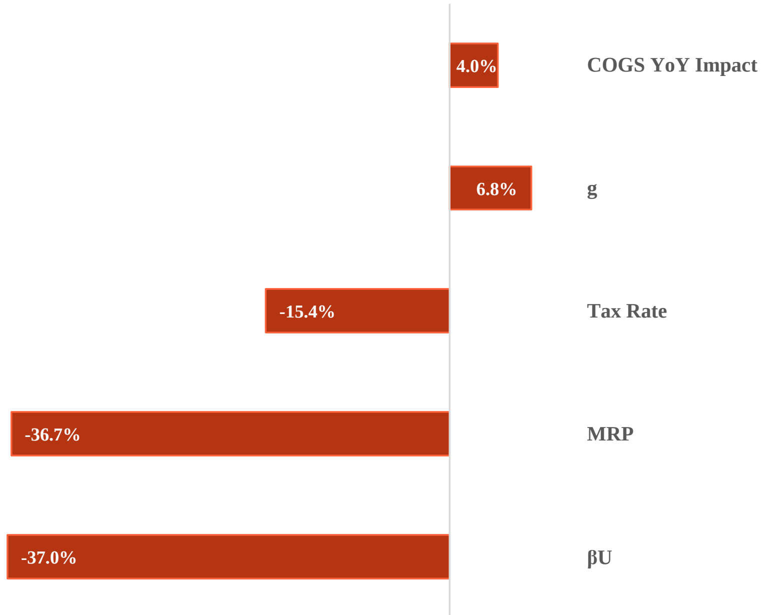


Monte Carlo Statistics	
Trials	100,000
Base Case	66.02
Mean	**67.91**
Median	66.29
Std. Deviation	12.86
Minimum	31.49
Maximum	195.32

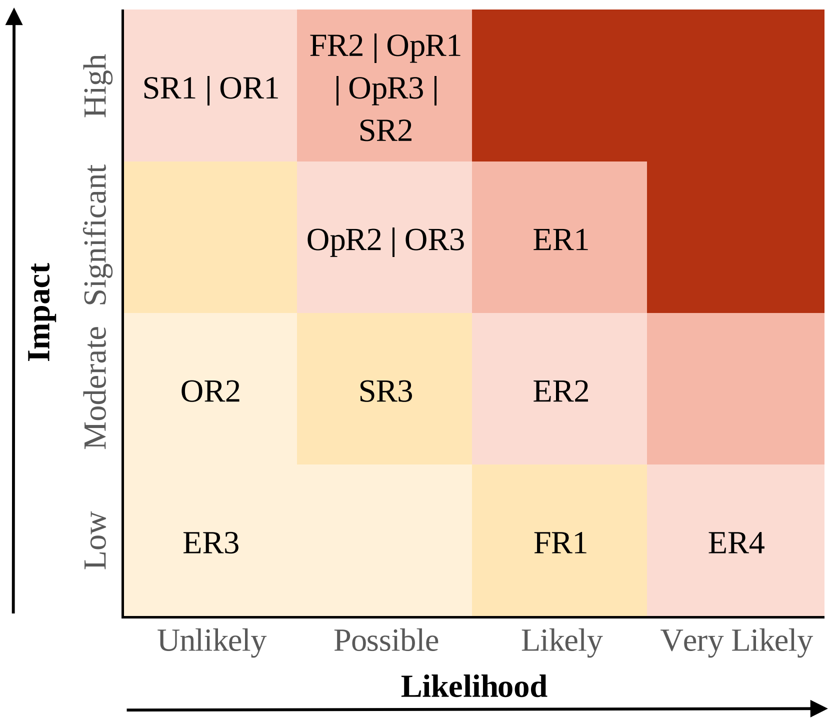
Between the price target generated by the Monte Carlo Simulation and the one estimate through the FCFF Method there is only a slight dispersion of ~ €2. Even with that dispersion both models reach a price target indicating a BUY recommendation with medium risk.

Price on 30st of September 2019		
49.15		
Models	**Price Target**	**Upside Potential**
DCF	66.02	26.6%
MC Mean	67.91	29.5%

Sensitivity Chart:



Appendix 19: Risk Matrix



Financial Risks:
- FR1 – Currency Exposure;
- FR2 – Taxes.

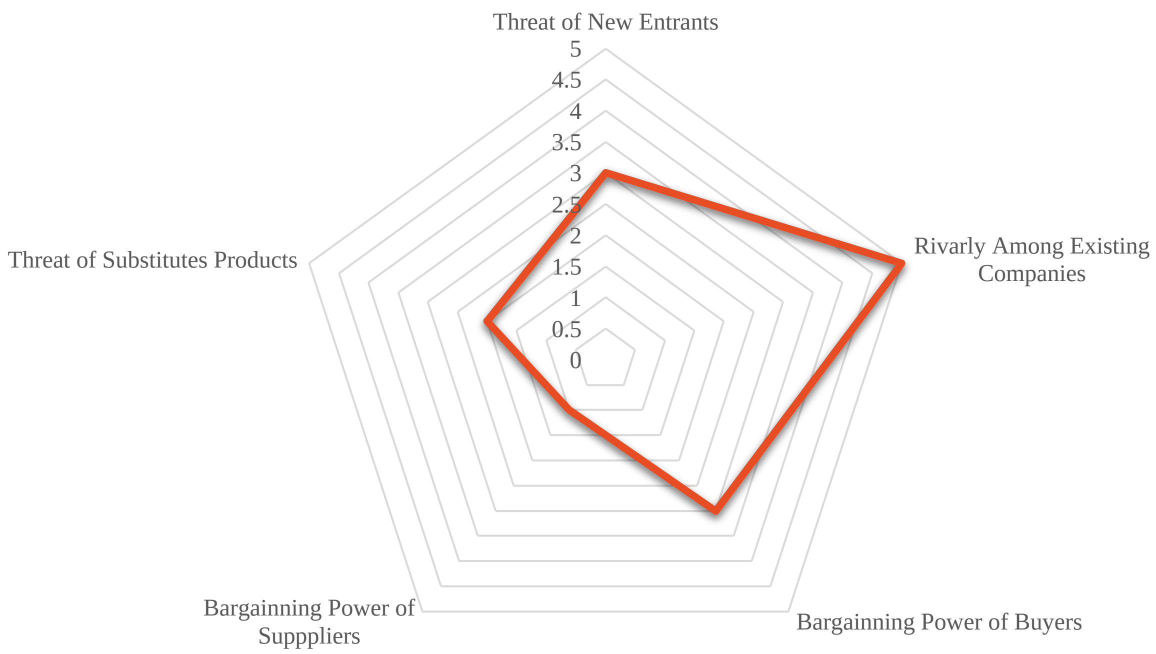
Operational Risks:
- OpR1 – Suppliers and Sourcing Markets;
- OpR2 – Quality & Logistics;
- OpR3 – Sales and Distribution.

Organizational Risks:
- OpR1 – IT;
- OpR2 – Personnel;
- OpR3 – Governance & Compliance.

External Risks:
- ER1 – Global Economy;
- ER2 – Political and Social;
- ER3 – Environmental and health risks;
- ER4 – Product Piracy & Competitive Environment.

Strategic Risks:
- SR1 – Collection and Industry;
- SR2 – Brand and Corporate Image;
- SR3 – Investments.

Appendix 20: Porter's Five Forces



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Databases:

- Bloomberg Terminal
- IMF Database: https://data.imf.org/
- Investing: https://www.investing.com/
- OECD Database: https://data.oecd.org/
- Statista Database: https://www.statista.com/
- Thomson Reuters Terminal
- Yahoo Finance: https://finance.yahoo.com/

Abbreviations

APV	Adjusted Present Value
AVG	Average
BENELUX	Belgium, Netherlands, and Luxembourg
CAGR	Compound Annual Growth Rate
CAPEX	Capital Expenditure
CAPM	Capital Asset Pricing Model
CNY	Chinese Yuan Renminbi
CBO	Chief Brand Officer
CEO	Chief Executive Officer
CFO	Chief Financial Officer
COGS	Cost of Goods Sold
CRP	Country Risk Premium
CSO	Chief Sales Officer
CSR	Corporate social responsibility
D&A	Depreciations & Amortizations
DCF	Discounted Cash Flow
DDM	Dividend Discount Model
DPO	Days Payables Outstanding
DPS	Dividend per Share
DSO	Days Sales Outstanding
EBIT	Earnings before Interest and Taxes
EBITDA	Earnings before Interest, Taxes, Depreciations and Amortizations
ECB	European Central Bank
EPS	Earnings per share
EUR	Euro
EV	Enterprise Value
EV/SALES	Enterprise Value-to-Sales Ratio
FCFF	Free Cash Flow to the Firm
g	Perpetual growth rate
GCGC	German Corporate Governance Code
GDP	Gross Domestic Product
HNWI	High-net-worth individuals
IMF	International monetary Fund
LTI	Long-Term Incentive

MRP	Market Risk premium
NWC	Net Working Capital
OECD	Organization for Economic Cooperation and Development
P/E	Price-to-earnings ratio
PP&E	Property Plant and Equipment
$\mathbf{R_D}$	Cost of debt
$\mathbf{R_E}$	Cost of Equity
$\mathbf{R_F}$	Risk Free Rate
$\mathbf{R_U}$	Unlevered Cost of Equity
ROA	Return on Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
SIEM	Security Information and Event Management
SMA	Sales, Marketing and Advertising
SQM	Square Meter
STI	Short-Term Incentive
$\mathbf{T_C}$	Tax rate
TV	Terminal Value
USA	United States of America
USD	United States Dollar
WACC	Weighted Average Cost of Capital
YE	Year-End
YoY	Year-over-Year
$\boldsymbol{\beta_U}$	Unlevered Beta

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Recommendation System

Level of Risk	SELL	REDUCE	HOLD/NEUTRAL	BUY	STRONG BUY
High Risk	0%≤	>0% & ≤10%	>10% & ≤20%	>20% & ≤45%	>45%
Medium Risk	-5%≤	>-5% & ≤5%	>5% & ≤15%	>15% & ≤30%	>30%
Low Risk	-10%≤	>-10% & ≤0%	>0% & ≤10%	>10% & ≤20%	>20%