

**MASTER OF SCIENCE IN
FINANCE**

**MASTERS FINAL WORK
PROJECT**

EQUITY RESEARCH:
ADIDAS AG

EDUARDO FIGUEIREDO FARIA DA SILVA

OCTOBER 2019

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EDUARDO FIGUEIREDO FARIA DA SILVA

SUPERVISOR:
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Abstract

This report is about a valuation of Adidas AG, elaborated in accordance with ISEG's Finance Master's Final Work. This Equity Research follows the structure of a research report recommended by the CFA Institute. The research note was prepared based on the information publicly disclosed by Adidas AG with reference to December 31st, 2018. Therefore, this report does not contemplate any events that may have occurred after this date. To obtain the Target price of the company, the method chosen was the Discounted Cash Flow (DCF) and the Relative Valuation through the multiples of peer companies. The price target reached was 284.61€. This valuation results in a Hold recommendation. It is considered of medium risk since, despite Adidas being one of the two big companies in this industry, the deceleration of the economy appears as a potential risk.

JEL classification: G10 ; G32; G34

Keywords: Equity Research; Valuation; Adidas; Reebok; DCF; Multiples; Apparel; Footwear; Hardware;

Resumo

Este relatório centra-se na avaliação da Adidas AG, que foi elaborado de acordo com o Trabalho Final de Mestrado do Master in Finance. Este Equity Research segue a estrutura de um reporte de research recomendado pelo CFA Institute. Esta nota de research foi preparada com base na informação pública disponibilizada pela Adidas com referência a 31 de Dezembro de 2018. Assim, este reporte não contempla eventos que possam ter ocorrido após essa data. Para chegar ao preço alvo para a empresa, o método escolhido foi o Discounted Cash Flow e a Avaliação Relativa, através de múltiplos de empresas concorrentes. O Price target obtido foi de 284.61€. Esta avaliação resulta numa recomendação de Manter. É considerada de risco médio uma vez que apesar da Adidas ser uma das duas grandes empresas desta indústria, o desaceleramento da economia surge como um potencial risco.

Classificação JEL: G10 ; G32; G34

Palavras-Chave: Equity Research; Avaliação de Empresas; Adidas; Reebok; DCF; Múltiplos; Apparel; Footwear; Hardware.

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This project represents the culmination of one of the most important stages of my life.

First of all, to God, for being the One who sustains me each time and through His mercy and grace enable me to complete this stage.

To my beloved parents, João Paulo Martins Faria da Silva and Olga Maria Mendes Figueiredo. They are the ones responsible for having come this far, through all their sacrifices so that they can give me everything I needed to make this outcome a reality. To my brother Rúben Silva and my aunt Edite Figueiredo for every word of discernment and wisdom.

To my girlfriend, Rita Rodrigues, who was always at my side with her patience and encouragement in times when her strength and will were lacking. "Love bears all things, believes all things, hopes all things, endures all things."

Finally, but with an enormous importance to have arrived here, to my supervisor, Professor Carlos Bastardo. Throughout this time he was always present, open to questions and advice and always tried to motivate me to reach the finish line.

Index

List of Appendix.....	7
List of Figures.....	8
List of Tables.....	9
Glossary.....	10
INVESTMENT SUMMARY.....	11
COMPANY DESCRIPTION.....	12
BUSINESS OVERVIEW.....	13
HISTORICAL FINANCIAL ANALYSIS.....	13
CORPORATE GOVERNANCE.....	15
INDUSTRY OVERVIEW.....	16
Key Drivers of Industry Profitability.....	17
SWOT Analysis.....	17
5 Porter’s Forces.....	18
PEER COMPANIES.....	19
VALUATION.....	20
INVESTMENT RISKS.....	22
SCENARIO ANALYSIS.....	23
Appendix.....	24
Appendix 1 - Balance Sheet.....	24
Appendix 2 - Income Statement.....	25
Appendix 3 – Cash Flow Statement.....	26
Appendix 4 – Financial Ratios.....	27
Appendix 5 – Common-size Balance Sheet.....	28
Appendix 6 – Common-size Income Statement.....	29
Appendix 7 – DCF Assumptions.....	30
Appendix 8 – Discounted Cash Flow.....	31
Appendix 8 – Discounted Cash Flow.....	32
Appendix 9 – Relative Valuation.....	33
Appendix 10 – Risk Matrix.....	34
Appendix 11 – Adidas Global Headquarters.....	35
Appendix 12 – Monte Carlo Simulation.....	36
References.....	37
Disclosures and Disclaimer.....	38

List of Appendix

Appendix	24
Appendix 1 - Balance Sheet	24
Appendix 2 - Income Statement.....	25
Appendix 3 – Cash Flow Statement.....	26
Appendix 4 – Financial Ratios.....	27
Appendix 5 – Common-size Balance Sheet	28
Appendix 6 – Common-size Income Statement.....	29
Appendix 7 – DCF Assumptions	30
Appendix 8 – Discounted Cash Flow.....	31
Appendix 8 – Discounted Cash Flow.....	32
Appendix 9 – Relative Valuation	33
Appendix 10 – Risk Matrix	34
Appendix 11 – Adidas Global Headquarters.....	35
Appendix 12 – Monte Carlo Simulation	36

List of Figures

Fig. 1 Potencial Upside.....	11
Fig. 2 Revenue Growth.....	11
Fig. 3 Margins Outlook.....	11
Fig. 4 Adidas Employees.....	12
Fig. 5 Adidas.....	12
Fig. 6 Reebok.....	12
Fig. 7 Company Strategy	12
Fig. 8 Net sales € in millions	12
Fig. 9 Net sales by brand	13
Fig. 10 Net sales by segment.....	13
Fig. 11 Net sales by product category	13
Fig. 12 EBITDA € in millions	14
Fig. 13 Net income from continuing operations € in millions	14
Fig. 14 Equity ratio in %.....	14
Fig. 15 Capital expenditure by type in % of total CAPEX	14
Fig. 16 5Y Share Performance.....	14
Fig. 17 Basic earnings per share in €	15
Fig. 18 Shareholder structure by investor group	15
Fig. 19 Regional GDP development in %.....	16
Fig. 20 Sportswear Revenue Worldwide (Us dollars)	17
Fig. 21 5 Porter's Forces.....	18
Fig. 22 Nike	19
Fig. 23 Puma	19
Fig. 24 Skechers.....	19
Fig. 25 Under Armour.....	19
Fig. 26 Earnings per Share.....	20
Fig. 27 Deprediation & Amortization.....	20
Fig. 28 Risk Matrix.....	22
Fig. 29 Monte Carlo Simulation	23

List of Tables

Tab. 1 Analyst Risk Assessment.....	11
Tab. 2 Market Profile.....	11
Tab. 3 ADS Price Target.....	11
Tab. 4 Net sales by segment.....	13
Tab. 5 Dividend Policy.....	15
Tab. 6 Performance of the Adidas AG share and important indices at year-end 2018 in %	15
Tab. 7 Executive Board	15
Tab. 8 Executive Board	16
Tab. 9 WACC Assumptions	21
Tab. 10 P/E Ratio – Peer Companies	21
Tab. 11 Multiples Price Target.....	21
Tab. 12 Target Price Sensitivity.....	23

Glossary

CAGR - Compound annual growth rate.

CapEx- Capital Expenditures

CAPM - Capital Asset Pricing Model

CEO - Chief Executive Officer

D&A - Depreciation and Amortization

DCF - Discounted Cash Flow

EBITDA - Earnings Before Interest Taxes Depreciation and Amortization

EPS – Earnings per Share

EV - Enterprise Value

GDP - Gross Domestic Product

P/E - Price Earnings Ratio

ROA – Return on Assets

ROE – Return on Equity

WACC - Weighted Average Cost of Capital

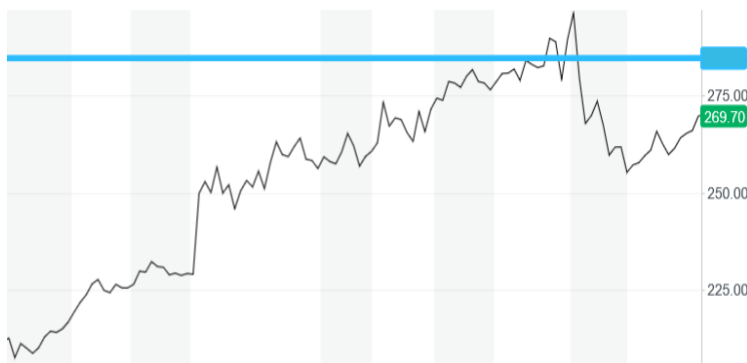
YE - Year End

“Through sport we have the power to change lives”

INVESTMENT SUMMARY

I issue a HOLD recommendation with a YE19 target price of 284.61€. This target price is the result of a careful valuation and represents a potential upside of 5.53% in comparison to the current price of 269.70€.

Fig. 1 Potencial Upside



Source: Yahoo Finance

Revenue Growth: Adidas has traditionally maintained a pronounced growth trend in its sales. 2019 YE represents an important stage in sales growth in markets such as North America and Asia-Pacific. As a result, a CAGR of 4.43% is expected in the following years.

Positive outlook of Adidas' Margins: In 2019, improvements in the company's margins are expected. First of all, the growth of gross margin to 53.5% which is largely the main factor for an increase of 30% in operating margin to 13.30%.

Valuation: Through the DCF method, we achieved a YE19 price target for Adidas. The target price of 284.61€ represents an increase of 5.53%. A Terminal Growth Rate of 2.0% and a WACC of 4.363% contributed to reach this YE19 Price target.

Tab. 1 Analyst Risk Assessment

Low	Medium	High
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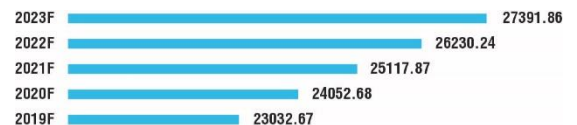
Source: Bloomberg

Tab. 2 Market Profile

Closing Price	269.70 €
52-week High	289.55 €
52-week Low	182.40 €
Market Capitalization	53.749B
Shares Outstanding	198 milion

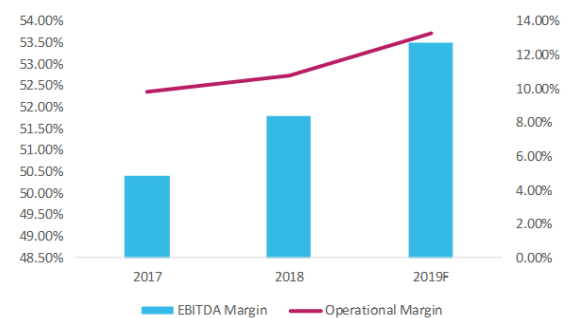
Source: Bloomberg

Fig. 2 Revenue Growth



Source: Own estimations

Fig. 3 Margins Outlook



Source: Own estimations

Tab. 3 ADS Price Target

DCF	284.61 €
Multiples	244.58 €

Source: Own estimations

COMPANY DESCRIPTION

Adidas AG is a German company and was founded by Adolf Dassler, in 1949. Adidas has its headquarters in Herzogenaurach. The company is one of the largest players in the footwear industry.

Adidas AG is known by the signature of the "three parallel bars". Recognized worldwide, it is present in Western Europe, North America, Russia/CIS, Asia-Pacific, Latin America and Emerging Markets.

In 1987, until then in control of the Dassler family, the company was sold. However, the change of management and the adoption of dubious decisions resulted in the worst results in the company's history. This poor performance led the company into a pre-bankruptcy situation.

The change of paradigm happens when Robert Louis-Dreyfus is appointed as the new CEO of the group. Three years later, the company decides to go public. This new stage comes with a slogan that goes down in history, "We knew then, we know now".

Aiming to consolidate itself as one of the major companies in this industry, driven by the positive evolution of financial results, the strategy is to acquire competitive companies. The new policy begins with the acquisition of the Salomon Group, in a US\$1.4 billion deal, which resulted in the creation of the second largest group in this industry.

In 2005, in a favourable situation the company decides to sell the company Salomon, for in the following year acquire its rival Reebok, in a deal valued at US\$3.8billion. After this deal, Adidas' revenues at the end of 2006 grew 52%, becoming a historic milestone.

Over the years, Adidas has invested in sponsoring different renowned athletes and teams from different sports such as David Beckham, Lionel Messi, Manchester United, Real Madrid and Derrick Rose. Through them were carried out different marketing campaigns that went down in history.

Fig. 4 Adidas Employees



Source: Company Data

Fig. 5 Adidas



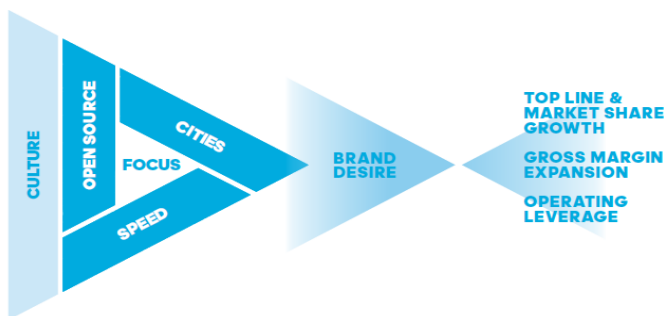
Source: Company Data

Fig. 6 Reebok



Source: Company Data

Fig. 7 Company Strategy



Source: Company Data

Fig. 8 Net sales € in millions



Source: Company Data

BUSINESS OVERVIEW

Adidas AG discriminates its business by brands, geographical regions, product category and distribution channel.

In figure 9, it is possible to see Adidas as the primary source of revenues with 19.851bn€ and 91% of total revenues. Reebok has 8%, with 1.687bn€ in Revenues. In a currency-neutral revenues basis, Adidas brand increase 9% and Reebok brand decrease 3%.

As mention before, this is a worldwide company. **Asia-Pacific** is responsible for 33% of total revenues, with 7.141m€. The increasing weight of this market is sustained by an increase of 12% of its revenues. **Europe** and **North America** follows with 27% and 21% of total revenues respectively. In 2018, **Asia-Pacific** and **North America** were the only with positive evolutions. **Europe**, **Russia/CIS**, **Latin America** and **Emerging Markets** registered negative changes in terms of revenues. In a currency-neutral scenario, excluding Emerging Markets (-3%), all the others segments accounted positive changes on revenues.

Adidas AG separates its products by **apparel**, **footwear** and **hardware**. In 2018 footwear and apparel products revenues increased due to the Sport Inspired and Sport Performance. In other hand, hardware products were down by 9% in a currency neutral scenario. In figure 11 is represented the sales by product category. Footwear with 58% continues being the most relevant category of products.

Adidas has the majority of its production outsourced to more than 55 countries, mainly in the Asian region. Vietnam has the largest weight, followed by Indonesia and China.

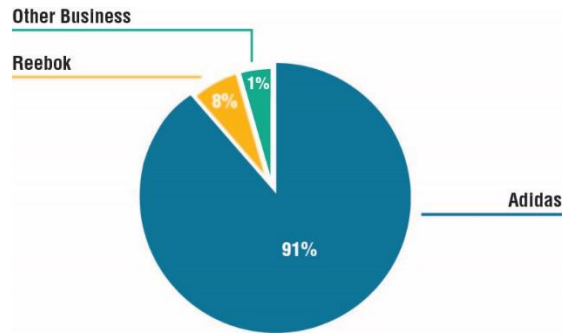
HISTORICAL FINANCIAL ANALYSIS

Over the last 5 years Adidas improved its revenue from 14,534€b up to 21,915€b, which represents a growth of 50,78%. The growth in revenue is explained mostly by the strong performance of North America and Asia-Pacific segments in particular, recording above double digit growth.

The gross margin has been increasing year on year. In the last period, the 1.4% increase was achieved mainly through better prices, channel and product, as well as lower input costs.

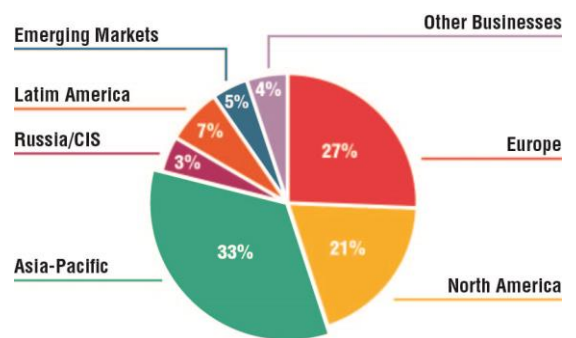
EBITDA increase around 14.77%, largely due to the increase in PPE. In terms of operating profit there was also an increase of 14%. Regardless of the increase in operating expenses, the increase in the gross margin allowed the operating margin to grow by 1.1%. The Net income from continuous operations had also registered an increase of 19.51%, the Earnings per share also registered an increase of 20%.

Fig. 9 Net sales by brand



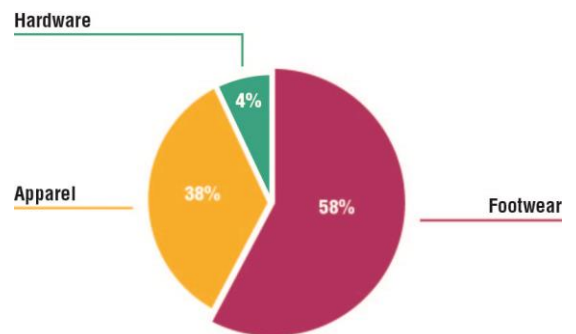
Source: Company Data

Fig. 10 Net sales by segment



Source: Company Data

Fig. 11 Net sales by product category



Source: Company Data

Tab. 4 Net sales by segment

	2018	2017	Change	Change (currency-neutral)
Europe	5,885	5,932	(1%)	0%
North America	4,689	4,275	10%	15%
Asia-Pacific	7,141	6,403	12%	15%
Russia/CIS	595	660	(10%)	1%
Latin America	1,634	1,907	(14%)	6%
Emerging Markets	1,144	1,300	(12%)	(3%)
Other Businesses	829	739	12%	15%
Total	21,915	21,218	3%	8%

Source: Company Data

Average operating working capital dropped by 1.4%, maintaining its downward trend. Over the years the company has been characterized by the investment it has been making, which explains the increase in CapEx recorded in the different categories, such as continuing operations, PPE and intangible assets.

In terms of liquidity metrics, we can measure an increase of almost 100% when compared to last year. This is largely explained by the increase in net cash from operating activities, however it was outweighed by the cash invested in the acquisition of fixed assets, the repurchase of shares and the payment of dividends to shareholders.

A particularly attractive aspect is the capital structure in this company. Although the equity ratio has decreased, it remains above 40%, being counterbalanced by the increase in the balance sheet. This metric also shows your low appetite for increasing your debt level.

The main financial indicators of Adidas show the robustness and strength of the company. On the one hand, the rise in revenues as well as in Gross Margin, which have allowed a very positive operational performance. And on the other hand, the dividend policy is very attractive to shareholders, with an increase in the dividend paid while remaining relatively constant in its Dividend Payout Ratio.

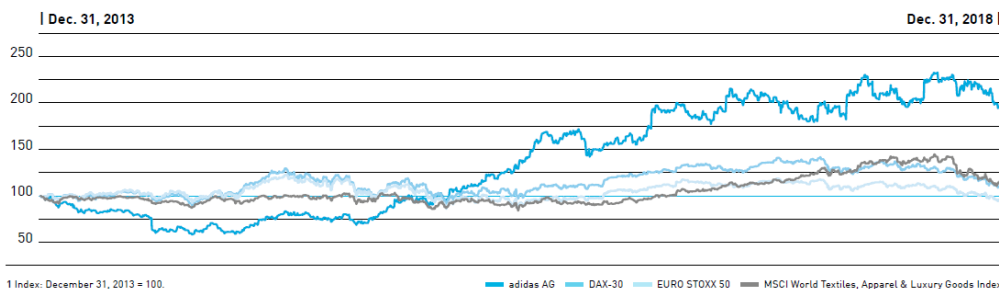
STOCKS INFORMATION

Company shares are listed on various stock exchanges and indexes in the world: DAX-30 Index in Germany, EURO STOXX 50 and MSCI World Textiles, Apparel & Luxury Goods Index, which also includes its main competitors.

STOCKS PERFORMANCE

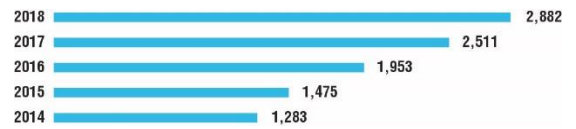
Over the past 3 years ADG's market performance has been remarkable, which lead to the market capitalization reached €51.98bn. As long as the main indices like DAX 30 and EURO STOXX 50 recorded performances of 9.15% and 9.48% respectively, its performance is even more evident as it recorded a return of 67.10%. When compared to its main competitor NIKE (45.23%), its superiority is even more evident.

Fig. 16 5Y Share Performance



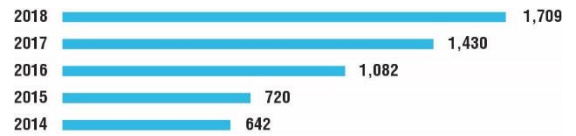
Source: Company Data

Fig. 12 EBITDA € in millions



Source: Company Data

Fig. 13 Net income from continuing operations € in millions



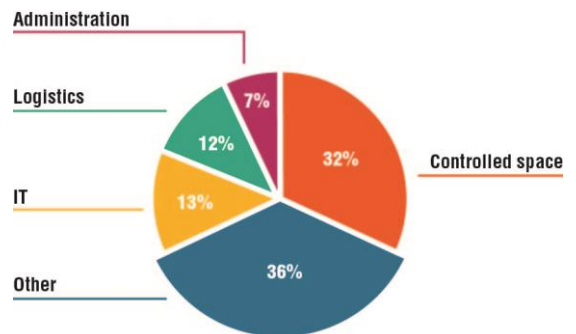
Source: Company Data

Fig. 14 Equity ratio in %



Source: Company Data

Fig. 15 Capital expenditure by type in % of total CAPEX



Source: Company Data

SHAREHOLDER STRUCTURE

In respect of Adidas' Shareholder Structure, the shares are split among different types of investors. Institutional investors have 92% of total shares, followed by the private investors and undisclosed holdings (7%). Finally, the company holds 1% of the shares as Treasury Shares. This smallest percentage is due to the Buyback Shares Program that is ongoing by the company.

Regarding the distribution of investors per geographic region, the North American (41%) market appear as the primary, followed by United Kingdom (21%) and Germany (10%).

DIVIDEND POLICY

In the last few years the company has significantly increased its dividends per share, accounting an increase of 29% compared with the previous year (2017), settling a dividend of 3.35€ per share. This increase is the consequence of the excellent operational performance during the year 2018, and a clear sign that the company has a robust and healthy financial position.

Tab. 5 Dividend Policy

	2018	2017	2016	2015	2014
Dividend Payout Ratio %	39.00	37.00	37.40	44.50	47.20
Dividend/share (€)	3.35	2.60	2.00	1.60	1.50
# shares outstanding	199.17	203.86	201.49	200.2	204.33
Total dividends paid (m€)	667	530	403	320	306

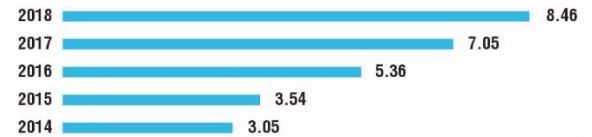
Source: Company Data

CORPORATE GOVERNANCE

Adidas AG, as well as all public corporations based in Germany, is subject to the regulations established by the German Stock Corporation Law. This law requires the existence of two distinct boards, which although independent from each other, a cooperative relationship allows the company to achieve the consistency and stability that shareholders strongly appreciate. On the one hand, the Executive Board, which is directly responsible for the entire operation and management of the company. On the other hand, the Supervision Board is in charge of supervising and advising on the main issues of the company.

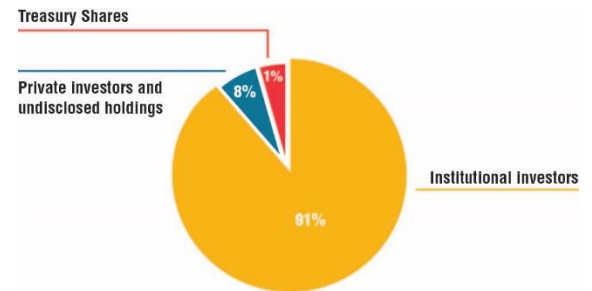
The Executive Board is made up by six members. It is in this board that the most important management decisions are made, namely in establishing the company's strategy, the targets to be achieved in its operations as well as its risk mitigation and compliance policies.

Fig. 17 Basic earnings per share in €



Source: Company Data

Fig. 18 Shareholder structure by investor group



Source: Company Data

Tab. 6 Performance of the Adidas AG share and important indices at year-end 2018 in %

	1 year	3 years	5 years	10 years
adidas AG	9	103	97	572
DAX-30	(18)	(2)	11	120
EURO STOXX 50	(14)	(8)	(3)	23
MSCI World Textiles, Apparel & Luxury Goods	(5)	25	16	283

Source: Company Data

Tab. 7 Executive Board

Name	Position	Responsibility
Kasper Rorsted	CEO	
Roland Auschel	Member	Global Sales
Eric Liedtke	Member	Global Brands
Harm Ohlmeyer	Member	Finance
Karen Parkin	Member	Global Human Resources
Martin Shankland	Member	Global Operations

Source: Company Data

In order to be in line with the German Co-Determination Act, the Supervision Board is formed by 16 members, who are divided equally between shareholder representatives and employee representatives, who are elected at the Shareholders' General Meeting and by employees respectively.

As the Supervisor Board is responsible for supervision, it has the duty to review and approve the group's financial statements, as well as the management team's proposals regarding the earnings to be distributed by the company.

Tab. 8 Executive Board

Name	Position
Igor Landau	Chairman
Udo Mueller	Deputy Chairman
Thomas Rabe	Deputy Chairman
Petra Auerbacher	Member
Ian Gallienne	Member
Roswitha Hermann	Member
Herbert Kauffmann	Member
Kathrin Menges	Member
Roland Nosko	Member
Beate Rohrig	Member
Nassef Sawiris	Member
Frank Scheiderer	Member
Michael Storl	Member
Bodo Uebber	Member
Jing Ulrich	Member
Guenter Weigl	Member

INDUSTRY OVERVIEW

The **World real GDP has been increasing** since 2016, from 3.1% to 3.66% annual growth rate in 2018. Employment rate has always been increasing from 2013 to 2018, in European Union and United States. In 2017, 60.1% of people from United States and 70.2% from European Union were employed.

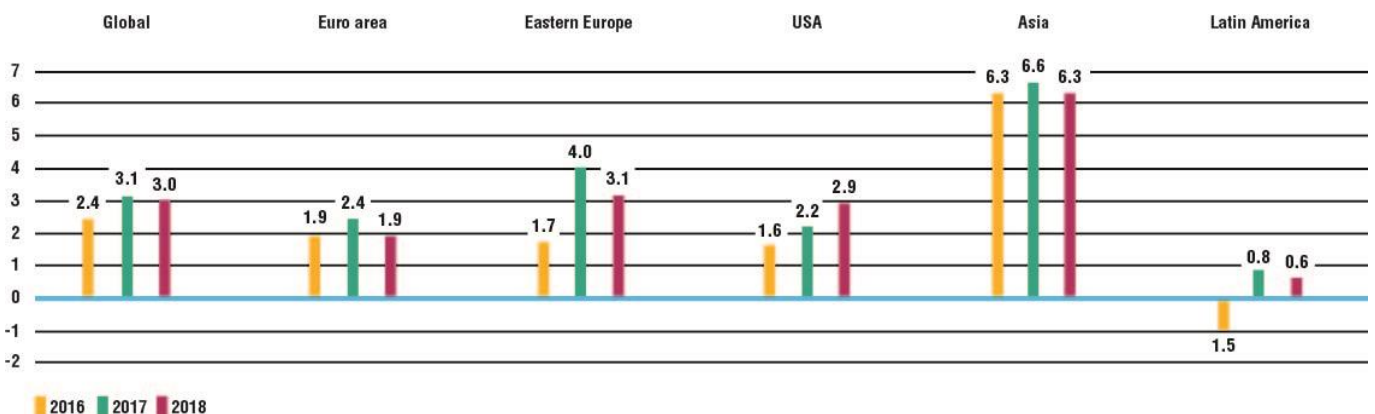
The raise of GDP and the increase in the employment rate have a positive influence in the environment, it can reflect an increase in the purchasing power of families which leads to a higher demand for footwear products, and consequently, will increase the supply and generate more revenues for the companies of the industry.

Adidas is part of the Sporting Goods Industry, which recorded a solid growth in 2018. Globally, China once again outgrew the global industry, North America returned to growth and Europe maintained its constant growth.

The sharp growth of this industry is explained by different reasons and trends. There is a high sensitivity on the part of the world population towards the importance of having a healthy lifestyle. The adoption of healthy practices and consequently a better quality-of-life. Another reason for this growth is the attention given by the authorities to the issue of a healthy lifestyle. Different strategies are followed in order to educate younger generations to adopt a healthy lifestyle.

Source: Company Data

Fig. 19 Regional GDP development in %



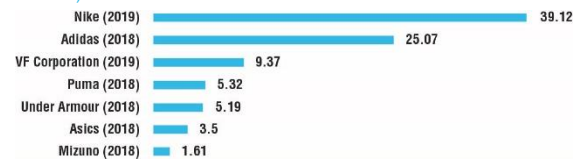
Source: Company Data

Sporting Goods Industry is also constantly in evolution due to digital progress. A dynamic strength in social networks for Social Fitness and the growth of e-commerce are evidence of the growing technological evolution in this industry.

This industry faces a number of challenges, such as the environmental impact of production, sportswear companies have been pressured to change their production methods, since the use of materials that are very harmful to the environment and cannot be recycled. Supply chain visibility, as the channels to generate revenue increase, so does the complexity of the supply chain. Tracking inventory and creating efficiencies can be

key differentiators in the footwear sector. Limited fulfilment capabilities, the technology and process of heritage systems and operations are quickly becoming ineffective. Upgrades to warehouse management systems, inventory controls and the development, or optimization, of an e-commerce platform are essential.

Fig. 20 Sportswear Revenue Worldwide (Us dollars)



Source: Statista

Key Drivers of Industry Profitability

MAIN REVENUE DRIVER

Brand Power: The biggest companies such as Nike and Adidas will always have advantage over the other brands, since they are well established in the industry and the increasing number of stores helps them boosting their revenues.

Innovation: In a sector like Footwear, trend is an important factor, so you cannot always make the same product over and over. Therefore, creating new products and pushing through the “status-quo” will attract new customers and thus increase revenues.

MAIN COST DRIVER

Marketing: To convince athletes/teams to sign contracts and to make ads, footwear companies spend a lot of money. For example, Real Madrid signed a contract of €100M/ year during 10 years with Adidas.

SWOT Analysis

Strength:

- The diversification of its products on apparel, footwear and hardware.
- Adidas’ legacy and heritage.
- The supply chain is very strong and efficient.

Weakness:

- The products to sell have a large range of prices.
- Adidas have its production outsourced on Asia, being a factor of instability.
- Slightly increase of Revenues in traditional markets like Europe.

Opportunities:

- Increase market share in Emerging Markets, China and North America.
- People are becoming more conscious about their lives, adopting healthy lifestyles.

Threats:

- In footwear industry the competition is very high due to the presence of a lot of firms operating in the same markets, becoming potential chooses to the costumers.
- Fraud products are becoming a several threat to company's revenues.
- Supplier dominance.

5 Porter's Forces

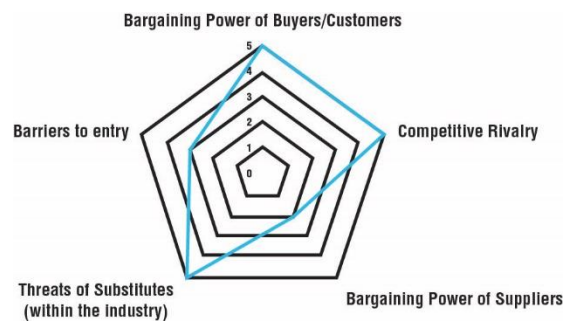
Bargaining Power of Buyers: High. In a Footwear industry, the quantity of suppliers is very low compared with the number of buyers, leading to low switching costs from one sneaky brand to another. Product differentiation is also relevant since in the market there are thousands of shoes. Nowadays, customers can access a lot of information about the different characteristics of the shoes and to find out where is cheaper to buy the desired product. Finally, the brand identity is a reason why customers may or may not choose to overpay because of the brand name.

Competitive Rivalry: High. Adidas operates in a segment composed by a large number of firms, even being one of the biggest companies, all of its competitors are present worldwide. To increase their market share the firms are focusing their strategies in increase the range of products. Design and looks over price. Brand identity and customer loyalty is a strong factor to be successful on this industry. Marketing and Advertising campaigns are also very important to reach the contact with the clients.

Bargaining Power of Suppliers: Low. Adidas holds a large number of suppliers. Some of them are very small, which represents a weakness for them since they are not able to make the rules or exercise any pressure in big companies like Adidas. Footwear companies have the possibility to switch to new suppliers easier.

Barriers to entry: High. In footwear industry, a new joiner will have to face the heritage from the famous brands. To compete with companies like Adidas, a new brand has to made high investments in whole of its business, from production to distribution.

Fig. 21 5 Porter's Forces



Source: Company Data

Threats of Substitutes: Moderate. For the costumers, the switching costs for choosing a brand over another are very low. Buyer inclination to substitute may be a different type of design/sneaker type the client is looking for. The quality and performance of the product is also very relevant, since not all sneakers perform in the same way, specifically the athletic ones.

PEER COMPANIES

In order to choose the peer companies group, the criteria applied was: market capitalization of over \$1B, Footwear as the primary source of revenues, publicly traded and headquarters and stronger markets in USA and Europe. The restricted group obtained was composed by Nike, Puma, Under Armour and Skechers.

With our peer companies well defined, there are some common practices in the strategies of this industry. Endorsements, Advertising, Distribution, Product and Environment are examples of its identical path.

NIKE INC

Nike Inc is faced as the most valuable brand among this industry. This American company is engaged in a strategy based on Product, Digital, Manufacturing & Engineering, Marketing and Communication, Supply Chain and Technology. In 2018, Nike's revenues increased 6% to \$36.4 billion.

PUMASE

Puma SE is an important player in the sporting goods industry. This is a German company that designs, manufactures and sells footwear, apparel and accessories. Over the last years, they have executed a strategy with five priorities: Brand Heat, Product, Women's, Distribution and Organization. They are experiencing a good moment, with their sales reaching €4.6B in 2018 and a growth in EBITDA from €154 million in 2015 to €419 million in 2018.

SKECHERS

Skechers designs and manufactures lifestyle footwear. In 2018, the company's revenues reached \$4.6B, with a Global Retail Growth of 8%. This American corporation accounted an increase of 50% on its operational income.

UNDER ARMOUR

This American Company manufactures footwear and apparel and was founded in 1996. The company's strategy focuses on to become more than just a brand, making great products but reducing unnecessary costs. The revenues increase from \$4.833B to \$5.193B over the period from 2016 to 2018.

Fig. 22 Nike



Source: Company Data

Fig. 23 Puma



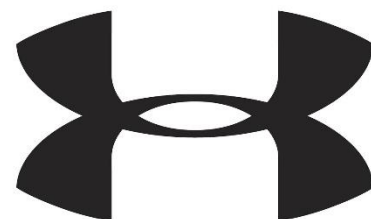
Source: Company Data

Fig. 24 Skechers



Source: Company Data

Fig. 25 Under Armour



UNDER ARMOUR.

Source: Company Data

VALUATION

First of all, it is important to mention the methods chosen to value Adidas AG were the Discounted Cash Flow (DCF), which consists of obtaining the Enterprise's Value based on the projections of its financial statements. The second approach used was Relative Valuation, which consists of evaluating the company on the basis of a comparison of key indicators from peer companies.

DCF

This is considered to be the most appropriate method to estimate the value of a company, taking into account the information available. To define the assumptions, the intention was to maintain the current situation as much as possible, so that the valuation would be meaningful.

Revenues: Following the same method as the company, the total value of revenues was obtained by estimating the evolution of the revenues in the different 7 markets in which it operates. Nevertheless, for a better understanding, it is necessary to understand that Adidas has been recording double-digit increases in revenues on a currency neutral basis. However, due to a slowdown in the world economy, I strongly believe that the company's sales evolution will slow down, expecting revenues to grow 5.10% in 2019 and 4.43% in the future.

North America, China and Emerging Markets continue to be the key segments that allow the company to record remarkable growth. In these 3 segments is expected a growth of 12%, 12% and 10% respectively. In the remaining segments the outlook for the future is not particularly bright, with Latin America and Europe recording a decrease in their revenues of 8% and 0.5%.

The remaining assumptions used, with the exception of Shareholder Equity, were derived as a percentage of sales.

Terminal Growth Rate: To determine the Terminal growth rate, we have to consider the fact that Adidas is a company with its operation spread all over the world, which forces us to take into account the overall evolution of the economy. As Adidas is a German company, and the German GDP growth rate for 2023F is expected to be 1.3%. Since more than a third of its revenues will be from Asia-Pacific segment is important to take in consideration the GDP growth rate in that region, in the case 5.2%. Based on this information, the Terminal Growth rate chosen was 2.0% to obtain the Terminal Value. This small value is also an indicator of the adoption of a conservative perspective.

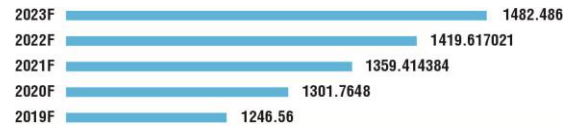
CapEx + D&A + Net Working Capital: Over the past few years the relationship between CapEx and Sales has been constant. In order to keep this relationship present, CapEx will account for 3.2% of Sales. Another relationship that has been constant is D&A and PPE, on average D&A is 22% of PPE. In order to explore this topic and take into consideration the historical distributions of CAPEX and D&A, they will be replicated in the period of Valuation.

Fig. 26 Earnings per Share



Source: Own estimations

Fig. 27 Depreciation & Amortization



Source: Own estimations

Net Working Capital is the difference between all assets and all liabilities included in the company's operation. Throughout the Valuation period, Net Working Capital is always positive, which indicates that the current assets are higher than the company's liabilities.

WACC Assumptions: The method chosen to determine the discount rate to be used to discount the Cash Flows was WACC. Since Adidas' capital structure is both debt and equity, it is necessary to calculate the cost of each individually.

Analyzing the available financial information about the company's debt, I found that the average cost of debt is 2.1%. Therefore, this was the figure I assumed for the entire period.

The cost of equity was achieved using the Capital Asset Pricing Model (CAPM). To apply this model, it is necessary to determine the Risk Free Rate, the Levered Beta and the Equity Risk Premium. For the Risk Free Rate was used the current 10 Year German-Bond with a negative yield of 0.585%. Despite being negative, no significant changes are expected in the short/medium term. For that reason, during the valuation process the Risk Free Rate used was the same.

Based on Damodaran's estimation for US companies, we obtained the values for the Levered Beta and Equity Risk Premium, which accounts 0.93 and 5.96% respectively.

Taking into account the weight of Debt and Equity in the company's capital structure and its costs, the WACC reached is 5.32%.

RELATIVE VALUATION

The relative valuation was performed based on multiples of selected peer companies. Selected them, the next step was to identify the key multiples. Therefore, the chosen to the analysis were P/E ratio, EV/Sales and EV/EBITDA.

P/E Ratio: By applying P/E ratio, the price target obtained is 199.21€. Compared with the price of DCF methodology, there is a very sharp discrepancy due to the Under Armour ratio which is null.

EV/Sales: For EV/Sales ratio, the price target reached was 175.02€. The value achieved is also not in accordance with price target from DCF calculations. This happens since the industry average ratio is much lower than that of Adidas.

EV/EBITDA: Using EV/EBITDA ratio, the target price reached is 359.50€. As the previous ones, this is not in consonance with the DCF target price.

The analysis of these ratios allows us to conclude that Adidas, along with Nike, is one step ahead of the rest. Assigning the same weight to these three ratios, we obtained the target price of 244.58€.

Tab. 9 WACC Assumptions

WACC Assumptions	
Risk free rate	-0.585%
Equity risk premium	5.960%
Levered Beta	0.80
Cost of Equity	4.650%
Cost of Debt	2.100%
Tax Rate	25.00%
Cost of debt net taxes	1.575%
Pre-tax WACC	4.412%
WACC	4.363%

Source: Own estimations

Tab. 10 P/E Ratio – Peer Companies

P/E Ratio	
Puma	33.44
Nike	30.91
Skechers	11.86
Under Armour	0.00
Adidas	24.19

Source: Own estimations

Tab. 11 Multiples Price Target

Price Target	
P/E	199.21
EV/Sales	175.02
EV/EBITDA	359.51
Adidas	244.58

Source: Own estimations

INVESTMENT RISKS

In order to assess and determine the main industry risks it was created a risk matrix. The creation of the matrix was based on four main risk areas: Operational risk, Financial risk, Strategic Risk and Political/Legal risk.

OPERATIONAL RISKS

Business Partner Risks: The company establishes partnerships with various third parties, such as athletes, creative partners, innovation partners, retail partners or suppliers of goods or services. Consequently, the company is exposed to a wide spectrum of business partner risks. Injuries to individual athletes or poor on-field performance on the part of sponsored teams or athletes could reduce their consumer appeal and eventually result in lower sales and diminished attractiveness of our brands.

FINANCIAL RISKS

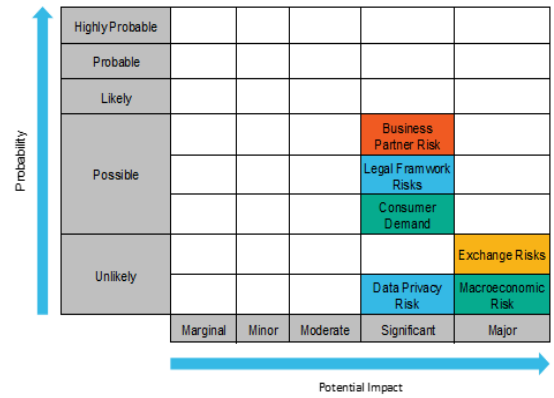
Exchange Risks: Currency risks for Adidas are a direct result of multi-currency cash flows within the company, in particular the mismatch of the currencies required for sourcing the products versus the denominations of the sales.

STRATEGIC RISKS

Consumer demand Risks: Being a successful player in the sporting goods industry depends on the ability to create new and innovative footwear and apparel products. In this respect, it is essential to anticipate and respond quickly to changes in consumer demand or consumer trends. Changes in consumer demand can be sudden and unexpected, particularly when it comes to the fashion-related part of the business. Thus, the failure to anticipate consumer demand, as well as the creation and supply of products that do not resonate with consumers, is a critical risk to the success of all brands.

Macroeconomic Risks: The growth of the sporting goods industry depends of a large extent on consumer spending and consumer confidence. Economic slowdowns, disruptions in financial markets and socio-political factors such as military conflicts, changes of government, nationalization or expropriation, particularly in regions where Adidas is strongly involved, therefore, could have a negative impact on the company's business activities and on its performance in terms of top results and operating results.

Fig. 28 Risk Matrix



Source: Own estimations

POLITICAL AND LEGAL

Legal Framework Risks: Numerous laws and regulations regarding competition, trade, customs and taxes affect the Adidas Group’s business practices worldwide. Non-compliance with regulations could lead to substantial financial losses and consequentially reputational damages.

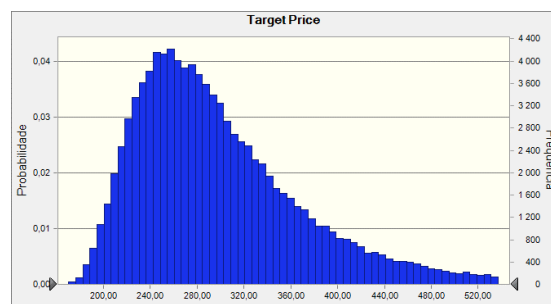
Data Privacy Risks: As a worldwide company, Adidas is subject to various laws and regulations concerning data protection and privacy. Non-compliance with regulations could lead to substantial financial losses and fines. For example, Non-compliance with EU- General Data Protection Regulation may result in fines up to 4% of net sales. In addition, this risk could result in reputational damages.

SCENARIO ANALYSIS

To execute the Monte Carlo Simulation, we used the Crystal Ball tool, with 100000 trials. The results showed a mean target price of 300.34€ and a median of 283.92€, under the range of the target price obtained by DCF. The results show a skewedness with an asymmetry of 1.94, which can be observed on the right tail, since it is longer. Moreover, the recorded Kurtosis value is 10.07, which is higher than the Kurtosis value of a normal distribution,3, something we can see in its fatter tails. The confidence interval is 95%.

The simulation was based on two assumptions to which the target price is very sensitive. In this case, the Terminal Growth Rate because represents the growth in the terminal period and the Long Term WACC, for being the rate used to discount the Cash Flows, also the Terminal Value.

Fig. 29 Monte Carlo Simulation



Source: Own estimations

Tab. 12 Target Price Sensitivity

		Change in Terminal Growth Rate						
		1.25%	1.50%	1.75%	2.00%	2.25%	2.50%	2.75%
Change in WACC	5.613%	166.25	174.94	184.75	195.92	208.75	223.65	241.14
	5.113%	184.10	195.23	208.01	222.84	240.26	261.02	286.16
	4.613%	207.26	222.03	239.39	260.05	285.10	316.07	355.35
	4.363%	221.62	238.94	259.57	284.61	315.47	354.68	406.04
	4.113%	238.50	259.09	284.03	314.88	354.00	405.25	475.31
	3.863%	258.60	283.50	314.28	353.33	404.47	474.38	575.70
	3.613%	282.96	313.68	352.65	403.69	473.46	574.57	734.26

Source: Own estimations

Appendix

Appendix 1 - Balance Sheet

Balance Sheet	Historical Balance Sheet				Forecast Balance Sheet			
	2016	2017	2018	2019	2020	2021	2022	2023
Assets								
Cash and Cash equivalents	1510.00	1598.00	2629.00	3114.66	3788.88	4501.57	5254.73	6050.43
Short-term financial assets	5.00	5.00	6.00	6.28	6.56	6.85	7.15	7.47
Accounts receivable	2200.00	2315.00	2418.00	2442.18	2550.33	2663.28	2781.22	2904.39
Other current financial assets	729.00	393.00	542.00	705.14	736.37	768.98	803.04	838.60
Inventories	3763.00	3692.00	3445.00	3600.03	3759.45	3925.94	4099.81	4281.37
Income tax receivables	98.00	71.00	48.00	59.38	62.01	64.75	67.62	70.61
Other current assets	580.00	498.00	725.00	759.80	793.45	828.59	865.28	903.60
Assets classified as held for sale	0.00	72.00	0.00	0.00	0.00	0.00	0.00	0.00
Total current assets	8886.00	8645.00	9813.00	10687.47	11697.05	12759.97	13878.85	15056.47
Property, plant and equipment	1915.00	2000.00	2237.00	5690.93	5942.95	6206.14	6480.99	6768.00
Goodwill	1412.00	1220.00	1245.00	1258.70	1314.44	1372.65	1433.44	1496.92
Trademarks	1680.00	806.00	844.00	864.26	902.53	942.50	984.24	1027.83
Other intangible assets	167.00	154.00	196.00	256.76	268.13	280.01	292.41	305.35
Long-term financial assets	194.00	236.00	276.00	346.38	361.72	377.74	394.47	411.94
Other non-current financial assets	96.00	219.00	256.00	402.94	420.79	439.42	458.88	479.21
Deferred tax assets	732.00	630.00	651.00	679.64	709.74	741.17	774.00	808.27
Other non-current assets	94.00	108.00	94.00	101.05	105.53	110.20	115.08	120.17
Total non-current assets	6290.00	5374.00	5799.00	9600.66	10025.83	10469.83	10933.49	11417.69
Total assets	15176.00	14019.00	15612.00	20288.13	21722.88	23229.80	24812.35	26474.16
Liabilities and equity								
Short-term borrowings	636.00	137.00	66.00	430.00	451.93	474.98	499.20	524.66
Accounts payable	2496.00	1975.00	2300.00	2612.80	2746.05	2886.10	3033.29	3187.99
Other current financial liabilities	201.00	362.00	186.00	568.97	597.99	628.49	660.54	694.23
Income Taxes	402.00	424.00	268.00	193.76	203.65	214.03	224.95	236.42
Other current provisions	573.00	741.00	1232.00	1255.41	1319.43	1386.72	1457.45	1531.78
Current Accrued liabilities	2023.00	2180.00	2305.00	2408.73	2531.57	2660.68	2796.37	2938.99
Other current liabilities	434.00	473.00	477.00	477.95	502.33	527.95	554.87	583.17
Total current liabilities	6765.00	6291.00	6834.00	7947.63	8352.95	8778.95	9226.68	9697.24
Long-term borrowings	982.00	983.00	1609.00	2135.90	2244.84	2359.32	2479.65	2606.11
Other non-current financial liabilities	22.00	22.00	103.00	3000.00	3153.00	3313.80	3482.81	3660.43
Pensions and similar obligations	355.00	298.00	246.00	214.02	224.94	236.41	248.46	261.14
Deferred tax liabilities	387.00	190.00	241.00	297.88	313.07	329.03	345.81	363.45
Other non-current provisions	44.00	80.00	128.00	197.89	207.98	218.59	229.74	241.45
Non-current accrued liabilities	120.00	85.00	19.00	19.32	20.31	21.34	22.43	23.58
Other non-current liabilities	46.00	53.00	68.00	8.64	9.08	9.54	10.03	10.54
Total non-current liabilities	1957.00	1711.00	2414.00	5873.65	6173.20	6488.04	6818.93	7166.69
					0.05	0.05	0.05	0.05
Share Capital	201.00	204.00	199.00	198.00	198.00	198.00	198.00	198.00
Reserves	749.00	-29.00	123.00					
Retained Earnings	5521.00	5858.00	6054.00					
Shareholders' equity	6472.00	6032.00	6377.00	6466.85	7196.72	7962.80	8766.74	9610.23
Non-controlling interests	-17.00	-15.00	-13.00					
Total equity	6455.00	6017.00	6364.00	6466.85	7196.72	7962.80	8766.74	9610.23
Total liabilities + equity	15176.00	14019.00	15612.00	20288.13	21722.88	23229.80	24812.35	26474.16
	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -

Appendix 2 - Income Statement

Income Statement	Historical Income Statement				Forecast Income Statement			
	2016	2017	2018	2019	2020	2021	2022	2023
Revenue								
Net Sales	19291.00	21218.00	21915.00	23032.67	24052.68	25117.87	26230.24	27391.86
Cost of sales	9912.00	10514.00	10552.00	10707.60	11181.80	11676.99	12194.11	12734.14
	9379.00	10703.00	11363.00	12325.06	12870.89	13440.88	14036.12	14657.72
	(% of net sales)	48.6%	50.4%	51.8%	53.5%	53.5%	53.5%	53.5%
Royalty	109.00	115.00	129.00	149.62	156.24	163.16	170.39	177.93
Other operating income	266.00	17.00	48.00	22.24	23.23	24.25	25.33	26.45
Other operating expenses	8263.00	8766.00	9172.00	9427.78	9845.30	10281.31	10736.62	11212.10
	(% of net sales)	42.80%	41.30%	41.90%	40.93%	40.93%	40.93%	40.93%
Goodwill impairment losses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operating Profit	1491.00	2070.00	2368.00	3069.13	3205.05	3346.99	3495.22	3650.00
	(% of net sales)	8%	10%	10.8%	13.3%	13.3%	13.3%	13.3%
Financial Income	28.00	46.00	57.00	54.59	57.01	59.53	62.17	64.92
Financial Expenses	74.00	93.00	47.00	157.70	164.69	171.98	179.60	187.55
Income before taxes	1444.00	2023.00	2378.00	2966.02	3097.37	3234.54	3377.79	3527.38
	(% of net sales)	8%	10%	10.9%	12.9%	12.9%	12.9%	12.9%
Income taxes	426.00	668.00	669.00	756.16	789.65	824.62	861.14	899.28
Losses/gain fr. discontinued op. net of tax	1.00	254.00	5.00	0.00	0.00	0.00	0.00	0.00
	(Tax rate %)			25.5%	25.5%	25.5%	25.5%	25.5%
Net Income	1020.00	1100.00	1704.00	2209.86	2307.72	2409.92	2516.65	2628.10
	(% of net sales)	5.3%	5.2%	7.8%	9.6%	9.6%	9.6%	9.6%
Net Income attributable to shareholders	1017.00	1097.00	1701.00	2206.86	2304.72	2406.92	2513.65	2625.10
	(% of net sales)	5.3%	5.2%	7.8%	9.6%	9.6%	9.6%	9.6%
Net income to non-controlling interests	2.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
EPS from continuing operations (€)	5.08	6.68	8.46	11.16	11.66	12.17	12.71	13.27
Share number for EPS from continuing and discontinued operations	201.00	204.00	199.00	198.00	198.00	198.00	198.00	198.00

Appendix 3 – Cash Flow Statement

Statement of Cash Flows	Historical Statement of Cash Flows				Forecast Statement of Cash Flows			
	2016	2017	2018	2019	2020	2021	2022	2023
Operating activities:								
Income before taxes	1444.00	2023.00	2378.00	2966.02	3097.37	3234.54	3377.79	3527.38
Adjustments for:								
Depreciation, amortization and impairment losses	397.00	484.00	490.00	1246.56	1301.76	1359.41	1419.62	1482.49
Reversals of impairment losses	-2.00	-1.00	-3.00	-3.15	-3.29	-3.44	-3.59	-3.75
Unrealized foreign exchange gains, net	-7.00	-75.00	-10.00	14.15	14.78	15.43	16.12	16.83
Interest income	-21.00	-25.00	-24.00	-28.31	-29.56	-30.87	-32.24	-33.66
Interest expense	70.00	62.00	42.00	155.68	162.58	169.77	177.29	185.15
Losses on sale of property, plant and equipment and intangible assets, net		17.00	9.00	10.11	10.56	11.02	11.51	12.02
Other non-cash expenses	0.00	3.00	17.00	8.09	8.45	8.82	9.21	9.62
Payment for external funding of pension obligations		-30.00	-90.00	-94.59	-98.78	-103.15	-107.72	-112.49
Proceeds from early termination of promotion and advertising contracts		76.00	0.00	0.00	0.00	0.00	0.00	0.00
Operating profit before working capital changes	1859.00	2534.00	2808.00	4274.56	4463.87	4661.55	4867.99	5083.57
Increase in receivables and other assets	-411.00	-477.00	-209.00	-980.59	-1024.01	-1069.36	-1116.72	-1166.17
Decrease/(increase) in inventories	-621.00	-216.00	180.00	-102.45	-106.99	-111.73	-116.67	-121.84
Increase in accounts payable and other liabilities	1006.00	422.00	741.00	-234.77	-245.17	-256.03	-267.37	-279.21
Case generated from operations before interest and taxes	1834.00	2263.00	3520.00	2956.75	3087.69	3224.43	3367.23	3516.35
Interest paid	-46.00	-65.00	-40.00	-40.44	-42.23	-44.10	-46.05	-48.09
Income taxes paid	-439.00	-556.00	-815.00	-646.98	-675.64	-705.56	-736.80	-769.43
Net cash generated from operating activities - continuing operations	1348.00	1641.00	2666.00	2269.33	2369.83	2474.78	2584.38	2698.83
Net cash (used in)/generated from operating activities - discontinued operations	-1.00	6.00	-20.00					
Net cash generated from operating activities (1)	1348.00	1648.00	2646.00	2269.33	2369.83	2474.78	2584.38	2698.83
Investing activities								
Purchase of trademarks and other intangible assets	-65.00	-74.00	-96.00	-99.07	-102.24	-105.51	-108.89	-112.38
Proceeds from sale of trademarks and other intangible assets	0.00	0.00	2.00	2.06	2.13	2.20	2.27	2.34
Purchase of property, plant and equipment	-586.00	-678.00	-611.00	-630.55	-650.73	-671.55	-693.04	-715.22
Proceeds from sale of property, plant and equipment	5.00	2.00	13.00	13.42	13.85	14.29	14.75	15.22
Proceeds from sale of assets held for sale	14.00	0.00	71.00	73.27	75.62	78.04	80.53	83.11
Proceeds from sale of a disposal group	29.00	6.00	18.00	18.58	19.17	19.78	20.42	21.07
Proceeds from disposal of discontinued operations net of cash disposed	0.00	174.00	0.00	0.00	0.00	0.00	0.00	0.00
Purchase of sale of short-term financial assets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Purchase of investments and other long-term assets	0.00	-132.00	-56.00	-57.79	-59.64	-61.55	-63.52	-65.55
Interest received	-33.00	25.00	24.00					
Net cash used in investing activities - continuing operations	-614.00	-676.00	-636.00	-680.09	-701.85	-724.31	-747.49	-771.41
Net cash used in investing activities - discontinuing operations	0.00	-4.00	0.00	0.00	0.00	0.00	0.00	0.00
Net cash used in investing activities (2)	-614.00	-680.00	-636.00	-680.09	-701.85	-724.31	-747.49	-771.41
					0.03	0.03	0.03	
Financing activities:								
Proceeds from long-term borrowings	0.00	0.00	141.00	0.00	0.00	0.00	0.00	0.00
Proceeds from issuance of a convertible bond	0.00	0.00	518.00	0.00	0.00	0.00	0.00	0.00
Payments for options related to a convertible bond	0.00	0.00	-35.00	0.00	0.00	0.00	0.00	0.00
Repayments of financial lease obligations	-3.00	-2.00	-2.00	-369.68	-386.05	-403.14	-421.00	-439.64
Dividend paid to shareholders of adidas AG	-320.00	-405.00	-528.00	-664.00	-716.42	-748.15	-781.28	-815.88
Dividend paid to non-controlling interest shareholders	-2.00	-1.00	-1.00	0.00	0.00	0.00	0.00	0.00
Repurchase of treasury shares	-218.00	-85.00	-1000.00	-247.50	-258.46	-269.90	-281.85	-294.34
Repurchase of treasury shares due to share-based payments		-15.00	-22.00	-13.58	-14.18	-14.80	-15.46	-16.15
Proceeds from reissuance of treasury shares due to share-based payments		13.00	19.00	11.49	12.00	12.53	13.08	13.66
Proceeds from short-term borrowings	150.00	0.00	9.00	0.00	0.00	0.00	0.00	0.00
Repayments of short-term borrowings	-138.00	-273.00	-49.00	438.60	458.02	478.31	499.49	521.61
Net cash used in financing activities - continuing operations	-553.00	-769.00	-951.00	-844.66	-905.09	-945.17	-987.03	-1030.74
Net cash used in financing activities - discontinued operations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net cash used in financing activities (3)	553.00	-769.00	-951.00	-844.66	-905.09	-945.17	-987.03	-1030.74
Effect of exchange rates on cash (4)								
Increase of cash and cash equivalents	145.00	88.00	1031.00	659.66	674.22	712.70	753.16	795.69
Cash and cash equivalents at beginning of year	1365.00	1510.00	1598.00	2455.00	3114.66	3788.88	4501.57	5254.73
Cash and cash equivalents at end of period	1510.00	1598.00	2629.00	3114.66	3788.88	4501.57	5254.73	6050.43
Decrease/increase of cash (1+2+3+4)	1252.00	88.00	1030.00	659.66	674.22	712.70	753.16	795.69

Appendix 4 – Financial Ratios

Key Financial Ratios	Forecast Balance Sheet				
	2019	2020	2021	2022	2023
Liquidity Ratios					
Current Ratio (x)	1.34	1.40	1.45	1.50	1.55
Quick Ratio (x)	0.89	0.95	1.01	1.06	1.11
Cash Ratio (x)	0.39	0.45	0.51	0.57	0.62
Efficiency Ratios					
Total Assets Turnover (x)	1.14	1.11	1.08	1.06	1.03
Accounts Receivables Turnover (x)	3442.38	3442.38	3442.38	3442.38	3442.38
Collection Period (days)	38.70	38.70	38.70	38.70	38.70
Inventory Turnover (x)	0.16	0.16	0.16	0.16	0.16
Days in Inventory (days)	122.72	122.72	122.72	122.72	122.72
Payables Turnover (x)	4.36	4.17	4.15	4.12	4.09
Payables Period (days)	89.06	89.64	90.21	90.79	91.38
Operating Cycle (days)	161.42	161.42	161.42	161.42	161.42
Cash Cycle (days)	72.35	71.78	71.20	70.62	70.04
Assets Turnover	9.18	9.41	9.64	9.86	10.07
Profitability Ratios					
Gross Profit Margin (%)	53.51%	53.51%	53.51%	53.51%	53.51%
EBITDA Margin (%)	18.74%	18.74%	18.74%	18.74%	18.51%
EBIT Margin (%)	13.33%	13.33%	13.33%	13.33%	13.33%
Net Profit Margin (%)	46.40%	48.63%	50.80%	52.91%	54.97%
ROA (%)	10.89%	10.62%	10.37%	10.14%	9.93%
ROE (%)	34.17%	32.07%	30.26%	28.71%	27.35%
EPS (x)	11.16	11.66	12.17	12.71	13.27
Solvency Ratios					
short-term Debt Ratio (%)	0.24	0.17	0.17	0.17	0.17
Long-term Debt Ratio (%)	0.76	0.83	0.83	0.83	0.83
Debt to Equity Ratio (x)	0.05	0.04	0.03	0.03	0.02
Equity Multiplier (x)	2.92	3.14	3.02	2.92	2.83
Interest Coverage Ratio (x)	19.05	19.05	19.05	19.05	19.05
Value Creation and Cash Flow Ratios					
Economic Value Added (EVA)	1131.42	1153.02	1175.12	1197.72	1220.84
Cash to Income	1.41	1.64	1.87	2.09	2.30
Earnings Quality: CFO/(NP+D&A+ΔNWC)	0.20	0.23	0.23	0.23	0.23

Appendix 5 – Common-size Balance Sheet

Balance Sheet	Historical Balance Sheet				Forecast Balance Sheet			
	2016	2017	2018	2019	2020	2021	2022	2023
Assets								
Cash and Cash equivalents	9.95%	11.40%	16.84%	15.35%	17.44%	19.38%	21.18%	22.85%
Short-term financial assets	0.03%	0.04%	0.04%	0.03%	0.03%	0.03%	0.03%	0.03%
Accounts receivable	14.50%	16.51%	15.49%	12.04%	11.74%	11.46%	11.21%	10.97%
Other current financial assets	4.80%	2.80%	3.47%	3.48%	3.39%	3.31%	3.24%	3.17%
Inventories	24.80%	26.34%	22.07%	17.74%	17.31%	16.90%	16.52%	16.17%
Income tax receivables	0.65%	0.51%	0.31%	0.29%	0.29%	0.28%	0.27%	0.27%
Other current assets	3.82%	3.55%	4.64%	3.75%	3.65%	3.57%	3.49%	3.41%
Assets classified as held for sale	0.00%	0.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total current assets	58.55%	61.67%	62.86%	52.68%	53.85%	54.93%	55.94%	56.87%
Property, plant and equipment	12.62%	14.27%	14.33%	28.05%	27.36%	26.72%	26.12%	25.56%
Goodwill	9.30%	8.70%	7.97%	6.20%	6.05%	5.91%	5.78%	5.65%
Trademarks	11.07%	5.75%	5.41%	4.26%	4.15%	4.06%	3.97%	3.88%
Other intangible assets	1.10%	1.10%	1.26%	1.27%	1.23%	1.21%	1.18%	1.15%
Long-term financial assets	1.28%	1.68%	1.77%	1.71%	1.67%	1.63%	1.59%	1.56%
Other no-current financial assets	0.63%	1.56%	1.64%	1.99%	1.94%	1.89%	1.85%	1.81%
Deferred tax assets	4.82%	4.49%	4.17%	3.35%	3.27%	3.19%	3.12%	3.05%
Other non-current assets	0.62%	0.77%	0.60%	0.50%	0.49%	0.47%	0.46%	0.45%
Total non-current assets	41.45%	38.33%	37.14%	47.32%	46.15%	45.07%	44.06%	43.13%
Total assets	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Liabilities and equity								
Short-term borrowings	4.19%	0.98%	0.42%	2.12%	2.08%	2.04%	2.01%	1.98%
Accounts payable	16.45%	14.09%	14.73%	12.88%	12.64%	12.42%	12.22%	12.04%
Other current financial liabilities	1.32%	2.58%	1.19%	2.80%	2.75%	2.71%	2.66%	2.62%
Income Taxes	2.65%	3.02%	1.72%	0.96%	0.94%	0.92%	0.91%	0.89%
Other current provisions	3.78%	5.29%	7.89%	6.19%	6.07%	5.97%	5.87%	5.79%
Current Accrued liabilities	13.33%	15.55%	14.76%	11.87%	11.65%	11.45%	11.27%	11.10%
Other current liabilities	2.86%	3.37%	3.06%	2.36%	2.31%	2.27%	2.24%	2.20%
Total current liabilities	44.58%	44.87%	43.77%	39.17%	38.45%	37.79%	37.19%	36.63%
Long-term borrowings	6.47%	7.01%	10.31%	10.53%	10.33%	10.16%	9.99%	9.84%
Other non-current financial liabilities	0.14%	0.16%	0.66%	14.79%	14.51%	14.27%	14.04%	13.83%
Pensions and similar obligations	2.34%	2.13%	1.58%	1.05%	1.04%	1.02%	1.00%	0.99%
Deferred tax liabilities	2.55%	1.36%	1.54%	1.47%	1.44%	1.42%	1.39%	1.37%
Other non-current provisions	0.29%	0.57%	0.82%	0.98%	0.96%	0.94%	0.93%	0.91%
Non-current accrued liabilities	0.79%	0.61%	0.12%	0.10%	0.09%	0.09%	0.09%	0.09%
Other non-current liabilities	0.30%	0.38%	0.44%	0.04%	0.04%	0.04%	0.04%	0.04%
Total non-current liabilities	12.90%	12.20%	15.46%	28.95%	28.42%	27.93%	27.48%	27.07%
Share Capital								
Reserves	4.94%	-0.21%	0.79%	0.00%	0.00%	0.00%	0.00%	0.00%
Retained Earnings	36.38%	41.79%	38.78%	0.00%	0.00%	0.00%	0.00%	0.00%
Shareholders' equity	42.65%	43.03%	40.85%	31.88%	33.13%	34.28%	35.33%	36.30%
Non-controlling interests	-0.11%	-0.11%	-0.08%	0.00%	0.00%	0.00%	0.00%	0.00%
Total equity	42.53%	42.92%	40.76%	31.88%	33.13%	34.28%	35.33%	36.30%
Total liabilities + equity	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Appendix 6 – Common-size Income Statement

Income Statement	Historical Income Statement				Forecast Income Statement			
	2016	2017	2018	2019	2020	2021	2022	2023
Revenue								
Net Sales	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Cost of sales	51.38%	49.55%	48.15%	46.49%	46.49%	46.49%	46.49%	46.49%
	48.62%	50.44%	51.85%	53.51%	53.51%	53.51%	53.51%	53.51%
Royalty	0.57%	0.54%	0.59%	0.65%	0.65%	0.65%	0.65%	0.65%
Other operating income	1.38%	0.08%	0.22%	0.10%	0.10%	0.10%	0.10%	0.10%
Other operating expenses	42.83%	41.31%	41.85%	40.93%	40.93%	40.93%	40.93%	40.93%
Goodwill impairment losses	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Operating Profit	7.73%	9.76%	10.81%	13.33%	13.33%	13.33%	13.33%	13.33%
Financial Income	0.15%	0.22%	0.26%	0.24%	0.24%	0.24%	0.24%	0.24%
Financial Expenses	0.38%	0.44%	0.21%	0.68%	0.68%	0.68%	0.68%	0.68%
Income before taxes	7.49%	9.53%	10.85%	12.88%	12.88%	12.88%	12.88%	12.88%
Income taxes	2.21%	3.15%	3.05%	3.28%	3.28%	3.28%	3.28%	3.28%
Losses/gain fr. discontinued op. net of tax	0.01%	1.20%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
Net Income	5.29%	5.18%	7.78%	9.59%	9.59%	9.59%	9.59%	9.59%
Net Income attributable to shareholders	5.27%	5.17%	7.76%	9.58%	9.58%	9.58%	9.58%	9.58%
Net income to non-controlling interests	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%

Appendix 7 – DCF Assumptions

Net Working Capital							
	2017	2018	2019	2020	2021	2022	2023
Accounts receivable	2315.00	2418.00	2442.18	2550.33	2663.28	2781.22	2904.39
Other current financial assets	393.00	542.00	705.14	736.37	768.98	803.04	838.60
Inventories	3692.00	3445.00	3600.03	3759.45	3925.94	4099.81	4281.37
Income tax receivables	71.00	48.00	59.38	62.01	64.75	67.62	70.61
Other current assets	498.00	725.00	759.80	793.45	828.59	865.28	903.60
Assets classified as held for sale	72.00	0.00	0.00	0.00	0.00	0.00	0.00
Deferred tax assets	630.00	651.00	679.64	709.74	741.17	774.00	808.27
Other non-current assets	108.00	94.00	101.05	105.53	110.20	115.08	120.17
Total	7779.00	7923	8347.217	8716.879	9102.912701	9506.041692	9927.023538
Accounts payable	1975.00	2300.00	2300.00	2417.30	2540.58	2670.15	2806.33
Other current financial liabilities	362.00	186.00	186.00	195.49	205.46	215.93	226.95
Income Taxes	424.00	268.00	268.00	281.67	296.03	311.13	327.00
Other current provisions	741.00	1232.00	1232.00	1294.83	1360.87	1430.27	1503.22
Current Accrued liabilities	2180.00	2305.00	2305.00	2422.56	2546.11	2675.96	2812.43
Other current liabilities	473.00	477.00	477.00	501.33	526.89	553.77	582.01
Deferred tax liabilities	190.00	241.00	241.00	253.29	266.21	279.79	294.05
Other non-current provisions	80.00	128.00	128.00	134.53	141.39	148.60	156.18
Non-current accrued liabilities	85.00	19.00	19.00	19.97	20.99	22.06	23.18
Other non-current liabilities	53.00	68.00	68.00	71.47	75.11	78.94	82.97
Total	6563.00	7224	7224	7592.424	7979.637624	8386.599143	8814.315699
Working Capital	1216.00	699	1123.217	1124.455	1123.275077	1119.442549	1112.707839
Working Capital Variation		-517.00	424.217	1.238467	-1.180390455	-3.832527794	-6.734709937

Cap Ex								
	2016	2017	2018	2019F	2020F	2021F	2022F	2023F
Reportable Segments	430.00	385.00	315.00	292.77	305.74	319.28	333.42	348.18
Other Business	12.00	16.00	5.00	4.65	4.85	5.07	5.29	5.53
HQ/Consolidation	207.00	357.00	473.00	439.62	459.09	479.43	500.66	522.83
Total CapEx	649.00	758.00	793.00	737.05	769.69	803.77	839.37	876.54

D&A								
	2016	2017	2018	2019F	2020F	2021F	2022F	2023F
Reportable Segments	199	258.00	291.00	773.45	943.61	1151.21	1404.47	1713.45
Reclassification to discontinued Operations	26	-7.00	-1.00	-2.66	-3.24	-3.96	-4.83	-5.89
Other Business	-14	16.00	8	21.26	25.94	31.65	38.61	47.11
HQ/Consolidation	145	146.00	171	454.50	554.49	676.48	825.31	1006.88
Total D&A	356.00	413.00	469.00	1246.56	1301.76	1359.41	1419.62	1482.49

Net Debt						
	2019	2020	2021	2022	2022	
Short-term borrowings	430.00		451.93	474.98	499.20	524.66
Long-term borrowings	2135.90		2244.84	2359.32	2479.65	2606.11
Other non-current financial liabilities	3000.00		3153.00	3313.80	3482.81	3660.43
Pensions and similar obligations	214.02		224.94	236.41	248.46	261.14
Cash and Cash equivalents	3114.66		3788.88	4501.57	5254.73	6050.43
Short-term financial assets	6.28		6.56	6.85	7.15	7.47
Net Debt	2658.98		2279.26	1876.09	1448.23	994.44

Appendix 8 – Discounted Cash Flow

WACC BASED ON VARIOUS CAPITAL STRUCTURES		
	Actual	Long Term
E/EV	0.953	0.906
Net Debt/EV	0.047	0.094
D/E	0.050	0.103
Unlevered Beta (Damodaran Calculations)	0.74	0.74
Risk free rate (10Y - German Bond)	-0.585%	-0.585%
Levered Beta (Damodaran Calculations)	0.93	0.80
Equity risk premium (Damodaran Calculations)	5.96%	5.96%
Cost of equity	5.50%	4.65%
Cost of debt	2.10%	2.10%
Tax rate	25%	25%
Cost of debt net of taxes	1.58%	1.58%
Pre-tax WACC	5.34%	4.41%
WACC	5.316%	4.363%

Cash Flows Calculations						
	2019	2020	2021	2022	2022	TV
Sales	23032.67	24052.68	25117.87	26230.24	27391.86	27939.70
		4.43%	4.43%	4.43%	4.43%	2.00%
EBITDA	4315.69	4506.82	4706.41	4914.83	5069.62	5171.01
D&A	1246.56	1301.76	1359.41	1419.62	1419.62	1482.49
EBIT	3069.13	3205.05	3346.99	3495.22	3650.00	3688.53
CapEx	737.05	769.69	803.77	839.37	839.37	876.54
WCR	424.22	1.24	-1.18	-3.83	-3.83	-6.73
Tax Rate	25%	25%	25%	25%	25%	25%
NOPAT	782.45	817.10	853.29	891.08	930.54	940.36
FCFF	867.75	1347.943	1410.112	1475.16	1514.622	1553.042

Appendix 8 – Discounted Cash Flow

Long term WACC	4.363%
WACC for the period	5.316%
Terminal Growth Rate	2.00%
TV	50738.59
PV of CF for the period	5614.65
Intrinsic Value	56353.24
Target Price	284.61

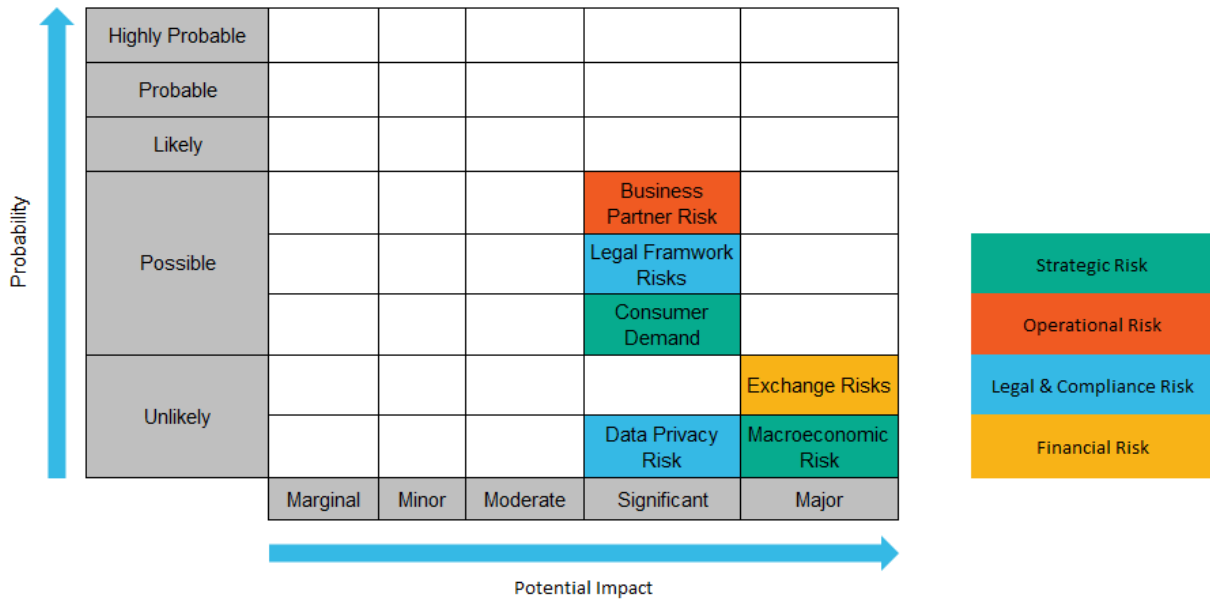
Appendix 9 – Relative Valuation

MULTIPLES OF COMPARABLE FIRMS			
	P/E	EV/Sales	EV/EBITDA
EUROPE			
Puma	33.44	1.25	17.70
Average of European Firms	33.4	1.3	17.7
Median of European Firms	33.4	1.3	17.7
North America			
Nike	30.91	3.07	21.89
Skechers	11.86	0.61	5.22
Under Armour	0.00	1.55	23.63
Average of North American Firms	14.3	1.7	16.9
Median of North America Firms	11.9	1.6	21.9
Average of all	19.1	1.6	17.1
Median of all	21.4	1.4	19.8

MULTIPLES OF COMPARABLE FIRMS			
	P/E	EV/Sales	EV/EBITDA
Puma	33.44	1.25	17.70
Nike	30.91	3.07	21.89
Skechers	11.86	0.61	5.22
Under Armour	0.00	1.55	23.63
Average	19.1	1.6	17.1
Adidas	24.19	2.32	12.39

ACCOUNTING DATA OF Adidas -2019F			
	Net Income	Sales	EBITDA
	2209.86	23032.67	4315.69
	P/E	EV/Sales	EV/EBITDA
EV	42103.32	37312.92	73,841.54
Net Debt	2,658.98	2,658.98	2,658.98
Equity Value	39,444.3	34,653.9	71,182.56
# Shares	198.0	198.0	198.0
Price Target	199.2	175.0	359.5
Final Target Price		244.58	

Appendix 10 – Risk Matrix



Risk evaluation categories

98

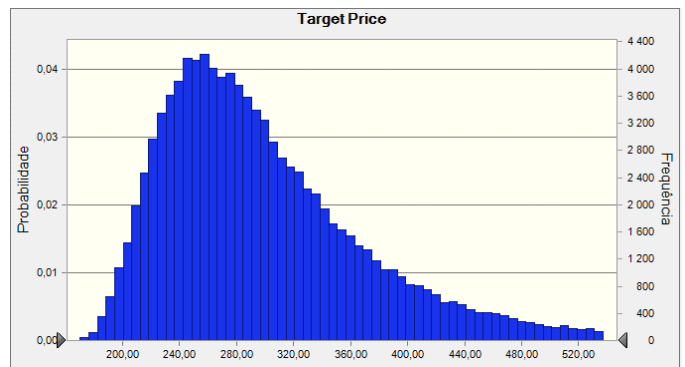
Likelihood	Material Risks				
	Marginal	Low	Medium	High	Significant
>85%					
50% – 85%					
30% – 50%					
15% – 30%					
<15%					
Financial equivalent¹	€ 1 million – € 10 million	€ 10 million – € 35 million	€ 35 million – € 60 million	€ 60 million – € 100 million	> € 100 million
Qualitative equivalent	<p>Almost no media coverage.</p> <p>Minor harm to employees or third parties such as consumers, customers, vendors, athletes that does not require medical treatment.</p> <p>Internal corrective actions required.</p>	<p>Limited local media coverage.</p> <p>Minor harm to employees or third parties such as consumers, customers, vendors, athletes that requires medical treatment.</p> <p>Judicial investigations leading to no direct sanctions but requiring internal corrective actions, including dismissal of employees.</p>	<p>Local and limited national media coverage.</p> <p>Harm to employees or third parties such as consumers, customers, vendors, athletes that leads to hospitalization.</p> <p>Judicial investigations leading to imprisonment of employees and/or business interruption.</p>	<p>Several weeks of national media coverage and some international media coverage.</p> <p>Serious, life-changing harm to employees or third parties such as consumers, customers, vendors, athletes.</p> <p>Judicial investigations leading to imprisonment of senior leadership and/or significant business interruption including due to ongoing investigations.</p>	<p>More than a month of extensive international media coverage.</p> <p>Fatalities of employees or third parties such as consumers, customers, vendors, athletes.</p> <p>Litigation (including class action), imprisonment of Board member(s), monitorship and/or cessation of business operations due to court order.</p>
	Potential impact				

Appendix 11 – Adidas Global Headquarters



Appendix 12 – Monte Carlo Simulation

Monte Carlo Simulation	
Avaliações	100,000.00
Base Case	284.61
Mean	303.51
Standard Deviation	83.37
Swekness	1.94
Kurtosis	10.07
Minimum	170.14
Maximum	1401.09
Percentil 10	222.17
Percentil 90	406.3



		Change in Terminal Growth Rate						
		1.25%	1.50%	1.75%	2.00%	2.25%	2.50%	2.75%
Change in WACC	5.613%	166.25	174.94	184.75	195.92	208.75	223.65	241.14
	5.113%	184.10	195.23	208.01	222.84	240.26	261.02	286.16
	4.613%	207.26	222.03	239.39	260.05	285.10	316.07	355.35
	4.363%	221.62	238.94	259.57	284.61	315.47	354.68	406.04
	4.113%	238.50	259.09	284.03	314.88	354.00	405.25	475.31
	3.863%	258.60	283.50	314.28	353.33	404.47	474.38	575.70
	3.613%	282.96	313.68	352.65	403.69	473.46	574.57	734.26

	Sell <	256.86
256.86	< Reduce <	283.19
283.19	< Hold <	310.16
310.16	< Buy <	350.61
350.61	< Strong Buy <	

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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%