



# Equity Valuation Nike Inc.

Paul Rudolf Darmstadt

Dissertation written under the supervision of  
Professor José Carlos Tudela Martins

Dissertation submitted in partial fulfilment of requirements for the MSc in  
Finance, at the Universidade Católica Portuguesa, 31.05.2023.

## **Abstract**

**Title:** Equity Valuation Nike Inc.

**Author:** Paul Rudolf Darmstadt

This dissertation provides a comprehensive equity valuation analysis of Nike Inc., the renowned leader in the sportswear industry. The valuation was conducted using the FCFF and APV approach, which were deemed most suitable for determining the intrinsic value of Nike's equity. Moreover, a comparable company and precedent transaction analysis was performed, incorporating multiples such as P/E, EV/EBITDA and EV/Sales, among others. Based on the valuation methods employed, the target price for Nike's shares as of May 31<sup>st</sup>, 2023, was determined to be \$118.1, using the FCFF, and \$121.0 using the APV approach. Moreover, the twelve-month price target is calculated at \$130.4, representing the average of the FCFF and APV methodologies for FY24. This target price implies an upside potential of 8.8% compared to the closing price of \$119.9 on May 15<sup>th</sup>, 2023, and a hold recommendation. The analysis considered factors such as continuous revenue growth and anticipated the company's ability for margin expansions in future periods. Furthermore, the results were compared with an equity report of Stifel Corp. To validate the findings, a sensitivity analysis was conducted, widening the range of the price target and indicating a hold recommendation in the majority of cases. Given the prevailing macroeconomic uncertainties, an upside and downside scenario was presented to compare them with the results of the analysis.

**Keywords:** Equity Valuation; Nike; DCF; APV; Intrinsic Value; Relative Valuation; Sportswear; Sports Apparel and Footwear

## **Resumo**

**Título:** Equity Valuation Nike Inc.

**Autor:** Paul Rudolf Darmstadt

Esta dissertação fornece uma análise abrangente de avaliação de patrimônio da Nike Inc., renomada líder na indústria de artigos esportivos. A avaliação foi conduzida utilizando a abordagem FCFF e APV, consideradas as mais adequadas para determinar o valor intrínseco do patrimônio da Nike. Além disso, uma análise comparativa de empresas semelhantes e transações anteriores foi realizada, incorporando múltiplos como P/E, EV/EBITDA e EV/Sales, entre outros. Com base nos métodos de avaliação utilizados, o preço-alvo das ações da Nike em 31 de maio de 2023 foi determinado em \$118,1 usando o FCFF e \$121,0 usando a abordagem APV. Além disso, o preço-alvo para os próximos doze meses é calculado em \$130,4, representando a média das metodologias FCFF e APV para o exercício fiscal de 2024. Esse preço-alvo implica um potencial de valorização de 8,8% em relação ao preço de fechamento de \$119,9 em 15 de maio de 2023, e recomenda-se manter as ações. A análise considerou fatores como crescimento contínuo da receita e a expectativa de expansão da margem da empresa em períodos futuros. Além disso, os resultados foram comparados com um relatório de patrimônio da Stifel Corp. Para validar as descobertas, foi realizada uma análise de sensibilidade, ampliando a faixa do preço-alvo e indicando a recomendação de manter a maioria dos casos. Dadas as incertezas macroeconômicas prevalentes, foram apresentados cenários otimista e pessimista para compará-los com os resultados da análise.

**Palavras-chave:** Avaliação de Equidade; Nike; DCF; APV; Valor Intrínseco; Avaliação Relativa; Vestuário Esportivo; Artigos Esportivos e Calçados Esportivos

## Table of Contents

List of Equations .....	vi
List of Tables.....	vii
List of Figures .....	viii
List of Abbreviations.....	ix
1 Introduction .....	1
2 Valuation .....	2
2.1 Discounted Cash Flow Valuation .....	2
2.1.1 Terminal Value (TV) .....	3
2.1.2 Free Cash Flow to Equity (FCFE) .....	4
2.1.3 Free Cash Flow to the Firm (FCFF) .....	5
2.1.4 Adjusted Present Value (APV) .....	6
2.2 Weighted Average Cost of Capital (WACC) .....	7
2.2.1 Cost of Equity ( $r_e$ ).....	7
2.2.2 Beta .....	8
2.2.3 Risk-free Rate .....	9
2.2.4 Market Risk Premium ( $r_{Mkt}$ ).....	9
2.2.5 Cost of Debt ( $r_D$ ) .....	9
2.3 Relative Valuation .....	10
2.3.1 Comparable Company Multiples .....	10
2.3.2 Precedent Transaction Multiples.....	11
2.4 Conclusion .....	11
3. Industry Overview.....	12
3.1 Macroeconomic Scenario .....	12
3.1.1 Inflation.....	12
3.1.2 Consumer Sentiment.....	13
3.1.3 War in Ukraine.....	14
3.1.4 Foreign Exchange Rates .....	14
3.2 Sportswear Industry Performance and Outlook.....	15
3.3 Competitive Landscape .....	17
4 Company Overview.....	18
4.1 Nike at a Glance .....	19
4.2 Product Line .....	20
4.3 Operating Segments.....	22

4.4 Distribution channels .....	23
4.5 Strategy .....	23
<b>5 Historical Financial Analysis.....</b>	<b>24</b>
5.1 Operative Cost Structure .....	24
5.1.1 Cost of Sales .....	24
5.1.2 Selling, General & Administrative Expenses .....	25
5.1.3 Other Income/(Expense) .....	25
5.2 Trend Analysis.....	26
5.3 Working Capital .....	27
5.4 CapEx .....	27
5.5 Common Size Analysis .....	28
5.6 Ratio analysis.....	29
5.7 FY23 Forecast.....	31
<b>6 Financial Forecast and Valuation .....</b>	<b>32</b>
6.1 Forecast Inputs .....	32
6.1.1 Revenues .....	32
6.1.2 Cost of sales .....	35
6.1.3 SG&A .....	35
6.1.4 Other income/(expense) .....	36
6.1.5 Working Capital.....	36
6.1.6 CapEx and D&A .....	37
6.2 Intrinsic Valuation .....	38
6.2.1 Cost of Capital .....	38
6.2.1.1 Risk Free Rate .....	38
6.2.1.2 Cost of Equity.....	38
6.2.1.3 Cost of Debt .....	41
6.2.1.4 WACC .....	42
6.2.2 Terminal Value .....	42
6.2.3 FCFF .....	42
6.2.4 APV.....	43
6.3 Relative Valuation .....	44
6.4 Comparison with Investment Banking Report .....	46
6.5 Sensitivity Analysis .....	47
6.6 Scenario Analysis .....	48
<b>7 Conclusion.....</b>	<b>49</b>

<b>References</b> .....	50
<b>Appendix</b> .....	55

**List of Equations**

Equation 1: Present Value .....	2
Equation 2: Terminal Value .....	3
Equation 3: Present Value including Terminal Value.....	3
Equation 4: Free Cash Flow to Equity I.....	4
Equation 5: Free Cash Flow to Equity II.....	5
Equation 6: Equity Value .....	5
Equation 7: Free Cash Flow to the Firm .....	5
Equation 8: Enterprise Value .....	5
Equation 9: Enterprise Value Using APV.....	6
Equation 10: Present Value of Tax Shield .....	6
Equation 11: Present Value of Financial Distress Costs .....	7
Equation 12: After-tax WACC.....	7
Equation 13: Cost of Equity .....	8
Equation 14: Levered Beta.....	8
Equation 15: Unlevered Beta .....	8

## List of Tables

Table 1: Fundamental Analysis of Nike and its Peers .....	18
Table 2: Historical Cost of Sales (USD m) .....	25
Table 3: Historical SG&A expenses (USD m).....	25
Table 4: Historical Other Income/(Expense) (USD m).....	26
Table 5: Trend Analysis Income Statement .....	26
Table 6: Historical Working Capital Development (USD m).....	27
Table 7: Historical Capital Expenditure and D&A .....	27
Table 8: Common Size Income Statement Nike .....	28
Table 9: Common Size Income Statement Nike and its Peers .....	29
Table 10: Profitability Ratios .....	29
Table 11: Liquidity Ratios.....	30
Table 12: Solvency Ratios.....	30
Table 13: Efficiency Ratios.....	30
Table 14: Nike 9M YTD23 Revenues.....	31
Table 15: Nike 9M YTD23 Shortened Income Statement.....	31
Table 16: Industry Multiplier .....	33
Table 17: GDP Multiplier .....	33
Table 18: Nike Other Operating Working Capital Forecast (USD m).....	37
Table 19: Beta Estimation Overview .....	40
Table 20: Market Risk Premium .....	40
Table 21: Levered Cost of Equity .....	40
Table 22: Unlevered Cost of Equity.....	41
Table 23: Bond Overview .....	41
Table 24: Other Debt Items.....	41
Table 25: Debt Overview .....	42
Table 26: WACC Calculation .....	42
Table 27: Free Cash Flow to the Firm Valuation.....	43
Table 28: Adjusted Present Value Valuation .....	43
Table 29: Equity Bridge and Share Price Determination.....	44
Table 30: Price Target Determination.....	44
Table 31: Comparable Company Analysis.....	45
Table 32: Relative Multiple Comparison .....	46
Table 33: Comparison with Investment Bank Report.....	47
Table 34: Sensitivity Analysis FCFF Valuation .....	47
Table 35: Sensitivity Analysis APV Valuation.....	47

## List of Figures

Figure 1: GDP Growth in Different Regions (%) .....	12
Figure 2: Inflation in the United States and Euro Zone (%) .....	13
Figure 3: Consumer Confidence Indicator .....	14
Figure 4: Relative Change of Nike's Main Exchange Rates.....	15
Figure 5: Sportswear Industry Historical and Future Development (USD bn).....	15
Figure 6: Geographic Market Share Development .....	16
Figure 7: Porters Five Forces Analysis .....	17
Figure 8: Nike's Historical Revenue and Margin Development (USDm/%) .....	19
Figure 9: Share Price Development since April 2018.....	20
Figure 10: Revenue by Product FY22.....	21
Figure 11: Revenue Development by Product Group FY22 (USD m) .....	21
Figure 12: Revenue Split by Operative Segments FY22 .....	22
Figure 13: Revenue Development by Products in Operative Segments .....	22
Figure 14: Revenue Development by Distribution Channel .....	23
Figure 15: Nike Historical Performance Against Sportswear Market and Weighted GDP .....	32
Figure 16: Future Regional Exposure Shifts .....	34
Figure 17: Nike Revenue Forecast by Operative Segments (USD m).....	35
Figure 18: Nike Operating Costs Forecast (USD m) .....	36
Figure 19: Nike Trade Working Capital Forecast.....	37
Figure 20: Nike CapEX and D&A Forecast (USD m).....	38
Figure 21: Nike and MSCI World Beta Estimation .....	39
Figure 22: Nike and S&P 500 Beta Estimation.....	39
Figure 23: Nike's Relative Forward Ratios .....	45
Figure 24: Scenario Analysis .....	48
Figure 25: Valuation Football Field.....	49

## List of Abbreviations

Adj.	Adjusted
APAC	Asia & Pacific
APLA	Asia, Pacific & Latin America
APV	Adjusted Present Value
ASP	Average Selling Price
Bps	Basis Points
CAGR	Compound Annual Growth Rate
CapEx	Capital Expenditure
CAPM	Capital Asset Pricing Model
CFO	Chief Financial Officer
CRP	Country Risk Premium
D&A	Depreciation & Amortization
D/E	Debt to Equity
DCF	Discounted Cash Flow
DIO	Days Inventory Outstanding
DPO	Days Payables Outstanding
DSO	Days Sales Outstanding
DTC	Direct to Consumer
EBIT	Earnings before Interests & Taxes
EBITDA	Earnings before Interests, Taxes, Depreciation & Amortization
EBT	Earnings before Taxes
ECB	European Central Bank
EMEA	Europe, Middle East & Africa
ERP system	Enterprise Resource Planning system
ERP	Equity Risk Premium
ESG	Environmental, Social & Governance
EV	Enterprise Value
FCFE	Free Cash Flows to Equity
FCFF	Free Cash Flows to the Firm
FDC	Financial Distress Costs
FX	Foreign Exchange
FY	Financial Year
GDP	Gross Domestic Product
IMF	International Monetary Fund
LATAM	Latin America
ME	Middle East
MSCI	Morgan Stanley Capital International
NKE	Nike
NOSH	Number of Shares Outstanding
NTM	Next Twelve Months
OWC	Other Working Capital
P/E	Price/Earnings
PP&E	Property, Plants & Equipment
PV	Present Value
Q	Quarter
R&D	Research & Development
ROA	Return on Assets
ROE	Return on Equity
ROIC	Return on Invested Capital

SG&A	Selling, General & Administrative
TV	Terminal Value
TWC	Trade Working Capital
US	United States
USD	US Dollar
WACC	Weighted Average Cost of Capital
YOY	Year-over-Year
YTD	Year to Date
YTM	Yield to Maturity

## **1 Introduction**

Understanding the true worth of a company is essential for finance professionals seeking to make informed decisions in the financial markets. Equity valuation serves as a fundamental tool in evaluating the intrinsic value of a company's shares, providing insights into its growth prospects, profitability, and overall financial health. By assessing key financial metrics, analyzing industry dynamics, and considering various valuation methods, stakeholders can gauge the fair value of a company's equity and determine its attractiveness as an investment opportunity. Therefore, this thesis involves a comprehensive assessment of both quantitative and qualitative factors. It goes beyond looking at a company's historical performance or current market price and analyzes drivers of its future earnings potential and market competitiveness.

Valuing Nike is a compelling exercise since the company is the world's leading athletic footwear and apparel company, is recognized around the globe due to its unique global brand with the iconic swoosh logo and collaborated with inspirational sportsmen and sportswomen like Cristiano Ronaldo, Tiger Woods, Michael Jordan, or Serena Williams.

This thesis is organized into seven core chapters. While the second chapter introduces the theoretical backgrounds of equity valuation used in the performed valuation in a literature review, the third chapter analyses macroeconomic factors and industry specific trends in an industry overview. Chapter four focuses on a comprehensive analysis of Nike as a company. This includes a detailed examination of its business model, competitive advantage, and key drivers of performance as well as Nike's future strategy. While chapter five dives into the historical financial performance and creates the base for the forecast, chapter six presents the explicit forecast as well as the selected valuation methods to estimate a fair value as of 31<sup>st</sup> of May 2023 and to give a price target. Furthermore, the results are tested for sensitivity and under different scenarios and are compared to an investment banking report of Stifel Financial Corp. The last chapter serves as a conclusion, summarizing key findings and formulating a recommendation based on the valuation analysis.

## 2 Valuation

Valuation is a key concept in finance that involves the process of determining the actual value of an asset, investment, or company and understanding the components of its worth. It is seen as an essential discipline in various areas of finance, such as corporate finance, financial reporting, and investment analysis (Fernandez, 2002).

Damodaran (2012) underlines the importance of valuation in the professional context of mergers and acquisitions, portfolio management, and corporate finance. He highlights that valuation helps to identify potential under- or overvaluation of a company's shares and mentions the importance of selecting appropriate valuation methods based on the nature of the asset being valued and the purpose of the valuation. Furthermore, Koller et al. (2010) caution that the valuation process is not always objective and can be influenced by factors such as assumptions, uncertainties, and biases.

The literature review below highlights common valuation methods and evaluates their strengths, weaknesses, and overall suitability.

### 2.1 Discounted Cash Flow Valuation

According to Imam et al. (2008), who conducted a study with leading sell-side and buy-side analysts, the Discounted Cash Flow (DCF) approach is one of the most commonly used valuation methods under practitioners. Furthermore, Damodaran (2012) states that the DCF approach, which intends to determine the intrinsic value of an asset, serves as the foundation for other valuation models, such as relative valuation or option pricing models. The intrinsic value of an asset is defined as its value based on its fundamental or intrinsic characteristics (Graham and Dodd, 1934). These valuation models follow the theory that the present value of an asset is equal to the sum of its discounted expected future cash flows (Hirshleifer, 1985; Rosenbaum and Pearl, 2009; Damodaran, 2012).

$$Present\ Value = \sum_{t=1}^{t=n} \frac{E(FCF)_t}{(1+r)^t}$$

*Equation 1: Present Value*

Where  $t$  is the time with  $n$  as the company's lifetime,  $E(FCF)$  is the expected cash flow at a specific time, and  $r$  is the discount rate. However, when estimating a company's or asset's value, it is often difficult or impossible to forecast cash flows beyond a certain period, which is usually five to ten years. This is where the concept of terminal value comes in (Koller, 2010).

### 2.1.1 Terminal Value (TV)

Estimating the terminal value (TV) is one of the most critical aspects of performing a DCF valuation since the TV accounts for a significant portion of the total value of a company. It represents the estimated value of an asset at the end of a forecast period, beyond which it is assumed that the asset will continue to generate cash flows indefinitely, resulting in a steady state, where continuity of cash flow, capital structure and growth rate is expected (Luehrman, 1997; Rosenbaum and Peal, 2009).

According to Damodaran (2012), there are three commonly used methods: exit multiple, liquidation, and perpetuity growth.

While the exit multiple method assumes that the company will be sold at the end of a specific period, using an enterprise or equity multiple to calculate the TV, the liquidation method represents the total value of a firm's assets as if they were sold off and its debts paid off at the end of its life.

In contrast, the perpetuity growth method assumes that the company will continue to grow at a constant rate indefinitely. TV is calculated by dividing the expected cash flows in the next year by the difference between the discount rate and the expected growth rate ( $g$ ), which is based on the company's historical growth, industry growth rates, and macroeconomic factors such as GDP growth.

$$\text{Terminal Value} = \frac{FCF_t \times (1 + g)}{(r - g)}$$

*Equation 2: Terminal Value*

The discounted TV is then added to the discounted present value of the cash flows generated during the forecast period to arrive at the total estimated value of the asset.

$$\text{Present Value} = \sum_{t=1}^{t=n} \frac{E(CF)_t}{(1 + r)^t} + \frac{\text{Terminal Value}_n}{(1 + r)^n}$$

*Equation 3: Present Value including Terminal Value*

When valuing a company using DCF, there are two primary methods: free cash flows to equity (FCFE) and free cash flows to firm (FCFF). FCFE represents the cash flows available to equity investors and is discounted with the cost of equity ( $r_e$ ), which is the expected rate of return that equity investors demand for their investment. FCFF, on the other hand, considers cash flows available to all capital providers, including equity investors, bondholders, and preferred

stockholders and is therefore discounted with the weighted average cost of capital (WACC). WACC reflects the cost of all financing components, including equity, debt, and other sources of financing, weighted according to their relative market values.

Lastly, the Adjusted Present Value (APV) method is a variant of the DCF approach. It adjusts for tax benefits of debt and bankruptcy costs by assuming a company is financed entirely with equity, providing a more accurate valuation than traditional DCF methods (Luehrman, 1997).

### **2.1.2 Free Cash Flow to Equity (FCFE)**

There are two primary methods for calculating FCFE. The first involves starting with a company's net income, which reflects its earnings after accounting for operating activities and adjusting for interest and taxes. To arrive at FCFE, non-cash operating expenses such as D&A are added back, as they do not represent actual cash outflows.

Next, changes in net working capital on a year-over-year (YOY) basis are factored in. An increase in net working capital decreases cash flows, while a decrease increases them. However, the working capital level depends heavily on the industry the company operates in.

Finally, capital expenditures (CapEx), which are an essential component for sustaining future business activities and growth, are subtracted. The difference between CapEx and D&A is known as Net CapEx, which provides insight into the growth stage of a company. Early-stage companies typically require substantial investment, whereas more mature firms have lower CapEx needs.

FCFE refers to cash flows available for distribution to stockholders, representing a debt-free cash flow approach. As debt takes priority over equity, debt holders' cash claims must be satisfied before those of stockholders. Therefore, cash flows related to debt repayment or borrowing must also be added to the FCFE calculation (Pinot et al., 2015).

$$FCFE = Net\ income + D\&A - \Delta NWC - CapEx + \Delta Net\ Debt$$

*Equation 4: Free Cash Flow to Equity I*

The second method for calculating FCFE involves utilizing the concept of free cash flows to the firm (FCFF), which is explained below. Starting from the cash flows that are available to all capital providers, the calculation subtracts the interest tax shield and adds net debt, as shown in the following equation:

$$FCFE = FCFF - \text{Interests} \times (1 - \tau_c) + \Delta \text{Net Debt}$$

*Equation 5: Free Cash Flow to Equity II*

To arrive at the equity value, the FCFE and the TV are discounted using the cost of equity:

$$\text{Equity Value} = \sum_{t=1}^{t=n} \frac{FCFE_t}{(1 + r_e)^t} + \frac{\text{Terminal Value}_n}{(1 + r_e)^n}$$

*Equation 6: Equity Value*

### 2.1.3 Free Cash Flow to the Firm (FCFF)

Free cash flow to the firm (FCFF) is a financial metric that measures the cash generated by a company that is available to all investors, including both equity and debt holders. It represents the amount of cash available for distribution to investors after all operating expenses, taxes, and capital expenditures have been accounted for (Vernimmen, 2014).

The cash flows are commonly known as unlevered cash flows since they don't account for the tax advantages of interest payments that are incorporated in the discount rate (Damodaran, 2012).

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

*Equation 7: Free Cash Flow to the Firm*

The present value of FCFF is calculated using the same technique as before, by discounting it using the WACC. The resulting figure represents the total firm value, also called enterprise value (EV):

$$\text{Enterprise Value} = \sum_{t=1}^{t=n} \frac{FCFF_t}{(1 + r_{WACC})^t} + \frac{\text{Terminal Value}_n}{(1 + r_{WACC})^n}$$

*Equation 8: Enterprise Value*

To arrive at the equity value, net debt, which is defined as bank debt minus excess cash has to be deducted and other adjustments on factors like non-operating assets and liabilities, minority interests and equity instruments such as stock options and warrants have to be made (Damodaran, 2012).

Damodaran (2012) also states that the suitability of FCFF or FCFE as a valuation approach depends on the assumed characteristics of the company, specifically its leverage and equity risk premium. For companies with stable leverage or an expected change in the equity risk premium

over time, FCFF may be preferred, whereas FCFE may be more appropriate for companies with changing leverage and a stable equity risk premium assumption.

#### 2.1.4 Adjusted Present Value (APV)

The Adjusted Present Value (APV) method is a financial valuation technique that separately considers the effects of financing decisions, such as debt and equity, on a company's future cash flows to determine its overall value. It was initially proposed by Myers (1974) and argues that traditional cash flow models, which assume a constant capital structure, are inadequate for valuing firms that use debt financing. In fact, the use of debt financing provides a benefit through the tax shield that can enhance the firm's value. However, the benefits of debt financing are often offset by the costs of financial distress (FDC), such as bankruptcy and other legal costs.

To account for these effects, the APV approach separates the valuation of a company's operating assets from the valuation of its financing decisions.

$$EV = \sum_{t=1}^{t=n} \frac{FCFF_t}{(1 + r_{e(u)})^t} + \frac{Terminal\ Value_n}{(1 + r_{e(u)})^n} + PV(Tax\ Shield) - PV(exp.\ FDC)$$

*Equation 9: Enterprise Value using APV*

In contrast to the previously discussed FCFF method, the present value of FCFF and TV is discounted using the unlevered cost of equity ( $r_{e(u)}$ ), while also accounting for the impact of TS and the FDC. To calculate the present value of the tax shield, one multiplies the tax rate by the value of debt and then discounts this amount using the cost of debt.

$$PV(Tax\ Shield) = \sum_{t=1}^{t=n} \frac{\tau_c \times (Debt \times r_d)}{(1 + r_d)^t} + \frac{TV}{(1 + r_d)^n}$$

*Equation 10: Present Value of Tax Shield*

The cost of financial distress includes two kinds of costs, the direct and indirect costs of financial distress. While direct costs are associated with legal and administrative fees incurred during the bankruptcy filing process, indirect costs mainly come up from reputational damage and can include loss of customers and suppliers, limited access to capital, loss of key personnel, or the fire sale of assets. Especially indirect costs can vary a lot depending on the circumstances of the company and the type of industry it operates in (Altman and Hotchkiss, 1993). Regarding Andrade and Kaplan (1998), these costs can make up for as much as 10% to 20% of the firm's value, while Shapiro and Titman (1985) anticipate them to be even higher, ranging from 25%

to 30% of the firm's value. To calculate the expected bankruptcy costs, the probability of default, as well as the direct and indirect costs of financial distress have to be estimated. Damodaran (2012) recommends using bond ratings and empirical default probability estimates for those ratings to estimate the probability of bankruptcy.

$$PV(\text{exp.FDC}) = \text{Probability of Financial Distress} \times PV(\text{FDC})$$

*Equation 11: Present Value of Financial Distress Costs*

## 2.2 Weighted Average Cost of Capital (WACC)

As mentioned before, the WACC is the proper discount rate to discount the free cash flows and the TV in the FCFF approach. It is computed by weighing the cost of each source of financing, including debt and equity, based on their proportion to the company's capital structure, considering their market value. To account for the tax deductibility of corporate interest payments, the cost of debt is adjusted by multiplying it by the difference between 1 and the tax rate.

$$WACC_{\text{after tax}} = \frac{E}{(D + E)} \times r_e + \frac{D}{(D + E)} \times r_d \times (1 - \tau_c)$$

*Equation 12: After-tax WACC*

When determining the weighted average cost of capital (WACC), defining a target capital structure is necessary. If the company has not provided any explicit guidance on this, one can consider the company's current and historical debt-to-total capitalization ratios, as well as the capitalization of its peers (Rosenbaum and Pearl, 2009). The discount rate significantly impacts a company's valuation; thus, its constituents are explained in further detail below:

### 2.2.1 Cost of Equity ( $r_e$ )

The cost of equity represents the rate of return required by investors to compensate them for the risk of investing in a company's stock. While researchers are discussing various approaches to estimate it, the capital asset pricing model (CAPM) is the most commonly used. According to Graham and Harvey's (2001) survey, around 75% of US finance executives use it to estimate their company's cost of equity. Sharpe (1964) first introduced the CAPM, which is based on the idea that the expected return of an asset is a function of its sensitivity to market risks, the beta, and the expected market risk premium.

However, the CAPM model introduced by Sharpe has faced criticisms over the years, including its assumptions of risk-averse investors and unrealistic assumptions regarding information

availability, transaction costs, and borrowing and lending rates (Ross et al., 2011). In addition, the model only considers market risk and ignores other sources of risk, which may lead to an incomplete assessment of an asset's risk and return potential (Damodaran, 2012).

According to the CAPM model, the formula for the cost of equity is as follows:

$$\text{Cost of equity} = r_e = r_f + \beta \times (r_{Mkt} - r_f)$$

*Equation 13: Cost of Equity*

### **2.2.2 Beta**

The CAPM model suggests that investments with higher betas should have higher expected returns to compensate investors for the additional risk they are taking on. Similarly, investments with lower betas should have lower expected returns as they are less sensitive to market risk (Fama and French, 2004). The so-called systematic risk is the risk that cannot be eliminated through diversification because it is inherent to the market itself and comprises risks like changes in interest rates or inflation (Damodaran, 2012).

Koller et al. (2015) recommend three different approaches for computing beta. The first one, called regression beta, suggests running a linear regression of the stock's historical returns against the returns of a benchmark index over a period of typically three to five years of monthly data. The slope of the regression will present the beta of the stock. Since it provides a direct measure of the stock's relationship to the market it is commonly used, even though it is backward-looking and therefore just gives limited information for current status.

$$\beta_L = \frac{\text{Cov}(r_e; r_{Mkt})}{\text{Var}(r_{Mkt})}$$

*Equation 14: Levered Beta*

Another way to estimate beta is to use the median or average beta of a group of peers, as companies within the same industry generally face similar risks. To do this, unlevered betas are first calculated to remove the effect of leverage before determining the median or average industry beta. This industry beta is then adjusted for the capital structure of the target company to arrive at its levered beta. The formula for unlevering betas is:

$$\beta_U = \frac{\beta_L}{\left(1 + (1 - \tau_c) \times \frac{D}{E}\right)}$$

*Equation 15: Unlevered Beta*

A third method, based on accounting principles, involves comparing a company's return on equity (ROE) with the market ROE, and is useful when historical stock price data is unavailable.

### **2.2.3 Risk-free Rate**

The risk free-free rate represents a return that an investor can get without being exposed to any reinvestment or default risk. As no asset is entirely risk-free, a common approach is to use US Treasury Bills, which are considered the least risky (Horváthová and Mokrišová, 2016). For long-term investments or valuations, Damodaran (1999) recommends default-free zero-coupon government bond rates that match the time frame of the historical risk premium. He also emphasizes the importance of consistency in other points, e.g., currency. Furthermore, he argues that in times of high and unstable inflation, valuations are often done in real terms, meaning that estimated cash flows are calculated using inflation-adjusted growth rates. In this case, discount rates must be adjusted to be consistent, and an inflation-indexed treasury security can be used.

### **2.2.4 Market Risk Premium ( $r_{Mkt}$ )**

The market risk premium represents the additional return that investors demand for investing in a risky asset. Its level is influenced by various factors, including investor sentiment, economic growth prospects, and market conditions (Lubis and Halim, 2022). In practice, the market risk premium is estimated by examining the historical difference between the returns earned by stocks and those earned by default-free securities, using actual returns over a long timeframe. The selection of the relevant timeframe has been a topic of debate among finance professionals, with some believing that more recent periods, such as the last decade, are more appropriate, while others suggest examining the pre-Great Depression era until the present. As a result, the estimated market risk premium can vary between approximately 4% and 8% (Rosenbaum and Pearl, 2009).

### **2.2.5 Cost of Debt ( $r_D$ )**

The cost of debt is the cost that firms incur when borrowing capital to finance projects. This cost can be determined by using the weighted yield to maturity of a company's outstanding bonds. Otherwise, it can also be derived by its implied probability of default coming from the company's credit rating. If there are no outstanding bonds, Damodaran (2012) suggests estimating the cost of debt by analyzing the company's recent borrowings and corresponding default spreads or by utilizing financial ratios, such as the interest coverage ratio, to derive a synthetic credit rating.

## **2.3 Relative Valuation**

While the DCF model aims to determine a company's intrinsic value, relative valuation methods aim to evaluate the worth of an asset compared to another. The premise is that comparable businesses will have similar market prices, and it usually uses price or enterprise multiples. While price multiples refer to the ratios of a stock's price to a fundamental metric, such as cash flow per share, enterprise multiples describe the ratios of a company's total value of stock and debt, net of cash and short-term investments, to a fundamental metric such as operating earnings (Pinto et al., 2015).

Relative valuation is one of the most frequently used, as a survey by Pinto et al. (2018) indicates. They found that 92.8% of professionals use multiples for valuation, making it even more popular than DCF models. Especially the simplicity and ability to reflect the market mood are benefits of relative valuation. Additionally, it is easy to understand and justify (Damodaran, 2012). However, the strengths can also be considered weaknesses, as relative valuation can lead to inconsistent estimates, and values may be too high or low, depending on the market sentiment (Damodaran, 2012).

Bancel and Mittoo (2014) state, that in the relative valuation application, EV/EBITDA is the most popular multiple used by more than 80% of experts, followed by price-earnings (68%), price-to-book, EV/EBIT and EV/Sales (each 45%). However, the use of a multiple seems to be also dependent on the purpose or the occupation of the user. Mukhlynina and Nyborg (2018) discovered that EV/EBITDA is the most popular multiple among practitioners, particularly for consultants and private equity experts. In contrast, asset managers and investment bankers tend to prefer price-earnings multiple, potentially indicating a greater focus on publicly traded companies in their respective fields.

Furthermore, multiples can be categorized as either historical, current, or forward-looking, depending on the kind of data they are using. In a study on the performance of different multiple approaches, Liu et al. (2002) find that forward earning multiples explain stock prices better than historical ones for a large fraction of firms.

In practice, there are two common multiple methodologies, discussed below in detail:

### **2.3.1 Comparable Company Multiples**

According to Damodaran (2012), comparable companies should provide similarity in their respective cash flows, growth, and risk profile. Usually, a peer group of companies in the same industry field as the target company are collected, since they usually face the same risks.

Furthermore, the peer group should also match the target company by comparing their key business characteristics as well as financial profile. These represent important drivers of valuation since, e.g., high growth companies are rewarded by equity investors with higher trading multiples (Rosenbaum and Pearl, 2009).

### **2.3.2 Precedent Transaction Multiples**

This valuation method involves using past deals of comparable firms to compute the value of the target company by multiplying the transaction's multiple with the financial metrics of the target. However, this approach has two limitations. Firstly, transaction multiples are historical and may not reflect the present market conditions. Comparable transactions should therefore be very carefully chosen and as recent as possible. Secondly, deals usually include a takeover premium paid on top of the company's fair value, which is a compensation for obtaining complete control and decision rights of the firm (Rosenbaum and Pearl, 2009).

### **2.4 Conclusion**

Various valuation methods have been considered in this chapter to determine the most appropriate approach for valuing Nike. While the FCF method emerged as the preferred choice due to Nike's positive cash flows, reliable estimates, and more or less stable capital structure, the APV method is also applied to disentangle financing effects. Additionally, a relative valuation analysis, utilizing multiples such as forward EV/EBITDA, forward EV/Sales, and forward P/E, is employed to assess Nike's performance relative to its peers.

### 3. Industry Overview

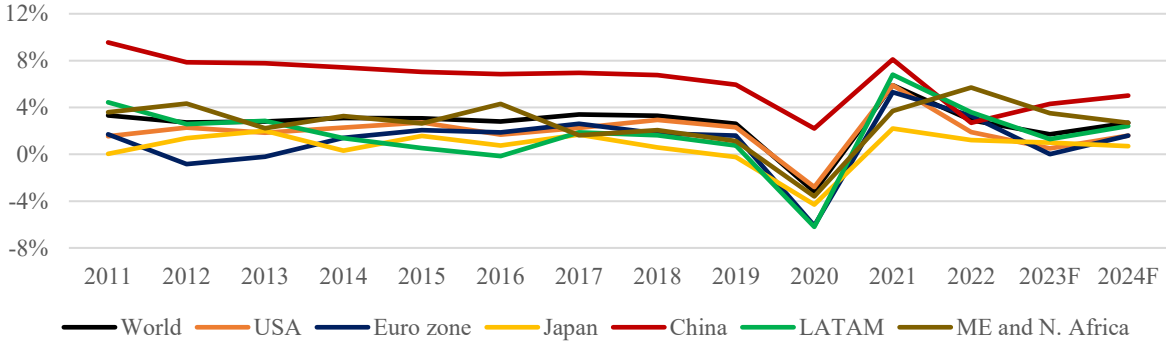
This chapter points out the macroeconomic environment as well as the outlook for the sportswear industry. Furthermore, the industry will be broken down, and Nike will be compared to its main competitors.

#### 3.1 Macroeconomic Scenario

After the time of the COVID-19 pandemic and more than a year of the war between Russia and Ukraine, economies are facing cyclical, structural, and supply chain challenges and most executives of the sporting goods industry see the environment as “challenging, uncertain, and unpredictable” (McKinsey 2023).

The World Bank (2023) expects the global growth at 1.7% in 2023, representing the third weakest pace of growth in nearly three decades, reflecting the tight monetary policy, worsening financial conditions, and the continued disruptions caused by the war in Ukraine. As a result, advanced economies like the US and the Eurozone are expected to slow growth sharply from around 1.9% to 3.3% in 2022 to 0.0% to 0.5% in 2023, starting to grow at a faster rate of 1.6% again by 2024. Growth in China has more than halved in 2022 in respect to the previous year, mainly due to COVID-19 related restrictions and lockdowns in Q4 (IMF, 2023). The lowest pace of growth since almost 50 years, 2.7% in 2022, is projected to pick up to 4.3% in 2023 as pandemic restrictions release.

Figure 1: GDP Growth in Different Regions (%)



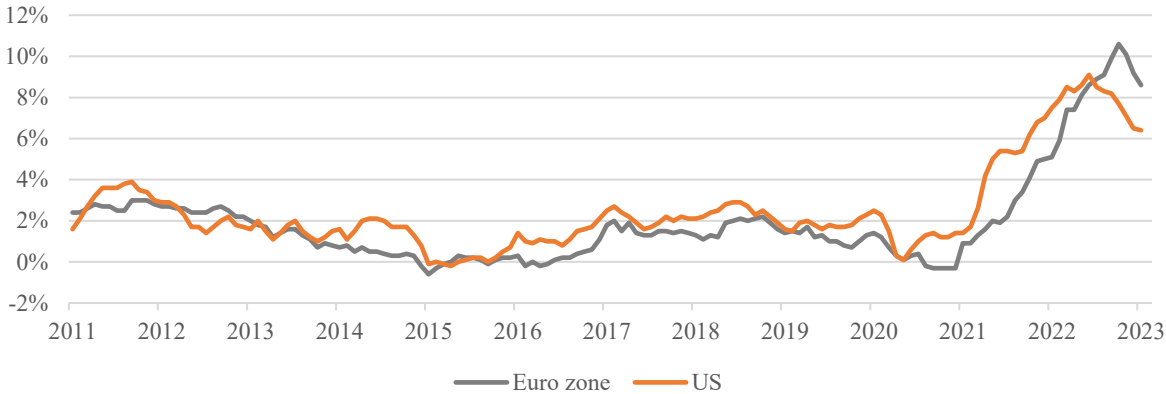
Source: World Bank

#### 3.1.1 Inflation

In 2022 inflation increased to the highest level of the last 40 years in Europe and the US, making the sports goods industry fear reduced demand and excess inventory. The soaring inflation reflected a combination of effects on the demand and supply side. Factors such as the growth acceleration and extraordinary monetary policy in response to the global pandemic led to

demand shocks and increased price pressure due to pandemic-related bottlenecks and supply-chain problems (Eickmeier and Hofmann, 2022; Shapiro, 2022). On the supply side, the main contributors to inflation were shortages of critical raw materials, partly due to the Russian invasion of Ukraine and labor market imbalances. (World Bank, 2023). Figure 2 shows the development of inflation rates for Nike's largest markets.

Figure 2: Inflation in the United States and Euro Zone (%)



Source: Refinitiv Eikon

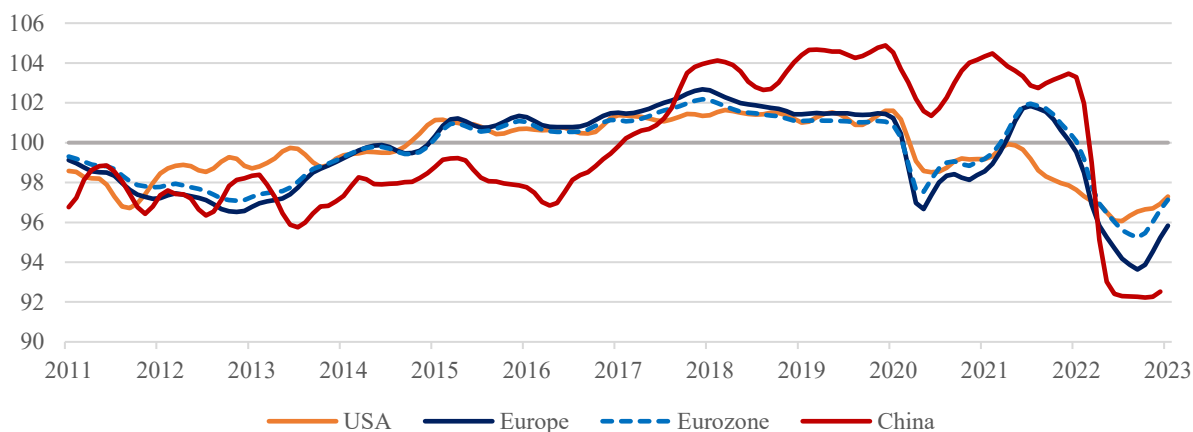
In response to rising inflation, interest rates were raised several times, so that the Fed funds rate in the US is 5% - 5.25% and the key interest rate in the Eurozone is 3.75% as of May 2023. (Federal Reserve, 2023; ECB, 2023).

While there are visible signs that monetary policy made the inflation peak and slow down, the full impact probably won't be realized before 2024. The IMF expects the average inflation in advanced economies like the US or the Eurozone to decline to 4-6% by the end of 2023 and 2.6% in 2024, indicating that inflation is narrowing to the target of 2 to 2.5% (IMF, 2023). Interest rates will, nonetheless, remain at the current level for a longer period or even be raised beyond 5%. (Moore, 2023). These higher rates will compress consumer spendings and raise the cost of capital for the companies (McKinsey, 2023).

**3.1.2 Consumer Sentiment**

This is also reflected in the consumer confidence indicator (CCI), which measures consumers' financial prospects and purchase behavior in the present and future (Islam and Mumtaz, 2016). Driven by the economic factors mentioned above, household's spendings are more focused on mandatory expenditures like food, housing, and electricity, resulting in lower purchases of durable goods for individual use, such as sports goods (McKinsey, 2023).

Figure 3: Consumer Confidence Indicator



Source: OECD

Figure 3 shows that the demand dynamics reached their minimum in Nike's key markets US, Europe, and China between June and September 2022 but seem to have reached its peak and are recovering now. However, strong volatility can be noted, and experts expect a higher pressure on performance throughout the year 2023 (McKinsey, 2023).

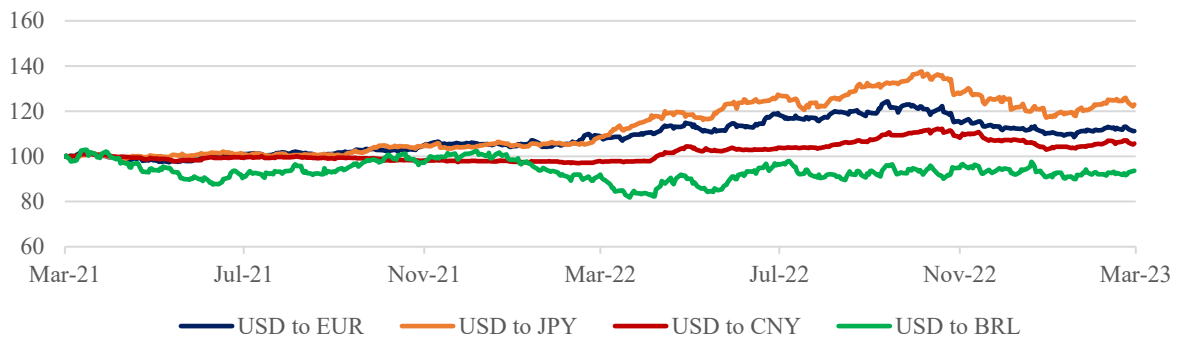
### 3.1.3 War in Ukraine

As a consequence of the Russian invasion of Ukraine, Nike announced in June 2022, that they are entirely exiting the Russian market (Spencer et al., 2022). This aligns with other sportswear companies like Adidas, Puma or Under Armour that also suspended operations and do not plan to return to this market. However, Spencer et al. (2022) indicate that Nike gets less than 1% of its revenues from Ukraine and Russia combined, so the withdrawal of its operations has no significant impact.

### 3.1.4 Foreign Exchange Rates

With around 60% of revenues generated outside of North America, Nike is affected by foreign exchange rates since its accounting currency is US Dollar (USD). As can be seen in the following figure 4, the USD strengthened significantly over the course of the last year. When comparing it to the currencies of the strongest economies of Nike's segments, the USD performed particularly strong against the Euro, Japanese Yen, and the Chinese Yuan in the last two years, while it lost around 6.5% against the Brazilian Real. A weaker USD would benefit Nike's revenues and consolidated earnings from abroad, while a stronger USD would reduce them.

Figure 4: Relative Change of Nike's Main Exchange Rates



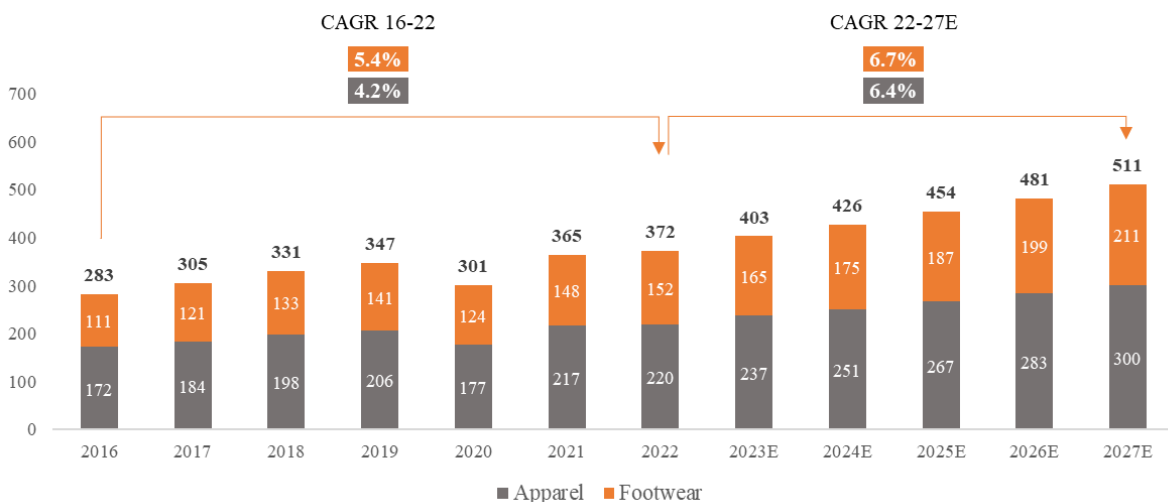
Source: Refinitiv Eikon

### 3.2 Sportswear Industry Performance and Outlook

Nike is competing within the market of global sportswear, which can be subclassified into sports apparel, sports footwear, and sports equipment.

From 2016 to 2022 the global market grew with a compounded annual growth rate (CAGR) of 4.7%, while sports apparel and sports footwear grew with a CAGR of 4.2% and 5.4%, respectively. A better estimate of historical growth could be the pre-pandemic CAGR of 6.2% and 8.3% in the period from 2016 to 2019, as sales trends were very opaque due to delivery bottlenecks and supply chain problems. An estimation of Euromonitor (2023a) sees the global apparel and footwear market to grow with a CAGR between 6% and 7% until 2027 so that it could reach a total size of over \$510bn.

Figure 5: Sportswear Industry Historical and Future Development (USD bn)



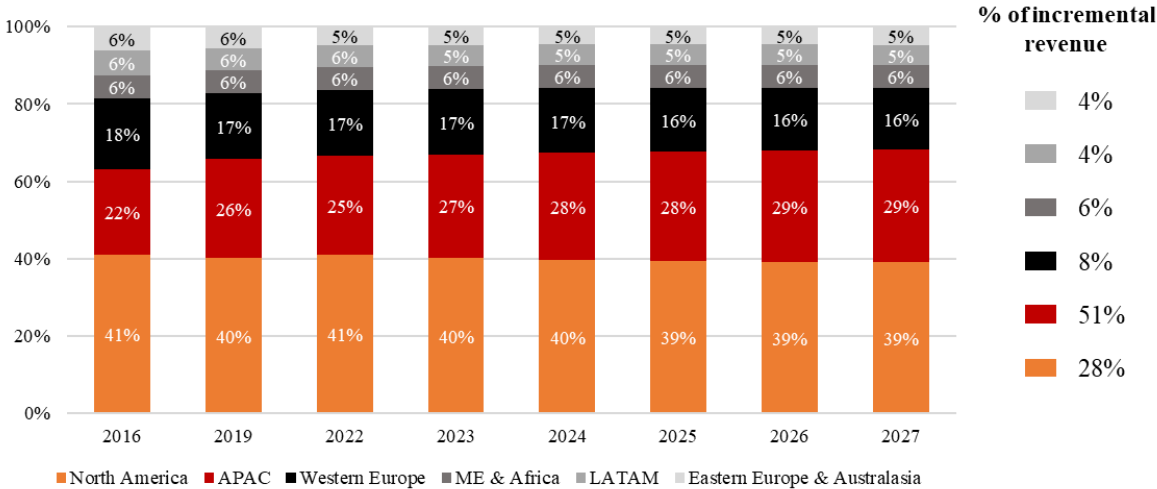
Source: Euromonitor, Own Analysis

In terms of the growth dynamics, factors like rising participation in sporting events like world cups or the Olympics, rising health awareness, and government initiatives to accelerate sporting activities within the society are affecting the industry (Market US, 2022). Additionally, the

introduction of innovative products, consumer identification with brand ambassadors like Serena Williams for Nike, and the rise of athleisure – clothes designed to be suitable for both exercise and everyday wear – boost the sportswear market significantly (Bringé, 2021).

The two key markets are North America and Asia Pacific (especially China). While North America is the most important segment in the market and the key element of Nike’s equity story, around 40% of global sales come from there. Its performance was lifted by a strong post-COVID recovery in 2021 but also exposed to weakened demand and conservatory assortment in 2022 and is expected to remain uncertain in 2023. On the other hand, APAC will be the main growth contributor in the upcoming years. The middle-class is expected to enlarge more, which creates millions of potential new consumers for sportswear brands (McKinsey, 2023). This demographic expansion, paired with the general increasing demand for sport goods, are growth drivers that will increase their market share in the midterm and are expected to contribute half of global growth by 2027, as can be seen in Figure 6.

Figure 6: Geographic Market Share Development



Source: Euromonitor, Own Analysis

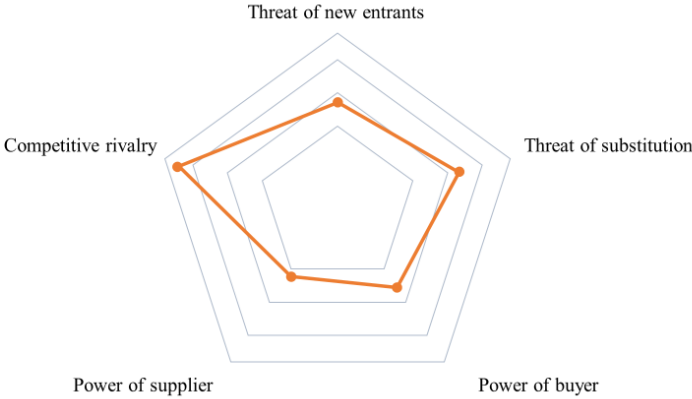
Despite the uncertainties pointed out before, branding and distribution channels are expected to shape the market in the future and contribute to growth (McKinsey, 2023). Since consumers tend to rely more on trusted brands during tough economic times, branding becomes more important (Staplehurst, 2020). More than half of the sporting goods players surveyed by McKinsey are expected to invest more in it in the future. Furthermore, distribution channels are shifting more from wholesale to direct-to-consumer (DTC). Therefore, consumers are getting a more personalized experience, and can also become an essential element of innovation. According to Nike’s chief executive Mark Parker, “the future of sport will be decided by the

company that obsesses the needs of the evolving consumer” (Nike, 2017) since DTC offers higher revenue recognition and margin benefits (GlobalData Thematic Research, 2021).

### 3.3 Competitive Landscape

The sportswear market is highly competitive and includes big international players. Factors like market concentration, price elasticity, and consumer behavior are shaping the competition within the industry. While the threat of new entrants is quite low, customers can substitute products quite easily, switching from one brand to another without facing notable price or quality changes. The bargaining power of buyers can be considered rather low; however, companies are incentivizing their ambitions to keep customers loyal, which was catalyzed by the rise of e-commerce (Nooh, 2022). The supplier landscape is favorable for the sports goods industry since there is a low level of differentiation among many suppliers of sports goods, and supplier switching comes at a relatively low price. Competitive rivalry within the industry can be considered very high, especially between the top brands operating around the globe, requiring constantly high investments in R&D and marketing to retain a good position in the market. Additionally, consumer behavior is becoming a key factor shaping the industry, with consumers increasingly focused on factors like sustainability and social responsibility.

Figure 7: Porters Five Forces Analysis



Source: Own Analysis

Nike is the clear leader in its industry, representing the highest market share over years. Besides, Adidas and Puma – both headquartered in Germany – as well as Under Armour and VF Corp in the US, are other key players in the industry, which are leading in both segments.

Looking at data from Euromonitor (2023b), it can be seen, that the global sports footwear market is getting more consolidated, so the top 15 brands represent around 65% of the global market. Compared to pre-pandemic levels, Adidas was the brand that gave away most of its

share in the footwear market, while local Chinese brands like Li-Ning or Anta gained significantly more global share. The combined Nike portfolio consisting of the Nike Brand, Converse, and Jordan represents over 27% of global market share, almost 2.5x the share of its biggest competitor Adidas.

In contrast, the sports apparel market is less concentrated than the footwear market, with the top 15 brands accounting for around 34% of the global market. While Nike is still the leader with around 9% market share, competition in the apparel segment seems to be much more tightened. Especially Lululemon, which is dominantly active in women's apparel, gained a lot of share during the last decade, and also brands from APAC like Li-Nang and Anta were winning market share from Nike and Adidas. A deeper analysis of the competitive market landscape can be found in appendix 16 and 17.

A comparison of the fundamentals of Nike and its closest peers underlines its market leading position not only in a market cap that is more than six times higher than the one of its closest competitor Adidas but also with over-average EBITDA- and profit-margins and exceptional profitability measured by significantly higher ROE and ROIC.

*Table 1: Fundamental Analysis of Nike and its Peers*

	Nike	Adidas	Puma	Under Armour	VF Corp
HQ	USA	Germany	Germany	USA	USA
Markets	Global	Global	Global	Global	Global
Segments	Footwear & Apparel	Footwear & Apparel	Footwear & Apparel	Footwear & Apparel	Footwear & Apparel
Market Cap (\$b.)	194,8	31,6	8,8	3,8	9,1
EBITDA Margin	16,1%	9,9%	11,8%	11,8%	16,3%
Profit Margin	10,5%	1,0%	4,0%	2,9%	7,9%
5Y Rev. CAGR	6,4%	1,2%	15,4%	0,8%	7,1%
D/E Ratio	61,7%	120,7%	61,9%	31,7%	153,5%
ROE	34,9%	3,4%	13,4%	9,3%	27,6%
ROIC	22,4%	1,8%	9,7%	6,4%	11,4%
Adj. Lev. Beta	1,1	0,9	0,8	1,4	1,3

*Source: Annual Reports, Refinitiv Eikon*

## 4 Company Overview

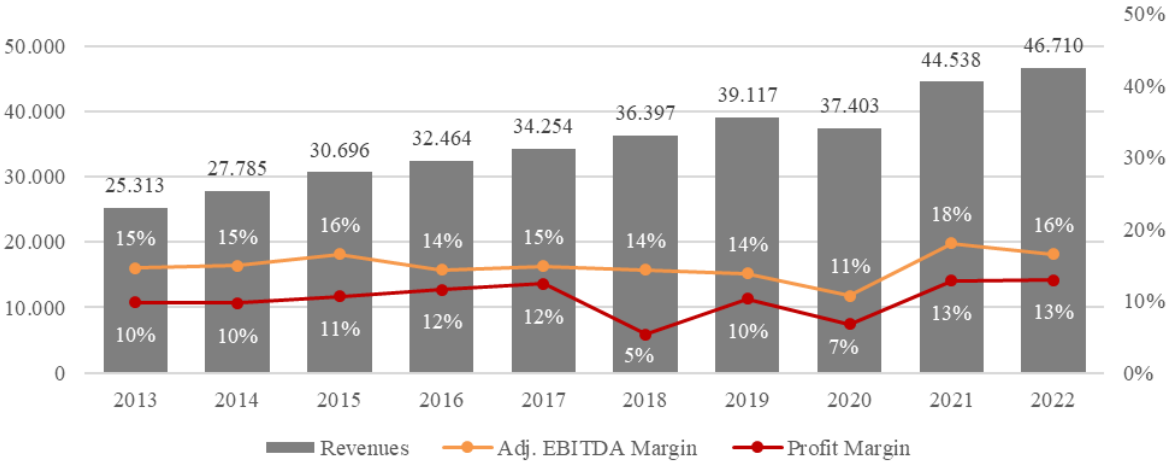
This chapter offers a comprehensive examination of Nike, beginning with a concise overview of the company. Subsequently, an in-depth analysis is conducted on Nike's product lines, operative segments, and distribution channels, providing a detailed understanding of the company's operations. Lastly, an overview of Nike's future corporate strategy is presented, highlighting the strategic direction and initiatives that will guide the company's growth and development.

### 4.1 Nike at a Glance

Nike Inc. is an American multinational corporation headquartered in Beaverton, Oregon and is focused on the design, development, and marketing of athletic footwear, apparel, equipment, and accessories. It was founded in 1964 by Bill Bowerman and Phil Knight under the name Blue Ribbon Sports before they started producing their own shoes under the brand Nike in 1971. The company employs over 79,100 employees worldwide and maintains over 80 distribution centers, of which 72 are outside of the US. Furthermore, in addition to Nike-owned and Converse-owned digital commerce platforms in over 45 countries, the Nike DTC businesses operate with 344 retail stores in and 702 outside the US. Nike’s shares are predominantly free float traded shares, accounting for 98,73% of all shares outstanding, while the remaining shares are mainly owned by strategic entities and board members. Geographically, three-thirds of the investor consortium is located in the US, followed by Europe (19%).

As can be seen in figure 8, over the past ten years Nike’s revenues constantly increased with a CAGR of 7,0% between 2013 and 2022, maintaining an adjusted EBITDA-margin and profit-margin predominantly staying in the lower and mid two-digit region, respectively. Adj. EBITDA is defined as EBITDA, excluding one-in-time effects like impairments of fixed assets and restructuring charges.

Figure 8: Nike's Historical Revenue and Margin Development (USDm)



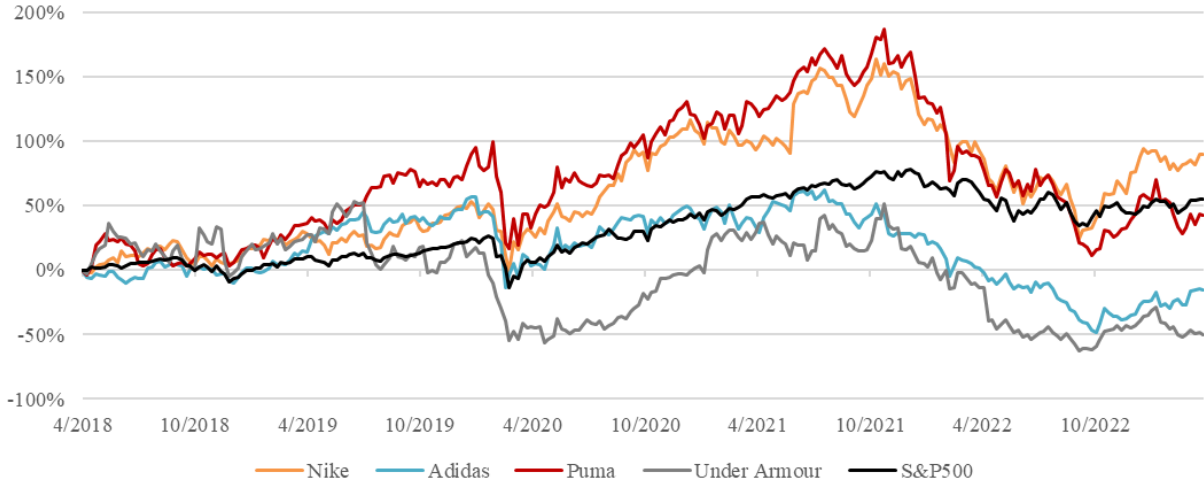
Source: Annual Reports

The 19% revenue increase in FY21 was driven by growth in all categories, led by sportswear and the Jordan brand during the recovery from COVID-19 and the corresponding economic upturn. The driver for the higher adj. EBITDA-margin were lower SG&A expenses as a percentage of revenues and a gross margin expansion, due to lower other costs and higher average selling prices (ASP), especially in Nike’s core market North America. The main reason

for lower revenue growth and decreasing adj. EBITDA-margin in FY22 was the Greater China market. Revenues decreased by 13% in this market, reflecting supply chain constraints and governmental restrictions due to COVID-19, which resulted in reduced physical retail traffic. With higher SG&A expenses mainly for demand creation, and a lower gross margin due to higher inventory obsolescence reserves, the adj. EBITDA-margin was slightly lower at 16%.

Nike showed resilience and a strong response to the COVID-19 slump as its share price recovered faster than the S&P500 and the shares of other competitors like Adidas and Under Armour and had a strong rally until November 2021. Inflation concerns and the Russian invasion of Ukraine caused a decrease of the stock price, which is partly caught up since October 2022.

Figure 9: Share Price Development since April 2018



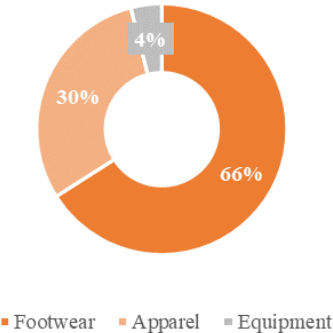
Source: Refinitiv Eikon

**4.2 Product Line**

Nike’s product lines include a wide range of athletic shoes for all kinds of physical activity, like running, basketball, tennis, football, or skating, among others. In addition to shoes, Nike also offers a variety of clothing for sports, including everything from compression shorts and leggings to sweatshirts, jackets, and jerseys. The equipment division includes different kinds of equipment and accessories, such as balls, gloves, hats, sunglasses, and other equipment designed for sports activities. Besides the NIKE Brand, it also designs products specifically for the Jordan Brand and Converse. While the Jordan Brand mainly focuses on athletic and casual basketball sportswear, the Converse product portfolio comprises casual sneakers, apparel, and accessories under different trademarks like Chuck Tayler or All Star.

Nike’s disaggregated revenues by major product lines show that it is generating around two-thirds of its revenue from footwear, followed by 30% by apparel and 4% by equipment, as shown in Figure 10.

Figure 10: Revenue by Product FY22

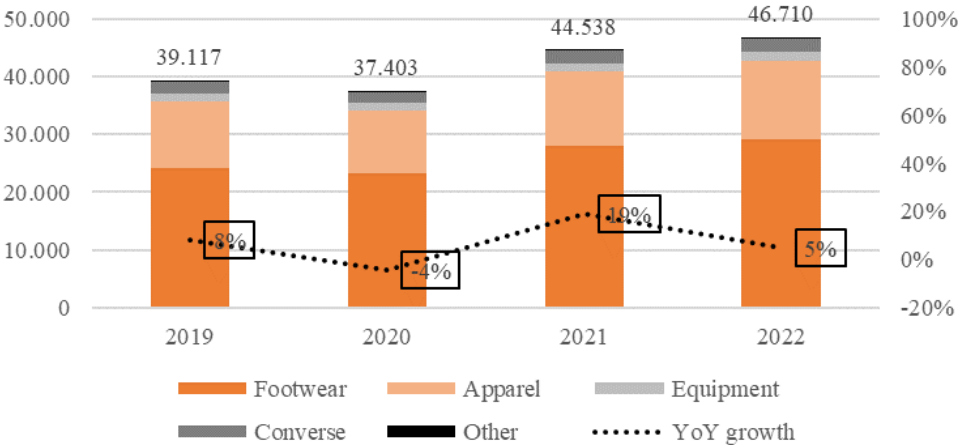


Source: Annual Report

Although the distribution of product lines was constant over the last five years, there have been some shifts in product lines on a geographical level, showing that footwear revenues had an increased share in North America (67%) and especially Greater China (72%), while it gave away its share to apparel in the EMEA region, where footwear just made up to 59% in FY22.

However, Nike only breaks down product lines for its NIKE Brand, not including Converse and other revenue streams like Global Brand Division and Corporate, which are reported on a stand-alone basis. A breakdown including these revenue streams is presented in Figure 11.

Figure 11: Revenue Development by Product Group FY22 (USD m)

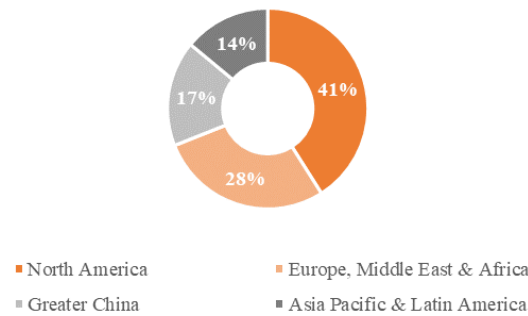


Source: Company Reports, Own Analysis

### 4.3 Operating Segments

Nike's operating segments are structured by the company's internal organization. Hence, the NIKE Brand segments are defined by geographic regions and include results for the NIKE and Jordan brands. They are divided into four regions. Figure 12 shows the segmentation for FY22.

Figure 12: Revenue Split by Operative Segments FY22



Source: Annual Report

North America is Nike's most important revenue contributor with 41% generated there, followed by EMEA (28%), Greater China (17%), and APLA (14%). Figure 13 presents a detailed overview of the product mix and revenue growth in each operative segment.

Figure 13: Revenue Development by Products in Operative Segments



Source: Annual Reports, Own Analysis

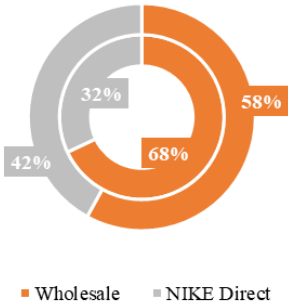
In the last years, Nike was able to foster growth in all segments. Its biggest market, North America, grew with a CAGR of 5.4% between FY18 and FY22, EMEA with an even higher CAGR of 7.8% in the same period. The strongest growing market, however, was Greater China, with a CAGR of 10.1%, although revenues were declining in FY22. Noting that the FY18 to FY21 CAGR was significantly higher at 17.3%, Greater China indicates to become Nike’s core growth driver in the future. The smallest segment APLA improved its year-on-year revenue growth constantly since FY20.

The Converse business also recorded solid revenue growth with a CAGR of 5.6% between FY18 and FY22, which was mainly driven by North America and Western Europe, partially offset by declines in Asia.

**4.4 Distribution channels**

Nike differentiates between NIKE Direct operations, which comprises Nike-owned retail stores and sales through its digital platforms, and its wholesale network. However, over the last ten years, distribution channels have shifted much more towards direct connections with consumers. First announced in June 2017 as Consumer Direct Offense and updated to Consumer Direct Acceleration in 2020, this alignment aims to move Nike closer to the consumer and thus to create a local business on a global scale. On the wholesale distribution side, Nike focuses on a selected group of wholesale partners that have been reduced by 50% over the last four years (Ryan, 2022). Comparing Nike’s revenues by distribution channel, a clear shift towards NIKE Direct is notable. While they accounted for 32% of total revenues in FY19, in FY22, 42% were realized through direct distribution, as can be seen in figure 14.

*Figure 14: Revenue Development by Distribution Channel*



*Source: Annual Reports*

**4.5 Strategy**

In their FY22 Annual Report Nike defines its strategy as “to achieve long-term revenue growth by creating innovative, “must-have” products building deep personal consumer connections

with its brands and delivering compelling consumer experiences through digital platforms and at retail”. Alongside this, Nike presented the already mentioned Consumer Direct Offense as well as the Triple Double strategy. The company aims to double the impact of innovation, increase speed and agility, and grow its direct connections with consumers.

The 2020 introduced Consumer Direct Acceleration, which can be seen as an update to the previous Consumer Direct Offense emerges as the core strategy for Nike. The goal is to shift from wholesale towards DTC and to target a revenue mix of 50% by FY25, with an increased portion of Nike Digital sales. Through this strategy, the company will benefit more from the end value chain and revenues will increase due to saving the wholesale retail markup in direct sales. From a consumer perspective, Nike’s DTC strategy will increase consumer engagement through membership services through all channels, like Nike stores, online platform, and its app ecosystem. The customer lifetime of members is expected to be enlarged significantly compared to single purchase customers, thus resulting in a higher customer lifetime value.

Nike’s financial goals through 2025 include high single-digit to low double-digit revenue growth and a gross margin close to 50%. Also, by 2025, EBIT-margins are expected to grow close to 20% (Nike, 2021).

## **5 Historical Financial Analysis**

This chapter aims to analyze the historical financial trajectory of Nike, with the objective of assessing its performance and identifying key drivers that could impact future outcomes. Initially, a comprehensive breakdown of Nike's operating cost structure is conducted to gain deeper insights into historical fluctuations, which are subsequently summarized through a trend analysis. Additionally, the historical trends of CapEx and operating working capital are examined. Furthermore, a common size analysis is employed to facilitate a comparative evaluation of Nike's historical performance over time and in relation to its primary industry peers. Lastly, a ratio analysis is conducted to assess the company's profitability, liquidity, solvency, and efficiency.

### **5.1 Operative Cost Structure**

#### **5.1.1 Cost of Sales**

The major components of cost of sales include inventory costs, warehousing expenses (including labor costs), third-party royalties, certain foreign currency gains and losses from hedging, and product design expenses. Shipping and handling expenses are recognized when

incurred and are also included in the cost of sales. Historically, cost of sales exceeded 50% of total revenues, with its highest value amounting to 57% in FY20.

Table 2: Historical Cost of Sales (USD m)

	FY17	FY18	FY19	FY20	FY21	FY22
Cost of Sales	19.038	20.441	21.643	21.162	24.541	25.231
<i>as a % of Revenue</i>						
<i>Cost of Sales</i>	55%	56%	55%	57%	55%	54%

Source: Annual Reports

### 5.1.2 Selling, General & Administrative Expenses

Nike's SG&A expenses include two components: demand creation and operating overhead expenses. Demand creation expenses primarily comprise advertising and promotional costs, including the costs of endorsement contracts, television, digital and print advertising, brand events, and retail brand presentation. While most of these costs are expensed when an advertisement appears or an event occurs, a significant amount of these expenses are endorsement payments. These payments often include variable payments based upon performance of the endorsers in their sport. Operating overhead expenses for Nike include employee-related costs like wages and benefits, R&D, and bad debt expenses. Additionally, other administrative expenses like rent, travel, D&A, and certain IT investments are part of operating overhead. Over the past years, SG&A expenses as a percentage of revenue remained quite stable, around 32%, while demand creation expenses decreased as a percentage of total SG&A.

Table 3: Historical SG&A Expenses (USD m)

	FY17	FY18	FY19	FY20	FY21	FY22
Demand Creation Expense	3.341	3.577	3.753	3.592	3.114	3.850
Operating Overhead Expense	7.222	7.934	8.949	9.534	9.697	10.954
<b>Total SG&amp;A</b>	<b>10.563</b>	<b>11.511</b>	<b>12.702</b>	<b>13.126</b>	<b>12.811</b>	<b>14.804</b>
<i>as a % of Total SG&amp;A</i>						
<i>Demand Creation Expense</i>	32%	31%	30%	27%	24%	26%
<i>Operating Overhead Expense</i>	68%	69%	70%	73%	76%	74%

Source: Annual Reports

### 5.1.3 Other Income/(Expense)

Nike is exposed to foreign currency fluctuations through its international sales, product sourcing and funding. A weaker USD compared to other currencies would benefit Nike's revenues and earnings, while a stronger USD would reduce them. Therefore, the company hedges its non-USD transactions with derivative contracts, which are updated twice a year. Gains and losses on translation of monetary assets and liabilities and the effect of certain derivative foreign currency instruments are included in other income/(expense).

Table 4: Historical Other Income/(Expense) (USD m)

Other income/(expense)	FY17	FY18	FY19	FY20	FY21	FY22
Other income/(expense)	43	-5	-95	191	36	181
<i>as % of Revenue</i>						
Other income/(expense)	0,1%	0,0%	-0,2%	0,5%	0,1%	0,4%

Source: Annual Reports

Nike states that their FX risk management program intends to lessen positive and negative effects of FX fluctuations and thus aims to entirely offset the impact of FX rate-related changes.

## 5.2 Trend Analysis

The following table 5 shows the trend analysis of Nike's income statement for the period from FY17 to FY22. Total revenues increased almost 1.4 times over this period, especially through growth in the footwear and apparel segment.

Cost of sales increased slightly slower, resulting in a gross profit growth of 40%. Since SG&A expenses stayed quite constant as a percentage of revenue and D&A were growing at a slower pace, the adj. EBIT grew even slightly more. Higher interest expenses were offset by lower taxes so that Nike achieved a FY22 net income that was almost 1.5 times higher than in FY17.

Table 5: Trend Analysis Income Statement

Income Statement (%)	FY17	FY18	FY19	FY20	FY21	FY22
Footwear	100%	106%	115%	111%	133%	138%
Apparel	100%	111%	120%	113%	133%	141%
Equipment	100%	98%	99%	90%	97%	114%
Converse	100%	92%	93%	90%	108%	115%
Other	100%	77%	24%	13%	44%	20%
<b>Total Revenues</b>	<b>100%</b>	<b>106%</b>	<b>114%</b>	<b>109%</b>	<b>130%</b>	<b>136%</b>
Cost of Sales	100%	107%	114%	111%	129%	133%
<b>Gross Profit</b>	<b>100%</b>	<b>104%</b>	<b>114%</b>	<b>106%</b>	<b>131%</b>	<b>140%</b>
Selling, General & Administrative Expenses	100%	109%	120%	124%	121%	140%
Other Non-Operating Income/(Expense)	100%	(12%)	(221%)	444%	84%	421%
<b>Adj. EBIT</b>	<b>100%</b>	<b>93%</b>	<b>98%</b>	<b>69%</b>	<b>151%</b>	<b>143%</b>
D&A	100%	108%	101%	101%	111%	117%
<b>Adj. EBITDA</b>	<b>100%</b>	<b>95%</b>	<b>98%</b>	<b>73%</b>	<b>146%</b>	<b>140%</b>
Non-Recurring Income/(Expense)	100%	(41%)	116%	(221%)	(201%)	0%
Add back D&A	100%	108%	101%	101%	111%	117%
<b>EBIT</b>	<b>100%</b>	<b>89%</b>	<b>98%</b>	<b>60%</b>	<b>140%</b>	<b>139%</b>
Interest Expense/(Income)	100%	98%	89%	162%	476%	373%
<b>EBT</b>	<b>100%</b>	<b>89%</b>	<b>98%</b>	<b>59%</b>	<b>136%</b>	<b>136%</b>
Taxes	100%	56%	120%	54%	145%	94%
<b>Net Income</b>	<b>100%</b>	<b>94%</b>	<b>95%</b>	<b>60%</b>	<b>135%</b>	<b>143%</b>

Source: Annual Reports, Own Analysis

### 5.3 Working Capital

In the following, working capital is divided into trade working capital (TWC), which includes the items inventory, trade receivables, and trade payables, as well as other working capital (OWC), that consists of all other working capital-like items, including operating cash, which is estimated at 2% of revenues for historical as well as future OWC. TWC increased slightly above the level of 20% of total revenues in FY20 and FY22, mainly by an increase in inventory.

The decrease in OWC is predominantly due to the higher accrued liabilities on the liabilities side, partly offset by an increase in deferred income taxes and other assets.

Therefore, total operating working capital levels were moving between 9% and 18% of total revenues in the period from FY17 to FY22, mainly explained by shifts in OWC items.

Table 6: Historical Working Capital Development (USD m)

Operating working capital (\$ million)	FY17	FY18	FY19	FY20	FY21	FY22
Inventories	5.055	5.261	5.622	7.367	6.854	8.420
Trade receivables	3.677	3.498	4.272	2.749	4.463	4.667
Trade payables	(2.048)	(2.279)	(2.612)	(2.248)	(2.836)	(3.358)
<b>Trade working capital</b>	<b>6.684</b>	<b>6.480</b>	<b>7.282</b>	<b>7.868</b>	<b>8.481</b>	<b>9.729</b>
Deferred income taxes and other assets	2.787	2.509	2.011	2.326	2.921	3.821
Prepaid expenses and other current assets	1.150	1.130	1.968	1.653	1.498	2.129
Deferred tax liabilities and other liabilities	(1.907)	(3.216)	(3.347)	(2.684)	(2.955)	(2.613)
Tax payables	(84)	(150)	(229)	(156)	(306)	(222)
Accrued liabilities	(3.011)	(3.269)	(5.010)	(5.038)	(6.063)	(6.220)
Other current liabilities	-	-	-	(146)	-	-
Operating Cash	685	728	782	748	891	934
<b>Other working capital</b>	<b>(380)</b>	<b>(2.268)</b>	<b>(3.825)</b>	<b>(3.297)</b>	<b>(4.014)</b>	<b>(2.171)</b>
<b>Total operating working capital</b>	<b>6.304</b>	<b>4.212</b>	<b>3.457</b>	<b>4.571</b>	<b>4.467</b>	<b>7.558</b>
<i>as % of revenues</i>						
<i>Inventories</i>	<i>15%</i>	<i>14%</i>	<i>14%</i>	<i>20%</i>	<i>15%</i>	<i>18%</i>
<i>Trade receivables</i>	<i>11%</i>	<i>10%</i>	<i>11%</i>	<i>7%</i>	<i>10%</i>	<i>10%</i>
<i>Trade payables</i>	<i>(6%)</i>	<i>(6%)</i>	<i>(7%)</i>	<i>(6%)</i>	<i>(6%)</i>	<i>(7%)</i>
<i>Trade working capital</i>	<i>20%</i>	<i>18%</i>	<i>19%</i>	<i>21%</i>	<i>19%</i>	<i>21%</i>
<i>Other working capital</i>	<i>(1%)</i>	<i>(6%)</i>	<i>(10%)</i>	<i>(9%)</i>	<i>(9%)</i>	<i>(5%)</i>
<i>Total operating working capital</i>	<i>18%</i>	<i>12%</i>	<i>9%</i>	<i>12%</i>	<i>10%</i>	<i>16%</i>

Source: Annual Reports, Own Analysis

### 5.4 CapEx

Nike's capital expenditures after the change of IFRS 16 are presented in the table below and are between 1% and 2% of total sales. They predominantly include investments in the construction and renovation of its distribution centers, retail stores and logistics infrastructure, as well as in IT infrastructure to support its e-commerce and digital marketing efforts as well as to improve its supply-chain. In future periods Nike states to make annual capital expenditures of around 3% of total revenues. The amortization rate remained quite constant at around 9% to 10%, while the company states that the lifetime of depreciated assets lies between 2 to 40 years.

Table 7: Historical Capital Expenditure and D&A

CapEx (\$ million)	FY20	FY21	FY22
PP&E	4.866,0	4.904,0	4.791,0
Intangible Assets	274,0	269,0	286,0
Right-of-use Assets	3.097,0	3.113,0	2.926,0
<b>Total tangible and intangible assets</b>	<b>8.237,0</b>	<b>8.286,0</b>	<b>8.003,0</b>
D&A	721,0	797,0	840,0
<b>Total CapEx</b>		<b>846,0</b>	<b>557,0</b>
Total CapEx as % of revenue		1,9%	1,2%
Amortization rate	8,8%	9,6%	10,5%

Source: Annual Reports

## 5.5 Common Size Analysis

By translating the income statement as a percentage of sales, a company can be compared over time and between its peers. The following tables 8 and 9 show a historical and a peers common-size income statement, respectively.

Table 8: Common Size Income Statement Nike

Income Statement (%)	FY17	FY18	FY19	FY20	FY21	FY22
Footwear	61%	61%	62%	62%	63%	62%
Apparel	28%	29%	30%	29%	29%	29%
Equipment	4%	4%	4%	3%	3%	3%
Converse	6%	5%	5%	5%	5%	5%
Other	0%	0%	0%	0%	0%	0%
<b>Total Revenues</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
Cost of Sales	55%	56%	55%	57%	55%	54%
<b>Gross Profit</b>	<b>45%</b>	<b>44%</b>	<b>45%</b>	<b>43%</b>	<b>45%</b>	<b>46%</b>
Selling, General & Administrative Expenses	31%	32%	32%	35%	29%	32%
Other Non-Operating Income/(Expense)	0%	(0%)	(0%)	1%	0%	0%
<b>Adj. EBIT</b>	<b>14%</b>	<b>12%</b>	<b>12%</b>	<b>9%</b>	<b>16%</b>	<b>15%</b>
D&A	2%	2%	2%	2%	2%	2%
<b>Adj. EBITDA</b>	<b>16%</b>	<b>14%</b>	<b>14%</b>	<b>11%</b>	<b>18%</b>	<b>16%</b>
Non-Recurring Income/(Expense)	0%	(0%)	0%	(1%)	(1%)	0%
Add back D&A	2%	2%	2%	2%	2%	2%
<b>EBIT</b>	<b>14%</b>	<b>12%</b>	<b>12%</b>	<b>8%</b>	<b>16%</b>	<b>15%</b>
Interest Expense/(Income)	0%	0%	0%	0%	1%	0%
<b>EBT</b>	<b>14%</b>	<b>12%</b>	<b>12%</b>	<b>8%</b>	<b>15%</b>	<b>14%</b>
Taxes	2%	1%	2%	1%	2%	1%
<b>Net Income</b>	<b>12%</b>	<b>11%</b>	<b>10%</b>	<b>7%</b>	<b>13%</b>	<b>13%</b>

Source: Annual Reports, Own Analysis

Nike kept its revenue mix as well as its cost of sales quite persistent over time but was improving its gross margin constantly in the last two years. The most fluctuating figure in the past was SG&A, ranging from 29% in FY21 to 35% in FY20, thus impacting on the bottom-line profitability margin, while D&A, interest expenses, and taxes remained quite stable over time.

A comparison of Nike to its industry peers is presented below, using the latest annual report figures. While Adidas and Puma show similar relative cost of sales as Nike, Under Armour and VF Corp present more efficient gross margins in their last full year report. However, Nike differentiates itself most by lower SG&A expenses compared to its peers, which impact bottom-line profitability margins more than different D&A expenses.

Table 9: Common Size Income Statement Nike and its Peers

Income Statement (%)	Nike	Adidas	Puma	Under Armour <sup>1)</sup>	VF Corp
<b>Total Revenues</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
Cost of Sales	54%	53%	54%	50%	45%
<b>Gross Profit</b>	<b>46%</b>	<b>47%</b>	<b>46%</b>	<b>50%</b>	<b>55%</b>
Selling, General & Administrative Expenses	32%	43%	38%	41%	41%
Other Non-Operating Income/(Expense)	0%	(2%)	(0%)	(5%)	0%
<b>Adj. EBIT</b>	<b>15%</b>	<b>3%</b>	<b>7%</b>	<b>5%</b>	<b>14%</b>
D&A	2%	5%	4%	2%	2%
<b>Adj. EBITDA</b>	<b>16%</b>	<b>8%</b>	<b>11%</b>	<b>7%</b>	<b>17%</b>
Non-Recurring Income/(Expense)	0%	(1%)	(1%)	3%	(0%)
Add back D&A	2%	5%	4%	2%	2%
<b>EBIT</b>	<b>15%</b>	<b>2%</b>	<b>7%</b>	<b>8%</b>	<b>14%</b>
Interest Expense/(Income)	0%	0%	0%	1%	1%
<b>EBT</b>	<b>14%</b>	<b>2%</b>	<b>7%</b>	<b>7%</b>	<b>13%</b>
Taxes	1%	1%	2%	1%	3%
<b>Net Income after Tax</b>	<b>13%</b>	<b>1%</b>	<b>5%</b>	<b>6%</b>	<b>10%</b>

<sup>1)</sup> FY21

Source: Annual Reports, Own Analysis

## 5.6 Ratio analysis

As a further component of this chapter, Nike's historical financial state is measured through a ratio analysis, which addresses the company's profitability, efficiency, liquidity, and solvency. The analysis compares Nike's ratios over time and to its peers. Adidas and Puma represent Nike's closest peers and are therefore weighted at 40% each. As only FY21 figures are reported on a full-year basis for Under Armour and VF Corp's product mix is slightly different from Nike, both are weighted with 10%, respectively. Nike shows a strong and consistent ability to generate profits, which is reflected in increased margins in FY22 compared to FY17 and to the peer's average. Significantly over-average ROE and ROA underline their efficiency in generating profits.

Table 10: Profitability Ratios

Profitability Ratio	FY17	FY18	FY19	FY20	FY21	FY22	Peers ø
Gross Margin	43,4%	43,8%	44,7%	43,4%	44,9%	46,0%	48,4%
EBITDA Margin	14,7%	14,3%	14,0%	10,3%	17,9%	16,1%	11,5%
EBIT Margin	12,7%	12,2%	12,0%	8,8%	16,2%	14,7%	7,6%
Profit Margin	12,4%	10,9%	10,3%	6,8%	12,9%	12,9%	4,6%
Return on Equity	34,4%	35,7%	42,7%	29,7%	55,0%	43,1%	14,6%
Return on Assets	19,0%	17,3%	17,4%	9,2%	16,6%	15,5%	5,2%

Source: Annual Reports, Refinitiv Eikon

Table 11 summarizes the most important liquidity ratios, which measure the ability to meet short-term debt obligations with current assets. A quick and current ratio way above one indicate that Nike is managing its liquidity very conscientiously and ranks first among its peers. The decreased interest coverage ratio over time is mainly due to the issuance of a significant amount of debt in FY20, which doesn't endanger Nike's liquidity by any means.

Table 11: Liquidity Ratios

Liquidity Ratio	FY17	FY18	FY19	FY20	FY21	FY22	Peers ø
Quick Ratio	2,0	1,6	1,4	1,6	2,0	1,8	0,9
Current Ratio	2,9	2,5	2,1	2,5	2,7	2,6	1,5
Interest Coverage Ratio	52,6	35,9	36,4	20,6	24,3	22,3	10,8

Source: Annual Reports, Refinitiv Eikon

Looking at solvency ratios, which can be seen as key metrics to analyze a company's capability to meet its long-term obligations, they show that Nike is less dependent on debt than its peer group. However, Nike issued more than \$5bn in corporate bonds in FY20 to maintain liquidity during the COVID-19 pandemic. As a result, net cash became net debt, which made the Net Debt/EBITDA ratio slightly positive but still lower than its peers'.

Table 12: Solvency Ratios

Solvency Ratio	FY17	FY18	FY19	FY20	FY21	FY22	Peers ø
Debt-to-Equity (BV)	0,3	0,4	0,4	1,2	0,7	0,6	1,0
Asset/Equity	1,9x	2,3x	2,6x	3,9x	3,0x	2,6x	3,3x
Net Debt/EBITDA	-0,4x	-0,2x	-0,1x	1,1x	-0,1x	0,0x	1,3x

Source: Annual Reports, Refinitiv Eikon

Lastly, the efficiency ratios presented below give an overview of how efficiently Nike is managing its core working capital items. Even though days inventory increased in the last years because of COVID-related excess inventory difficulties, it is still below the level of Nike's peers. Furthermore, days receivables and payables indicate that Nike receives payments from its costumers faster than in the past and also than its peers, but that it also still has potential for payable days extension.

Table 13: Efficiency Ratios

Efficiency Ratio	FY17	FY18	FY19	FY20	FY21	FY22	Peers ø
Days Inventory	96,9	94,1	94,8	127,1	101,9	121,8	137,4
Days Receivables	39,2	35,1	39,9	26,8	36,6	36,5	47,8
Days Payables	39,3	40,8	44,1	38,8	42,2	48,6	96,3
Cash Conversion Cycle	96,8	88,4	90,6	115,1	96,3	109,7	88,9

Source: Annual Reports, Refinitiv Eikon

Overall, the ratio analysis underlines Nike's solid fundamentals and healthy condition. A comparison with its peers shows that Nike is the clear leader in the industry without indicating any severe solvency or liquidity constraints. However, the above average cash conversion cycle gives potential for efficiency improvement.

## 5.7 FY23 Forecast

To include the progress of the current FY23, a comparison of Nike's nine months year to date (YTD) key figures is presented below.

Table 14: Nike 9M YTD23 Revenues

Revenues (USD m)	YTD22	as % of FY22	YTD23	Delta	Delta %
Footwear	21.158	73%	24.588	3.430	16%
Apparel	10.330	76%	10.609	279	3%
Equipment	1.237	76%	1.297	60	5%
Converse	1.753	75%	1.841	88	5%
Other	(2)	(7%)	57	59	-
<b>Total Revenues</b>	<b>34.476</b>	<b>74%</b>	<b>38.392</b>	<b>3.916</b>	<b>11%</b>

Source: Annual Reports, Refinitiv Eikon

Table 15: Nike 9M YTD23 Shortened Income Statement

Income Statement (USD m)	YTD22	as % of FY22	YTD23	Delta	Delta %
Total Revenues	34.476	74%	38.392	3.916	11%
Gross Profit	15.976	74%	16.697	721	5%
Adj. EBITDA	5.995	78%	5.456	(539)	(9%)
EBIT	5.442	79%	4.977	(465)	(9%)
EBT	5.277	79%	4.955	(322)	(6%)
Net Income	4.607	76%	4.039	(568)	(12%)

Source: Annual Reports, Refinitiv Eikon

While Nike was able to increase revenues mainly due to higher ASP and double-digit growth in footwear in all operational segments except Greater China, gross profit decreased by approximately 285 bps due to higher markdowns to liquidate inventory, unfavorable FX rates, and higher product input costs. With higher SG&A costs primarily due to wage-related expenses and increased demand creation expenses to stimulate consumer behavior, profitability decreased in comparison to the prior year's 9M YTD. To forecast Q4 figures for Nike, the cyclicality of the company is analyzed by looking at historical Q4 performances compared to the first three quarters. Historically, Nike's revenues are strongest in the first and last fiscal quarters, indicating that the results for Q4 should contribute more than 25% to the total FY23. Therefore, the average contribution of Nike's past ten years Q4 results are applied to YTD23 actuals to arrive at a FY23 (9+3) forecast. Based on these FY23 figures, the explicit forecast relies on.

The same technique is applied to Nike’s balance sheet in order to compare the already reported FY23 quarterly results with historical results and to lay the base for the forecast period. Refer to appendix 2 and 4 for further detail.

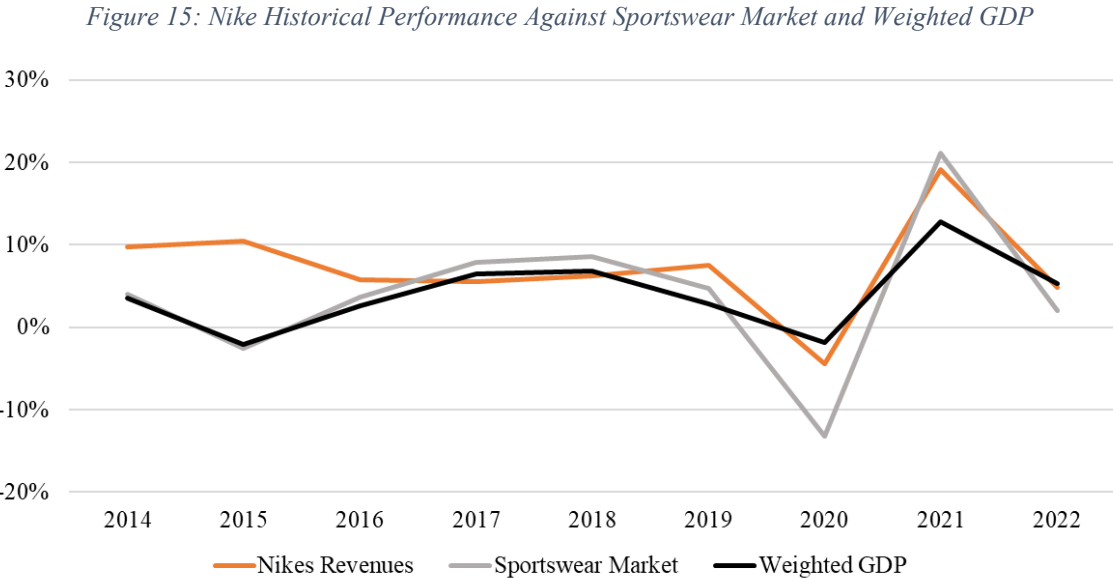
**6 Financial Forecast and Valuation**

The purpose of this chapter is to present a comprehensive overview of the various inputs required for forecasting Nike's accounts. Drawing upon the historical performance analysis discussed in the previous chapter, as well as incorporating a wide range of other relevant factors, a thorough assessment will be conducted. Subsequently, the methodologies outlined in the literature review will be applied to ensure a reliable forecast. Lastly, different valuation approaches are presented, providing a comprehensive perspective on Nike's financial outlook.

**6.1 Forecast Inputs**

**6.1.1 Revenues**

Nike’s revenues are expected to grow with a CAGR of 9.8% between FY23 and FY28, slowing down growth in further years with a CAGR of 6.5% between FY28 and FY33. In the past years, Nike was able to outperform the industry growth as well as the GDP growth both by an average of 3.2%, as illustrated in figure 15.



*Source: Euromonitor, Own Analysis*

It is expected that this trend will continue since Nike is the industry leader and has proven resilience, especially in challenging market conditions.

The revenue forecast is executed in two main steps. Firstly, the historical revenue growth of Nikes operative segments North America, EMEA, Greater China, and APLA is compared to the sportswear industry and to nominal GDP growth to estimate a multiplier. This figure is then applied to estimate Nikes growth over its operative segments in the future periods until FY27. Negative multipliers, which occurred due to negative growth either for Nike or the comparable, are excluded and the median value between 2014 and 2022 is used. The approach delivers the following result.

Table 16: Industry Multiplier

Industry Multiplier	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
North America	1,6x	1,8x	1,4x	0,5x	-	1,1x	1,7x	0,6x	1,3x	8%	6%	7%	7%	7%
EMEA	12,7x	-	2,9x	0,8x	2,8x	-	0,5x	1,5x	-	12%	8%	9%	9%	8%
Greater China	0,5x	1,4x	1,7x	0,7x	1,0x	1,1x	-	1,7x	-	12%	11%	10%	9%	8%
APLA	0,0x	1,5x	-	0,9x	0,9x	0,2x	3,1x	0,4x	6,8x	9%	9%	7%	7%	6%

Source: Own Analysis

Table 17: GDP Multiplier

GDP Multiplier	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
North America	2,9x	5,6x	3,2x	0,7x	-	1,8x	5,0x	1,6x	0,8x	11%	8%	9%	10%	9%
EMEA	13,0x	-	-	1,0x	2,6x	-	1,1x	1,7x	4,9x	11%	6%	9%	8%	8%
Greater China	0,6x	2,5x	2,8x	1,0x	2,0x	2,9x	2,8x	1,8x	-	10%	16%	15%	14%	14%
APLA	0,0x	-	-	1,4x	1,4x	5,0x	0,7x	0,9x	-	10%	9%	8%	8%	8%

Source: Own Analysis

Since the sports industry multiplier is a closer estimate for Nike, the two approaches are weighted with 70% and 30%, respectively.

In a second step, these growth rates are broken down into Nike’s product categories, which consist of 66% footwear, 30% apparel, and 4% equipment as of FY22, to be adjusted for an outperformance ability in the future.

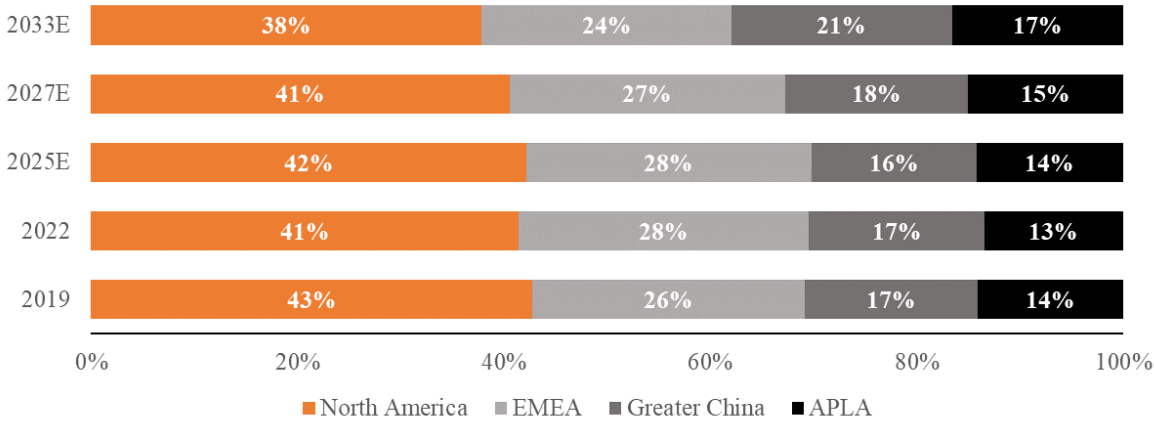
As mentioned in the company overview, Nike’s core strategy is to shift towards its DTC business model. The target of a 50% DTC mix by FY25, as targeted by the Nike management, is expected to elevate revenues by an additional multiplier of 1.1x to 1.3x between FY24 and FY26. Furthermore, the industry multiplier method applied may underestimate the growing importance of Greater China and especially the APLA segment since Nike was more concentrated on its established markets in prior years. The constantly increasing CAGRs in the APLA region over the last three financial years, as well as the installation of a new APLA head in March 2023, to unlock long-term growth and profitability in the region (Nike, 2023), are an indicator of Nike’s strongly rising growth efforts. This translates into an additional multiplier of 1.1x to 1.3x and 1.3x to 1.5x for the Greater China and APLA segment, respectively.

Lastly, growth is expected to be slightly higher for sports footwear than for sports apparel as analyzed in the industry overview, which is also accounted for in the revenue forecast. A detailed overview of the additional multiplier can be found in appendix 13.

After constant rates in FY27 and FY28, growth slows down in the following years before the company is expected to operate in a steady state.

This translates into regional exposure shifts towards Greater China and APLA in the coming periods. While these two regions account for around 30% in FY22, their share is expected to increase to 33% and 38% in FY27 and FY33, respectively.

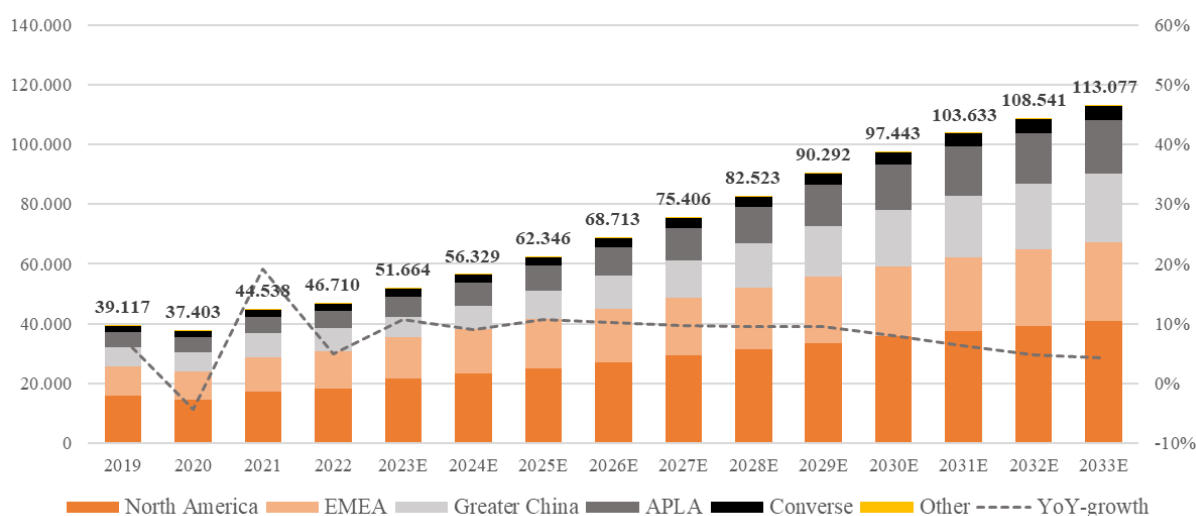
Figure 16: Future Regional Exposure Shifts



Source: Annual Reports, Own Analysis

The revenues for the Converse segment are modeled separately and are expected to remain more or less constant to its historical performance, ranging between 5% and 7% y-o-y growth. The Other segment contains revenues from Global Brand Division and Corporate. They include Nike brand licensing and other miscellaneous revenues which are not part of an operative segment and foreign currency hedge gains and losses related to generated revenues. Both accounts are marginal and don't show any specific pattern. Thus, they are expected to remain constant at an average of previous years. The resulting revenue streams divided by operating segments are presented in figure 17. They imply a FY23 to FY33 CAGR of 8.1%, an increase of 93.3 bps compared to the period of FY13 to FY23.

Figure 17: Nike Revenue Forecast by Operative Segments (USD m)



Source: Annual Reports, Own Analysis

### 6.1.2 Cost of sales

Nike is targeting a “high 40s” gross margin by FY25. However, as mentioned before, Nike’s costs of sales were affected by higher freight and product costs, Greater China market challenges, inflation pressure in their supply chain, and an appreciation of the USD in the recent past, which had increasing effects on its cost of sales. Because most of these headwinds will persist in the short term, it is expected that Nike will achieve the stated goal belated when the effects of the current crisis will fade, improving its cost of sales as a percentage of revenues to 51% in FY27. From FY28, Nike’s gross margin is expected to remain constant at 50%.

### 6.1.3 SG&A

As mentioned earlier, Nike’s SG&A expenses comprise demand creation and overhead expenses, with demand creation expenses shrinking from around one-third to one-quarter of total SG&A expenses in the last years. It is expected that Nike will be able to cut costs in the midterm mainly driven by scale effects as a competitive advantage. Since Nike generates around 2x more revenue than its closest competitor Adidas and 5x more than Puma, Nike indicates the ability to decrease its relative spending without compromising on absolute spending levels against its peers. Additionally, Nike shows historically higher EBIT-margins in the Greater China market, which imply lower SG&A expenses (see appendix 9).

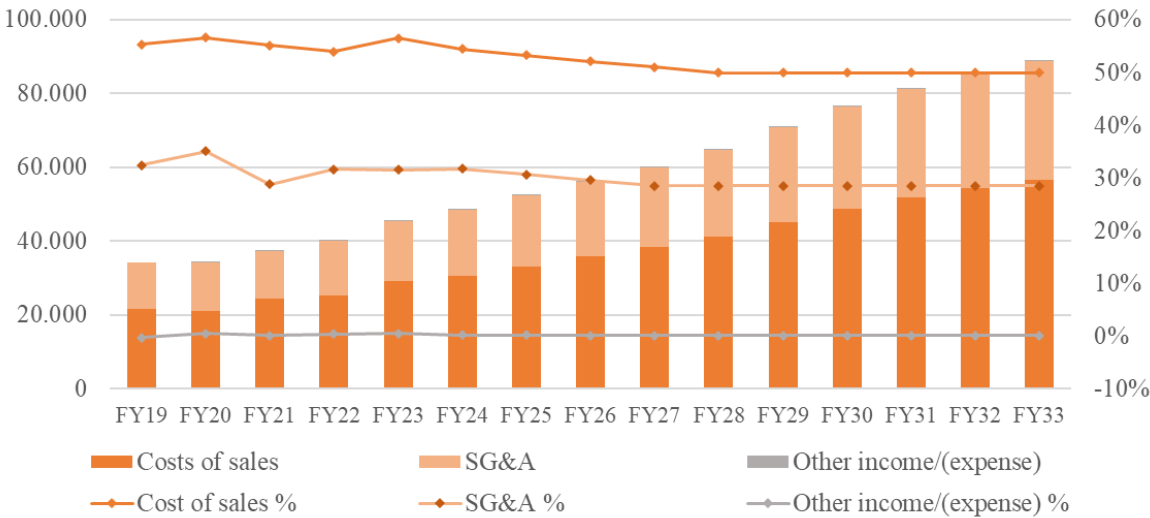
The expansion in this market is expected to have a beneficial effect on Nike’s total SG&A expenses. Therefore, Nike is expected to decrease its SG&A expenses as a percentage of revenues by around 300 bps by FY27. This is in line with Nike’s EBIT-margin target of close

to 20% by FY25, which – as already mentioned in the context of cost of sales – is expected to be achieved slightly delayed.

**6.1.4 Other income/(expense)**

Other income/(expense) was quite volatile in the past, didn’t show a specific pattern, and developed independently of sales. The company states that it aims to lessen both the positive and negative effects of currency fluctuations in the future, but it’s not expected that they can be completely offset. For that reason, other income/(expense) is modeled constant as an average of previous years, which also means that its relative significance on earnings will weaken.

Figure 18: Nike Operating Costs Forecast (USD m)

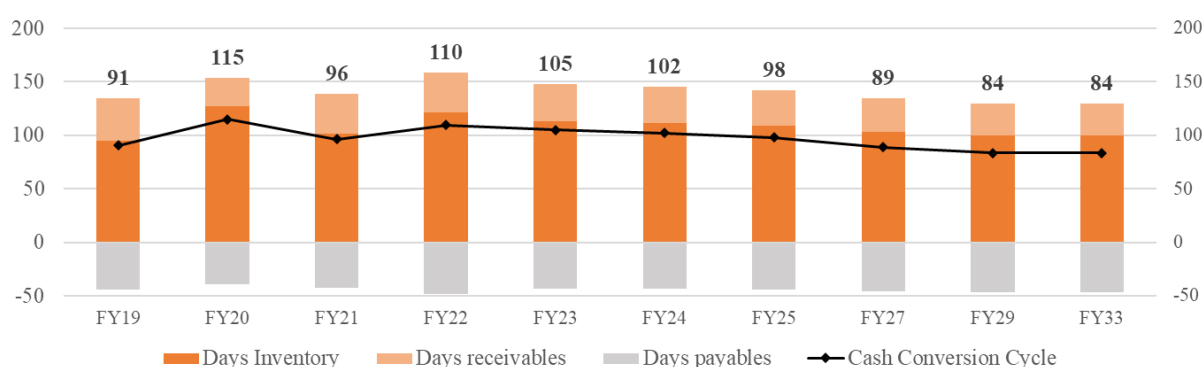


Source: Annual Reports, Own Analysis

**6.1.5 Working Capital**

The forecast for working capital is split between trade and other working capital. TWC is projected with the DIO, DSO, and DPO approaches, which are applied on revenues and cost of sales. From a lifted position in FY22, Nike’s TWC is expected to improve constantly over future periods due to less supply-chain disruptions and the launch of a new ERP system, which is set up to increase the visibility and productivity of Nike’s inventory and supply-chain (Salgado, 2022). With regard to Nike's focus on DTC, its management considers this to be a key factor. Especially through an improvement of its DIO, the Cash Conversion Cycle is expected to decrease under 100 by FY25 to 84 in FY29, from where it stays at a constant level.

Figure 19: Nike Trade Working Capital Forecast



Source: Annual Reports, Own Analysis

Other operating working capital items listed in the table below are not covered by specific guidelines. Therefore, they are projected as a percentage of sales of their historical averages.

Table 18: Nike Other Operating Working Capital Forecast (USD m)

Operating working capital (\$ million)	FY19	FY22	FY23	FY24	FY25	FY27	FY33
Inventories	5.622	8.420	9.090	9.398	10.182	11.783	17.323
Trade receivables	4.272	4.667	4.864	6.008	6.483	7.439	10.854
Trade payables	(2.612)	(3.358)	(3.436)	(4.203)	(4.639)	(5.566)	(8.328)
<b>Trade working capital</b>	<b>7.282</b>	<b>9.729</b>	<b>10.518</b>	<b>11.203</b>	<b>12.026</b>	<b>13.656</b>	<b>19.849</b>
Deferred income taxes and other assets	2.011	3.821	4.064	4.063	4.497	5.439	8.155
Prepaid expenses and other current assets	1.968	2.129	1.951	1.852	2.024	2.386	3.532
Deferred tax liabilities and other liabilities	(3.347)	(2.613)	(2.598)	(3.240)	(3.586)	(4.338)	(6.505)
Tax payables	(229)	(222)	(358)	(387)	(428)	(518)	(777)
Accrued liabilities	(5.010)	(6.220)	(6.074)	(7.501)	(8.302)	(10.041)	(15.058)
Other current liabilities	-	-	-	-	-	-	-
Operating Cash	782	934	1.033	1.127	1.247	1.508	2.262
<b>Other working capital</b>	<b>(3.825)</b>	<b>(2.171)</b>	<b>(1.981)</b>	<b>(4.087)</b>	<b>(4.549)</b>	<b>(5.564)</b>	<b>(8.391)</b>
<b>Total operating working capital</b>	<b>3.457</b>	<b>7.558</b>	<b>8.537</b>	<b>7.116</b>	<b>7.477</b>	<b>8.092</b>	<b>11.459</b>
<i>as % of revenues</i>							
Inventories	14%	18%	18%	17%	16%	16%	15%
Trade receivables	11%	10%	9%	11%	10%	10%	10%
Trade payables	(7%)	(7%)	(7%)	(7%)	(7%)	(7%)	(7%)
Trade working capital	19%	21%	20%	20%	19%	18%	18%
Other working capital	(10%)	(5%)	(4%)	(7%)	(7%)	(7%)	(7%)
Total operating working capital	9%	16%	17%	13%	12%	11%	10%

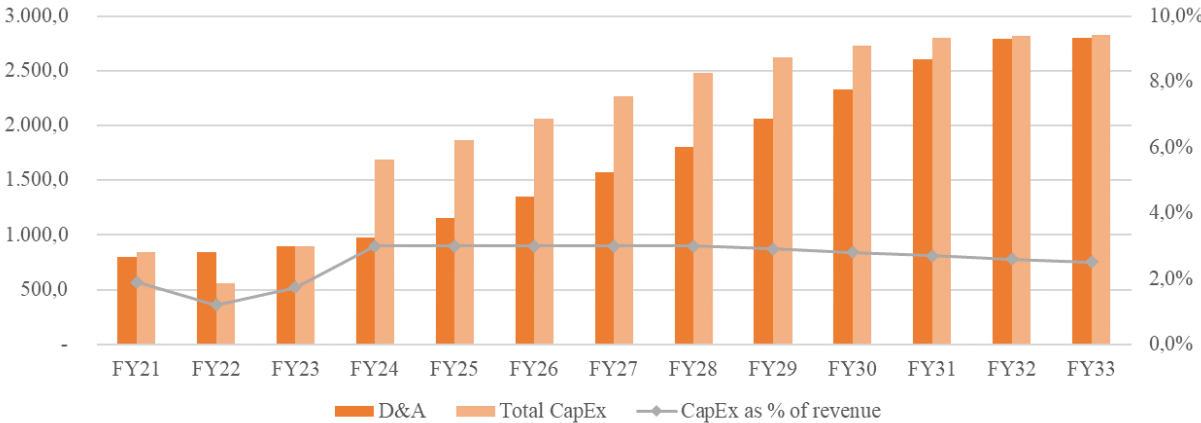
Source: Annual Reports, Own Analysis

## 6.1.6 CapEx and D&A

As already mentioned in the historical analysis, Nike mainly invests in the construction and maintenance of its distribution centers, as well as IT infrastructure, to enhance its DTC strategy and optimize its supply-chain. While the CapEx in the last two periods was below Nike's target of 3% of total revenues, it is expected that the company will return to this target in the future, which was also indicated in Nike's third quarter conference call. In the long run, CapEx is expected to decrease to a maintenance level of 2.5% of sales.

D&A is projected according to an estimated useful life of 10 years. This is explained by a historical depreciation rate of 10%, supported by an estimate of the MACRS Asset Life table from Thomson Reuters (2023). Nike states, that depreciation is determined on a straight-line basis; thus, CapEx is depreciated over ten years, while the first and last year are depreciated at half of the depreciation to account for over the year investments.

Figure 20: Nike CapEX and D&A Forecast (USD m)



Source: Own Analysis

**6.2 Intrinsic Valuation**

**6.2.1 Cost of Capital**

**6.2.1.1 Risk Free Rate**

As described in the literature review, the closest proxy for the risk-free rate for US companies is the US Treasury Bill. Therefore, the selected rate is the 10-Year US Treasury Bill, which yield as of 12<sup>th</sup> of May 2023 was 3.4%.

**6.2.1.2 Cost of Equity**

The cost of equity is determined by the application of the CAPM model, which is the most used by practitioners. The model implies that investments with higher betas should have higher expected returns as compensation for an additional risk. Moreover, the CAPM necessitates the inclusion of a risk market portfolio that encompasses all risky assets. However, such a portfolio remains theoretical and is not observable. Given the substantial presence of Nike's investors in the US, utilizing a local index as the market portfolio is a viable option. However, there is also a noticeable diversification of Nike investors around the world. Furthermore, incorporating a global index, which encompasses worldwide diversification, may provide a more accurate estimation of the market portfolio within the theoretical framework of the CAPM theory.

Consequently, the estimation of Nike’s levered beta is applied on a local and global basis, using the S&P500 and the MSCI World as a market portfolio proxy.

In the next step, beta is estimated through a regression analysis of Nike’s excess returns against excess returns of the market portfolio. To ensure a reliable analysis and minimize the impact of significant company changes and low trading volume, monthly returns are assessed over a five-year period. This approach delivers sufficient observations with relatively stable company performance. Beta is defined as the slope of the linear regression equation and results in an average raw levered beta of 1.14.

Figure 21: Nike and MSCI World Beta Estimation

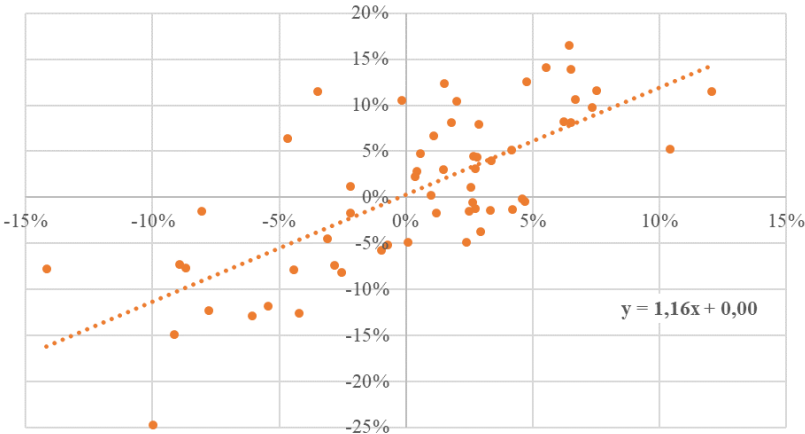
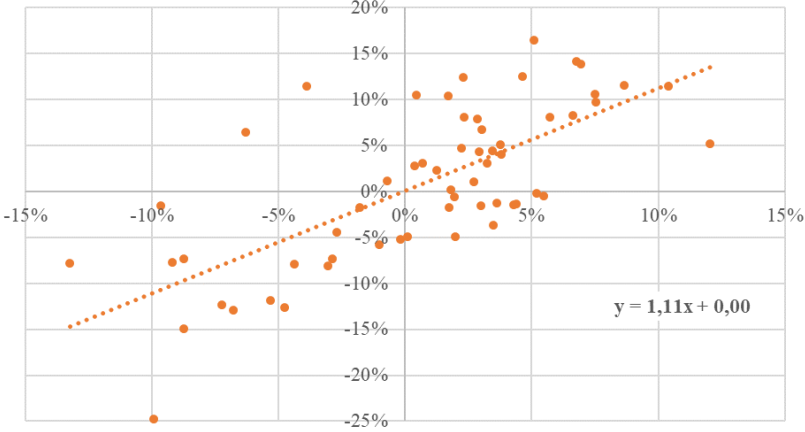


Figure 22: Nike and S&P 500 Beta Estimation



Sources: Own Analysis

The resulting raw beta is furthermore adjusted with the Bloome formula (Blume, 1975). It approximates a security’s future beta by adjusting the historical beta to account for its tendency to revert to the market average of 1 over time by weighing the realized estimate with 2/3 and the market beta with 1/3. The result is presented in the table below.

Table 19: Beta Estimation Overview

5 Year Monthly	MSCI World	S&P 500
<b>Beta (Levered)</b>	<b>1,16</b>	<b>1,11</b>
Standard Error	0,15	0,14
t-Stat	8,01	7,72
<b>Average Raw Beta</b>		<b>1,14</b>
<b>Average Bloome Adj. Beta</b>		<b>1,09</b>

Source: Own Analysis

The other input needed to determine Nike's cost of equity is the risk premium, which represents an additional return an investor requires on top of the risk-free rate for the higher risk taken. The risk premium comprises the equity risk premium (ERP), which accounts for the higher risk of equities compared to the risk-free asset, and an additional country risk premium (CRP), which compensates investors for the risk arising from international operations.

The applied ERP is the US ERP in accordance with the risk-free rate chosen. The CRP is first calculated for each of Nike's four operating segments using a weighted average. In a second step, the CRP is weighted based on the revenues in these segments and added on top of the ERP. (Damodaran, 2023)

Table 20: Market Risk Premium

Risk Premium	Revenue Split	CRP	Risk Premium
<b>Equity Risk Premium</b>			<b>5,9%</b>
North America	41%	0,0%	0,0%
EMEA	28%	1,2%	0,3%
Greater China	17%	1,2%	0,2%
APLA	14%	3,1%	0,4%
<b>Country Risk Premium</b>			<b>1,0%</b>
<b>Total Risk Premium</b>			<b>6,9%</b>

Source: Damodaran, Own Analysis

In a final step, all parameters are put together in the CAPM formula to calculate the levered and unlevered cost of equity. While the levered cost of equity uses the levered beta determined before, the unlevered cost of equity uses a beta, which is unlevered by Nike's debt-to-equity ratio. The output is presented in the tables below.

Table 21: Levered Cost of Equity

Levered Cost of Equity	Parameters
Risk-free Rate	3,4%
Adjusted Beta	1,1
Risk Premium	6,9%
<b>Levered Cost of Equity</b>	<b>10,6%</b>

Source: Own Analysis

Table 22: Unlevered Cost of Equity

Unlevered Cost of Equity	Parameters
Risk-free Rate	3,4%
Adjusted Beta	1,0
Risk Premium	6,9%
<b>Unlevered Cost of Equity</b>	<b>10,4%</b>

Source: Own Analysis

### 6.2.1.3 Cost of Debt

Nike's debt consists predominantly of bonds (73.7%), followed by lease liabilities (26.3%) and a marginal part of notes (0.1%). The cost of debt is calculated based on the YTM of Nike's public bonds and interest rates paid on other debt items. Table 23 represents an overview of Nike's outstanding bonds as of 11<sup>th</sup> of April 2023 and the weighted average YTM of these.

Table 23: Bond Overview

Name	Issue Date	Maturity Date	Nominal Value (m)	Last Price	YTM
NKE 2.250 01-May-2023 '23	Apr. 13	May. 23	500	99,8	5,7%
NKE 2.400 27-Mar-2025 '25	Mar. 20	Mar. 25	1000	96,6	4,2%
NKE 2.375 01-Nov-2026 '26	Oct. 16	Nov. 26	1000	93,8	4,3%
NKE 2.750 27-Mar-2027 '27	Mar. 20	Mar. 27	1000	95,0	4,1%
NKE 2.850 27-Mar-2030 '29	Mar. 20	Mar. 30	1500	92,3	4,1%
NKE 3.250 27-Mar-2040 '39	Mar. 20	Mar. 40	1000	84,9	4,5%
NKE 3.625 01-May-2043 '42	Apr. 13	May. 43	500	87,7	4,6%
NKE 3.875 01-Nov-2045 '45	Oct. 15	Nov. 45	1000	90,6	4,5%
NKE 3.375 01-Nov-2046 '46	Oct. 16	Nov. 46	500	83,5	4,5%
NKE 3.375 27-Mar-2050 '49	Mar. 20	Mar. 50	1500	82,5	4,5%
<b>Weighted Average YTM</b>					<b>4,4%</b>

Source: Refinitiv Eikon

Other debt items are presented in the table below. While the market value of non-current lease liabilities is determined as the present value of the carrying amount, the market value of current lease liabilities and notes is assumed to be the same as its book value. Discount rates are taken from Nike's last published annual report FY22.

Table 24: Other Debt Items

Other debt items	Market Value (m)	Discount Rate
Non-current Lease Liabilities	2631,5	2,3%
Current Lease Liabilities	432,2	2,3%
Notes	7,9	19,8%
<b>Weighted Average Cost of Debt</b>	<b>3071,6</b>	<b>2,3%</b>

Source: Annual Reports

Taking all debt items together, Nike's debt amounts to \$11.7bn and has an average cost of debt of 3.9%.

Table 25: Debt Overview

Debt Items	Market Value (m)	Cost of debt
Bonds	8.586	4,4%
Notes	8	19,8%
Non-current Lease Liabilities	2.631	2,3%
Current Lease Liabilities	432	2,3%
<b>Total Debt</b>	<b>11.658</b>	<b>3,9%</b>

Source: Own Analysis

#### 6.2.1.4 WACC

The WACC as the appropriate discount rate for the FCFF is then calculated by weighing the after-tax cost of debt and cost of equity on the market value of debt and equity and yields 10.2%.

Table 26: WACC Calculation

WACC	Parameters
Market value of equity	191.601
Market value of debt	11.658
D/E	6,1%
Tax rate	25,0%
Cost of Debt	3,9%
After-tax Cost of Debt	2,9%
Cost of Equity	10,6%
<b>WACC</b>	<b>10,2%</b>

Source: Own Analysis

#### 6.2.2 Terminal Value

The terminal value is computed on the figures of FY33, the last year of the explicit forecast. At that time, margins are expected to remain constant, as well as working capital needs and investments with CapEx equaling D&A. This results in a sustainable free cash flow, which will grow at the perpetual growth rate. The determination of the perpetual growth rate aligns with the future forecasts for the sportswear industry and real GDP projections until the year 2033. Consequently, given the prosperous outlook for the sportswear industry, the perpetual growth rate is established at 2.8%, allocated close to the upper limit growth rate corresponding to the long-term real GDP growth rate of 2.9% in 2033, as reported by Euromonitor (2023c).

#### 6.2.3 FCFF

The first approach to determine the intrinsic value of Nike is the FCFF, which according to the literature review represents the cash flows accessible to both shareholders and debtholders. The table below shows the evolution of cash flows and the corresponding discount factors. The sum of the present values of the future cash flows and the terminal value amount to \$183,405m, which represents the enterprise value.

Table 27: Free Cash Flow to the Firm Valuation

FCFF	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
EBIT	6,923	6,856	6,423	7,876	10,103	12,665	15,579	17,863	19,534	21,071	22,402	23,457	24,432
(Operational taxes)	(971)	(624)	(1,239)	(1,260)	(1,617)	(2,026)	(2,493)	(2,858)	(3,125)	(3,371)	(3,584)	(3,753)	(3,909)
D&A	797	840	894	979	1,157	1,354	1,570	1,807	2,062	2,330	2,606	2,793	2,796
<b>Gross Cash Flows</b>	<b>6,749</b>	<b>7,072</b>	<b>6,078</b>	<b>7,594</b>	<b>9,643</b>	<b>11,992</b>	<b>14,656</b>	<b>16,812</b>	<b>18,470</b>	<b>20,029</b>	<b>21,424</b>	<b>22,497</b>	<b>23,319</b>
Change in OWC	104	(3,091)	(978)	1,421	(361)	(328)	(287)	(270)	(787)	(725)	(627)	(497)	(460)
CAPEX	(846)	(557)	(892)	(1,690)	(1,870)	(2,061)	(2,262)	(2,476)	(2,618)	(2,728)	(2,798)	(2,822)	(2,827)
Change in other fixed assets	(19)	(42)	3	-	-	-	-	-	-	-	-	-	-
<b>FCFF</b>	<b>5,989</b>	<b>3,382</b>	<b>4,211</b>	<b>7,325</b>	<b>7,412</b>	<b>9,602</b>	<b>12,107</b>	<b>14,066</b>	<b>15,065</b>	<b>16,576</b>	<b>17,998</b>	<b>19,178</b>	<b>20,033</b>
Discount Factor (WACC)				0,91	0,82	0,75	0,68	0,62	0,56	0,51	0,46	0,42	0,38
<b>PV (FCFF)</b>				<b>6,647</b>	<b>6,104</b>	<b>7,176</b>	<b>8,211</b>	<b>8,656</b>	<b>8,413</b>	<b>8,401</b>	<b>8,278</b>	<b>8,004</b>	<b>7,587</b>
Sum of PV (FCFF)													77,477
PV Terminal Value													105,929
<b>Enterprise Value</b>													<b>183,405</b>

Source: Own Analysis

## 6.2.4 APV

In contrast to the FCFF, the APV values the company as if it was all equity financed, discounting the FCFF by the unlevered cost of equity, and adding the PV of the tax shield, which is discounted by the cost of debt. Finally, the expected distress costs are subtracted. The theoretical yearly tax shield is calculated by multiplying the cost of debt and the effective tax rate on the average outstanding gross debt. The growth rate applied for the terminal value is the same as for the FCFF. Hence, the value of the tax shields amounts to \$9,028m.

The cost of bankruptcy is calculated as the product of the probability of default for Nike, its unlevered firm value, and the cost of financial distress. While the probability of default is derived from Damodaran's rating default spread table, the probability is determined at 0.9%, corresponding with Nike's AA- bond rating. The cost of financial distress is estimated at 20% of Nike's unlevered firm value, in accordance with literature suggestions. Finally, by adding all components together, the APV method yields an enterprise value of \$187,828m.

Table 28: Adjusted Present Value Valuation

APV	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
FCFF	5,989	3,382	4,211	7,325	7,412	9,602	12,107	14,066	15,065	16,576	17,998	19,178	20,033
Discount Factor ( $r_{(u)}$ )				0,91	0,82	0,74	0,67	0,61	0,55	0,50	0,45	0,41	0,37
<b>PV (FCFF)</b>				<b>6,638</b>	<b>6,086</b>	<b>7,145</b>	<b>8,164</b>	<b>8,595</b>	<b>8,341</b>	<b>8,317</b>	<b>8,184</b>	<b>7,902</b>	<b>7,480</b>
Sum of PV(FCFF)													76,851
PV Terminal Value													102,253
<b>Unlevered Value</b>													<b>179,104</b>
Gross Debt	12,813	12,627	12,557	12,642	12,751	12,867	12,989	13,119	13,260	13,390	13,503	13,592	13,675
Theoretical yearly tax shield				122,2	123,1	124,2	125,4	126,6	127,9	129,2	130,4	131,4	132,2
Discount factor ( $k_D$ )				0,96	0,93	0,89	0,86	0,83	0,80	0,77	0,74	0,71	0,68
<b>PV (TS)</b>				<b>118</b>	<b>114</b>	<b>111</b>	<b>108</b>	<b>105</b>	<b>102</b>	<b>99</b>	<b>96</b>	<b>93</b>	<b>90</b>
Sum of PV (TS)													1,036
PV of Terminal Value													7,992
<b>Value of Tax Shield</b>													<b>9,028</b>
Probability of Default													0,9%
Cost of Financial distress													20,0%
<b>PV (Financial distress)</b>													<b>304</b>
<b>Enterprise Value</b>													<b>187,828</b>

Source: Own Analysis

To obtain a share price for Nike, the equity value must be calculated first. To arrive at the equity value, net debt is deducted. Since Nike doesn't hold any minority interests, non-operating assets or other items that must be deducted, no further adjustments are made. By dividing the equity value by the number of shares outstanding, the resulting price for FY23 is \$118.1 and \$121.0 for the FCFF and APV approach, respectively.

Table 29: Equity Bridge and Share Price Determination

Valuation Summary	FCFF	APV
Enterprise value	183.405	187.828
(-) Net debt	(1.843)	(1.843)
<b>Equity value</b>	<b>181.562</b>	<b>185.984</b>
Number of shares (NOSH) (m)	1.537	1.537
<b>Equity value per share (€)</b>	<b>118,1</b>	<b>121,0</b>

Source: Own Analysis

Discounting the FCFF and TS to FY24, the price target for FY24 corresponds to \$128.9 under the FCFF and \$131.9 under the APV approach. With an estimated amount of \$4,500m for the share repurchase program, which translates to 37.5m bought back shares at an average price of \$120.0, the number of shares outstanding is adjusted to 1,499.5m.

Table 30: Price Target Determination

Valuation 2024	FCFF	APV
Sum of PV (FCFF)	78.051	77.483
PV Terminal Value (FCFF)	116.729	112.840
Sum of PV (TS)	-	953,6
PV of Terminal Value (TS)	-	8.302,5
PV (Financial Distress)	-	323,5
<b>Enterprise Value</b>	<b>194.780</b>	<b>199.255</b>
(-) Net debt	(1.544)	(1.544)
<b>Equity value</b>	<b>193.236</b>	<b>197.711</b>
Numbers of shares (NOSH) (m)	1.500	1.500
<b>Expected share price in one year (2024)</b>	<b>128,9</b>	<b>131,9</b>

Source: Own Analysis

### 6.3 Relative Valuation

The comparable company analysis is a widely used valuation approach known for its simplicity. For the analysis mean forward values have been taken from Refinitiv Eikon, which represent the mean values forecasted by an analyst consortium. The choice for forward instead of actual multiples is justified by the principles of valuation to be forward looking as well as empirical evidence that suggests that forward multiples are a better estimate than historical ones (Koller et al., 2005). While negative multiples were excluded from the analysis, the average, harmonic mean, and median were calculated. To determine the respective enterprise value and equity value, the average multiple is applied.

Table 31: Comparable Company Analysis

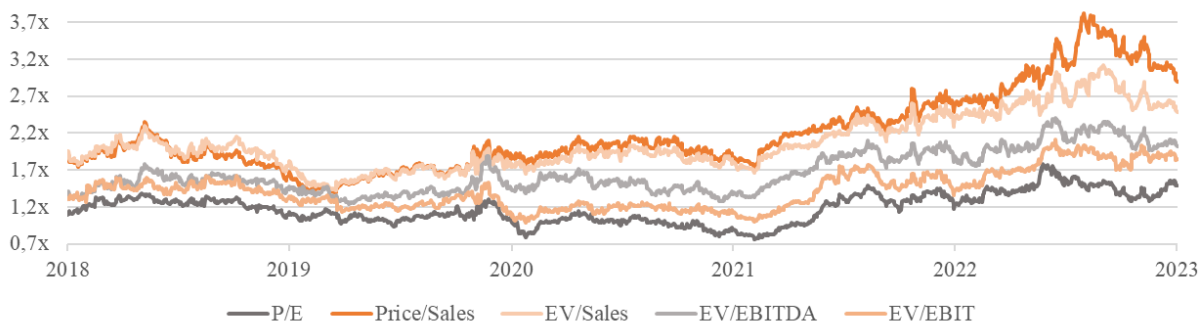
Company Name	NOSH	Price	EV	Sales NTM	Earnings NTM	EBITDA NTM	EBIT NTM	P/E NTM	P/Sales NTM	EV/Sales NTM	EV/EBITDA NTM	EV/EBIT NTM
Nike	1.537	119	182.918	56.329	6.509	8.854	7.876	28,2 x	3,3 x	3,2 x	20,7 x	23,2 x
ADIDAS AG	180	180	35.889	23.953	(606)	919	(572)	-	1,4 x	1,5 x	39,1 x	-
PUMA SE	151	56	9.298	10.337	407	1.101	704	20,6 x	0,8 x	0,9 x	8,4 x	13,2 x
Under Armour Inc	444	8	3.846	6.005	235	471	328	14,3 x	0,6 x	0,6 x	8,2 x	11,7 x
VF Corp	389	21	16.879	12.046	807	1.379	1.095	10,3 x	0,7 x	1,4 x	12,2 x	15,4 x
Lululemon Athletica Inc	127	376	45.464	9.792	1.467	2.441	2.085	32,7 x	4,9 x	4,6 x	18,6 x	21,8 x
Li Ning Co Ltd	2.636	7	16.915	4.691	712	1.085	859	24,3 x	3,7 x	3,6 x	15,6 x	19,7 x
ANTA Sports Products Ltd	2.833	12	34.183	9.677	1.377	2.403	1.999	24,2 x	3,4 x	3,5 x	14,2 x	17,1 x
Skechers USA Inc	155	53	7.450	8.452	495	895	725	16,6 x	1,0 x	0,9 x	8,3 x	10,3 x
Asics Corp	190	29	4.994	3.972	179	433	-	30,3 x	1,4 x	1,3 x	11,5 x	-
Average								21,7 x	2,0 x	2,0 x	15,1 x	15,6 x
Har Mean								19,0 x	1,2 x	1,3 x	12,1 x	14,6 x
Median								22,4 x	1,4 x	1,4 x	12,2 x	15,4 x
<b>Enterprise Value</b>								<b>142.887,3</b>	<b>113.100,4</b>	<b>114.911,1</b>	<b>134.012,0</b>	<b>122.918,3</b>
Net Debt								(1.843,2)	(1.843,2)	(1.843,2)	(1.843,2)	(1.843,2)
<b>Equity Value</b>								<b>141.044,2</b>	<b>111.257,2</b>	<b>113.067,9</b>	<b>132.168,8</b>	<b>121.075,1</b>
NOSH								1.537,0	1.537,0	1.537,0	1.537,0	1.537,0
Share Price								<b>91,8</b>	<b>72,4</b>	<b>73,6</b>	<b>86,0</b>	<b>78,8</b>

Source: Refinitiv Eikon, Own Analysis

As the results in Table 31 indicate, Nike seems heavily overpriced using the multiple approach. While Nike's forward P/E multiple is at 28.2x, the industry average lies at 21.7x. Similarly, Nike's enterprise value trades at 20.7x EBITDA, while the industry average trades at 15.1x.

However, by comparing Nike's historical forward multiples with the average of its peer group, a significant premium is noticeable, which Nike is priced on top. Damodaran (2012) presents the application of relative ratios, which measure a company's multiple in comparison to the peer group's average. By comparing this ratio to historical means, an analyst can get a sentiment if the company is under- or overvalued. The figure below shows an overview of Nike's relative forward ratios, used in the comparable company analysis.

Figure 23: Nike's Relative Forward Ratios



Source: Refinitiv Eikon, Own Analysis

By comparing the historical relative forward ratios between Nike and its peers, Nike ranges in all of them above the peers level. While P/E NTM trades most similarly with the peer group with a range of 0.8x to 1.8x and a mean of 1.2x, Price/Sales, EV/Sales and EV/EBITDA trade far above Nike's peer group with an average of 2.2x, 2.1x and 1.7x, respectively. Under these results, the traditional multiple approach does not deliver accurate and useful results since the

selected peer group is too different from Nike’s characteristics. However, a comparison of the current NTM relative multiples with the historical ones provides information on whether Nike is overvalued or undervalued. While P/E and EV/EBIT are currently trading similarly to the historical mean, Price/Sales and EV/Sales are below the historical average, as well as the current EV/EBITDA. Hence, the application of relative valuation to historical norms shows that Nike is traded above the peer’s average. However, it delivers a diverse picture, while the development during 2022 and 2023 may indicate, that Nike is slightly overvalued.

Table 32: Relative Multiple Comparison

	P/E	Price/Sales	EV/Sales	EV/EBITDA	EV/EBIT
Min	0,8x	1,4x	1,4x	1,2x	1,0x
Max	1,8x	3,8x	3,1x	2,4x	2,1x
Average	1,2x	2,2x	2,1x	1,7x	1,4x
<b>Current NTM Multiples</b>					
Nike Multiple	28,2x	3,3x	3,2x	20,7x	23,2x
Industry Mean Multiple	21,7x	2,0x	2,0x	15,1x	15,6x
<b>Relative Multiple</b>	<b>1,3x</b>	<b>1,6x</b>	<b>1,6x</b>	<b>1,4x</b>	<b>1,5x</b>

Source: Refinitiv Eikon, Own Analysis

In addition to the comparable company analysis, a comparable transaction analysis was also performed and can be found in appendix 15. Due to a lack of precedent transactions and very different company characteristics, the results are not considered.

**6.4 Comparison with Investment Banking Report**

This chapter compares the results yielded by the FCFF and APV to the estimates of an investment bank. The investment bank report used was published on the 6<sup>th</sup> of January 2023 by Stifel Financial Corp and recommends buying Nike shares with a target price of \$132.0, while Nike was trading at \$124.3 on that day.

The price target is based on a 20.4x EV/EBITDA multiple and a forecasted EBITDA of \$10,013.5m in FY25. Stifel states that the applied multiple has increased in line with strong demand trends and is consistent with the three-year average. It considers macroeconomic concerns, elevated inventory levels, and challenging conditions in China, but also views Nike as a top-tier retailer with a strong market position, momentum, and enhanced digital capabilities to further improve its positioning. They expect gross margin to expand in future periods and operating margins to surpass pre-pandemic highs growing into the high-teens range.

While revenues in the thesis report are forecasted slightly more ambitious than in Stifel’s investment report, gross margin is expected to be quite similar. However, the thesis expects a to some degree higher EBITDA and profit margin, which is supported by guidelines from

Nike's FY23 Q3 conference call, in which Nike's CFO Matt Friend emphasized the focus on operative cost reduction during the next financial year. Additionally, the approaches used in the DCF valuation and the one used by Stifel differ within the variables used.

Table 33: Comparison with Investment Bank Report

	Stifel	Thesis	
Publishing date	Jan 23	May 23	May 23
Valuation approach	EV/EBITDA F	FCFF	APV
Revenue FY25E (USDm)	61.115	62.346	62.346
Gross margin FY25E	46,6%	46,7%	46,7%
EBITDA margin FY25E	16,7%	18,1%	18,1%
Profit margin FY25E	12,6%	13,4%	13,4%
<b>Price Target (USD)</b>	<b>132,0</b>	<b>128,9</b>	<b>131,9</b>

Source: Stifel Corp, Own Analysis

## 6.5 Sensitivity Analysis

Through a sensitivity analysis, the FY24 outcome of the FCFF and APV model is stressed alongside the discount rate and the perpetual growth rate. This aims to determine different outcomes if one or both of these crucial variables change. Therefore, the analysis tests both variables on a range of  $\pm 0.80\%$ . Furthermore, appendix 23 presents a Monte Carlo simulation.

Table 34: Sensitivity Analysis FCFF Valuation

		Perpetual Growth (FCFF)								
		2,0%	2,2%	2,4%	2,6%	2,8%	3,0%	3,2%	3,4%	3,6%
WACC	9,4%	136,1	138,4	140,9	143,4	146,2	149,1	152,2	155,5	159,0
	9,6%	132,1	134,3	136,5	138,9	141,5	144,2	147,0	150,1	153,3
	9,8%	128,3	130,3	132,4	134,7	137,0	139,5	142,2	145,0	148,0
	10,0%	124,7	126,6	128,6	130,6	132,8	135,1	137,6	140,2	143,0
	10,2%	121,3	123,0	124,9	126,8	128,9	131,0	133,3	135,7	138,3
	10,4%	118,0	119,7	121,4	123,2	125,1	127,1	129,3	131,5	133,9
	10,6%	114,9	116,5	118,1	119,8	121,6	123,4	125,4	127,5	129,7
	10,8%	112,0	113,4	114,9	116,5	118,2	119,9	121,8	123,7	125,8
	11,0%	109,1	110,5	111,9	113,4	115,0	116,6	118,3	120,2	122,1

Table 35: Sensitivity Analysis APV Valuation

		Perpetual Growth (FCFF)								
		2,0%	2,2%	2,4%	2,6%	2,8%	3,0%	3,2%	3,4%	3,6%
re(u)	9,6%	136,6	139,1	141,9	144,9	148,4	152,3	157,2	163,8	175,3
	9,8%	132,7	135,1	137,8	140,6	143,9	147,6	152,3	158,6	169,9
	10,0%	129,1	131,4	133,8	136,6	139,6	143,2	147,7	153,8	164,8
	10,2%	125,6	127,8	130,1	132,7	135,6	139,1	143,3	149,3	160,1
	10,4%	122,3	124,4	126,6	129,1	131,9	135,1	139,2	145,0	155,6
	10,6%	119,2	121,1	123,3	125,6	128,3	131,4	135,3	141,0	151,4
	10,8%	116,2	118,1	120,1	122,3	124,9	127,9	131,7	137,2	147,5
	11,0%	113,4	115,1	117,0	119,2	121,6	124,5	128,2	133,6	143,7
	11,2%	110,6	112,3	114,2	116,2	118,5	121,3	124,9	130,1	140,2

Sources: Own Analysis

The sensitivity analysis suggests that by changes of 0.8%, the share price for Nike could range between \$109.1 and \$159.0 for the outcome of the FCFE and between \$110.6 and \$175.3 for the APV results. Taking a threshold of 15% of the actual share price as of 15<sup>th</sup> of May 2023, which is \$119.8, as an indicator for a sell, hold, or buy recommendation, a value above \$137.8 would trigger a buy recommendation, while a value below \$101.9 would trigger a sell recommendation. Thus, using the FCFE approach, 74% of the cases would recommend holding, while 26% would recommend buying. In the APV case, the buy signal would be triggered by 38% of the results, while 62% would recommend holding.

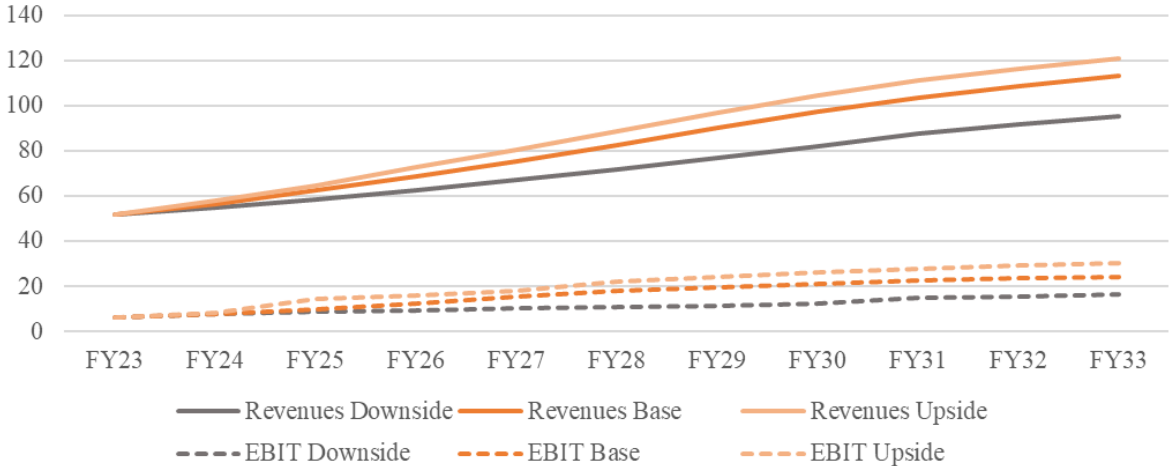
**6.6 Scenario Analysis**

Furthermore, a scenario analysis is executed to incorporate the outcome of the underlying valuation by other input factors on Nike’s future revenues and operative costs that compares the base with a downside and upside scenario.

In the downside scenario, the revenue CAGR is assumed to be 6.8% between FY23 and FY29. This could be the case if consumer demand slows down and Nike will not recover in its historically strong growing Greater China market. Nike’s targets to achieve a 50% gross margin and an EBIT margin close to 20% won’t be achieved. Instead, gross margin stays flat at 46% in the midterm and increases to 47% in later years, while the EBIT margin will remain at just 15% until FY30, where it could improve to 17%.

In contrast, Nike’s revenues could grow with a CAGR of 11% between FY23 and FY29 in the upside scenario, reaching a gross margin of 50% and an EBIT margin of 22% by FY25. Furthermore, in the long run, both margins are expected to increase slightly.

*Figure 24: Scenario Analysis*



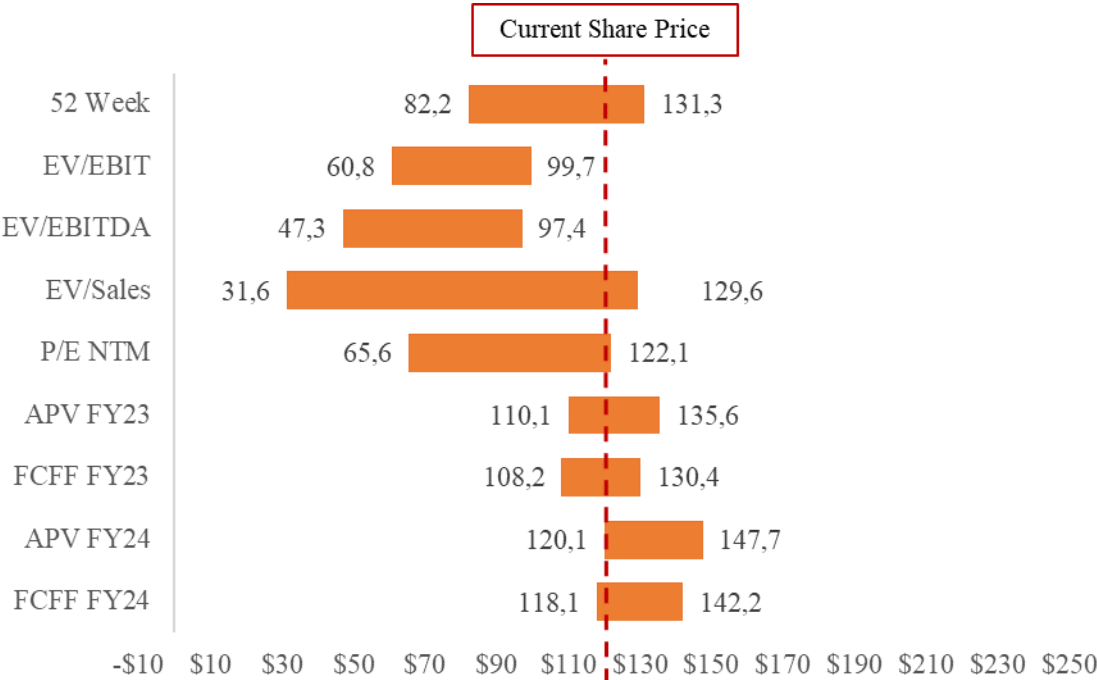
Source: Own Analysis

Under the downside scenario, the share price would translate into \$88.4 using the FCFF approach and \$92.2 using APV. In an upside scenario the share price could reach \$163.0 and \$165.4, respectively.

**7 Conclusion**

In order to value Nike, a variety of valuation approaches were applied in this thesis. While the FCFF and APV methods generated price targets of \$128.9 and \$131.9, respectively, the relative valuation approach using comparable company and transaction analysis did not yield practical results in the current circumstances. As a result, the valuation process excluded relative valuation and instead derived an average price target of \$130.4 by combining the FCFF and APV methodologies. This target aligns with an investment banking report and indicates a promising upside potential of 8.8% compared to Nike's share price as of May 15<sup>th</sup>, 2023. Therefore, a hold recommendation is given since the threshold of 15% is not exceeded. The valuation findings are effectively summarized in a football field chart, showcasing a narrow sensitivity range of 0.4% in both directions for the FCFF and APV values. Notably, the comparable company results excluded the top and bottom 25% percentiles to enhance accuracy.

Figure 25: Valuation Football Field



Source: Refinitiv Eikon, Own Analysis

## References

- Altman, E. I., & Hotchkiss, E. (1993). *Corporate financial distress and bankruptcy (Vol. 1998, pp. 105-110)*. New York: John Wiley & Sons.
- Andrade, G., & Kaplan, S. N. (1998). How costly is financial (not economic) distress? Evidence from highly leveraged transactions that became distressed. *The Journal of Finance*, 53(5), 1443-1493.
- Bancel, F., & Mittoo, U. R. (2014). The gap between the theory and practice of corporate valuation: Survey of European experts. *Journal of Applied Corporate Finance*, 26(4), 106-117.
- Blume, M. E. (1975). Betas and their regression tendencies. *The Journal of Finance*, 30(3), 785-795.
- Bringé, A. (2021). The Rise of Athleisure In The Fashion Industry And What It Means For Brands. *Forbes*.  
<https://www.forbes.com/sites/forbescommunicationscouncil/2021/05/03/the-rise-of-athleisure-in-the-fashion-industry-and-what-it-means-for-brands/?sh=6499ec823ae0>.
- Damodaran, A. (1999). *Estimating risk free rates*. WP, Stern School of Business, New York.
- Damodaran, A. (2006). *Damodaran on valuation: Security analysis for investment and corporate finance (2nd ed)*. John Wiley & Sons.
- Damodaran, A. (2012). *Investment Valuation 3rd edition*.
- Damodaran, A. (2023). *Country Default Spreads and Risk*.  
[https://pages.stern.nyu.edu/~adamodar/New\\_Home\\_Page/datafile/ctryprem.html](https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html)  
Premiums.
- ECB (2023). *Key ECB Interest Rates*.  
[https://www.ecb.europa.eu/stats/policy\\_and\\_exchange\\_rates/key\\_ecb\\_interest\\_rates/html/index.en.html](https://www.ecb.europa.eu/stats/policy_and_exchange_rates/key_ecb_interest_rates/html/index.en.html).
- Eickmeier, S., & Hofmann, B. (2022). *What drives inflation? Disentangling demand and supply factors*.
- Euromonitor (2023a). Sportswear Market Size. *Euromonitor International Passport*. Retrieved on 15th of April 2023 on <https://www.portal.euromonitor.com>.

- Euromonitor (2023b). Sportswear Market Share. *Euromonitor International Passport*. Retrieved on 15th of April 2023 on <https://www.portal.euromonitor.com>.
- Euromonitor (2023c). Real GDP Growth. *Euromonitor International Passport*. Retrieved on 29th of April 2023 on <https://www.portal.euromonitor.com>.
- Fama, E. F., & French, K. R. (2004). The capital asset pricing model: Theory and evidence. *Journal of Economic Perspectives*, 18(3), 25-46.
- Federal Reserve (2023). *Federal Reserve issues FOMC statement*. <https://www.federalreserve.gov/newsevents/pressreleases/monetary20230503a.htm>.
- Fernández, P. (2002). *Company Valuation Methods*. In *Valuation Methods and Shareholder Value Creation* (S. 21–56). Elsevier. <https://doi.org/10.1016/B978-012253841-4.50003-2>.
- GlobalData Thematic Research (2021). Direct To Consumer in Apparel: Macroeconomic Trends. *Retail Insight Network*. <https://www.retail-insight-network.com/comment/dtc-direct-to-consumer-apparel/>.
- Graham, B., Dodd, D. L. F., & Cottle, S. (1934). *Security analysis* (Vol. 452). New York: McGraw-Hill.
- Graham, J. R., & Harvey, C. R. (2001). The theory and practice of corporate finance: Evidence from the field. *Journal of Financial Economics*, 60(2-3), 187-243.
- Hirshleifer, J. (1958). On the theory of optimal investment decision. *Journal of political economy*, 66(4), 329-352.
- Horváthová, J., & Mokrišová, M. (2016). Analysis and comparison of methods of risk-free rate estimation. *Exclusive e-journal: economy and environment*, (1), 8.
- Imam, S., Barker, R., & Clubb, C. (2008). The Use of Valuation Models by UK Investment Analysts. *European Accounting Review*, 17(3), 503–535. <https://doi.org/10.1080/09638180802016650>.
- IMF (2023). *World Economic Outlook Update*. <https://www.imf.org/en/Publications/WEO/Issues/2023/01/31/world-economic-outlook-update-january-2023>.

- Islam, T. U., & Mumtaz, M. N. (2016). Consumer Confidence Index and Economic Growth: An Empirical Analysis of EU Countries. *EuroEconomica*, 35(2).
- Koller, T., Goedhart, M., & Wessels, D. (2005). The right role for multiples in valuation. *McKinsey on Finance*, (15), 7-11.
- Koller, T., Goedhart, M., & Wessels, D. (2010). *Valuation: measuring and managing the value of companies (Vol. 499)*. John Wiley and Sons.
- Liu, J., Nissim, D., & Thomas, J. (2002). Equity valuation using multiples. *Journal of Accounting Research*, 40(1), 135-172.
- Lubis, I., & Halim, Z.A. (2022). A Review of Factors that influence Equity Premium Literature: A MiniReview Approach. *International Journal of Finance, Economics and Business*, 1(1), 18-42. <https://doi.org/10.56225/ijfeb.v1i1.1>.
- Luehrman, T. A. (1997). Using APV: A better tool for valuing operations. *Harvard business review*, 75(3), 145-145.
- Market.US (2022). *Global Sportswear Market Research Report*. <https://market.us/report/sports-wear-market/#overview>.
- McKinsey (2023). *Sporting good 2023: The need for resilience in a world in disarray*. <https://www.mckinsey.com/industries/retail/our-insights/sporting-goods-2023-the-need-for-resilience-in-a-world-in-disarray>.
- Moore, S. (2023). How High Could U.S. Interest Rates Rise In 2023? *Forbes*. <https://www.forbes.com/sites/simonmoore/2023/02/21/how-high-could-us-interest-rates-rise-in-2023/?sh=43c56c851740>.
- Mukhlynina, L., & Nyborg, K. G. (2018). *Supplementary Survey The Choice of Valuation Techniques in Practice: Education versus Profession*.
- Myers, S. C. (1974). Interactions of Corporate Financing and Investment Decisions- Implications for Capital Budgeting. *The Journal of Finance*.

- Nike (2017). *NIKE, Inc. Announces New Consumer Direct Offense: A Faster Pipeline to Serve Consumers Personally, At Scale*.  
<https://www.businesswire.com/news/home/20170615005634/en/NIKE-Inc.-Announces-New-Consumer-Direct-Offense-A-Faster-Pipeline-to-Serve-Consumers-Personally-At-Scale>.
- Nike (2019). *2019 Annual Report*. <https://investors.nike.com/investors/news-events-and-reports/?toggle=earnings>.
- Nike (2020). *2020 Annual Report*. <https://investors.nike.com/investors/news-events-and-reports/?toggle=earnings>.
- Nike (2021). *2021 Annual Report*. <https://investors.nike.com/investors/news-events-and-reports/?toggle=earnings>.
- Nike (2022). *2022 Annual Report*. <https://investors.nike.com/investors/news-events-and-reports/?toggle=earnings>.
- Nike (2023). *Nike Announces Senior Leadership Shifts to Drive Continued Future Growth*.  
<https://www.businesswire.com/news/home/20230307005884/en/Nike-Announces-Senior-Leadership-Shifts-to-Drive-Continued-Future-Growth>.
- Nooh, M. N. (2022). Designing A Sportswear Strategic Marketing Plan: A Data Analytics Approach. *ASEAN Entrepreneurship Journal (AEJ)*.
- OECD (2023). *Consumer confidence index (CCI)*. <https://data.oecd.org/leadind/consumer-confidence-index-cci.htm>.
- Pinto, J. E., Henry, E., Robinson, T. R., & Stowe, J. D. (2015). *Equity asset valuation (3rd ed.)*. John Wiley & Sons.
- Pinto, J. E., Robinson, T. R., & Stowe, J. D. (2019). Equity valuation: A survey of professional practice. *Review of Financial Economics*, 37(2), 219-233.
- Rosenbaum, J., & Pearl, J. (2009). *Investment Banking: Valuation, Leveraged Buyouts, and Mergers & Acquisitions*. John Wiley & Sons, Inc.  
<https://doi.org/10.1002/9781118267943>.
- Ross, S. A., Westerfield, R. W., Jaffe, J., & Jordan, B. D. (2011). *Corporate finance: Core principles and applications (3rd ed.)*. McGraw Hill Higher Education.

- Ryan, T. (2022). *Nike heads to the wholesale exits*. <https://retailwire.com/discussion/nike-heads-to-the-wholesale-exits/>.
- Salgado, A. (2022). *Nike overhauls ERP in bid for better supply chain speed, agility*. <https://www.supplychaindive.com/news/nikes-new-erp-system-launch-in-greater-china-then-the-us/626353/>.
- Shapiro, A. & Titman, S. (1985). An Integrated Approach to Corporate Risk Management. *Midland Corporate Finance Journal*, pp. 41-56.
- Shapiro, A. H. (2022). Decomposing Supply and Demand Driven Inflation. *Federal Reserve Bank of San Francisco*.
- Sharpe, W. F. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk. *The journal of finance*, 19(3), 425-442.
- Spencer, M., Gronholt-Pedersen, J. & Naidu, R. (2023). Nike to make full exit from Russia. *Reuters*. <https://www.reuters.com/business/exclusive-nike-make-full-exit-russia-2022-06-23/>.
- Staplehurst, G. (2020). Can trust carry brands through good times - and bad? *Research World*. <https://archive.researchworld.com/can-trust-carry-brands-through-good-times-and-bad/>.
- Thomson Reuters (2023). MACRS Asset Life table. *Thomson Reuters*. [https://cs.thomsonreuters.com/ua/fixa/cs\\_us\\_en/ass\\_life\\_tbl/hid\\_help\\_asset\\_lives.htm](https://cs.thomsonreuters.com/ua/fixa/cs_us_en/ass_life_tbl/hid_help_asset_lives.htm).
- Vernimmen, P., Quiry, P., Dallochio, M., Le Fur, Y., & Salvi, A. (2014). Corporate finance - theory and practice 4E: *Theory and practice*. John Wiley & Sons.
- World Bank (2023). Global Economic Prospects, January 2023. *The World Bank*.

## Appendix

### Appendix 1: Historical Income Statement including 2023 9+3 Forecast

Income statement	2019A	2020A	2021A	2022A	2023 (9+3)
<b>Sales</b>	<b>39,117,0</b>	<b>37,403,0</b>	<b>44,538,0</b>	<b>46,710,0</b>	<b>51,663,8</b>
<i>Growth</i>		(4,4%)	19,1%	4,9%	10,6%
Cost of sales	(21,643,0)	(21,162,0)	(24,541,0)	(25,231,0)	(29,219,9)
<b>Gross Profit</b>	<b>17,474,0</b>	<b>16,241,0</b>	<b>19,997,0</b>	<b>21,479,0</b>	<b>22,443,9</b>
<i>Margin</i>	44,7%	43,4%	44,9%	46,0%	43,4%
Selling, General and administrative	(12,702,0)	(13,126,0)	(12,811,0)	(14,804,0)	(16,311,7)
Other Income/Expenses	(95,0)	191,0	36,0	181,0	291,1
Excluding D&A	720,0	721,0	797,0	840,0	893,9
<b>Adj. EBITDA</b>	<b>5,397,0</b>	<b>4,027,0</b>	<b>8,019,0</b>	<b>7,696,0</b>	<b>7,317,2</b>
<i>Margin</i>	13,8%	10,8%	18,0%	16,5%	14,2%
D&A	(720,0)	(721,0)	(797,0)	(840,0)	(893,9)
<b>Adj. EBIT</b>	<b>4,677,0</b>	<b>3,306,0</b>	<b>7,222,0</b>	<b>6,856,0</b>	<b>6,423,3</b>
<i>Margin</i>	12,0%	8,8%	16,2%	14,7%	12,4%
Non-Recurring Income/(Expense)	173,0	(330,0)	(299,0)	0,0	0,0
<b>EBIT</b>	<b>4,850,0</b>	<b>2,976,0</b>	<b>6,923,0</b>	<b>6,856,0</b>	<b>6,423,3</b>
Interest expense/income	(49,0)	(89,0)	(262,0)	(205,0)	(38,5)
<b>EBT</b>	<b>4,801,0</b>	<b>2,887,0</b>	<b>6,661,0</b>	<b>6,651,0</b>	<b>6,384,8</b>
Income taxes	(772,0)	(348,0)	(934,0)	(605,0)	(1,231,3)
<b>Net income</b>	<b>4,029,0</b>	<b>2,539,0</b>	<b>5,727,0</b>	<b>6,046,0</b>	<b>5,153,4</b>
<i>Margin</i>	10,3%	6,8%	12,9%	12,9%	10,0%

### Appendix 2: FY23 Q4E Income Statement Forecast

	FY23 Q1A	FY23 Q2A	FY23 Q3A	FY23 Q4E	Q4 as % of 9M YTD
<b>Revenues</b>	<b>12,687</b>	<b>13,315</b>	<b>12,390</b>	<b>13,272</b>	<b>35%</b>
Cost of Sales	7,072	7,604	7,019	7,525	35%
<b>Gross Profit</b>	<b>5,615</b>	<b>5,711</b>	<b>5,371</b>	<b>5,747</b>	
Selling, General & Administrative Expenses	3,920	4,124	3,959	4,309	36%
Other Non-Operating Income/(Expense)	146	79	58	8	3%
<b>Adj. EBIT</b>	<b>1,841</b>	<b>1,666</b>	<b>1,470</b>	<b>1,446</b>	
D&A	169	310	174	241	37%
<b>Adj. EBITDA</b>	<b>2,010</b>	<b>1,976</b>	<b>1,644</b>	<b>1,687</b>	
Non-Recurring Income/(Expense)	0	0	0	0	0%
<b>EBITDA</b>	<b>2,010</b>	<b>1,976</b>	<b>1,644</b>	<b>1,687</b>	
Add back D&A	169	310	174	241	37%
<b>EBIT</b>	<b>1,841</b>	<b>1,666</b>	<b>1,470</b>	<b>1,446</b>	
Interest Expense/(Income)	13	16	0	9	25%
<b>EBT</b>	<b>1,828</b>	<b>1,650</b>	<b>1,470</b>	<b>1,437</b>	
Taxes	360	319	237	315	34%
<b>Net Income after Tax</b>	<b>1,468</b>	<b>1,331</b>	<b>1,233</b>	<b>1,121</b>	

## Appendix 3: Income Statement Forecast

Income statement	2023 (9+3)	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
<b>Sales</b>	<b>51.663,8</b>	<b>56.329,3</b>	<b>62.346,0</b>	<b>68.712,6</b>	<b>75.406,0</b>	<b>82.523,4</b>	<b>90.292,0</b>	<b>97.443,0</b>	<b>103.633,1</b>	<b>108.540,6</b>	<b>113.077,3</b>
Growth	10,6%	9,0%	10,7%	10,2%	9,7%	9,4%	9,4%	7,9%	6,4%	4,7%	4,2%
Cost of sales	(29.219,9)	(30.672,5)	(33.231,3)	(35.834,1)	(38.457,1)	(41.261,7)	(45.146,0)	(48.721,5)	(51.816,5)	(54.270,3)	(56.538,6)
<b>Gross Profit</b>	<b>22.443,9</b>	<b>25.656,8</b>	<b>29.114,7</b>	<b>32.878,5</b>	<b>36.949,0</b>	<b>41.261,7</b>	<b>45.146,0</b>	<b>48.721,5</b>	<b>51.816,5</b>	<b>54.270,3</b>	<b>56.538,6</b>
Margin	43,4%	45,5%	46,7%	47,8%	49,0%	50,0%	50,0%	50,0%	50,0%	50,0%	50,0%
Selling, General and administrative	(16.311,7)	(17.902,0)	(19.132,3)	(20.334,6)	(21.490,7)	(23.519,2)	(25.733,2)	(27.771,2)	(29.535,4)	(30.934,1)	(32.227,0)
Other Income/Expenses	291,1	120,8	120,8	120,8	120,8	120,8	120,8	120,8	120,8	120,8	120,8
Excluding D&A	893,9	978,5	1.156,7	1.353,5	1.569,9	1.807,0	2.062,0	2.329,6	2.606,2	2.793,4	2.796,2
<b>Adj. EBITDA</b>	<b>7.317,2</b>	<b>8.854,1</b>	<b>11.259,9</b>	<b>14.018,2</b>	<b>17.149,0</b>	<b>19.670,4</b>	<b>21.595,6</b>	<b>23.400,7</b>	<b>25.008,1</b>	<b>26.250,5</b>	<b>27.228,7</b>
Margin	14,2%	15,7%	18,1%	20,4%	22,7%	23,8%	23,9%	24,0%	24,1%	24,2%	24,1%
D&A	(893,9)	(978,5)	(1.156,7)	(1.353,5)	(1.569,9)	(1.807,0)	(2.062,0)	(2.329,6)	(2.606,2)	(2.793,4)	(2.796,2)
<b>Adj. EBIT</b>	<b>6.423,3</b>	<b>7.875,6</b>	<b>10.103,2</b>	<b>12.664,7</b>	<b>15.579,1</b>	<b>17.863,4</b>	<b>19.533,6</b>	<b>21.071,1</b>	<b>22.401,9</b>	<b>23.457,0</b>	<b>24.432,4</b>
Margin	12,4%	14,0%	16,2%	18,4%	20,7%	21,6%	21,6%	21,6%	21,6%	21,6%	21,6%
Non-Recurring Income/(Expense)	-	-	-	-	-	-	-	-	-	-	-
<b>EBIT</b>	<b>6.423,3</b>	<b>7.875,6</b>	<b>10.103,2</b>	<b>12.664,7</b>	<b>15.579,1</b>	<b>17.863,4</b>	<b>19.533,6</b>	<b>21.071,1</b>	<b>22.401,9</b>	<b>23.457,0</b>	<b>24.432,4</b>
Interest expense/income	(38,5)	(84,1)	(73,9)	(64,4)	(61,9)	(61,9)	(62,0)	(65,0)	(65,4)	(61,4)	(51,9)
<b>EBT</b>	<b>6.384,8</b>	<b>7.791,5</b>	<b>10.029,3</b>	<b>12.600,3</b>	<b>15.517,1</b>	<b>17.801,5</b>	<b>19.471,6</b>	<b>21.006,1</b>	<b>22.336,5</b>	<b>23.395,6</b>	<b>24.380,5</b>
Income taxes	(1.231,3)	(1.246,6)	(1.604,7)	(2.016,1)	(2.482,7)	(2.848,2)	(3.115,5)	(3.361,0)	(3.573,8)	(3.743,3)	(3.900,9)
<b>Net income</b>	<b>5.153,4</b>	<b>6.544,8</b>	<b>8.424,6</b>	<b>10.584,3</b>	<b>13.034,4</b>	<b>14.953,2</b>	<b>16.356,1</b>	<b>17.645,1</b>	<b>18.762,7</b>	<b>19.652,3</b>	<b>20.479,6</b>
Margin	10,0%	11,6%	13,5%	15,4%	17,3%	18,1%	18,1%	18,1%	18,1%	18,1%	18,1%

## Appendix 4: Historical Balance Sheet including 2023 9+3 Forecast

Balance sheet	2019A	2020A	2021A	2022A	2023 (9+3)
Deferred income taxes and other assets	2.011,0	2.326,0	2.921,0	3.821,0	4.064,0
Inventories	5.622,0	7.367,0	6.854,0	8.420,0	9.089,5
Trade receivables	4.272,0	2.749,0	4.463,0	4.667,0	4.863,9
Prepaid expenses and other current assets	1.968,0	1.653,0	1.498,0	2.129,0	1.951,4
Deferred tax liabilities and other liabilities:	(3.347,0)	(2.684,0)	(2.955,0)	(2.613,0)	(2.598,0)
Trade payables	(2.612,0)	(2.248,0)	(2.836,0)	(3.358,0)	(3.435,7)
Tax payables	(229,0)	(156,0)	(306,0)	(222,0)	(357,9)
Accrued liabilities	(5.010,0)	(5.038,0)	(6.063,0)	(6.220,0)	(6.073,9)
Other current liabilities	0,0	(146,0)	0,0	0,0	0,0
Operating Cash	782,3	748,1	890,8	934,2	1.033,3
<b>Operating working capital</b>	<b>3.457,3</b>	<b>4.571,1</b>	<b>4.466,8</b>	<b>7.558,2</b>	<b>8.536,5</b>
Goodwill	154,0	223,0	242,0	284,0	281,0
Intangible assets	283,0	274,0	269,0	286,0	275,5
Property, plant and equipment	4.744,0	4.866,0	4.904,0	4.791,0	4.923,6
Operating lease right-of-use assets	0,0	3.097,0	3.113,0	2.926,0	2.802,4
Other non-current assets	0,0	0,0	0,0	0,0	0,0
<b>Fixed assets</b>	<b>5.181,0</b>	<b>8.460,0</b>	<b>8.528,0</b>	<b>8.287,0</b>	<b>8.282,5</b>
<b>Core capital employed</b>	<b>8.638,3</b>	<b>13.031,1</b>	<b>12.994,8</b>	<b>15.845,2</b>	<b>16.819,0</b>
Long-term debt	3.464,0	9.406,0	9.413,0	8.920,0	8.925,0
Operating lease liabilities	0,0	2.913,0	2.931,0	2.777,0	2.692,0
Current portion of long-term debt	6,0	3,0	0,0	500,0	500,0
Current lease liabilities	0,0	445,0	467,0	420,0	432,2
Notes payables	9,0	248,0	2,0	10,0	7,9
<b>Gross financial debt</b>	<b>3.479,0</b>	<b>13.015,0</b>	<b>12.813,0</b>	<b>12.627,0</b>	<b>12.557,1</b>
Short-term investments	(197,0)	(439,0)	(3.587,0)	(4.423,0)	(3.505,9)
Cash and cash equivalents	(3.683,7)	(7.599,9)	(8.998,2)	(7.639,8)	(7.208,0)
<b>Net debt</b>	<b>(401,7)</b>	<b>4.976,1</b>	<b>227,8</b>	<b>564,2</b>	<b>1.843,2</b>
Common Stock - Issued & Paid	3,0	3,0	3,0	3,0	3,0
Capital in excess of stated value	7.163,0	8.299,0	9.965,0	11.484,0	12.495,3
Accumulated other comprehensive income	231,0	(56,0)	(380,0)	318,0	325,4
Retained earnings (deficit)	1.643,0	(191,0)	3.179,0	3.476,0	2.152,0
<b>Total equity</b>	<b>9.040,0</b>	<b>8.055,0</b>	<b>12.767,0</b>	<b>15.281,0</b>	<b>14.975,7</b>
<b>Total funds invested</b>	<b>8.638,3</b>	<b>13.031,1</b>	<b>12.994,8</b>	<b>15.845,2</b>	<b>16.818,9</b>

## Appendix 5: FY23 Q4E Balance Sheet Forecast

Assets	FY23 Q1A	FY23 Q2A	FY23 Q3A	FY23 Q4E	Q4 as % of 9M YTD
Cash and Cash Equivalents	7.226	6.490	6.955	8.241	40%
Short-term Investments	4.650	4.131	3.847	3.506	28%
Accounts receivable, net	4.960	5.437	4.513	4.864	33%
Inventories	9.662	9.326	8.905	9.090	33%
Prepaid expenses and other current assets	2.379	2.063	1.815	1.651	26%
<b>Total Current Assets</b>	<b>28.877</b>	<b>27.447</b>	<b>26.035</b>	<b>27.352</b>	
Property, plant and equipment, net	4.778	4.854	4.939	4.924	34%
Operating lease right-of-use assets, net	2.880	2.809	2.834	2.802	33%
Identifiable intangible assets, net	283	280	277	275	33%
Goodwill	282	281	281	281	33%
Deferred income taxes and other assets	3.988	3.976	3.928	4.064	34%
<b>Total Non-Current Assets</b>	<b>12.211</b>	<b>12.200</b>	<b>12.259</b>	<b>12.346</b>	
<b>Total Assets</b>	<b>41.088</b>	<b>39.647</b>	<b>38.294</b>	<b>39.698</b>	
Equity & Liability	FY23 Q1A	FY23 Q2A	FY23 Q3A	FY23 Q4E	Q4 as % of 9M YTD
Current portion of long-term debt	500	500	500	500	33%
Notes payable	9	7	14	8	26%
Accounts payable	3.371	2.810	2.675	3.136	35%
Current portion of operating lease liabilities	424	426	435	432	34%
Accrued liabilities	6.277	6.020	5.594	6.074	34%
Income taxes payable	338	436	330	358	32%
Other current liabilities	0	0	0	0	-
<b>Total Current Liabilities</b>	<b>10.919</b>	<b>10.199</b>	<b>9.548</b>	<b>10.508</b>	
Long-Term Debt	8.922	8.924	8.925	8.925	33%
Operating Lease Liabilities	2.736	2.668	2.692	2.692	33%
Deferred Income Taxes and Other Liabilities	2.689	2.584	2.598	2.598	33%
<b>Total Non-Current Liabilities</b>	<b>14.347</b>	<b>14.176</b>	<b>14.215</b>	<b>14.215</b>	
<b>Total Liabilities</b>	<b>25.266</b>	<b>24.375</b>	<b>23.763</b>	<b>24.723</b>	
Common Stock - Issued & Paid	3	3	3	3	33%
Capital in excess of stated value	11.648	11.851	12.074	12.495	35%
Accumulated other comprehensive income (loss)	636	559	302	325	22%
Retained earnings (deficit)	3.535	2.859	2.152	2.152	25%
<b>Total Shareholder's Equity</b>	<b>15.822</b>	<b>15.272</b>	<b>14.531</b>	<b>14.976</b>	
<b>Total Liabilities and Shareholder's Equity</b>	<b>41.088</b>	<b>39.647</b>	<b>38.294</b>	<b>39.698</b>	

## Appendix 6: Balance Sheet Forecast

Balance sheet	2023 (9+3)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Deferred income taxes and other assets	4,064.0	4,062.6	4,496.6	4,955.8	5,438.5	5,951.8	6,512.1	7,027.9	7,474.3	7,828.3	8,155.5
Inventories	9,089.5	9,397.8	10,181.8	10,979.3	11,783.0	12,642.3	13,832.4	14,927.9	15,876.2	16,628.0	17,323.0
Trade receivables	4,863.9	6,007.6	6,483.1	6,961.9	7,439.0	7,921.1	8,666.8	9,353.2	9,947.4	10,418.4	10,853.9
Prepaid expenses and other current assets	1,951.4	1,851.9	2,024.1	2,202.6	2,386.1	2,577.4	2,820.1	3,043.4	3,236.8	3,390.0	3,531.7
Deferred tax liabilities and other liabilities:	(2,598.0)	(3,240.4)	(3,586.5)	(3,952.7)	(4,337.7)	(4,747.2)	(5,194.1)	(5,605.4)	(5,961.5)	(6,243.8)	(6,504.8)
Trade payables	(3,435.7)	(4,202.6)	(4,638.5)	(5,093.9)	(5,565.6)	(6,077.4)	(6,649.6)	(7,176.2)	(7,632.1)	(7,993.5)	(8,327.6)
Tax payables	(357.9)	(387.0)	(428.4)	(472.1)	(518.1)	(567.0)	(620.4)	(669.5)	(712.0)	(745.7)	(776.9)
Accrued liabilities	(6,073.9)	(7,500.9)	(8,302.1)	(9,149.9)	(10,041.2)	(10,989.0)	(12,023.5)	(12,975.7)	(13,800.0)	(14,453.5)	(15,057.6)
Other current liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operating Cash	1,033.3	1,126.6	1,246.9	1,374.3	1,508.1	1,650.5	1,805.8	1,948.9	2,072.7	2,170.8	2,261.5
<b>Operating working capital</b>	<b>8,536.5</b>	<b>7,115.7</b>	<b>7,477.0</b>	<b>7,805.2</b>	<b>8,092.1</b>	<b>8,362.6</b>	<b>9,149.8</b>	<b>9,874.4</b>	<b>10,501.7</b>	<b>10,999.0</b>	<b>11,458.8</b>
Goodwill	281.0	281.0	281.0	281.0	281.0	281.0	281.0	281.0	281.0	281.0	281.0
Intangible assets	275.5	300.0	324.5	348.9	372.7	395.8	414.9	428.6	435.3	436.2	437.3
Property, plant and equipment	4,923.6	5,361.3	5,800.4	6,236.0	6,662.0	7,073.5	7,415.9	7,661.3	7,779.4	7,797.0	7,815.9
Operating lease right-of-use assets	2,802.4	3,051.5	3,301.5	3,549.4	3,791.9	4,026.1	4,221.0	4,360.6	4,427.8	4,437.9	4,448.6
Other non-current assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Fixed assets</b>	<b>8,282.5</b>	<b>8,993.8</b>	<b>9,707.5</b>	<b>10,415.3</b>	<b>11,107.6</b>	<b>11,776.3</b>	<b>12,332.8</b>	<b>12,731.6</b>	<b>12,923.4</b>	<b>12,952.1</b>	<b>12,982.8</b>
<b>Core capital employed</b>	<b>16,819.0</b>	<b>16,109.5</b>	<b>17,184.5</b>	<b>18,220.5</b>	<b>19,199.8</b>	<b>20,138.9</b>	<b>21,482.6</b>	<b>22,606.0</b>	<b>23,425.2</b>	<b>23,951.1</b>	<b>24,441.5</b>
Long-term debt	8,925.0	8,925.0	8,925.0	8,925.0	8,925.0	8,925.0	8,925.0	8,925.0	8,925.0	8,925.0	8,925.0
Operating lease liabilities	2,692.0	2,692.0	2,692.0	2,692.0	2,692.0	2,692.0	2,692.0	2,692.0	2,692.0	2,692.0	2,692.0
Current portion of long-term debt	500.0	545.2	603.4	665.0	729.8	798.7	873.8	943.0	1,003.0	1,050.5	1,094.4
Current lease liabilities	432.2	471.3	521.6	574.9	630.9	690.4	755.4	815.2	867.0	908.1	946.0
Notes payables	7.9	8.6	9.5	10.5	11.5	12.6	13.8	14.9	15.8	16.5	17.2
<b>Gross financial debt</b>	<b>12,557.1</b>	<b>12,642.0</b>	<b>12,751.5</b>	<b>12,867.3</b>	<b>12,989.1</b>	<b>13,118.6</b>	<b>13,260.0</b>	<b>13,390.1</b>	<b>13,502.8</b>	<b>13,592.1</b>	<b>13,674.6</b>
Short-term investments	(3,505.9)	(3,155.3)	(2,839.8)	(2,555.8)	(2,300.2)	(2,070.2)	(1,863.2)	(1,676.9)	(1,509.2)	(1,358.3)	(1,222.4)
Cash and cash equivalents	(7,208.0)	(7,942.6)	(8,412.8)	(8,323.3)	(8,394.9)	(8,588.3)	(8,438.4)	(8,867.5)	(9,643.0)	(10,733.9)	(11,896.2)
<b>Net debt</b>	<b>1,843.2</b>	<b>1,544.0</b>	<b>1,498.9</b>	<b>1,988.2</b>	<b>2,293.9</b>	<b>2,460.1</b>	<b>2,958.4</b>	<b>2,845.7</b>	<b>2,350.5</b>	<b>1,499.9</b>	<b>555.9</b>
Common Stock - Issued & Paid	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Capital in excess of stated value	12,495.3	12,495.3	12,495.3	12,495.3	12,495.3	12,495.3	12,495.3	12,495.3	12,495.3	12,495.3	12,495.3
Accumulated other comprehensive income	325.4	51.9	51.9	51.9	51.9	51.9	51.9	51.9	51.9	51.9	51.9
Retained earnings (deficit)	2,152.0	2,015.2	3,135.3	3,682.0	4,355.5	5,128.4	5,973.9	7,210.0	8,524.4	9,901.0	11,335.3
<b>Total equity</b>	<b>14,975.7</b>	<b>14,565.4</b>	<b>15,685.5</b>	<b>16,232.2</b>	<b>16,905.7</b>	<b>17,678.6</b>	<b>18,524.1</b>	<b>19,760.2</b>	<b>21,074.6</b>	<b>22,451.1</b>	<b>23,885.5</b>
<b>Total funds invested</b>	<b>16,818.9</b>	<b>16,109.4</b>	<b>17,184.4</b>	<b>18,220.4</b>	<b>19,199.7</b>	<b>20,138.8</b>	<b>21,482.5</b>	<b>22,605.9</b>	<b>23,425.1</b>	<b>23,951.0</b>	<b>24,441.4</b>

## Appendix 7: Historical Cash Flows including 2023 9+3 Forecast

Cash flows	2020A	2021A	2022A	2023 (9+3)
EBIT	2.976,0	6.923,0	6.856,0	6.423,3
(Operational taxes)	(358,7)	(970,7)	(623,6)	(1.238,8)
D&A	721,0	797,0	840,0	893,9
<b>Gross cash flows</b>	<b>3.338,3</b>	<b>6.749,3</b>	<b>7.072,4</b>	<b>6.078,5</b>
Change in noncash WC	(1.148,0)	247,0	(3.048,0)	(879,3)
CAPEX	(3.931,0)	(846,0)	(557,0)	(892,4)
Change in other fixed assets	(69,0)	(19,0)	(42,0)	3,0
<b>FCFO</b>	<b>(1.809,7)</b>	<b>6.131,3</b>	<b>3.425,4</b>	<b>4.309,8</b>
Tax shields	10,7	36,7	18,6	7,4
Net Interest expenses/income	(89,0)	(262,0)	(205,0)	(38,5)
Change in gross debt	9.536,0	(202,0)	(186,0)	(69,9)
Change in short-term investments	(242,0)	(3.148,0)	(836,0)	917,1
<b>FCFE</b>	<b>7.406,0</b>	<b>2.556,0</b>	<b>2.217,0</b>	<b>5.125,9</b>
Dividends	(1.452,0)	(1.638,0)	(1.837,0)	(2.057,7)
Other movements in group equity	(2.072,0)	623,0	(1.695,0)	(3.401,0)
<b>Change in cash</b>	<b>3.882,0</b>	<b>1.541,0</b>	<b>(1.315,0)</b>	<b>(332,8)</b>

## Appendix 8: Cash Flow Forecast

Cash flows	2023 (9+3)	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
EBIT	6.423,3	7.875,6	10.103,2	12.664,7	15.579,1	17.863,4	19.533,6	21.071,1	22.401,9	23.457,0	24.432,4
(Operational taxes)	(1.238,8)	(1.260,1)	(1.616,5)	(2.026,4)	(2.492,6)	(2.858,1)	(3.125,4)	(3.371,4)	(3.584,3)	(3.753,1)	(3.909,2)
D&A	893,9	978,5	1.156,7	1.353,5	1.569,9	1.807,0	2.062,0	2.329,6	2.606,2	2.793,4	2.796,2
<b>Gross cash flows</b>	<b>6.078,5</b>	<b>7.594,0</b>	<b>9.643,4</b>	<b>11.991,9</b>	<b>14.656,3</b>	<b>16.812,3</b>	<b>18.470,2</b>	<b>20.029,3</b>	<b>21.423,8</b>	<b>22.497,3</b>	<b>23.319,5</b>
Change in noncash WC	(879,3)	1.514,1	(241,0)	(200,8)	(153,1)	(128,1)	(631,9)	(581,6)	(503,5)	(399,2)	(369,0)
CAPEX	(892,4)	(1.689,9)	(1.870,4)	(2.061,4)	(2.262,2)	(2.475,7)	(2.618,5)	(2.728,4)	(2.798,1)	(2.822,1)	(2.826,9)
Change in other fixed assets	3,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>FCFO</b>	<b>4.309,8</b>	<b>7.418,3</b>	<b>7.532,0</b>	<b>9.729,7</b>	<b>12.241,0</b>	<b>14.208,5</b>	<b>15.219,9</b>	<b>16.719,3</b>	<b>18.122,3</b>	<b>19.276,1</b>	<b>20.123,5</b>
Tax shields	7,4	13,5	11,8	10,3	9,9	9,9	9,9	10,4	10,5	9,8	8,3
Net Interest expenses/income	(38,5)	(84,1)	(73,9)	(64,4)	(61,9)	(61,9)	(62,0)	(65,0)	(65,4)	(61,4)	(51,9)
Change in gross debt	(69,9)	84,9	109,5	115,8	121,8	129,5	141,4	130,1	112,6	89,3	82,6
Change in short-term investments	917,1	350,6	315,5	284,0	255,6	230,0	207,0	186,3	167,7	150,9	135,8
<b>FCFE</b>	<b>5.125,9</b>	<b>7.783,1</b>	<b>7.895,0</b>	<b>10.075,4</b>	<b>12.566,4</b>	<b>14.516,0</b>	<b>15.516,2</b>	<b>16.981,1</b>	<b>18.347,6</b>	<b>19.464,7</b>	<b>20.298,3</b>
Dividends	(2.057,7)	(2.157,9)	(2.777,7)	(3.489,8)	(4.297,6)	(4.930,3)	(5.392,8)	(5.817,8)	(6.186,3)	(6.479,6)	(6.752,4)
Other movements in group equity	(3.401,0)	(4.773,6)	(4.500,0)	(6.545,5)	(8.060,7)	(9.247,4)	(10.114,9)	(10.587,1)	(11.257,6)	(11.791,4)	(12.287,8)
<b>Change in cash</b>	<b>(332,8)</b>	<b>851,6</b>	<b>617,3</b>	<b>40,1</b>	<b>208,1</b>	<b>338,4</b>	<b>8,4</b>	<b>576,2</b>	<b>903,7</b>	<b>1.193,7</b>	<b>1.258,1</b>

## Appendix 9: Historical EBIT Margins in operative segments

EBIT	2016	2017	2018	2019	2020	2021	2022
North America	3763	3875	3600	3925	2976	6923	6856
EMEA	1787	1507	1587	1995	1541	2435	3296
Greater China	1372	1507	1807	2376	2490	3243	2365
APLA	1002	980	1189	1323	1184	1530	1896
<i>EBIT Margin</i>							
<i>North America</i>	25%	25%	24%	25%	21%	40%	37%
<i>EMEA</i>	24%	19%	17%	20%	16%	21%	26%
<i>Greater China</i>	36%	36%	35%	38%	37%	39%	31%
<i>APLA</i>	23%	21%	23%	25%	24%	29%	32%

Note: Margins just include the operative segments, not including Corporate, Brand Division and Converse

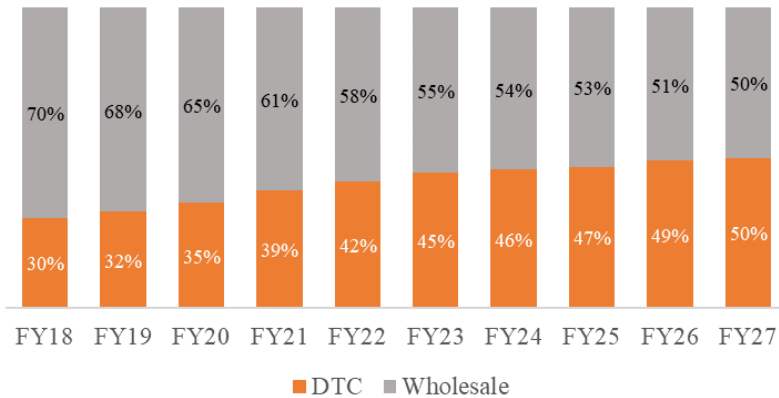
### Appendix 10: Historical Payouts

	2020A	2021A	2022A	2023 (9+3)
Dividend distribution	1.452,0	1.638,0	1.837,0	2.057,7
Share repurchases	2.072,0	(623,0)	1.695,0	3.401,0
Retained portion	(985,0)	4.712,0	2.514,0	(305,3)

### Payout Forecast

	2023 (9+3)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Dividend distribution	2.057,7	2.157,9	2.777,7	3.489,8	4.297,6	4.930,3	5.392,8	5.817,8	6.186,3	6.479,6	6.752,4
Share repurchases	3.401,0	4.500,0	4.500,0	6.545,5	8.060,7	9.247,4	10.114,9	10.587,1	11.257,6	11.791,4	12.287,8
Retained portion	(305,3)	(113,1)	1.146,9	549,0	676,1	775,6	848,4	1.240,2	1.318,8	1.381,3	1.439,5

### Appendix 11: Nike DTC vs. Wholesale Forecast



### Appendix 12: Nike App ecosystem

Apps are likely to be the most important product to increase digital sales, personalized offers and memberships in the future. Nike offers a variety of apps for fitness, shopping and membership services with free and paid contents.



## Appendix 13: Sales Forecast

Sportswear Industry Growth (%)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
North America	7%	6%	5%	6%	9%	6%	-16%	30%	5%	6%	5%	5%	5%	5%
EMEA	1%	-12%	1%	7%	7%	0%	-10%	15%	-2%	8%	6%	6%	6%	5%
Greater China	10%	12%	14%	16%	21%	18%	-3%	14%	2%	11%	10%	9%	8%	7%
APLA	4%	-2%	4%	11%	10%	7%	-13%	17%	2%	10%	10%	8%	8%	7%
Nike Sportswear Growth (%)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
North America	10%	12%	7%	3%	-2%	7%	-9%	19%	7%					
EMEA	17%	11%	3%	5%	18%	6%	-5%	23%	9%					
Greater China	5%	18%	23%	12%	21%	21%	8%	24%	-9%					
APLA	0%	-1%	-2%	10%	9%	2%	-4%	6%	11%					
Nominal GDP Growth (%)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
North America	4%	2%	2%	4%	5%	4%	-2%	11%	9%	5%	4%	4%	4%	4%
EMEA	1%	-13%	0%	6%	7%	-1%	-4%	13%	2%	5%	3%	4%	4%	4%
Greater China	9%	7%	8%	11%	10%	7%	3%	13%	5%	4%	7%	7%	6%	6%
APLA	6%	6%	4%	7%	7%	0%	-6%	7%	-1%	6%	6%	5%	5%	5%
Nike vs. Industry (%)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
North America	4%	5%	2%	-3%	-11%	1%	7%	-11%	2%	7%	5%	6%	6%	6%
EMEA	16%	23%	2%	-2%	12%	6%	5%	8%	11%	10%	8%	8%	8%	8%
Greater China	-5%	6%	9%	-4%	0%	3%	10%	10%	-11%	11%	10%	9%	8%	8%
APLA	-4%	1%	-7%	-1%	-1%	-5%	9%	-10%	10%	10%	9%	8%	7%	7%
Industry Multiplier	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
North America	1,6x	1,8x	1,4x	0,5x	-	1,1x	1,7x	0,6x	1,3x	8%	6%	7%	7%	7%
EMEA	12,7x	-	2,9x	0,8x	2,8x	-	0,5x	1,5x	-	12%	8%	9%	9%	8%
Greater China	0,5x	1,4x	1,7x	0,7x	1,0x	1,1x	-	1,7x	-	12%	11%	10%	9%	8%
APLA	0,0x	1,5x	-	0,9x	0,9x	0,2x	3,1x	0,4x	6,8x	9%	9%	8%	7%	6%
GDP Multiplier	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
North America	2,9x	5,6x	3,2x	0,7x	-	1,8x	5,0x	1,6x	0,8x	11%	8%	9%	10%	9%
EMEA	13,0x	-	-	1,0x	2,6x	-	1,1x	1,7x	4,9x	11%	6%	9%	8%	8%
Greater China	0,6x	2,5x	2,8x	1,0x	2,0x	2,9x	2,8x	1,8x	-	10%	16%	15%	14%	14%
APLA	0,0x	-	-	1,4x	1,4x	5,0x	0,7x	0,9x	-	10%	9%	8%	8%	8%
Average Multiplier	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
North America										9%	7%	8%	8%	8%
EMEA										12%	8%	9%	8%	8%
Greater China										12%	13%	12%	11%	10%
APLA										9%	9%	8%	7%	7%

Nike specific revenue multiples for the strong growth phase (including outperformance multiple, Greater China and APLA multiple and adjustment for Footwear/Apparel)

Nike specific multiplier	2024	2025	2026	2027	2028
<b>Footwear</b>					
North America	1,1x	1,2x	1,2x	1,0x	1,0x
Europe, Middle East & Africa	1,0x	1,1x	1,1x	1,0x	1,0x
Greater China	1,1x	1,6x	1,5x	1,5x	1,5x
Asia Pacific & Latin America	1,4x	1,6x	1,8x	2,0x	2,0x
<b>Apparel</b>					
North America	1,0x	0,9x	0,9x	0,9x	0,7x
Europe, Middle East & Africa	0,9x	1,1x	0,9x	1,0x	0,7x
Greater China	1,4x	1,5x	1,7x	1,6x	1,6x
Asia Pacific & Latin America	1,4x	1,8x	1,9x	1,9x	1,4x
<b>Equipment</b>					
North America	0,7x	0,8x	0,8x	0,7x	0,7x
Europe, Middle East & Africa	0,9x	1,1x	0,9x	1,0x	1,0x
Greater China	1,4x	1,1x	1,2x	1,3x	1,3x
Asia Pacific & Latin America	0,9x	1,2x	1,1x	1,2x	1,2x

## Appendix 14: Extended Peer Comparison

	Tier I Peers					Tier II Peers				
	Nike	Adidas	Puma	Under Armour	VF Corp	Lululemon	Li Ning Co	Anta	Skechers	Asics Corp
HQ	USA	Germany	Germany	USA	USA	Canada	China	China	USA	Japan
Markets	Global	Global	Global	Global	Global	Global	Greater China	Greater China	Global	Global
Segments	Footwear & Apparel	Footwear & Apparel	Footwear & Apparel	Footwear & Apparel	Footwear & Apparel	Apparel	Footwear & Apparel	Footwear & Apparel	Footwear	Footwear
Market Cap (\$b.)	194,8	31,6	8,8	3,8	9,1	48,3	18,8	33,5	8,3	5,4
EBITDA Margin	16,1%	9,9%	11,8%	10,1%	16,3%	24,9%	23,3%	29,2%	9,4%	10,4%
Profit Margin	10,5%	1,0%	4,0%	2,9%	7,9%	15,8%	15,8%	14,0%	5,4%	4,2%
5Y Rev. CAGR	6,4%	1,2%	15,4%	0,8%	7,1%	28,2%	23,9%	26,3%	7,6%	3,9%
D/E Ratio	61,7%	120,7%	61,9%	31,7%	153,5%	0,0%	8,8%	51,5%	8,8%	80,9%
ROE	34,9%	3,4%	13,4%	9,3%	27,6%	44,5%	18,1%	23,5%	11,7%	11,6%
ROIC	22,4%	1,8%	9,7%	6,4%	11,4%	43,5%	n/a	n/a	10,8%	7,4%
Adj. Lev. Beta	1,1	0,9	0,8	1,4	1,3	1,3	1,2	1,1	1,2	1,6

Peer Group Ratio Analysis FY2022	Adidas	Puma	Under Armour <sup>1)</sup>	VF Corp	Average	Nike
<b>Weight</b>	35%	35%	15%	15%	100%	
<b>Profitability Ratio</b>						
Gross Margin	47,3%	46,1%	50,4%	54,5%	48,4%	46,0%
EBITDA Margin	9,9%	11,8%	10,1%	16,3%	11,5%	16,1%
EBIT Margin	4,4%	7,9%	7,7%	14,0%	7,6%	14,7%
Profit Margin	1,1%	5,0%	6,3%	10,3%	4,6%	12,9%
Return on Equity	3,7%	15,1%	19,1%	34,4%	14,6%	43,1%
Return on Assets	1,2%	6,8%	7,2%	9,1%	5,2%	15,5%
<b>Efficiency Ratio</b>						
Days Inventory	153,9	149,9	110,7	96,2	137,4	121,8
Days Receivables	53,2	49,0	35,3	45,2	47,8	36,5
Days Payables	80,2	116,8	77,1	105,3	96,3	48,6
Cash Conversion Cycle	126,9	82,1	68,9	36,1	88,9	109,7
<b>Liquidity Ratio</b>						
Quick Ratio	0,6	0,7	1,7	1,0	0,9	1,8
Current Ratio	1,3	1,5	2,3	1,4	1,5	2,6
Interest Coverage Ratio	8,0	12,4	12,0	12,2	10,8	22,3
<b>Solvency Ratio</b>						
Debt-to-Equity (BV)	1,3	0,6	0,3	1,5	1,0	0,62
Asset/Equity	4,1	2,7	2,4	3,8	3,3	2,64x
Net Debt/EBITDA	2,3	1,1	-1,5	2,2	1,3	-0,05x

<sup>1)</sup>FY21 figures

## Appendix 15: Precedent Transactions from Merger Market

Announced Date	Completed Date	Target	Target HQ	Target Description	Acquiror	Acquiror HQ	EV	EV/EBITDA	EV/Sales
Feb-21	Mar-21	DTLR Villa LLC	USA	US-based hyperlocal athletic footwear and apparel streetwear retailer	JD Sports Fashion	UK	495	10,9x	-
Dec-18	Feb-19	Groupe Courir SAS	France	Retailer specialising in the sale of sports shoes.	Equistone Partners Europe	UK	322	8,1x	-
Jul-17	Sep-17	Sport Maska Inc	USA	Sporting and athletic goods manufacturer.	Birch Hill Equity Partners	Canada	110	10,0x	0,4x
<b>Average</b>								<b>9,6x</b>	<b>0,4x</b>
<b>Median</b>								<b>10,0x</b>	<b>0,4x</b>

Source: Merger Market

## Appendix 16: Global Sports Footwear Market Share Dynamics: Top 15 Players 2014 - 2022

Local Brand Name		2014	2015	2016	2017	2018	2019	2020	2021	2022	Bps Delta	
											2014-2019	2019-2022
Nike	USA	23,5%	24,6%	24,2%	23,1%	22,6%	22,7%	23,8%	23,4%	23,0%	-80	30
adidas	GER	11,0%	11,4%	12,5%	13,3%	13,3%	12,9%	12,4%	12,0%	11,7%	190	-120
Skechers	USA	4,0%	4,6%	4,8%	5,0%	5,2%	5,3%	5,5%	5,9%	5,9%	130	60
Puma	GER	2,3%	2,3%	2,3%	2,4%	2,6%	2,7%	2,8%	3,1%	3,4%	40	70
Vans	USA	2,5%	2,6%	2,6%	2,7%	3,1%	3,3%	2,9%	3,0%	2,8%	80	-50
Asics	JPN	3,8%	3,7%	3,5%	3,3%	2,9%	2,7%	2,6%	2,6%	2,6%	-110	-10
New Balance	USA	3,2%	3,3%	3,3%	3,0%	2,8%	2,5%	2,4%	2,4%	2,5%	-70	0
Jordan	USA	1,4%	1,5%	1,7%	1,7%	1,7%	2,0%	2,4%	2,4%	2,4%	60	40
Converse	USA	2,5%	2,5%	2,4%	2,2%	2,1%	2,1%	2,1%	2,1%	2,0%	-40	-10
Li-Ning	CHN	0,8%	0,9%	0,9%	0,9%	1,0%	1,1%	1,2%	1,6%	1,8%	30	70
Anta	CHN	0,8%	0,9%	0,9%	1,0%	1,0%	1,1%	1,2%	1,4%	1,5%	30	40
Xtep	CHN	1,1%	1,1%	1,1%	0,9%	1,0%	1,0%	1,1%	1,1%	1,3%	-10	30
Under Armour	USA	0,9%	1,2%	1,4%	1,3%	1,3%	1,2%	1,1%	1,3%	1,2%	30	0
Timberland	USA	1,8%	1,7%	1,5%	1,4%	1,4%	1,3%	1,2%	1,3%	1,2%	-50	-10
Reebok	USA	1,9%	1,8%	1,8%	1,6%	1,5%	1,4%	1,3%	1,2%	1,2%	-50	-20
<b>Top 15 Brands</b>		<b>61,5%</b>	<b>64,1%</b>	<b>64,9%</b>	<b>63,8%</b>	<b>63,5%</b>	<b>63,3%</b>	<b>64,0%</b>	<b>64,8%</b>	<b>64,5%</b>	<b>180</b>	<b>120</b>
<b>Nike Inc.</b>	<b>USA</b>	<b>27,4%</b>	<b>28,6%</b>	<b>28,3%</b>	<b>27,0%</b>	<b>26,4%</b>	<b>26,8%</b>	<b>28,3%</b>	<b>27,9%</b>	<b>27,4%</b>	<b>-60</b>	<b>60</b>

## Appendix 17: Global Sports Apparel Market Share Dynamics: Top 15 Players 2014 - 2022

Local Brand Name		2014	2015	2016	2017	2018	2019	2020	2021	2022	Bps Delta	
											2014-2019	2019-2022
Nike	USA	8,5%	9,0%	9,1%	8,9%	8,9%	8,9%	9,0%	8,8%	8,7%	40	-20
adidas	GER	6,3%	6,3%	6,9%	7,0%	7,2%	7,1%	7,1%	6,9%	6,5%	80	-60
lululemon	CAN	0,9%	1,1%	1,2%	1,3%	1,5%	1,8%	2,3%	2,7%	3,2%	90	140
Under Armour	USA	2,4%	3,0%	3,4%	3,2%	3,1%	3,1%	2,9%	3,1%	2,9%	70	-20
The North Face	USA	2,1%	2,1%	1,9%	1,8%	1,9%	1,9%	1,9%	1,7%	2,0%	-20	10
Puma	GER	1,4%	1,3%	1,3%	1,3%	1,5%	1,6%	1,7%	1,8%	1,8%	20	20
Columbia	USA	1,4%	1,5%	1,4%	1,4%	1,4%	1,5%	1,4%	1,4%	1,5%	10	0
Fila	KOR	0,1%	0,2%	0,3%	0,3%	0,5%	0,9%	1,2%	1,3%	1,3%	80	40
Li-Ning	CHN	0,5%	0,5%	0,5%	0,5%	0,6%	0,7%	0,9%	1,2%	1,2%	20	50
Champion	USA	1,0%	1,1%	1,2%	1,2%	1,2%	1,2%	1,1%	1,2%	1,2%	20	0
Anta	CHN	0,4%	0,6%	0,6%	0,7%	0,9%	0,9%	0,9%	1,0%	1,1%	50	20
Decathlon	FRA	1,2%	1,1%	1,1%	1,2%	1,1%	1,1%	1,1%	1,1%	1,1%	-10	0
Athleta	USA	0,3%	0,3%	0,4%	0,4%	0,4%	0,5%	0,6%	0,6%	0,7%	20	20
Xtep	CHN	0,3%	0,3%	0,3%	0,3%	0,3%	0,4%	0,5%	0,5%	0,6%	10	20
Vans	USA	0,5%	0,5%	0,5%	0,5%	0,6%	0,6%	0,6%	0,6%	0,6%	10	0
<b>Top 15 Brands</b>		<b>27,3%</b>	<b>28,9%</b>	<b>30,1%</b>	<b>30,0%</b>	<b>31,1%</b>	<b>32,2%</b>	<b>33,2%</b>	<b>33,9%</b>	<b>34,4%</b>	<b>490</b>	<b>220</b>
<b>Nike Inc.</b>	<b>USA</b>	<b>8,5%</b>	<b>9,0%</b>	<b>9,1%</b>	<b>8,9%</b>	<b>8,9%</b>	<b>8,9%</b>	<b>9,0%</b>	<b>8,8%</b>	<b>8,7%</b>	<b>40</b>	<b>-20</b>

Source: Both retrieved from Euromonitor Passport

## Appendix 18: Nike ESG Score

	2021	2020	2019	2018	2017
ESG Score (100.0%)	B+	B+	B+	B+	B+
Environmental Pillar Score (18.2%)	A-	A-	A-	B+	B+
Social Pillar Score (53.1%)	A-	A-	B+	B+	A-
Governance Pillar Score (28.7%)	C+	C+	B+	B+	B-

## Appendix 19: Nike's Executive Officer

Executive Chairman	President & CEO	COO	Executive VP & CFO	Executive VP & CLO	Executive VP & CHRO	Pres. of Consumer & Marketplace
Mark G. Parker	John J. Donahoe II	Andrew Campion	Matthew Friend	Ann M. Miller	Monique S. Matheson	Heidi O'Neill
						

**Appendix 20: SWOT Analysis**

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>- Strong Brand Image: Nike is globally recognized by its iconic swoosh logo, a symbol of quality and athletic excellence.</li> <li>- Product Innovation: Nike is investing in innovative products that are appreciated by its customers.</li> <li>- Global Presence: Global footprint with an advanced distribution network, allowing to reach diverse costumers around the world</li> </ul>	<ul style="list-style-type: none"> <li>- Dependence on third parties: Nike relies on its manufactures for the production of its products, which can bring of quality risks</li> <li>- Ethical concerns: Reputation could be damaged due to labor practices in its supply chain</li> <li>- Fast changing consumer trends: Nike is very dependent on consumer trends. An unanticipated shift could have severe impacts</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>- Growth in emerging markets: Nike has the big opportunity to expand its business in strengthening new markets with increasing income and health awareness</li> <li>- E-commerce: Online shopping enables Nike to get closer to the customer and to get more from the end value chain</li> <li>- ESG: ESG gives Nike the opportunity to differentiate itself from competitors and increase its reputation</li> </ul>	<ul style="list-style-type: none"> <li>- Intense competition: The sportswear industry is very competitive which could lead to a market share loss</li> <li>- Economic downturns: If consumer spending is lower because of economic downturns, Nike will feel the impact due to lower sales and profits</li> <li>- Changing consumer preferences: A change in fashion trends or the focus on other forms of exercise could affect Nike negatively</li> </ul>

## Appendix 21: Rating Conversion Table

Rating is	Spread is
D2/D	20.00%
C2/C	17.50%
Ca2/CC	15.78%
Caa/CCC	11.57%
B3/B-	7.37%
B2/B	5.26%
B1/B+	4.55%
Ba2/BB	3.13%
Ba1/BB+	2.42%
Baa2/BBB	2.00%
A3/A-	1.62%
A2/A	1.42%
A1/A+	1.23%
Aa2/AA	0.85%
Aaa/AAA	0.69%

Retrieved from:

[https://pages.stern.nyu.edu/~adamodar/New\\_Home\\_Page/datafile/ratings.html](https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ratings.html)

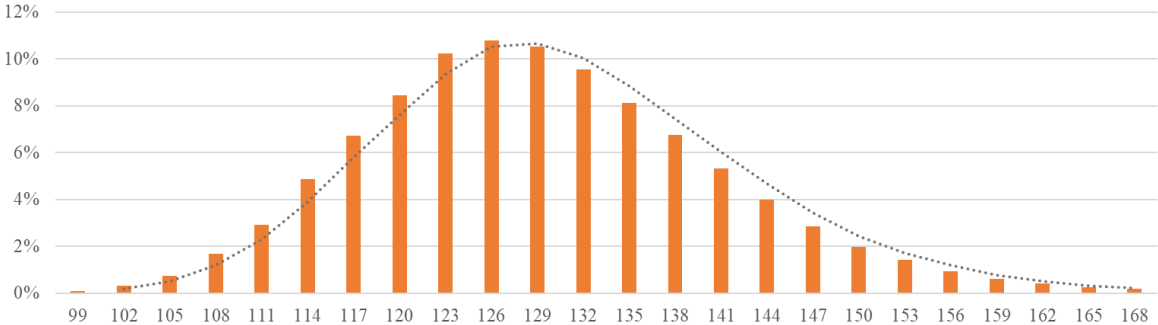
## Appendix 22: Sensitivity Analysis FY23 Outcome

		Perpetual Growth (FCFF)								
		2,0%	2,2%	2,4%	2,6%	2,8%	3,0%	3,2%	3,4%	3,6%
WACC	9,4%	125,5	127,5	129,7	132,0	134,4	137,0	139,8	142,7	145,9
	9,6%	121,7	123,6	125,6	127,7	130,0	132,4	134,9	137,6	140,5
	9,8%	118,1	119,9	121,7	123,7	125,8	128,0	130,4	132,9	135,5
	10,0%	114,7	116,3	118,1	119,9	121,9	123,9	126,1	128,4	130,9
	10,2%	111,4	113,0	114,6	116,3	118,1	120,0	122,1	124,2	126,5
	10,4%	108,3	109,8	111,3	112,9	114,6	116,4	118,2	120,2	122,3
	10,6%	105,4	106,8	108,2	109,7	111,2	112,9	114,7	116,5	118,4
	10,8%	102,6	103,9	105,2	106,6	108,1	109,6	111,2	113,0	114,8
	11,0%	99,9	101,1	102,4	103,7	105,1	106,5	108,0	109,6	111,3

		Perpetual Growth (FCFF)								
		2,0%	2,2%	2,4%	2,6%	2,8%	3,0%	3,2%	3,4%	3,6%
re(u)	9,6%	125,9	128,2	130,7	133,5	136,6	140,2	144,6	150,6	161,3
	9,8%	122,3	124,5	126,8	129,4	132,3	135,7	140,0	145,8	156,2
	10,0%	118,9	120,9	123,1	125,6	128,3	131,6	135,6	141,3	151,5
	10,2%	115,6	117,5	119,6	121,9	124,6	127,7	131,5	137,0	147,0
	10,4%	112,5	114,3	116,3	118,5	121,0	124,0	127,7	133,0	142,8
	10,6%	109,5	111,2	113,1	115,2	117,6	120,5	124,1	129,2	138,9
	10,8%	106,7	108,3	110,1	112,1	114,4	117,1	120,6	125,6	135,2
	11,0%	104,0	105,5	107,3	109,2	111,4	114,0	117,4	122,3	131,7
	11,2%	101,4	102,9	104,5	106,4	108,5	111,0	114,3	119,1	128,4

### Appendix 23: Monte Carlo Simulation

The Monte Carlo Simulation allows to test the results for a set of more than two variables. Therefore, the FCFF share price result for FY24 was tested for sensitivity on future FCFF, the levered beta, leverage, market risk premium, and the perpetual growth rate. The outcome can be seen in the figure below. While the distribution is slightly positively skewed due to asymmetric inputs, the average share price is determined at \$129.4.



Monte Carlo Simulation Statistics	
Observations	63188
Average	129,4
Median	128,5
Max	213,6
Min	92,1
Skewness	0,5
Std. Dev.	11,6