LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER OF SCIENCE IN FINANCE

MASTERS FINAL WORK
PROJECT

EQUITY RESEARCH:
UNDER ARMOUR, INC.

RAFAEL FILIPE BORGES TORRES

OCTOBER 2021

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SUPERVISOR:

TIAGO CRUZ GONÇALVES

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Abstract

The objective of this report is to study and provide an investment recommendation for Under Armour, Inc. This report is based on public information available until 1st of August 2021 and it was developed according to the CFA Institute recommendation for the CFA Research Challenge.

Under Armour, Inc. is an American company engaged in the development, marketing and distribution of branded sports performance and casual apparel, footwear and accessories for men, women and youth. During the course of Equity Research I had the opportunity to study this industry, which helped better understand its ins and outs.

Under Armour's valuation was calculated using a Weighted Average Cost of Capital (WACC) Method through Free Cash Flow to the Firm (FCFF) for the industry, complemented with the Adjusted Present Value (APV) and a Relative Multiples Valuation.

At the end, the recommendation of this report is to sell the common share, with a price target of $ 9.62 per share, in the end of 2021, representing a potential downside of 49.11%, when compared to the price of the common share at the time of this report's elaboration. This recommendation is based on a high level of risk, as the company operates in a very saturated market, with low operating margins, where supply is extremely high, and where its power of branding and marketing is not as strong as some of its competitors.

JEL classification: G10 ; G32; G34.

Keywords: Equity Research; Valuation; Under Armour; Footwear and Apparel Industry

Resumo

O objetivo deste relatório é estudar e fornecer uma recomendação de investimento para a Under Armour, Inc. Este relatório é baseado em toda a informação pública disponível até 1 de Agosto de 2021, tendo sido desenvolvido de acordo com as normas e recomendações impostas pelo CFA Institute no “CFA Research Challenge”.

A Under Amour, Inc. é uma empresa Norte-Americana que se dedica ao desenvolvimento, marketing e distribuição de equipamento, calçado e acessórios, desportivos e casuais, para homens, mulheres e jovens. Durante a unidade curricular de Equity Resarch tive a oportunidade de estudar esta indústria, que me ajudou a compreender melhor o seu funcionamento.

A empresa Under Amour foi avaliada através do Método *Weighted Average Cost (WACC)* para a indústria, confirmado pela avaliação método APV, bem como da comparação dos múltiplos de empresas concorrentes.

Após os estudos de avaliação, obtivemos uma recomendação de venda das ações, com um preço unitário de $ 9.62, no final do ano de 2021, representando uma queda potencial de 49.11%, face ao preço da ação à data da elaboração deste relatório. Esta recomendação é baseada num nível de risco elevado, visto a empresa atuar num mercado bastante saturado, com uma margem operacional muito ténue, onde a oferta é extremamente alta, e onde o seu poder de *branding* e *marketing* não são tão fortes como alguns dos seus concorrentes.

Classificação JEL: G10 ; G32; G34.

Palavras-Chave: Equity Research; Under Armour; Indústria de Calçado e Vestuário

Acknowledgements

The elaboration of this Equity Research report would not have been possible without the support of the following people, who were pivotal through this challenging last year.

First and foremost, I would like to express my deepest gratitude to my supervisor, Professor Tiago Gonçalves PhD, for his vast knowledge, wisdom and experienced guidance throughout this project.

A very special thanks is owed to my parents and my sister, as well as my closest family, for providing me with inspiration and constant support throughout the most difficult times. Moreover, for providing me with a privileged education and life, which I'll be forever indebted and grateful for. To my grandfather, João Borges, a hardworking man all his life, who didn't have the chance to see me graduate, I hope I made and continue to make you proud.

To my friends, for being there for me as I am there for them, whenever they need me. Last but not least, I'd like to thank myself for persevering and believing it was possible to finish my Master's Final Work after a two year hiatus, due to professional reasons.

I thank you all.

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Under Armour, Inc.

Sell

High risk

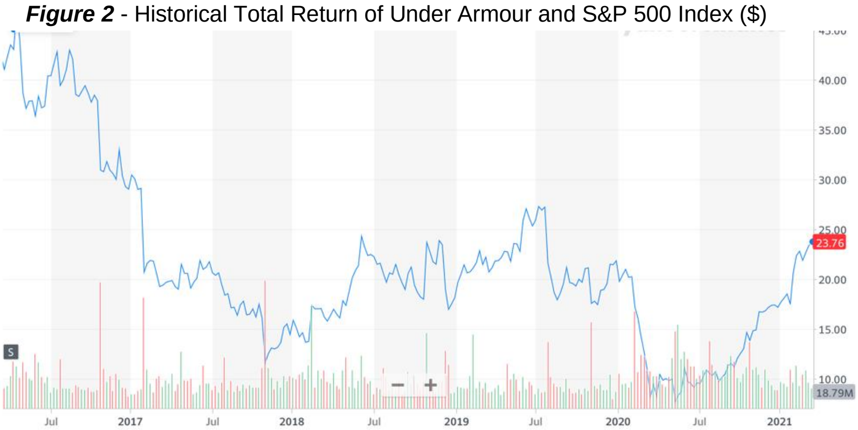
October 2021

Rafael Torres (rafaeltorres2121@aln.iseg.ulisboa.pt)
Masters in Finance

1. Research Snapshot

We issue a **SELL recommendation** for Under Armour, Inc., listed on The New York Stock Exchange (NYSE: UAA) with a 2021YE **price target** of **$9.62** per common share, representing a **downside potentia**l of **49.11%**, from the latest of closing price of $18.90 on the 12th of July 2021, using the **Discounted Free Cash Flow (to the Firm) model**, with **high risk level**. This recommendation is based on a combination of macroeconomic and company-specific variables, which place UA in a vulnerable position within its industry and when looking at the future of the company.

Figure 2 - Historical Total Return of Under Armour and S&P 500 Index ($)



Source – *Yahoo Finance*

According to our risk assessment, we determined UA had a **high risk** of investment, since the company operates in a **highly competitive** and **oversaturated industry**, dominated by the likes of Adidas, Puma and Nike, where Under Armour struggles to get market share, create brand awareness outside North America, and design products their customers relate and are drawn to.

During the next few years, we expect an increase in **revenues** from $4,698.4 millions of in FY2020 to $5,206.9 millions in FY2025, representing a **CAGR** of **11%**. We estimate that **EBIT/Sales** will remain constant over the years, at a value of **2.80%**, see ***Table 3.***

Moreover, we expect **net income** to remain negative and decrease from -$39,657 millions in FY2021 to -$43,949 millions in FY2025. Due to an increase in revenues, we also expect **COGS over sales** to remain constant throughout the forecast, at a rate of **51.7%**.

Table 2 – Analyst's Risk Assessment

Low	Medium	High

Source – The Author

Table 2 – Under Armour Market Data

Market Profile	
Closing Price	$18.90
52-Week Price Range	$6.37 -$ 20.31
3-month Avg. Vol. (Mil)	110.95
Shares Outstanding (Mil)	454.09
Market Cap. (Mil)	9,739.05
BV per share	$3.68
Free Float	83.96%
ROE	-11.26%
D/E	59.88%
P/BV	6.57
P/E	-

Source – Thomson Reuters

Table 3 – Under Armour FY2021 Results

FY 2021E	
Revenue (in thousands)	$4 698 400
COGS	$2 430 301
EBITDA	$304 784
EBITDA Margin	6,49%
EBIT	$131 551
EBIT Margin	2,80%
Net Income	($39 657)

Source – The Author

Table 4 – Under Armour FY2021 Valuation

Valuation	
DCF (FCFF)	$ 9,62
Downside Potential	*49,11%*
APV	$ 10,20
Downside Potential	*46,04%*
EV/EBIT	$ 8,11
EV/EBITDA	$ 15,64
Average	$ 11,88
Downside Potential	*37,16%*

Source – The Author

2. Company and Business Description

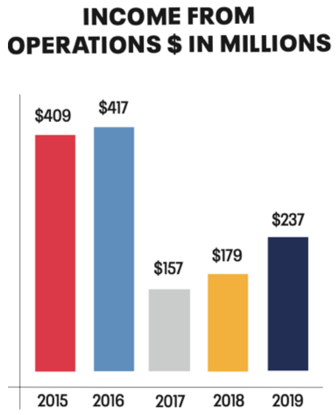
Under Armour is a **sports apparel** and **footwear company** headquartered in Baltimore, USA. **Founded** in **1996** by **Kevin Plank**, Under Armour, appeared to solve a simple, but not easy problem. Kevin a Plank, a former University of Maryland American football player, felt the need to change his sweat t-shirt (used under the armor of American football players) quite often. Therefore, Under Armour was created to introduce a solution in the market: a slim fit t-shit made of synthetic fabrics.

Figure 2 – Under Armour's Logo

Source – The Author

Under Armour truly was a pioneer in the industry on inner garments, changing the way athletes dress forever. Major competing brands such as Nike and Adidas, would soon follow in UAA's footsteps and create their own moisture-wicking apparel. The company got their big break when their products were featured in Hollywood movies such as *"Any Given Sunday" (1999*), which directly contributed to its growth and brand awareness. One very curious fact about the company is that Kevin Plank, Founder and now Executive Chairman, opted to use the British spelling "armor" in the company's name as the toll-free vanity number was still available for that version. Under Armour went public on the 18th November, 2005, less than 10 years after being formed. It was the first US- based public offering to double its IPO on the first day of trading in five years.

Figure 3 – Under Armour's Income from Operations

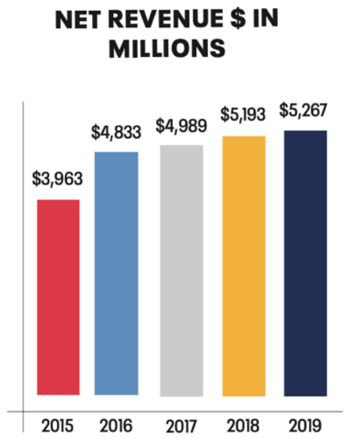


Source – Company Data

Today, the company designs, develops and markets product offerings consisting of **apparel, footwear** and **accessories** for men, women, and youth. UAA's prides itself of offering products in a variety of styles and fits, intended to enhance comfort and mobility, regulate body temperature and improve performance, regardless of weather conditions. Under Armour currently has approximately **16,400 employees**, including 11,300 in their brand and factory house stores and approximately 1,500 their distribution facilities. As of December 31, 2019, Under Armour had **19 brand house stores** in **North America**.

After completely restructuring its business model in 2017, Under Armour's income from operations drastically decreased, causing the company to experience a steep deceleration in growth. By **FY2019** Under Armour's **revenues** had **plateaued**, only experiencing **1.4% growth YoY,** see ***Figure 4***. In **2020**, due to economic effects of the **pandemic Covid-19**, Under Armour saw its **revenues decrease** a whopping **15% YoY**.

Figure 4 – Under Armour's Net Revenues



Source – Company Data

Nonetheless, over the years, Under Armour has invested a lot in brand awareness and sponsorship deals. The company is an official sponsor of world-renowned athletes such as: Michael Phelps (swimmer and greatest Olympian of all time); Tom Brady (NFL); Stephen Curry (NBA); and Gisele Bündchen (model) among others. Furthermore, through sponsorship deals with sports leagues and football clubs and social media influencers, the company has increased its social media presence and exposure.

Figure 5 – Under Armour Marketing Campaign

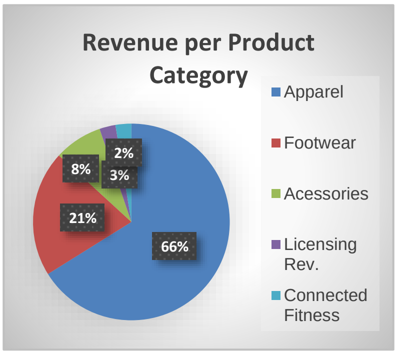
Source – Company Data

Under Armour discriminates its business by product category, geographical region and distribution channel.

Revenues by Product Category

Under Armour's revenues are divided for 5 big categories: **Apparel** (**66**% of total revenues); **Footwear** (**21**% of total revenues); **Accessories** (**8**% of total revenues); **Licensing** revenues (3% of total revenues); and **Connected** fitness (**3**% of total revenues), as visible in ***Figure 6***. Despite Under Armour's concerted efforts to diversify its revenues throughout all its categories – for instance in 2015 the company launched a massive sneaker (footwear) campaign after one of its athletes, Stephen Curry, won an NBA championship – it still is very top heavy, relying a lot on apparel revenues. Revenues provided by the **apparel** category represent **$3.470M.**

Figure 6 – Under Armour Revenues per Product Category

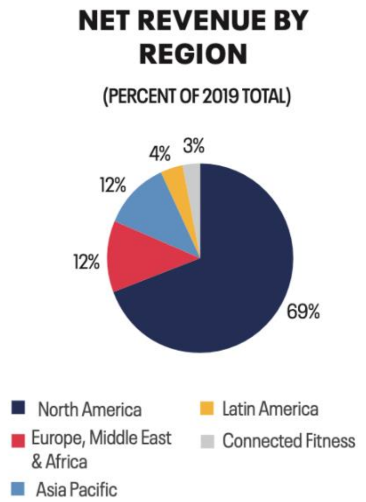


Source – Company Data; The Author

Revenues by Region

Under Armour, a global company, has its operations spread out throughout the world, see ***Figure 7***. Therefore, Under Armour's revenues are divided by: **North America** (**69**% of total revenues); **EMEA** (**12%** of total revenues); **Asia Pacific** (**12%** of total revenues); **Latin America** (**4%** of total revenues); **Connected Fitness** (**3%** of total revenues). The Connected Fitness category represents subscription-based services clients can purchase (*eg*. app *MyFitnessPall*) to share and obtain workouts created by Under Armour.

Figure 7 – Under Armour Revenue By Region



Source – Company Data; The Author

- **Region Analysis**

The reason why the company's revenue is distributed this way is due to the fact that the company is North American, therefore primarily marketing and relating to the American consumer public, through sports such as American football and the National Basketball League (NBA). In Europe and Latin America the number one sport in terms of popularity is soccer, thus consumers do not directly relating to the company's products and marketing.

Table 5 – Historical Revenue by Region

(In thousands)	Year Ended December 31, 2019	2018	2017
Net revenues			
North America	$ 3,658,353	$ 3,735,293	$ 3,801,056
EMEA	621,137	591,057	471,560
Asia-Pacific	636,343	557,431	430,972
Latin America	196,132	190,795	181,317
Connected Fitness	136,378	120,357	101,870
Corporate Other (1)	18,789	(1,748)	2,469
Total net revenues	$ 5,267,132	$ 5,193,185	$ 4,989,244

Source – Company Data; The Author

After analyzing of *Table 6* we can see that total revenues have actually been decreasing **(FY2017-20)** in **North America** at a **CAGR** of **-3.75%.** This is problematic as **Under Armour** has been **losing market share** in its biggest market to direct competitors. Upon further analysis of the table, it's also possible to infer that revenues in the **EMEA** area have been growing at a **CAGR** of **32%** (FY2017-19). Under Armour has been highly invested in this market for the past 5 years, sponsoring Premier League club *Tottenham Hotspur*, and several European soccer players. However, the overall revenue is still very distant from the figure obtained in North America. The **Latin American** revenue has been growing at a **CAGR** of **8%** (FY2017-20), a low figure, for reasons stated above. At last revenues in the **Asia-Pac**ific market have been growing at a **CAGR** of **48%** (FY2017-20), a very impressive figure, already surpassing the EMEA's revenues. This is possible because Under Armour identified this particular

Table 6 – Historical Revenue CAGR by Region

Revenue Growth by Region (FY2017-19)	
Region	**CAGR**
North America	-3,75%
EMEA	32,00%
Asia-Pacific	48,00%
Latin America	8,00%
Connected Fitness	661,00%

Source – Company Data; The Author

market as their big next step. Not only is the company developing synergies with local manufacturers and wholesale customers, but it's also investing in basketball marketing as the sport's popularity is growing at a high rate in the Asian market.

Revenues by Distribution Channel

Under Armour's revenues are generated through wholesale, direct-to-consumer, licensing and connected fitness, see ***Figure 8***.

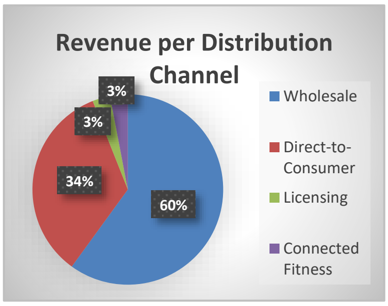
Wholesale, representing **60%** of total revenues, is the company's main source of revenue. Most of the company's sales are generated through wholesale channels, which include national and regional sporting goods chains, department store chains, among others. While the company is way too reliant on wholesale, company data states that **no costumer accounted for more than 10%** of their net revenues in 2019.

Direct-to-consumer sales, representing **34%** of total revenues, are generated through the company's **brand and factory house stores** and **e-commerce** website. As of 2019 the company had 169 factory house stores in North America.

Licensing sales, representing **3%** of total revenues, take place in various countries where the company doesn't have direct sales operations, selling their products to independent distributors and engaging licensees interested in obtaining the rights to sell Under Armour's products.

Connect Fitness sales, representing **3%** of total revenues, are generated through digital fitness subscriptions, along with digital advertising revenue obtained through the company's apps and platforms (such as: *MapMyFitness, MyFitnessPal and Endomondo*). However, this source of revenue is expected to significantly decrease as Under Armour has sold *MyFitnessPal* in 2020 for $345M and will discontinue *Endomondo* by the end of 2021.

Figure 8 –Revenue per Distribution Channel



Source – Company Data; The Author

Figure 9 – Committee Composition

Source – Company Data; The Author

Company Strategy

Under Armour's mission is, in the company's words, "*To make all athletes better through passion, design and the relentless pursuit of innovation*". The company plans to reinvest and restructure its operational capabilities, while at the same time optimize its high-return investments in the current markets, partnerships, and sponsorships it has already established. It's noteworthy that the company plans to cut ties with some wholesale retailers, primarily in North America, starting in the back half of 2021. It has plans to pull out of around 2,000 partner stores, being left with around 10,000 partner stores by the end of 2022. The organization plans to shift focus to their online / e-commerce platform.

Table 7 – Board of Directors Composition

		AUDIT COMMITTEE	HUMAN CAPITAL AND COMPENSATION COMMITTEE	CORPORATE GOVERNANCE & SUSTAINABILITY COMMITTEE	FINANCE & CAPITAL PLANNING COMMITTEE
Kevin A. Plank	★				
Patrik Frisk	M				
George W. Bodenheimer	I		👥	👥	
Douglas E. Coltharp	I	👤			👤
Jerri L. DeVard	I		👥	👥	
Mohamed El-Erian	I	👥			👥
Karen W. Katz	I	👥			👥
Wes Moore	I			👥	
Eric T. Olson	I			👤	
Harvey L. Sanders	I		👤		

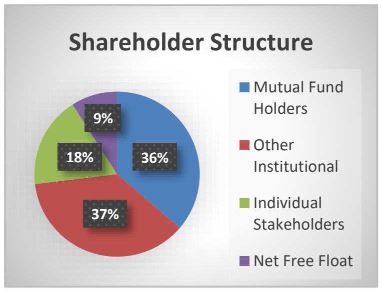
Source – Company Data; The Author

Product for Segments is Under Armour's main goal. By constantly renewing and innovating its' footwear and apparel lines, the company hopes to be fully present in 3 different market segments: **casual athleisure enthusiast** costumer with an active lifestyle; **recreational athletes** who want to extract the most out of their gear; and **professional athletes**. The main strategy used by the company is to continue to recognize industry trends and to design product that are both functional and stylish before their competitors do so. Regarding their products. Under Armour strives to focus on **innovation**, **technology**, and **design**.

Pricing Strategy: Under Armour offers similar quality products at around the same prices as their industry competitors, such as Nike Inc. or Adidas AG. Prices tend to be similar in the North American market, but tend to slightly lower in overseas markets, as Under Armour's brand power is not as strong outside the US.

Advertising and Marketing Strategy: Under Armour's marketing ethos is "*The only way is through*", see ***Figure 5***. Therefore, as customers want to buy products that are perceived to be cutting edge and disruptive as well as endorsed by their favorite celebrities and athletes, Under Armour intends to not only retain but also expand their roster of sponsored athletes and celebrities, such as Michael Phelps, Tom Brady, Stephen Curry, Gisele Bündchen, Dwayne "The Rock" Johnson among many others.

Figure 10 – Shareholder Structure



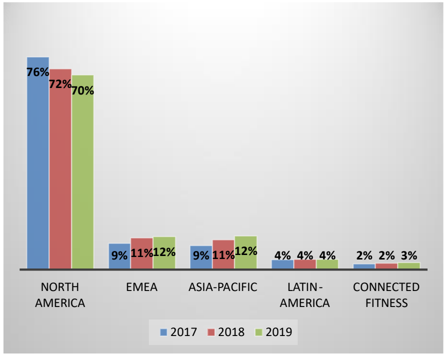
Source – Company Data; The Author

Management and Corporate Governance

Under Armour's governance system falls in line with the **Anglo-Saxon Model**, which is based on a board of directors, compensation committee, executive committee, corporate governance committee and audit committee. All committee members must meet independent and eligibility requirements imposed by the exchange standards of the **NYSE**: UAA. The company does not currently pay a dividend to its shareholders.

Under Armour has three types of Common Stock. **Class A Common Stock** (with an undetermined number of beneficial owners) holds the right of one vote per share. **Class B Common Stock** is only held by the founder and current **Executive Chairman of the Board**, Kevin Plank, which aren't traded publicly and confer a number of 10 votes per share to him. Moreover, the now Executive Chairman, **Kevin Plank**, controls **67% of the company's voting rights**. **Class C Common Stock** garner no voting rights.

Figure 11 – Proportion of Revenues by Region 2017-2019 (in percentage)



Source – Company Data; The Author

The highest decision-making bodies and governing of Under Armour are the **General Shareholders' Meeting**, which represents all shareholders, and the **Board of Directors (BoD)**. The BoD, which is elected by the shareholders, is the ultimate decision-making body of the company, except with respect to matters reserved to the shareholders. The BoD selects the Chief Executive Officer and certain members of the executive management team, who are in turn charged with directing the company's business.

There are currently four standing Committees of the Board of Directors: Audit; Compensation; Corporate Governance and Sustainability; and Finance and Capital Planning.

⇒ **Executive Chairman of the Board** – Kevin A. Plank (co-founder)

⇒ **Board of Directors** – composed of 9 members, selected by the shareholders

⇒ **Executive Management** Team – composed of 8 members selected by the board

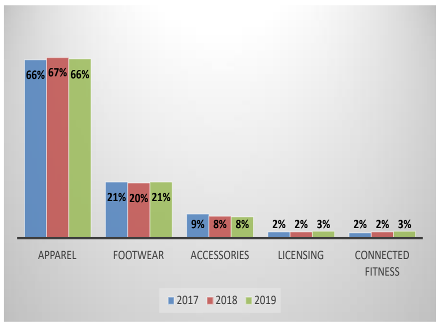
⇒ **Audit Commission** - This is the body responsible for guaranteeing regulatory compliance, financial transparency and assessing risks that may affect the company. Consists of 3 members.

⇒ **Compensation Commission** – Approves, implements and administers Under Armour's compensation plans, policies and programs. It also oversees the company's key human capital management strategies and programs. Consists of 3 members

⇒ **Corporate Governance & Sustainability** – To identify qualified individuals to become members of Under Armour's BoD. To oversee the company's significant strategies, programs and policies relating to sustainability. Composed by 4 members.

⇒ **Finance & Capital Planning** – Assists the BoD in overseeing the financial and capital investment policies and planning. Composed by 3 members

Figure 12 – Proportion of Revenues by Product Category 2017-2019 (in percentage)



Source – Company Data; The Author

Sustainability Policy

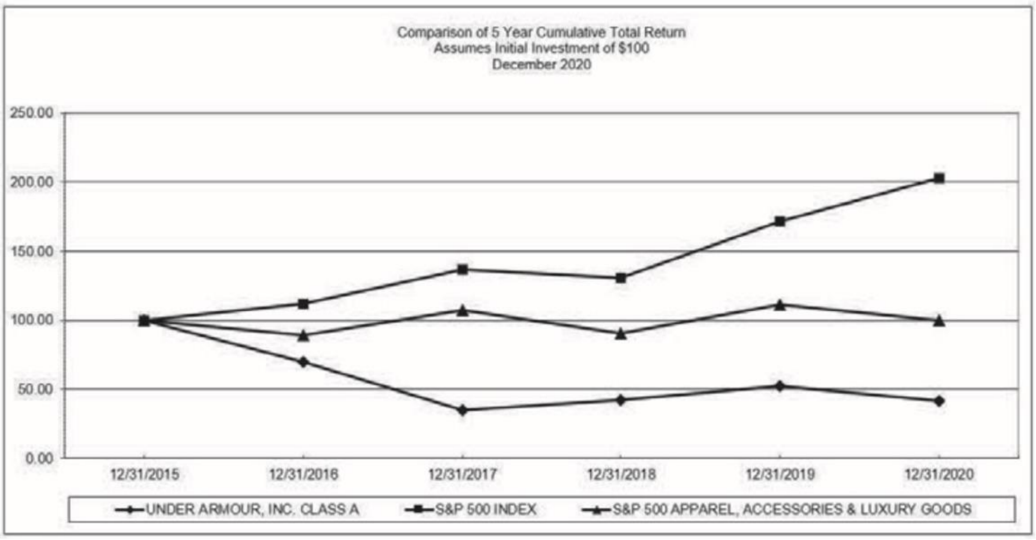
Under Armour's sustainability ethos is clear: "the best performance imaginable on the cleanest Earth possible". At the leadership level, Under Armour has a Sustainability Council that meets regularly. This cross-functional committee comprises senior and operationally responsible leaders, whose responsibilities include striving to incorporate the results of Under Armour's sustainability program and related due diligence efforts into business processes, while helping to drive operational improvements. Since joining the **Sustainable Apparel Coalition (SAC)** in 2016, Under Armour has asked key factory partners to annually assess their operations with the SAC's Facilities **Environmental Module (FEM)**. This tool outlines the best practices and gives the company's manufacturers clear guidance for improvement.

On the manufacturing and operating side of things, Under Armour strives to reduce its packaging environmental impacts while ensuring the company doesn't compromise the quality of their customers' experience. The company has not only **reduced product plastic bag packaging use and labelling**, but also revised their specifications for **corrugated boxes worldwide**, and work with suppliers to ensure that, when possible, their cartons are made with **recycled content and use minimal fiber**.

Historical Stock Performance

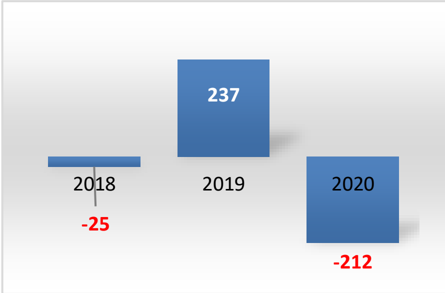
The stock performance graph below compares **cumulative total return** on **Under Armour**, Inc. Class A Common Stock to the cumulative total return of the **S&P 500 Index (basic)**, and the **S&P 500 Apparel, Accessories and Luxury Goods** Index from December 21, 2015, through December 31, 2020. The graph assumes **an initial investment of $100** in Under Armour and each index as of December 31, 2015, and reinvestment of any dividends. The performance shown on the graph below is not intended to forecast or be indicative of possible future performance of Under Armour's common stock. It was used here only to illustrate the recent past returns of Under Armour's stock performance.

Figure 27 – Comparison of 5Y Cumulative Total Return Assumes Initial Investment of $100 December 2020



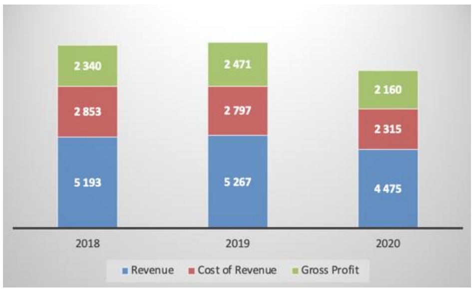
Source – Company Data; The Author

Figure 13 – Historical Operating Income *$ in Millions*



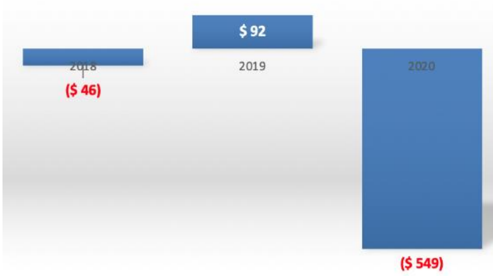
Source – Company Data; The Author

Figure 14 – Historical Revenue, Cost of Revenue and Gross Profit *$ in Millions*



Source – Company Data; The Author

Figure 15 – Historical Net Income *$ in Millions*



Source – Company Data; The Author

Historical Financial Analysis

As previously mentioned Under Armour's revenue is distributed by four different **product categories**: **apparel**; **footwear**; **accessories**; **licensing** and **connected fitness**. **Geographically**, the revenue is obtained in 5 different regions: **North America**; **EMEA**; **Asia-Pacific**; **Latin America** and **Connected Fitness**, see *Figure 11* and *12*.

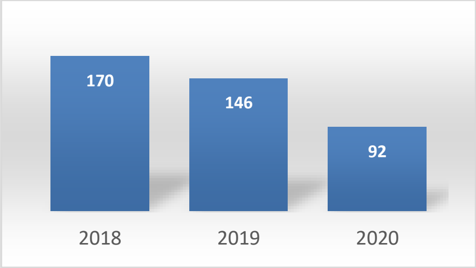
The **main region** that generates revenues for Under Armour is **North America**. Between FY2017 and FY2019, the North American market share decreased from 76% to 70% (see *Figure 11*). The **main product category** in terms of revenues is **Apparel**, having stayed constant at **66%** of **total revenues** between FY2017 and FY2019.

Over the last 3 years, Under Armour's **revenues** decreased from $5,193 millions to $4,475 millions, representing a **decrease rate of 13.84%**. It is important denote that by 2019, Under Armour was already experiencing a very low growth rate of revenues, due to business being in a mature phase, experiencing a YoY revenue growth rate in 2019 of 1.4%. In **2020**, the **significant drop of total revenues** was due to the pandemic Covid-19, as the company's biggest customer are wholesale distributors, who had to close doors, thus stopping purchases, and canceling existing orders, see *Figure 14*.

Operating income, already -$25 million in FY2018, decreased to -$212 million in FY2020, see Figure 13. As a percentage of revenues, EBIT decreased from -0.48% in FY2018 to -0.26% in FY2020.

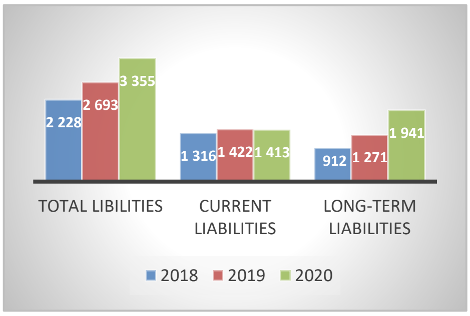
Regarding **gross profit margin**, it increased between FY2018 and FY2020. In FY2018 the gross profit margin equaled 45.07% and 48.27% in FY2020, representing $2,340 millions in FY2018 and $2,160 in FY2020 of total sales, respectively. Despite Under Armour's total sales having decreased, the company managed to be more efficient in the production process and reduce the weight of the cost of sales.

Figure 16 – Historical CAPEX *$ in Millions*



Source – Company Data; The Author

Figure 17 – Historical Total Liabilities, Current Liabilities and Long-Term Liabilities *$ in Millions*

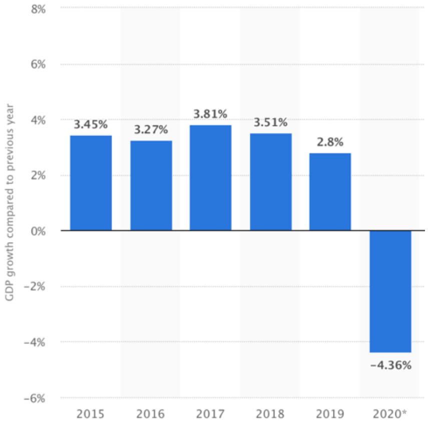


Source – Company Data; The Author

During Q12020, the whole world was hit by the Covid-19 pandemic, which caused a major global shut down for most of the first and second quarters of 2020. After that, local governments have been intermittently closing and opening their countries based on policies they deem appropriate. The Covid-19 pandemic caused the world's economy to literally stay at a standstill, as people were ordered to remain home and social distance. As one can see in *Figure 14*, Under Armour's revenue growth rate was already very dim, at 1.4% YoY in 2019. However, the pandemic caused Under Armour's revenues to decrease 15% YoY, in FY2020. Furthermore, it was not only Under Armour's revenues that decreased, but the company also experienced significant losses in its realized losses of forex currencies.

For the reasons stated above, **net income** decreased from -$46 million in FY2018 to -$549 million in FY2020, see *Figure 15.*

Figure 18 – Historical World Real GDP Growth YoY



Source – *Statista*; The Author

Under Armour's **working capital** has been decreasing between FY2018 and FY2020. This decrease is primarily due to the decrease in **total current assets**, from $2,160 million to $1,778, in FY2018 and FY2020, respectively. On the other hand, **total current liabilities** stayed relatively constant during the same period, oscillating between $1,244 million to 1,332 million, respectively. The **decrease in total current assets** is justified by the fact that Under Armour rearranged its stock inventory, finding ways to liquidate some of it, creating a bigger cash position and, consequently, lower positions of accounts receivable and inventory. Under Armour's **net working capital (NWC)** decreased from $916 million in FY2018 to $447 million in FY2020, for the reasons stated above. See *Table 8*.

Figure 19 – *Adidas AG* logo

Source – *Adidas Ag;* The Author

Table 8 – Historical Working and Net Working Capital, *in thousands*

Net Working Capital			
	FY 2018	FY 2019	FY 2020
Accounts receivable	$652 546	$708 714	$527 340
Inventory	$1 019 496	$892 258	$895 974
Prepaid Expenses & Other current Assets	$364 183	$313 165	$282 300
Other non-current assets	$123 819	$88 341	$72 876
Total Current Assets	**$2 160 044**	**$2 002 478**	**$1 778 490**
Acounts payable	$560 884	$618 194	$575 954
Accrued expenses & other liabilities	$340 415	$374 694	$378 859
Customer refund liability	$301 421	$219 424	$214 128
Operating leases liability	$0	$125 900	$162 561
Income taxes payble and receivable	$41 051	$18 862	$257 224
Total Current Liabilities	**$1 243 771**	**$1 357 074**	**$1 331 502**
Net Working Capital	**$916 273**	**$645 404**	**$446 988**
Net Working Capital Variation	**$309 254**	**$270 869**	**$198 416**

Source – Company Data; The Author

Figure 20 – *Adidas* Historical Total Revenues

Source – *Adidas Ag;* The Author

Investing activities decreased from FY2018 to FY2020, from $202 million to -$66 million, respectively. As present in *Figure 16*, the **CAPEX** has been consistently lowering each year, as Under Armour has been devesting from retail stores and physical points of sale, and shifting more towards its ecommerce operation, especially during this pandemic. It's also noteworthy that in 2020 Under Armour sold its proprietary app *MyFitnessPal*, for which it already registered a cashflow of $199 million. This divestment in the business will directly impact the growth, or lack thereof, of future revenues.

Total liabilities have increased consistently between FY2018 and FY2020, from $2,228 million to $3,355 million, respectively. This was due to a heavy increase in long-term liabilities, as in 2020 Under Armour acquired around $800 million in long-term debt proceeds, directly increasing its long-term liabilities from $912 million in FY2018 to $1,941 million FY2020, respectively (see *Figure 17*).

Figure 21 – Nike, Inc. logo

Source – Nike, Inc.*;* The Author

3. Industry Overview

The **global footwear industry** is comprised by part of the clothing and apparel industry, which in turn is comprised luxury and athletic footwear, sneakers, sport-performance shoes as well as other related goods. Footwear, and sneakers more specifically, have turned from everyday walking commodities, into a status icon and fashion statement for consumers. The industry is divided into two categories of products: type of shoe; and materials used.

- **Type**: athletic and non-athletic footwear
- **Materials**: leather and non-leather footwear

Under Armour operates in the athletic and non-athletic footwear industry, manufacturing footwear athletes and non-athletes use to perform their physical activities and sports, while also producing non-athletic footwear their customers use daily, whether that is at work, in school or while going about their normal life. According to data from *Statista*

(2019), the **USA** had the **largest footwear market in terms of revenue, amassing** close to **80 billion U.S. dollars**.

The **key drivers** of the footwear industry are: the **product design; brand power; athleisure trend**.

In today's world, footwear retailers see their products as more than just their core function. That's why it is so critical for companies to pay attention to their **product design** as customers envision their **footwear products as fashion statements as much as a performing tool**. Therefore, brands assume their products to have a short life cycle. On the other hand, consumers feel the need to look for unique products who help them perform to the best of their abilities, while at the same time making a statement.

Other very critical driver of the industry is **brand awareness** and power on the customers' minds. In the footwear industry, customers are willing to pay more for products of brands that resonate with them, whether that be because of their sponsored favorite athletes or because of great marketing campaigns. Consequently, **brand preferences** and **product quality** are valued higher by the consumer than overall retail price. Of course, this shift in demand is very much caused by what the consumer sees on social media of key influencing people in their life, such as family, social media "influencers", athletes, and celebrities.

One trend that's very prominent in today's fashion world is ***athleisure***. Athleisure is the concept that both apparel apparel and footwear can be both used for physical exercise as well as general use. Meaning, consumers began using several sports products as their normal garments, such as: sneakers instead of dress shoes; women's leggings instead of trousers; women's sports bras/tops instead of t-shirts etc.

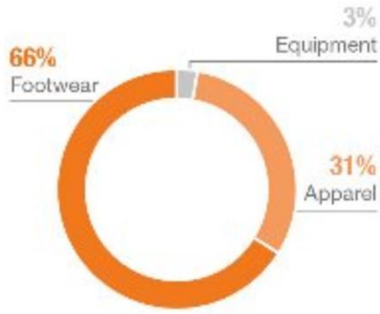
According to BlueWeave Consulting (2019), the global footwear market is expected keep growing during the forecast period 2020-2025, as footwear keeps gaining popularity as a fashion accessory among consumers. There are also several **macroeconomic factors that indirectly affect the footwear industry**, such as the overall health of economies, and Black-Swan events, like the Covid-19 pandemic. Because footwear is still considered to be a normal good, demand goes up when the economy is thriving and goes down when consumers' disposable income decreases. This was the case in 2020, which caused Under Armour's revenues to decrease significantly, 15% YoY in FY2020.

The **world real GDP** has been consistently growing since 2015, growing at a rate of 3.45% in FY2015 YoY, 2.8% in FY2019 and decreasing 4.36% in FY2020, due to the Covid-19 pandemic, see *Figure 18.*

The growth in the industry is explained by different reasons and trends. On the one hand, there's **high sensitivity on the part of the world's population towards the importance of having a healthy and conscientious lifestyle**. Now more than ever, the adoption of healthy practices, hobbies, and overall lifestyle, is a priority to people. This, in addition to the implementation of work from home, will allow people to invest even more in athleisure footwear and apparel, blurring the line between casual and athletic apparel and footwear.

Some other **differentiators** in the footwear industry are: limited fulfilment capabilities, technology and process of heritage systems, and operations which are quickly becoming ineffective with technological advancements. To overcome this challenge upgrades to the warehouse management systems, inventory controls, and development of a great e-commerce platform business model are essential.

Figure 22 – Nike, Inc. Revenue Distribution per Product Category

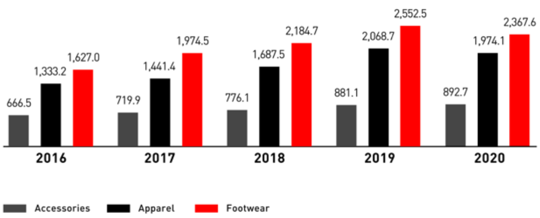


Source – Nike, Inc.*;* The Author

Figure 23 – Puma SE logo

Source – Puma SE*;* The Author

Figure 24 – Puma SE Historical Revenue Distribution per Product Category



Source – Puma SE*;* The Author

Peer Companies

To find the peer companies, the first step was to select, among all the firms in Bloomberg, the ones within the Textiles, Apparel & Luxury Goods. This group was comprised by the following companies: Adidas, Geox, Nike, Puma, Skechers, Under Armour (our company), and VF Corp.

The second step taken was to scrap from the group the companies which either did not have footwear as their main source of revenue or did not have a strong market presence in the Europe and the USA.

Lastly, the third step was to eliminate the organizations with a market capitalization lower than $1 billion. Therefore, we were left with the final pool selection of: Adidas, Nike, Puma and Skechers.

Adidas AG

In 2021, according to *Bloomberg*, Adidas has a market capitalization of €50.077 billion and a total revenue of €19.844 billion in FY2020, representing a decrease of 16% YoY. Adidas Operating Income decreased around 68% - YoY - in FY2020. The Footwear revenues represents approximately 47% of total revenues.

Strategies: One of Adidas' strategies is to foresee and **anticipate market trends**. This company wants to improve their products through product design and performance innovation. The company is also focused on opening more stores worldwide.

Nike, Inc.

In 2021, according to *Bloomberg* Nike has a market capitalization of $210.31 billion. Nike not only is the most valuable brand within the industry, as it's also one of the most recognizable and power-house brands in the whole world. The company is engaged in a strategy of product, digital, manufacturing & engineering, marketing and communication, supply chain and technology. Nike generated total revenues of $38.507 billion in FY2020, 2% lower than the previous year, YoY. Approximately 60% of the total revenue is generated by footwear sales.

Strategies: Nike wants to improve their products through **product design, sustainable manufacturing** while at the same time keep pushing their products at a **technological** level.

Puma SE

This German organization was founded after a family disagreement, which originated both the creation of the Adidas Group and Puma Group, founded by two brothers, respectively. In 2021, according to *Bloomberg*, Puma has a market capitalization of €13.64 billion. The company generated total revenues of €5.234 billion in FY2020, experiencing a 4.9% decrease YoY. Of the total net revenues, 45.20% were generated by Footwear, 37.70% by apparel, and 17.10% by accessories.

Strategies: (1) **marketing** them to strengthen their positions as a sports brand through partnerships with some of the most elite athletes (2) improve their **products** through of **technology and product design**; (3) The **female line items** have been made a priority to the company. The company has made a significant investment in improving the quality and offering of their products to women.

Skechers U.S.A

Skechers designs and manufactures lifestyle and athletic footwear and apparel. In 2021, according to *Bloomberg*, Skechers had a market capitalization of $7.85 billion. This American corporation totaled net revenues of $4.597 billion in FY2020, experiencing a decrease of 11.93% YoY.

Figure 25 – Skechers U.S.A logo

Source – Skechers U.S.A; The Author

Strategies: Reinvestment to **increase operational capabilities**, high-return investments in the current markets it already operates in. Creation of **products for different age target groups**. Create a **pricing strategy** to offer quality products to their customers at lower prices than their competitors.

Under Armour's SWOT Analysis:

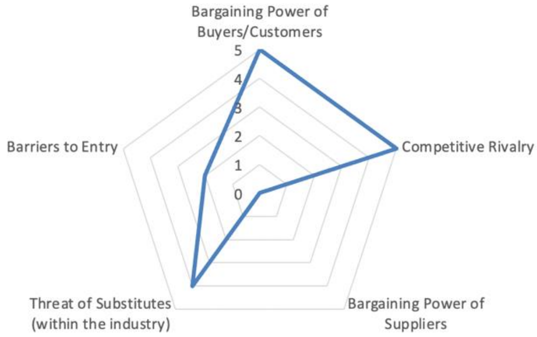
STRENGHTS	WEAKNESSES
- Diversified range of products - Efficient and strong supply chain - Under Armour brand awareness - Sponsorship of key athletes	- High dependance on wholesale customers - Manufacturing in developing countries which are less stable - Highly dependent on customers' perception of what is trendy - Competitor brands have bigger budgets for marketing campaigns - Adidas and Nike sponsor the Tier 1 athletes if the world
OPPORTUNITIES	**THREATS**
- Increase market share in Emerging Markets, Asia and South America - People are becoming more conscious about their lives and daily activities - Social distancing propelled athleisure as people opted for more comfortable clothes for staying home	- Competition is very high due to the presence of a lot of competing players - Counterfeit. products are becoming a real threat to company's revenues - Supplier dominance

Porter's 5 Forces:

Bargaining Power of Buyers (High)

In the Footwear industry, the number of suppliers is very low, when compared to the number of buyers, leading to low switching costs from one brand to another. Product differentiation is very relevant, as in the market there's an infinite number of models to choose from. Nowadays, with the advancements of technology, customers have a lot of information regarding the different characteristics of the shoes available and where they can get the best price/quality ratio. At last, probably the most important factor, is that brand identity is the reason why customers may or may not choose to overpay for a specific sneaker because of brand name and awareness.

Figure 26 – Porter's 5 Forces



Source – Company Data; The Author

Competitive Rivalry (High)

Under Armour operates in an industry composed by a few big players across the world. The Footwear industry has a highly competitive position of its players. In order to gain market share, organizations use brand awareness and sponsorship of world class athletes to stimulate the loyalty of clients.

Furthermore, companies also try to introduce new products to the market to capture more consumers. At last, companies can incentivize buyers to switch from one brand to another through price, discounts and sales.

Bargaining Power of Suppliers (Low)

Under Armour has a large number of suppliers and manufacturers. Some of them are, in fact, very small, which represents a weakness for them as they're not able to dictate the rules of the business deals or exercise much pressure in big companies like Under Armour. Moreover, Footwear companies have the possibility to switch to other suppliers easily, as there is no shortage of them.

Barriers to Entry (High)

In this industry a new joiner will have to go against the perineal "heritage brands", such as *Nike, Adidas* and *Puma*. To compete against likes as those a new brand will have to make huge initial capital investments/expenditures, from the design and marketing of the product, to the production process, to the distribution.

Threats of Substitutes (Moderate)

For the final customers, the switching costs for choosing a product from one brand over another are very low. Buyer inclination to substitute may be a different type of design/sneaker type the customer is looking for. The quality and performance of the product is also very relevant, as not all sneakers perform in the same way, especially the more athletic ones, which are performance oriented

4. Investment Summary

With a **price target of $9.62** per common share for FY2021 and a **downside potential** of **49.11%** from the current stock price of **$18.90**, using the **Discounted Cash Flow Method**, more specifically the **FCFF method**, and a **high-risk assessment**, we issue a **SELL** recommendation. The **APV** also supports this sell recommendation. As for the **relative valuation,** through the multiples method, it is also in line with our recommendation, as we obtained a final **price target** of **$11.88**, representing a **downside potential** of **37.16%**, see *Table 9*.

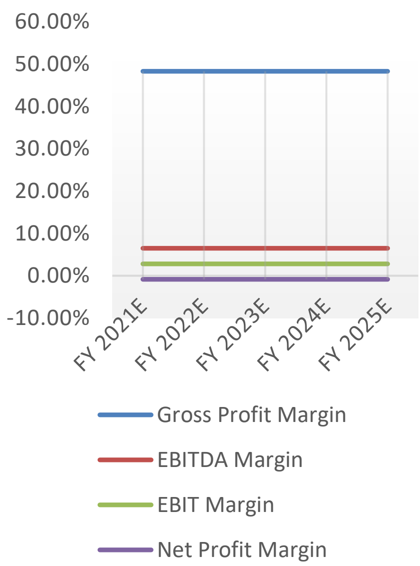
The main economic drivers for this industry are product design; brand power; athleisure trend; product design. Depending on the location of the consumer themselves, each driver's impact may vary accordingly. Under Armour is heavily exposed to economic downturns, as in the case of the Covid-19 pandemic, as well as the change of consumer preferences, in an industry which is primarily dominated by three key players: Adidas, Nike and Puma. For those reasons, the **Terminal Growth rate** used in this valuation becomes fundamental. It is expected to be equal to **2.00%** and was calculated based on the weighted average growth rate for the main regions where the company has sales, the weights represent that specific region's sales.

Table 9 – Valuation Summary

DCF	
Enterprise Value	$ 3 853 293
Price Target FY2021	$ 9,62
APV	
Price Target FY2021	$ 10,20
Multiples Valuation	
EV/EBITDA price target	$ 15,64
EV/EBIT price target	$ 8,11
Average	$ 11,88

Source – The Author

Figure 28 – Forecasted Gross Profit Margin, EBITDA Margin, EBIT Margin and Net Profit Margin (%)

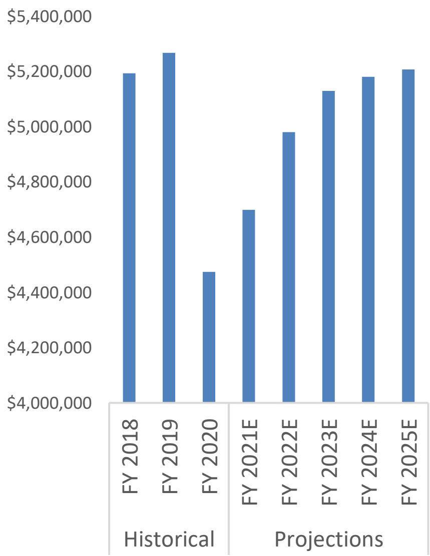


Source – The Author

Valuation Methods

To perform the valuation of Under Armour, two different methodologies were used, a relative one and an absolute one. Regarding the absolute valuation method, we elected to use the **Free Cash Flow to the Firm** and the **Adjusted Present Value**. Regarding the relative valuation method, we used the **Comparable Multiples** approach. For the latter approach, we elected to use the following comparable multiples **EV/EBIT** and **EV/EBITDA**. The comparable multiples method was used as means to test the robustness of the absolute valuation performed. In the end, this approach supports the conclusions derived from the absolute valuation method.

Figure 29 – Forecasted Total Revenue



Source – Company Data; The Author

Financial Position

Keeping in mind Under Armour's past performance and its future outlook, it is expected that revenues increase until FY2025. However, revenue growth is expected to fall in line with the last historical 5 years, meaning we expect the revenue growth to remain very slow and to decelerate with time, as the company enters it mature phase and more companies compete for the same market share. For **FY2025 revenue growth rate** is expected to be **0.5%**. Under Armour's **gross profit margin** represented 46.90% and 48.27% in FY2019 and FY2020, respectively. For our valuation it was assumed to be kept constate throughout the forecast period at 48.27%. **EBITDA Margin** is expected to stay constant at 6.49% until FY2025. **Net profit margin**, while negative, is expected to increase from -12.27% in FY2020, to -0.84% in FY2021, respectively, and remain constant throughout the valuation.

Risk Price Target

The Footwear industry is directly impacted by: **product design; brand awareness; consumer trends *(athleisure)*** and **preferences**; and **disposable income**. Therefore, in order to estimate the impact of the main risks on the price target, we performed a **sensitivity analysis** and a **Monte Carlo simulation**. Both these approaches support our SELL recommendation. According to Monte Carlo simulation the final price target obtained was $9.81.

5. Valuation

To perform the valuation of Under Armour, we used the consolidated financial statements between the period of 2017 and 2020 as well as other information deemed of interest.

Methodology

As stated above in the Investment Summary, two different methodologies were used. The absolute valuation method and the relative one. For the former, we used the primary method of the **DCF** and, secondly, the **APV method**. Through the DCF method we were able to calculate Under Armour's enterprise value. Moreover, the **Dividend Discount Model** was not applicable to Under Armour, as the company doesn't pay or distribute any kind of dividends to its shareholders.

As far as the relative valuation is concerned, we used the **Multiples Approach**, applying both the **EV/EBIT** and **EV/EBITDA** multiples. It is important to explain that we chose **not to use** the **EV/SALES** multiple as it does not portray an accurate representation of Under Armour's business health. Since Under Armour's overall sales are actually not the issue, if we chose to use this multiple to compare Under Armour to its peer companies, it would fare quite well against its peer companies, which would give us an inaccurate picture of the company, driving us toward a price target for the valuation far too high. Since the problem of Under Armour's business is not the volume of sales, which are relatively healthy, but rather the operating structure of the business, which systematically causes it to have a negative operating income. The selection of the peer group of comparable companies is mentioned in chapter 6.

Key Valuation Drivers

Considering the company's last annual reports, the **revenues** were forecasted based on the revenue distribution for each geographical region and for each product category.

For the period FY2017-20, Under Armour's revenues are divided by: **North America** (**69**% of total revenues), registering a CAGR of – 3.75%; **EMEA** (**12%** of total revenues), registering a CAGR of 32.00%; **Asia Pacific** (**12%** of total revenues), registering a CAGR of 48%; **Latin America** (**4%** of total revenues), registering a CAGR of 8%; **Connected Fitness** (**3%** of total revenues), registering a CAGR of 661.00%. However, the last source of revenue is going to be totally erased for the forecasted period, as Under Armour has sold *MyFitnessPal* in 2020 for $345M and will discontinue *Endomondo* by the end of 2021. Moreover, this factor was considered when estimating the rate of revenue growth for the forecasted period. According to Prof. Damodaran's estimations and research (2021), the expected revenue growth rate for the next 2 years is 4.66%. For the next 5 years, Prof. Damodaran expects the revenue growth rate to be 15.84%. Historically, Under Armour has been growing at a lower rate than the industry average, experiencing a YoY growth rate of 3.2%, 4.1% and 1.4%, in FY2017-19, respectively.

Due to the Covid-19 pandemic, Under Armour's revenues decreased 15% in FY2020. Furthermore, considering the ongoing pandemic and the business outlook we have of the company, that it is nearing its mature phase and that revenues are growing, but a decelerating pace, we decided it was best to estimate the revenue growth individually for the forecasted period.

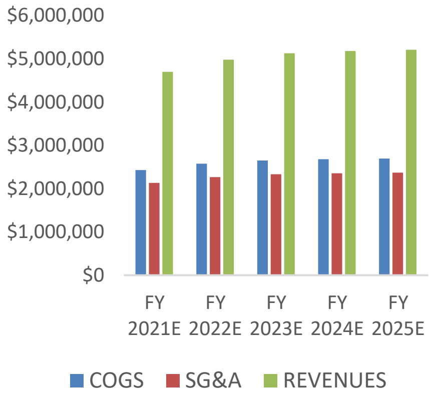
We expect **revenues** to grow **5% YoY** in **FY2021** and **6% YoY** in **FY2022**, as the economy picks up and starts to turnaround, and as vaccines start rolling out and lockdowns come to an end. Afterwards, for the remaining period, we expected revenue growth to decelerate again, following the historical trend pre-Covid 19 pandemic. Thus, we expected a 3% YoY growth in FY2023, 1% YoY growth in FY2024 and 0.5% YoY in FY2025

Cost of Revenue

Under Armour's cost of revenue is comprised by two major categories. The **Cost of Goods Sold** category and **Selling General & Administrative** category. We decided to estimate this category as a constant percentage of total revenues.

Therefore, expect COGS to be 51.7% of total revenues, keeping constant the percentage of the last historical year FY2018. COGS primarily represents of product costs, inbound/outbound freight duty costs, and handling costs to make products floor ready.

Figure 30 – Forecasted COGS, SG&A and Total Revenues



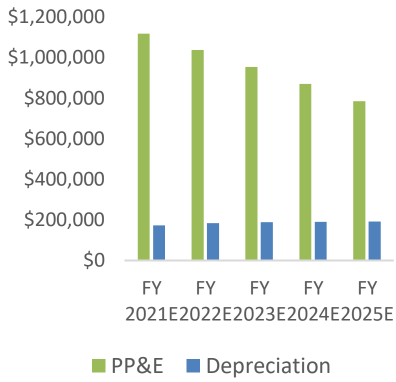
Source – Company Data; The Author

SG&A, on the other hand, represents the costs related to marketing, selling, product innovation and supply chain, and corporate services. SG&A are expected to follow the same pattern as COGS, varying as percentage of total revenues. The average of the last 4 historical years was 45.5% of total revenues. It is expected to remain constant throughout the forecast period.

Net Working Capital

NWC is the **difference between current assets** and **current liabilities**. For the current assets we accounted **accounts receivable, inventory, prepaid expenses & other current assets**. For the current liabilities we accounted the **accounts payable, accrued expenses & other liabilities, customer refund liability, operating leases liability** and **income taxes payable and receivable**. To estimated NWC, we assumed that the both the current assets and liabilities mentioned above would follow a percentage of sales, equal to the average of the three past historical years or, in some cases, equal to the value of the last historical year.

Figure 31 – Forecasted PP&E and Depreciation



Source – Company Data; The Author

Table 10 – Historical and Forecasted Net Working Capital, *in thousands*

Net Working Capital								
	Historical			Forecasted				
	FY 2018	FY 2019	FY 2020	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E
Accounts receivable	$652 546	$708 714	$527 340	$553 707	$586 929	$604 537	$610 583	$613 636
Inventory	$1 019 496	$892 258	$895 974	$940 773	$997 219	$1 027 136	$1 037 407	$1 042 594
Prepaid Expenses & Other current Assets	$364 183	$313 165	$282 300	$296 415	$314 200	$323 626	$326 862	$328 496
Other non-current assets	$123 819	$88 341	$72 876	$72 876	$72 876	$72 876	$72 876	$72 876
Total Current Assets	**$2 160 044**	**$2 002 478**	**$1 778 490**	**$1 863 771**	**$1 971 224**	**$2 028 175**	**$2 047 728**	**$2 057 602**
Acounts payable	$560 884	$618 194	$575 954	$604 752	$641 037	$660 268	$666 871	$670 205
Accrued expenses & other liabilities	$340 415	$374 694	$378 859	$372 687	$395 048	$406 899	$410 968	$413 023
Customer refund liability	$301 421	$219 424	$214 128	$224 834	$238 324	$245 474	$247 929	$249 169
Operating leases liability	$0	$125 900	$162 561	$170 689	$180 930	$186 358	$188 222	$189 163
Income taxes payble and receivable	$41 051	$18 862	$257 224	$46 973	$54 809	$53 821	$46 422	$37 337
Total Current Liabilities	**$1 243 771**	**$1 357 074**	**$1 331 502**	**$1 419 935**	**$1 510 148**	**$1 552 821**	**$1 560 412**	**$1 558 897**
Net Working Capital	**$916 273**	**$645 404**	**$446 988**	**$443 836**	**$461 076**	**$475 354**	**$487 316**	**$498 705**
Net Working Capital Variation	**$309 254**	**$270 869**	**$198 416**	**$3 152**	**($17 240)**	**($14 278)**	**($11 962)**	**($11 389)**

Source – Company Data; The Author

CAPEX and Depreciation & Amortization

Over the last three historical years, the relationship between **CAPEX** and **Revenues** have been **correlated**. Therefore, we assumed CAPEX to be a percentage of revenues, which we equaled to the last historical year and maintained throughout the whole forecast period. Moreover, CAPEX will account for **2.1% of total revenues**. Thus, making the **PP&E** equal to the previous year PP&E minus the current year's depreciation, plus CAPEX (purchase of PP&E for the current year), minus the sale of PP&E for the current year. This method was followed for the whole valuation period. See *Figure 31*.

Table 11 – Discount Rate Assumptions

Discount Rate - Assumptions	
Risk-Free Rate:	1,38%
Equity Risk Premium	5,50%
Cost of Debt	4,71%

Source – The Author; Professor Damodaran (2021)

Discounted Cash Flow Method Valuation

To estimate the price target of Under Armour, we considered the **forecast period** of **2021-2025** with a Terminal Value in 2025, to estimate the value of the company in perpetuity (consult appendix).

Firstly, to calculate the **cost of equity** (**re**) we used the **Capital Asset Pricing Model (CAPM)**. To use this model we had to get **the risk-free rate** (**`rf`**), which we assumed to be the YTM of the 10-year US T-Bill, found in *Bloomberg* (2021), 1.38%. To get the Under Armour's **equity/market risk premium** (**MRP**), because approximately 70% or the company's total revenues are generated in the US market, we decided to follow Damodaran's (2021) estimation for US companies and go with the value of 5.50%

Once more, according to Damodaran's (2021) estimations for US companies in the footwear industry, we found the **levered beta** ($\boldsymbol{\beta_L}$) of 1.21. Afterwards, in order to determine the **unlevered beta** ($\boldsymbol{\beta_u}$) we applied the following formula:

$\boldsymbol{\beta_L = \beta_U \times (1 + D/E) \times (1 - tc)}$ and we got the value of **1.08**. At last, we used the CAPM formula to finally compute the cost of equity: $\boldsymbol{re = rf + (mrp \times \beta_L)}$ We got a value for the cost of equity (re) of **8.02%**.

Regarding the **cost of debt** ($\boldsymbol{rd}$) we decided to stick to the interest rate Under Armour was paying over its long-term debt. Therefore, $\boldsymbol{rd}$ is equal to **4.71%**. To calculate the after-tax cost of debt we used an **effective tax rate** of 30%. See *Table 12*.

Table 12 – Cost of Debt Assumptions

Cost of Debt	
Cost of Debt	4,71%
Effective Tax Rate	30,00%
After-Tax Cost of Debt	3,30%

Source – The Author; Company Data; Professor Damodaran (2021)

Afterwards, we had to calculate Under Armour's weighted equity and debt. The formulas are *E / (E+D)* and *D / (E+D),* respectively. The weighted equity of Under Armour is 89.33% and the weighted debt 10.67%, respectively.

Lastly, after having all the necessary inputs to calculate the **WACC rate**, we applied the formula: $\boldsymbol{WACC = (weight\ of\ equity \times re) + (weight\ of\ debt \times rd \times (1 - t))}$

Our **WACC** rate obtained was **7.52%**, used to discount the company's free cash flows.

To determine the **Terminal Growth rate**, we considered that Under Armour's primary market responsible for its revenue generation is the US market. To be more precise, just this geographic region alone is responsible for more than **two thirds of the company total revenues**. Therefore, according to *Statista* (2021) the expected GDP growth rate for the USA in 2025 is 1.83%. Since other regions such as Asia-Pacific have higher GDP expectancy growth rates, we decided to use a **Terminal Growth rate** of **2.00%**. This value is also an indicator of the adoption of a conservative outlook of the company's future which, has I have stated, is reaching its maturity phase, while operating in an extremely competitive industry.

Figure 32 – Forecasted EPS

Source – Company Data; The Author

The next and final step, after having all inputs required, was to calculate the FCFF for the forecast period, and discount them at the WACC rate. The FCFF was calculated using the following formula: $\boldsymbol{FCFF = EBIT\ (1 - t) + Depreciation - CAPEX - \Delta NWC + \text{Stock-Based Compensation}}$

Table 13 – Free Cash Flow to the Firm Calculation

Under Armour Inc. - Cash Flow Projections	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E
Revenue:	$4 698 400	$4 980 304	$5 129 714	$5 181 011	$5 206 916
EBITDA:	$304 784	$323 071	$332 763	$336 091	$337 771
Operating Income:	$131 551	$139 444	$143 627	$145 064	$145 789
Less: Taxes	($39 465)	($41 833)	($43 088)	($43 519)	($43 737)
NOPAT	$92 086	$97 611	$100 539	$101 545	$102 052
Plus: Depreciation	$173 233	$183 627	$189 136	$191 027	$191 983
Plus: Amortization	$0	$0	$0	$0	$0
Plus: Stock-Based Compensation	$44 174	$46 824	$48 229	$48 711	$48 954
Less Change in Working Capital:	$88 433	$90 214	$42 672	$7 591	($1 515)
Less: Capital Expenditures	($96 906)	($102 720)	($105 801)	($106 859)	($107 394)
Free Cash Flow to the Firm	$301 020	$315 556	$274 775	$242 014	$234 081
Present Value of FCFF	$279 976	$272 977	$221 081	$181 109	$162 926

Source – The Author

Table 14 – Price Target FCFF method

DCF (FCFF) Valuation		
Enterprise Value	$	4 130 618,55
Net Debt	$	513 805,00
Equity Value	$	4 644 423,55
Number of Shares Out.	$	454 089,00
Price Target	$	**9,62**
Share Price (Feb./2021)	$	18,50
Downside potential		**-49,11%**

Source – The Author

Following this method, we got a **price target** at the end of 2021 of **$9.62** per share (see *Table 14)*. This price target represents a **downside** of **49.11%**. It is our opinion that the company is currently **overvalued**. According to our risk assessment we conclude Under Armour presents a **high risk**, thus issuing a final recommendation of **SELL**, see *Table 14.*

Adjusted Present Value

The second model we chose to add to the valuation of Under Armour was the APV method. While, ideally, it is to be expected that Under Armour will decrease its debt along the course of the years, we apply the APV method assuming that Under Armour will be finance solely by equity, in addition to the present value of its fiscal benefits.

It must be taken into the count that this method may not be the most appropriate to forecast this type of company, as Under Armour's interest coverage ratio is negative, meaning the company would not be capable of getting financing in the open market as well as not being able to pay back its debt.

We calculate Pre-tax WACC rate, using the formula $\boldsymbol{ru} = \mathbf{(E/(E{+}D))}{*}\ \boldsymbol{re} + \mathbf{(D/(E{+}D))}{*}\boldsymbol{rd}$. As far as the other necessary inputs, they had already been previously calculated and they can be consulted in *appendix 9.*

Afterwards we calculated the **interest tax shield** (ITS), see *Table 16*.

Table 16 – Interest Tax Shield Calculation, $ i*n thousands*

	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E	TV
FCFF	$301 020	$315 556	$274 775	$242 014	$234 081	$4 328 207
Re(unlevered)	5,96%	5,96%	5,96%	5,96%	5,96%	5,96%
FCFF + EV	$5 695 652	$5 394 632	$5 079 076	$4 804 301	$4 562 287	
PV	$4 171 633	$4 104 809	$4 074 782	$4 075 726	$4 084 660	
Debt Capacity	$196 449	$193 302	$191 888	$191 932	$192 353	
Interest Paid	$9 251	$9 103	$9 036	$9 038	$9 058	
Interest Tax Shield	$2 775	$2 731	$2 711	$2 712	$2 717	

Source – The Author

Table 15 – Price Target APV method

APV Valuation	
EV Unlevered	$4 105 353
PV (Int. Tax Shield)	$11 001
Entity Value	$4 116 355
Net Debt	$513 805
Intrinsic Value of Equity	$4 630 160
# Dilluted Shares	454 089
Price Target	**$10,20**
Share Price (Feb./2021)	$18,50
Downside potential	**-44,88%**

Source – The Author

The results derived from the APV model **are aligned** with our DCF recommendation of **SELL**. The **price target** obtained was **$10.20** per share, which represents a **potential downside** of **46.04%**.

Relative Valuation: Market Multiples Approach

To estimate Under Armour's price target through the relative valuation method, we used the **market multiples approach**, relative to **FY2021**. The ratios considered in this approach were **EV/EBIT** and **EV/EBITDA**.

It is important to explain that we chose **not to use** the **EV/SALES** multiple as it does not portray an accurate representation of Under Armour's business health. Since Under Armour's overall sales are not the issue, had we chosen to use this multiple to compare Under Armour to its peers, it would fare quite well against them. Thus, giving us an inaccurate picture of the company and driving us toward a price target for the valuation far too high. At last, the selection process of the peer companies used in this method is can be found in detail in **Chapter 6**.

The first step we took was to calculate the average and median value of EV/EBIT and EV/EBITDA for FY2021, see *Table 17.* We ended up opting to go with the average values instead of the median, because they were lower, meaning more conservative, and able to give us a better picture of Under Armour's valuation.

We achieved an average forecast for **EV/EBIT** of **23.5** and of **21.4** for **EV/EBITDA**, for **FY2021**, see *Table 17.*

Table 17 – Peers' Multiples FY2021

MULTIPLES OF COMPARABLE FIRMS		
	EV/EBIT	EV/EBITDA
EUROPE		
Adidas	24,64	17,12
Puma	29,52	28,32
Average of Europea	**27,1**	**28,3**
Median of Europeai	**27,1**	**28,3**
North America		
Nike	28,36	25,20
Skechers	12,53	10,53
Average of North Ai	**20,4**	**17,9**
Median of North Ar	**20,4**	**17,9**
Average of all	**23,5**	**21,4**
Median of all	**28,4**	**25,2**
Under Armour (FY 2021 Caculated)		

Source – The Author

Table 18 – Price Target EV/EBIT & EV/EBITDA

FORECASTED UNDER ARMOUR PRICE TARGET FY 2021E		
	EBIT	**EBITDA**
	$131 551	$304 784
	EV/EBIT	**EV/EBITDA**
EV	$3 087 501	$6 507 142
Net Debt	($595 994)	($595 994)
Equity Value	$3 683 495	$7 103 135
# Shares	454 089	454 089
Price Target	**$8,11**	**$15,64**
Downside Potential	**57,08%**	**17,23%**
Average	**$11,88**	**37,16%**

Source – The Author; *Bloomberg*

For the **EV/EBIT** multiple we obtained a price target of **$8.11** for the end of FY2021, representing a **potential downside** of **57.08%,** see *Table 18.*

For the **EV/EBITDA** multiple we obtained a price target of **$15.64** for the end of FY2021, representing a **potential downside** of **17.23%**, see *Table 18*. This price target is considerably higher than EV/EBIT because Under Armour reports very large depreciations.

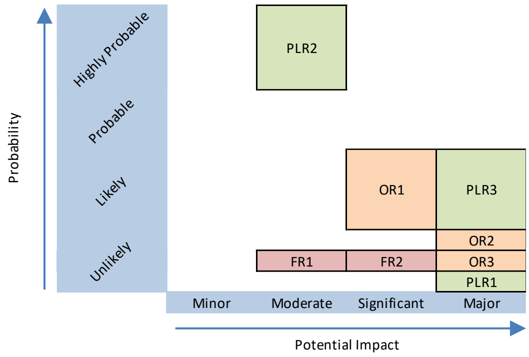
At last, we performed the average of both estimation multiples and obtained **a final price target** of **$11.88**, representing a **potential downside** of **37.16%**. Therefore, we conclude our relative valuation, through the **Market Multiples Approach**, **supports** our DCF Valuation recommendation of **SELL**.

6. Investment Risks

In order to assess and determine the main industry risks towards Under Armour, a risk matrix was created. The creation of said matrix was based and supported on four main areas of risk: Operational Risk; Financial Risk; and Political/Legal Risk.

OPERATIONAL RISKS

Figure 33 – Risk Matrix



Source – The Author

Supply Chain Risk (OR1): The company has ongoing relationships with various third parties, such as endorsed athletes, creative partners, manufacturers, wholesalers, distributors and suppliers of goods and services, among others, thus being exposed to a wide range of supply chain risks. Moreover, injuries to individual endorsed athletes or poor performance on the field may reduce their consumer appeal and eventually result in lower sales and diminished attractiveness of the brand. On the supply side, if suppliers don't meet their obligations in the delivery, tracking and transportation of the products Under Armour's bottom line will be impacted. We believe there's a **medium probability** of **occurrence** with a **moderate to high impact** to the company.

Brand Reputation Risk (OR2): In this industry, **brand image** and **reputation** are the main drivers of revenues and customer loyalty. Therefore, nowadays, the risk of brand damage increases due to the exposure of social networks and media. On the other hand, if Under Armour's endorsed athletes are involved in any kind of controversy on or off the field, there will be a direct connotation and association with the brand. We believe there's a **medium to low probability of occurrence** with a **high impact** to the company.

Consumer Trends (OR3): Under Armour must successfully **anticipate** and **create consumer preferences** and **trends**. Otherwise, if the company isn't able to rapidly adapt and move in the direction of what their customers want, sales will decline and inventories will pile up. We believe there's a **medium to low probability of occurrence** with a **high impact** to the company

FINANCIAL RISKS

Foreign Exchange Rate Risk (FR1): Currency risks for Under Armour are a direct result of multi-currency cash-flows within the company, thus affecting revenue and profitability. This fluctuation can also impact third parties, such as subsidiaries, manufacturers, and wholesale distributors. We believe there's a **medium to low probability of occurrence** with a **moderate impact** for to the company.

Interest Rates (FR2): An increase in interest rates, will limit Under Armour's capacity to borrow more funds and pay back its current and long-term debt Consequently, less resources will be available to allocate to invest in new products and models, which may cause demand and revenues to decrease. We believe there's a **medium to low probability of occurrence** with a **moderate to high impact** to the company.

POLITICAL AND LEGAL RISKS

Political and Legal Framework Risk (PLR1): Political risk inherent to the industry is related to laws and regulation around the world that Under Armour must comply with. They vary from country to country, such as: minimum wage; gender pay gap; hours of labor/week; workers' subsidies etc. We believe there's a **low probability of occurrence** with a **high impact** to the company.

Taxes and Policy Risk (PLR2): Directly impacting companies' bottom line, possible changes in taxes play a huge part in every company's future outlook. Therefore, an increase on the effective tax rate could very well affect net income and EPS. We believe there's **a high probability of occurrence** with a **medium impact** to the company.

Data Privacy Risks (PLR3): As a global organization, Under Armour is subject to various laws and regulations, concerning data protections and privacy of its customers. Non-compliance with regulations, or data leaks, could lead to substantial losses and fines to the company. We believe there's a **medium probability of occurrence** with a **high impact** to the company.

Sensitivity Analysis

Since the DCF model heavily relies on its assumptions to determine the price target, we performed a sensitivity analysis with select variables we considered to have heavy impact on the output price target. Moreover, the variables chosen were the **perpetual growth rate (g)** and **WACC rate**.

In *Table 19* below we can see the direct impact in the price target as both the WACC and perpetual growth rate (g) change simultaneously. In the worst-case scenario, the price target can drop to $6.96 (potential downside of 63.19%) whereas in the best-case scenario, the price target can rise up to $85.92 (potential upside of 354.63%).

Table 19 – Effects of changes in **g** and **WACC** in the valuation's price target

Under Armour Inc. - Sensitivity Analysis WACC - Terminal Growth Rates								
		Discount Rate						
		5,50%	6,00%	6,50%	**7,00%**	**7,49%**	8,00%	8,50%
Terminal Growth Rate	0,0%	$ 10,27	$ 9,49	$ 8,82	$ 8,26	**$ 7,77**	$ 7,34	$ 6,96
	1,0%	$ 11,95	$ 10,85	$ 9,94	$ 9,19	**$ 8,57**	$ 8,01	$ 7,54
	2,0%	**$ 14,59**	**$ 12,89**	**$ 11,56**	**$ 10,50**	$ 9,65	**$ 8,91**	**$ 8,30**
	3,0%	$ 19,35	$ 16,29	$ 14,11	$ 12,47	**$ 11,22**	$ 10,18	$ 9,34
	4,0%	$ 30,44	$ 23,10	$ 18,69	$ 15,75	**$ 13,68**	$ 12,07	$ 10,85
	5,0%	$ 85,92	$ 43,51	$ 29,37	$ 22,30	**$ 18,13**	$ 15,23	$ 13,21

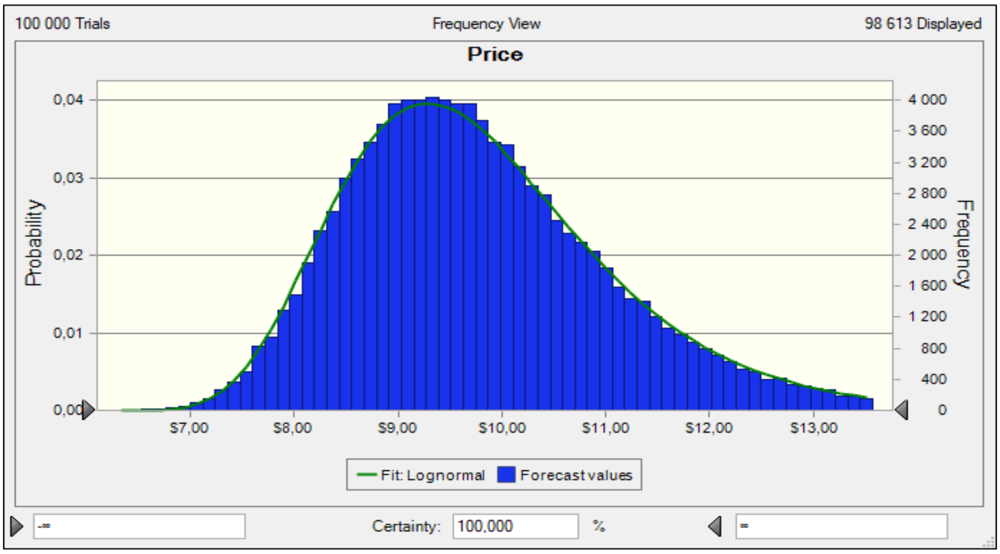
Source – The Author

Monte Carlo Simulation

We also performed a Monte Carlo simulation, ran through the Crystal Ball software, to have a more thorough sensitivity analysis of the price target. This simulation was ran executing 100,000 trials. We assumed a normal distribution, and respective standard deviation, for the inputs we believe to impact Under Armour's price target the most. The inputs tested were the: **WACC rate** of 7.51% (standard deviation of 0.75%); **Tax rate** of

30% (standard deviation of 3%); and **perpetual growth rate** of 2% (standard deviation of 25%).

Figure 34 – Monte Carlo Price Distribution



Source – The Author; Crystal Ball

Table 20 – Monte Carlo Statistics

Statistics	
Trials	100 000
Base Case	$9,62
Mean	$9,81
Median	$9,62
Standard Deviation	$1,34
10th Percentile	
9th Percentile	

Source – The Author; Crystal Ball Simulation

The results show a **mean price** (price target reached) of **$9.81**, with a standard deviation of $1.34, in comparison to the $9.62 obtained through the DCF method. The mean price of the Monte Carlo simulation represents a **potential downside** of **48.10%**, supporting our **SELL** recommendation. The SELL recommendation has a **100%** of being accurate.

Appendices

Appendix 1: Statement of Financial Position (Balance Sheet)

Balance Sheet	Historical				Projections				
	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E
Assets:									
Current Assets:									
Cash & Cash-Equivalents:	$312 483	$557 403	$788 072	$1 517 361	$1 649 728	$1 841 378	$1 956 918	$2 015 766	$2 060 012
Accounts Receivable:	$609 670	$652 546	$708 714	$527 340	$553 707	$586 929	$604 537	$610 583	$613 636
Inventory:	$1 158 548	$1 019 496	$892 258	$895 974	$940 773	$997 219	$1 027 136	$1 037 407	$1 042 594
Prepaid Expenses & other current assets	$256 978	$364 183	$313 165	$282 300	$296 415	$314 200	$323 626	$326 862	$328 496
Total Current Assets:	**$2 337 679**	**$2 593 628**	**$2 702 209**	**$3 222 975**	**$3 440 622**	**$3 739 726**	**$3 912 217**	**$3 990 618**	**$4 044 738**
Long-Term Assets:									
Plants, Property & Equipment:	$885 774	$826 868	$792 148	$1 195 338	$1 119 010	$1 038 103	$954 769	$870 601	$786 012
Operating lease and right of use assets	$0	$0	$591 931	$0	$0	$0	$0	$0	$0
Goodwill:	$555 674	$546 494	$550 178	$502 214	$502 214	$502 214	$502 214	$502 214	$502 214
Intangible Assets:	$46 995	$41 793	$36 345	$13 295	$13 295	$13 295	$13 295	$13 295	$13 295
Deferred income taxes	$82 801	$112 420	$82 379	$29 930	$31 427	$33 312	$34 311	$34 655	$34 828
Other Assets:	$97 444	$123 819	$88 341	$72 876	$72 876	$72 876	$72 876	$72 876	$72 876
Total Assets:	**$4 006 367**	**$4 245 022**	**$4 843 531**	**$5 036 628**	**$5 179 444**	**$5 399 527**	**$5 489 682**	**$5 484 258**	**$5 453 963**
Liabilities & Shareholders' Equity:									
Current Liabilities:									
Revolver (short-term debt)	$125 000	$0	$0	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Accounts Payable:	$561 108	$560 884	$618 194	$575 954	$604 752	$641 037	$660 268	$666 871	$670 205
Accrued Expenses:	$296 841	$340 415	$374 694	$378 859	$372 687	$395 048	$406 899	$410 968	$413 023
Customer Refund Liability	$0	$301 421	$219 424	$214 128	$224 834	$238 324	$245 474	$247 929	$249 169
Operating lease liabilities	$0	$0	$125 900	$162 561	$170 689	$180 930	$186 358	$188 222	$189 163
Current Maturities of long term debt	$27 000	$25 000	$0	$0	$0	$0	$0	$0	$0
Other current liabilities	$50 426	$88 257	$83 797	$81 774	$85 863	$91 014	$93 745	$94 682	$95 156
Total Current Liabilities:	**$1 060 375**	**$1 315 977**	**$1 422 009**	**$1 413 276**	**$1 458 824**	**$1 546 354**	**$1 592 745**	**$1 608 672**	**$1 616 715**
Long-Term Liabilities:									
Long-Term Debt, net of current liabilitie	$765 046	$703 834	$592 687	$1 003 556	$1 053 734	$1 116 958	$1 150 467	$1 161 971	$1 167 781
Operating Lease liabilities	$0	$0	$580 635	$839 414	$881 385	$934 268	$962 296	$971 919	$976 778
Other Long-Term Liabilities:	$162 304	$208 340	$98 113	$98 389	$103 308	$109 507	$112 792	$113 920	$114 490
Total Liabilities:	**$1 987 725**	**$2 228 151**	**$2 693 444**	**$3 354 635**	**$3 497 251**	**$3 707 087**	**$3 818 299**	**$3 856 482**	**$3 875 765**
Shareholders' Equity:									
Common Stock:	$146	$148	$149	$149	$149	$149	$149	$149	$149
Additional Paid-In Capital:	$872 266	$916 628	$973 717	$1 030 806	$1 125 157	$1 235 205	$1 316 943	$1 377 158	$1 431 923
Treasury Stock:	$0	$0	$0	$0	$0	$0	$0	$0	$0
Retained Earnings:	$1 184 441	$1 139 082	$1 226 986	$713 581	$673 924	$631 889	$588 592	$544 862	$500 913
Accumulated Other Comprehensive Inco	($38 211)	($38 987)	($50 765)	($62 543)	($117 038)	($174 803)	($234 300)	($294 393)	($354 786)
Total Shareholders' Equity:	**$2 018 642**	**$2 016 871**	**$2 150 087**	**$1 681 993**	**$1 682 193**	**$1 692 440**	**$1 671 383**	**$1 627 776**	**$1 578 198**
Total Liabilities & SE:	**$4 006 367**	**$4 245 022**	**$4 843 531**	**$5 036 628**	**$5 179 444**	**$5 399 527**	**$5 489 682**	**$5 484 258**	**$5 453 963**

Appendix 2: Income Statement

Income Statement	Historical				Projections				
	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E
Revenue:	$4 989 244	$5 193 185	$5 267 132	$4 474 667	$4 698 400	$4 980 304	$5 129 714	$5 181 011	$5 206 916
Cost of Goods Sold:	$2 737 830	$2 852 714	$2 796 599	$2 314 572	$2 430 301	$2 576 119	$2 653 402	$2 679 936	$2 693 336
Gross Profit:	$2 251 414	$2 340 471	$2 470 533	$2 160 095	$2 268 100	$2 404 186	$2 476 311	$2 501 074	$2 513 580
Operating Expenses:									
Restructuring and impairment charges	$124 049	$183 149	$0	$0	$0	$0	$0	$0	$0
Selling, General & Administrative:	$2 099 522	$2 182 339	$2 233 763	$2 171 934	$2 136 549	$2 264 742	$2 332 684	$2 356 011	$2 367 791
Operating Income	**$27 843**	**($25 017)**	**$236 770**	**($11 839)**	**$131 551**	**$139 444**	**$143 627**	**$145 064**	**$145 789**
Interest Expense	($34 538)	($33 568)	($21 240)	($47 259)	($49 622)	($52 599)	($54 177)	($54 719)	($54 993)
Other expense	($3 614)	($9 203)	($5 688)	($433 446)	($117 980)	($125 059)	($128 811)	($130 099)	($130 750)
Pre-Tax Income:	($10 309)	($67 788)	$209 842	($492 544)	**($36 051)**	**($38 214)**	**($39 361)**	**($39 755)**	**($39 953)**
Income Tax Expense (benefit):	$37 951	($20 552)	$70 024	$49 387	$3 605	$3 821	$3 936	$3 975	$3 995
Income from equity method investment	$0	$934	($47 679)	($7 246)	$0	$0	$0	$0	$0
Net Income:	**($48 260)**	**($46 302)**	**$92 139**	**($549 177)**	**($39 657)**	**($42 036)**	**($43 297)**	**($43 730)**	**($43 949)**
Earnings Per Share (EPS):	**($0,11)**	**($0,10)**	**$0,20**	**($1,21)**	**($0,09)**	**($0,09)**	**($0,10)**	**($0,10)**	**($0,10)**
Diluted Shares Outstanding:	445 815	445 815	450 964	454 089	454 089	454 089	454 089	454 089	454 089
EBIT:	**$27 843**	**($25 017)**	**$236 770**	**($11 839)**	**$131 551**	**$139 444**	**$143 627**	**$145 064**	**$145 789**
EBITDA:	**$201 844**	**$157 005**	**$423 449**	**$165 215**	**$304 784**	**$323 071**	**$332 763**	**$336 091**	**$337 771**
Levered Free Cash Flow:	**($43 879)**	**$457 845**	**$363 229**	**$120 573**	**$211 333**	**$220 487**	**$176 854**	**$143 114**	**$134 686**
Book Value Per Share (BV):	**$3,18**	**$3,20**	**$3,47**	**$2,57**	**$2,57**	**$2,59**	**$2,55**	**$2,45**	**$2,34**

Appendix 3: Cash Flow Statement

Cash Flow Statement	Historical				Projections				
	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E
Operating Activities:									
Net Income:	**($48 260)**	**($46 302)**	**$92 139**	**($549 177)**	**($39 657)**	**($42 036)**	**($43 297)**	**($43 730)**	**($43 949)**
Depreciation & Amortization of PP&E:	$173 747	$181 768	$186 425	$164 984	$173 233	$183 627	$189 136	$191 027	$191 983
Unrealized foreign currency exchange rate (gains) losses	($29 247)	$14 023	($2 073)	($9 295)	($9 760)	($10 345)	($10 656)	($10 762)	($10 816)
Impairment charges	$71 378	$9 893	$39 000	$470 543	$40 950	$43 407	$44 709	$45 156	$45 382
Amortization of Intangibles (bond premium):	$254	$254	$254	$12 070	$0	$0	$0	$0	$0
Stock-Based Compensation:	$39 932	$41 783	$49 618	$42 070	$44 174	$46 824	$48 229	$48 711	$48 954
Deferred Income Tax Expense:	$55 910	($38 544)	$38 132	$43 992	$0	$0	$0	$0	$0
Gain Loss on Sale of Business	$0	$0	$0	($179 318)	$0	$0	$0	$0	$0
Excess tax benefit (loss) from stock-based compensation	($75)	$0	$0	$0	$0	$0	$0	$0	$0
Loss on PP&E:	$2 313	$4 256	$4 640	$3 740	$0	$0	$0	$0	$0
Changes in Reserves and allowances	$108 757	($234 998)	($26 096)	$10 347	$10 864	$11 516	$11 862	$11 980	$12 040
Changes in Operating Assets & Liabilities:									
Accounts Receivable:	($79 106)	$186 834	($45 450)	$167 614	($26 367)	($33 222)	($17 608)	($6 045)	($3 053)
Inventory:	($222 391)	$109 919	$149 519	$15 306	($44 799)	($56 446)	($29 917)	($10 271)	($5 187)
Prepaid Expenses & other current assets	($52 106)	($107 855)	$24 334	$18 603	($14 115)	($17 785)	($9 426)	($3 236)	($1 634)
Other non-current assets	$0	$0	$19 966	$0	$0	$0	$0	$0	$0
Accounts Payable:	$145 695	$26 413	$59 458	($40 673)	$28 798	$36 285	$19 231	$6 603	$3 334
Accrued expenses & other liabilities	$109 823	$134 594	($18 987)	$318 532	$161 464	$199 238	$196 611	$192 496	$191 893
Customer refund liability	$0	$305 141	($80 710)	($19 250)	$10 706	$13 490	$7 150	$2 455	$1 240
Operating lease liabilities	$0	$0	$0	$0	$8 128	$10 241	$5 428	$1 864	$941
Income taxes payable and receivable	($39 164)	$41 051	$18 862	($257 224)	($35 382)	($61 587)	($128 797)	($176 274)	($189 049)
Cash Flow from Operations (1):	**$237 460**	**$628 230**	**$509 031**	**$212 864**	**$308 238**	**$323 207**	**$282 655**	**$249 973**	**$242 080**
Investing Activities:									
Purchases of PP&E (CAPEX)	($281 339)	($170 385)	($145 802)	($92 291)	($96 906)	($102 720)	($105 801)	($106 859)	($107 394)
Sale of PP&E	$0	$11 285	$0	$0	$0	$0	$0	$0	$0
Purchases of PP&E from related parties	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchase of equity method investment	$0	($39 207)	$0	($40 280)	$0	$0	$0	$0	$0
Sale of Business				$198 916	$0	$0	$0	$0	$0
Purchase of available for sale securities	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sales of available for sale securities	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchase of other assets	($1 648)	($4 597)	($1 311)	$0	$0	$0	$0	$0	$0
Cash Flow from Investing (2):	**($282 987)**	**($202 904)**	**($147 113)**	**$66 345**	**($96 906)**	**($102 720)**	**($105 801)**	**($106 859)**	**($107 394)**
Financing Activities:									
Proceeds from long term debt and revolving credit facility	$763 000	$505 000	$25 000	$1 288 753	$50 178	$63 224	$33 509	$11 505	$5 810
Payments on long term debt and revolving credit facility	($665 000)	($695 000)	($162 817)	($800 000)	($49 622)	($52 599)	($54 177)	($54 719)	($54 993)
Employee taxes paid for shares withheld for income taxes	($2 781)	($2 743)	($4 235)	$0	$0	$0	$0	$0	$0
Proceeds from exercise of stock options and other stock is	$11 540	$2 580	$7 472	$4 744	$4 981	$5 280	$5 438	$5 493	$5 520
Other financing fees	$0	$306	$63	$0	$0	$0	$0	$0	$0
Payments of debt financing costs	$0	($11)	($2 553)	($56 644)	($59 476)	($63 045)	($64 936)	($65 585)	($65 913)
Cash divideds paid	$0	$0	$0	$0	$0	$0	$0	$0	$0
Contingent consideration payments for acquisitons	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash Flow from Financing (3):	**$106 759**	**($189 868)**	**($137 070)**	**$436 853**	**($53 939)**	**($47 140)**	**($80 166)**	**($103 307)**	**($109 576)**
Effect of exchange rate changes on cash (4):	**$4 178**	**$12 467**	**$5 100**	**$16 445**	**$17 267**	**$18 303**	**$18 852**	**$19 041**	**$19 136**
Increase / Decrease in Cash (1+2+3+4):	**$65 410**	**$247 925**	**$229 948**	**$732 507**	**$174 661**	**$191 650**	**$115 540**	**$58 848**	**$44 246**
Cash & Cash Equivalents Beginning of period:	**$252 725**	**$309 478**	**$557 403**	**$787 351**	**$1 517 361**	**$1 649 728**	**$1 841 378**	**$1 956 918**	**$2 015 766**
Cash & Cash Equivalents End of period:	**$318 135**	**$557 403**	**$787 351**	**$1 519 858**	**$1 692 022**	**$1 841 378**	**$1 956 918**	**$2 015 766**	**$2 060 012**

Appendix 4: Key Financial Ratios

Key Financial Ratios	Historical				Forecasted				
Liquidity Ratios	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021E**	**FY 2022E**	**FY 2023E**	**FY 2024E**	**FY 2025E**
Current Ratio (x)	2,20	1,97	1,90	2,28	2,36	2,42	2,46	2,48	2,50
Quick Ratio (x)	0,87	0,92	1,05	1,45	1,51	1,57	1,61	1,63	1,65
Cash Ratio (x)	0,29	0,42	0,55	1,07	1,13	1,19	1,23	1,25	1,27
Efficiency Ratios									
Total Assets Turnover (x)	2,49	1,26	1,16	0,91	0,92	0,94	0,94	0,94	0,95
Accounts Receivables Turnover (x)	16,37	8,23	7,74	7,24	8,69	8,73	8,61	8,53	8,51
Accounts Receivable days (collection period)	43,99	45,24	48,44	42,43	42,43	42,43	42,43	42,43	42,43
Inventory Turnover (x)	4,73	2,62	2,93	2,59	2,65	2,66	2,62	2,60	2,59
Days in Inventory (days)	76,17	137,43	123,05	139,07	136,04	135,41	137,33	138,67	139,01
Payables Turnover (x)	9,76	5,09	4,74	3,88	4,12	4,14	4,08	4,04	4,03
Accounts Payables days	73,78	70,78	79,58	89,58	89,58	89,58	89,58	89,58	89,58
Operating Cycle (days)	120,16	182,67	171,49	181,49	178,46	177,84	179,75	181,09	181,44
Cash Cycle (days)	46,38	111,88	91,91	91,91	88,88	88,26	90,17	91,51	91,85
Profitability Ratios									
Gross Profit Margin (%)	45,13%	45,07%	46,90%	48,27%	48,27%	48,27%	48,27%	48,27%	48,27%
EBITDA Margin (%)	4,05%	3,02%	8,04%	3,69%	6,49%	6,49%	6,49%	6,49%	6,49%
EBIT Margin (%)	0,56%	-0,48%	4,50%	-0,26%	2,80%	2,80%	2,80%	2,80%	2,80%
Net Profit Margin (%)	-0,97%	-0,89%	1,75%	-12,27%	-0,84%	-0,84%	-0,84%	-0,84%	-0,84%
ROA (%)	-1,20%	-1,09%	1,90%	-10,90%	-0,77%	-0,78%	-0,79%	-0,80%	-0,81%
ROE (%)	-2,39%	-2,30%	4,29%	-32,65%	-2,36%	-2,48%	-2,59%	-2,69%	-2,78%
EPS (x)	-0,11	-0,10	0,20	-1,21	-0,09	-0,09	-0,10	-0,10	-0,10
Solvency Ratios									
Short-term Debt Ratio (%)	0,14	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Long-term Debt Ratio (%)	0,86	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
Debt to Equity Ratio (x)	0,44	0,35	0,28	0,60	0,63	0,66	0,69	0,71	0,74
Equity Multiplier (x)	1,98	2,10	2,25	2,99	3,08	3,19	3,28	3,37	3,46
Interest Coverage Ratio (x)	-0,81	0,75	-11,15	0,25	-2,65	-2,65	-2,65	-2,65	-2,65
Value Creation and Cash Flow Ratios									
Debt Coverage Ratio	-0,05	-0,07	0,16	-0,55	-0,04	-0,04	-0,04	-0,04	-0,04
Cash to Income	-6,47	-12,04	8,55	-2,76	-41,60	-43,80	-45,20	-46,10	-46,87
Earnings Quality: CFO/(NP+D&A+ΔNWC)		1,77	2,85	0,28	2,41	2,44	3,29	4,87	5,70

Appendix 5: Common-Size Statement of Financial Position

Balance Sheet	Historical				Projections				
	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E
Assets:									
Current Assets:									
Cash & Cash-Equivalents:	7,80%	13,13%	16,27%	30,13%	31,85%	34,10%	35,65%	36,76%	37,77%
Accounts Receivable:	15,22%	15,37%	14,63%	10,47%	10,69%	10,87%	11,01%	11,13%	11,25%
Inventory:	28,92%	24,02%	18,42%	17,79%	18,16%	18,47%	18,71%	18,92%	19,12%
Prepaid Expenses & other current assets	6,41%	8,58%	6,47%	5,60%	5,72%	5,82%	5,90%	5,96%	6,02%
Total Current Assets:	**58,35%**	**61,10%**	**55,79%**	**63,99%**	**66,43%**	**69,26%**	**71,26%**	**72,76%**	**74,16%**
Long-Term Assets:									
Plants, Property & Equipment:	22,11%	19,48%	16,35%	23,73%	21,60%	19,23%	17,39%	15,87%	14,41%
Operating lease and right of use assets	0,00%	0,00%	12,22%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Goodwill:	13,87%	12,87%	11,36%	9,97%	9,70%	9,30%	9,15%	9,16%	9,21%
Intangible Assets:	1,17%	0,98%	0,75%	0,26%	0,26%	0,25%	0,24%	0,24%	0,24%
Deferred income taxes	2,07%	2,65%	1,70%	0,59%	0,61%	0,62%	0,63%	0,63%	0,64%
Other Assets:	2,43%	2,92%	1,82%	1,45%	1,41%	1,35%	1,33%	1,33%	1,34%
Total Assets:	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**
Liabilities & Shareholders' Equity:									
Current Liabilities:									
Revolver (short-term debt)	3,12%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Accounts Payable:	14,01%	13,21%	12,76%	11,44%	11,68%	11,87%	12,03%	12,16%	12,29%
Accrued Expenses:	7,41%	8,02%	7,74%	7,52%	7,20%	7,32%	7,41%	7,49%	7,57%
Customer Refund Liability	0,00%	7,10%	4,53%	4,25%	4,34%	4,41%	4,47%	4,52%	4,57%
Operating lease liabilities	0,00%	0,00%	2,60%	3,23%	3,30%	3,35%	3,39%	3,43%	3,47%
Current Maturities of long term debt	0,67%	0,59%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Other current liabilities	1,26%	2,08%	1,73%	1,62%	1,66%	1,69%	1,71%	1,73%	1,74%
Total Current Liabilities:	**26,47%**	**31,00%**	**29,36%**	**28,06%**	**28,17%**	**28,64%**	**29,01%**	**29,33%**	**29,64%**
Long-Term Liabilities:									
Long-Term Debt, net of current liabilities:	19,10%	16,58%	12,24%	19,93%	20,34%	20,69%	20,96%	21,19%	21,41%
Operating Lease liabilities	0,00%	0,00%	11,99%	16,67%	17,02%	17,30%	17,53%	17,72%	17,91%
Other Long-Term Liabilities:	4,05%	4,91%	2,03%	1,95%	1,99%	2,03%	2,05%	2,08%	2,10%
Total Liabilities:	**49,61%**	**52,49%**	**55,61%**	**66,60%**	**67,52%**	**68,66%**	**69,55%**	**70,32%**	**71,06%**
Shareholders' Equity:									
Common Stock:	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Additional Paid-In Capital:	21,77%	21,59%	20,10%	20,47%	21,72%	22,88%	23,99%	25,11%	26,25%
Treasury Stock:	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Retained Earnings:	29,56%	26,83%	25,33%	14,17%	13,01%	11,70%	10,72%	9,94%	9,18%
Accumulated Other Comprehensive Income:	-0,95%	-0,92%	-1,05%	-1,24%	-2,26%	-3,24%	-4,27%	-5,37%	-6,51%
Total Shareholders' Equity:	**50,39%**	**47,51%**	**44,39%**	**33,40%**	**32,48%**	**31,34%**	**30,45%**	**29,68%**	**28,94%**
Total Liabilities & SE:	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**

Appendix 6: Common-Size Income Statement

Income Statement	Historical				Projections				
	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E
Revenue:	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**
Cost of Goods Sold:	54,87%	54,93%	53,10%	51,73%	51,73%	51,73%	51,73%	51,73%	51,73%
Gross Profit:	**45,13%**	**45,07%**	**46,90%**	**48,27%**	**48,27%**	**48,27%**	**48,27%**	**48,27%**	**48,27%**
Operating Expenses:									
Restructuring and impairment charges	2,49%	3,53%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Selling, General & Administrative:	42,08%	42,02%	42,41%	48,54%	45,47%	45,47%	45,47%	45,47%	45,47%
Operating Income	**0,56%**	**-0,48%**	**4,50%**	**-0,26%**	**2,80%**	**2,80%**	**2,80%**	**2,80%**	**2,80%**
Interest Expense	-0,69%	-0,65%	-0,40%	-1,06%	-1,06%	-1,06%	-1,06%	-1,06%	-1,06%
Other expense	-0,07%	-0,18%	-0,11%	-9,69%	-2,51%	-2,51%	-2,51%	-2,51%	-2,51%
Pre-Tax Income:	**-0,21%**	**-1,31%**	**3,98%**	**-11,01%**	**-0,77%**	**-0,77%**	**-0,77%**	**-0,77%**	**-0,77%**
Income Tax Expense (benefit):	0,76%	-0,40%	1,33%	1,10%	0,08%	0,08%	0,08%	0,08%	0,08%
Income from equity method investment	0,00%	0,02%	-0,91%	-0,16%	0,00%	0,00%	0,00%	0,00%	0,00%
Net Income:	**-0,97%**	**-0,89%**	**1,75%**	**-12,27%**	**-0,84%**	**-0,84%**	**-0,84%**	**-0,84%**	**-0,84%**

Appendix 7: Forecasting Assumptions

Operating Assumptions									
	Historical				Projections				
	2017	2018	2019	2020	2021	2022	2023	2024	2025
	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E
Revenue Growth %:	*3,2%*	*4,1%*	*1,4%*	*-15,0%*	*5,0%*	*6,0%*	*3,0%*	*1,0%*	*0,5%*
COGS % Revenue:	*54,9%*	*54,9%*	*53,1%*	*51,7%*	*51,7%*	*51,7%*	*51,7%*	*51,7%*	*51,7%*
SG&A % Revenue:	*42,1%*	*42,0%*	*42,4%*	*48,5%*	*45,5%*	*45,5%*	*45,5%*	*45,5%*	*45,5%*
Stock-Based Compensation % Revenue:	*0,8%*	*0,8%*	*0,9%*	*0,9%*	*0,9%*	*0,9%*	*0,9%*	*0,9%*	*0,9%*
Depreciation & Amortization % Revenue:	*3,5%*	*3,5%*	*3,5%*	*3,7%*	*3,7%*	*3,7%*	*3,7%*	*3,7%*	*3,7%*
Other expense % Revenue	*0,1%*	*0,2%*	*0,1%*	*9,7%*	*2,5%*	*2,5%*	*2,5%*	*2,5%*	*2,5%*
Debt Interest Rate:	*3,9%*	*4,8%*	*3,6%*	*4,7%*	*4,7%*	*4,7%*	*4,7%*	*4,7%*	*4,7%*
Effective Tax Rate:	*0,0%*	*30,3%*	*33,4%*	*0,0%*	*30,0%*	*30,0%*	*30,0%*	*30,0%*	*30,0%*
Accounts Receivable % Revenue:	*12,2%*	*12,6%*	*13,5%*	*11,8%*	*11,8%*	*11,8%*	*11,8%*	*11,8%*	*11,8%*
Accounts Receivable Days:	44,0	45,2	48,4	42,4	42,4	42,4	42,4	42,4	42,4
Inventory % COGS:	*42,3%*	*35,7%*	*31,9%*	*38,7%*	*38,7%*	*38,7%*	*38,7%*	*38,7%*	*38,7%*
Amortization of Intangibles:	$254	$254	$254	$12 070	$254	$254	$254	$254	$254
Prepaid expenses as % of COGS	9,39%	12,77%	11,20%	12,20%	12,20%	12,20%	12,20%	12,20%	12,20%
Accounts Payable % COGS:	*20,5%*	*19,7%*	*22,1%*	*24,9%*	*24,9%*	*24,9%*	*24,9%*	*24,9%*	*24,9%*
Accounts Payable Days:	73,8	70,8	79,6	89,6	89,6	89,6	89,6	89,6	89,6
Accrued Expenses % Operating Expenses:	*13,3%*	*14,4%*	*16,8%*	*17,4%*	*17,4%*	*17,4%*	*17,4%*	*17,4%*	*17,4%*
Customer refund liabilities % Revenues	*0,0%*	*5,8%*	*4,2%*	*4,8%*	*4,8%*	*4,8%*	*4,8%*	*4,8%*	*4,8%*
CapEx % Revenue:	*5,6%*	*3,3%*	*2,8%*	*2,1%*	*2,1%*	*2,1%*	*2,1%*	*2,1%*	*2,1%*

Appendix 8: Net Working Capital

Net Working Capital								
	Historical			Forecasted				
	FY 2018	FY 2019	FY 2020	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E
Accounts receivable	$652 546	$708 714	$527 340	$553 707	$586 929	$604 537	$610 583	$613 636
Inventory	$1 019 496	$892 258	$895 974	$940 773	$997 219	$1 027 136	$1 037 407	$1 042 594
Prepaid Expenses & Other current Assets	$364 183	$313 165	$282 300	$296 415	$314 200	$323 626	$326 862	$328 496
Other non-current assets	$123 819	$88 341	$72 876	$72 876	$72 876	$72 876	$72 876	$72 876
Total Current Assets	**$2 160 044**	**$2 002 478**	**$1 778 490**	**$1 863 771**	**$1 971 224**	**$2 028 175**	**$2 047 728**	**$2 057 602**
Acounts payable	$560 884	$618 194	$575 954	$604 752	$641 037	$660 268	$666 871	$670 205
Accrued expenses & other liabilities	$340 415	$374 694	$378 859	$372 687	$395 048	$406 899	$410 968	$413 023
Customer refund liability	$301 421	$219 424	$214 128	$224 834	$238 324	$245 474	$247 929	$249 169
Operating leases liability	$0	$125 900	$162 561	$170 689	$180 930	$186 358	$188 222	$189 163
Income taxes payble and receivable	$41 051	$18 862	$257 224	$46 973	$54 809	$53 821	$46 422	$37 337
Total Current Liabilities	**$1 243 771**	**$1 357 074**	**$1 331 502**	**$1 419 935**	**$1 510 148**	**$1 552 821**	**$1 560 412**	**$1 558 897**
Net Working Capital	**$916 273**	**$645 404**	**$446 988**	**$443 836**	**$461 076**	**$475 354**	**$487 316**	**$498 705**
Net Working Capital Variation	**$309 254**	**$270 869**	**$198 416**	**$88 433**	**$90 214**	**$42 672**	**$7 591**	**($1 515)**

Appendix 9: Free Cash Flow to The Firm (DCF Method)

Under Armour Inc. - Cash Flow Projections	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E
Revenue:	**$4 698 400**	**$4 980 304**	**$5 129 714**	**$5 181 011**	**$5 206 916**
EBITDA:	$304 784	$323 071	$332 763	$336 091	$337 771
Operating Income:	$131 551	$139 444	$143 627	$145 064	$145 789
Less: Taxes	($39 465)	($41 833)	($43 088)	($43 519)	($43 737)
NOPAT	$92 086	$97 611	$100 539	$101 545	$102 052
Plus: Depreciation	$173 233	$183 627	$189 136	$191 027	$191 983
Plus: Amortization	$0	$0	$0	$0	$0
Plus: Stock-Based Compensation	$44 174	$46 824	$48 229	$48 711	$48 954
Less Change in Working Capital:	$88 433	$90 214	$42 672	$7 591	($1 515)
Less: Capital Expenditures	($96 906)	($102 720)	($105 801)	($106 859)	($107 394)
Free Cash Flow to the Firm	**$301 020**	**$315 556**	**$274 775**	**$242 014**	**$234 081**
Present Value of FCFF	**$279 976**	**$272 977**	**$221 081**	**$181 109**	**$162 926**

Discount Rate Calculation - Assumptions	
Risk-Free Rate:	1,38%
Equity Risk Premium:	5,50%
Cost of Debt	4,71%

Under Armour Inc. - DCF Assumptions & Output	
Use Multiples Method?	No
Discount Rate (WACC) :	7,51%
Terminal EBITDA Multiple:	21,4 x
Terminal Growth Rate:	2,0%
Terminal Value:	$ 4 331 129
PV of Terminal Value:	$3 015 104
Sum of PV of Cash Flows:	$838 190
Enterprise Value:	**$3 853 293**
Terminal Value % EV:	78,2%
Enterprise Value:	$3 853 293
Balance Sheet Adjustment (Net Debt):	$513 805
Implied Equity Value:	**$4 367 098**
Implied Price Per Share:	**$ 9,62**

DCF (FCFF) Valuation		
Enterprise Value	$	3 853 293,48
Net Debt	$	513 805,00
Equity Value	$	4 367 098,48
Number of Shares Out.	$	454 089,00
Price Target	**$**	**9,62**
Share Price (Jul./2021)	$	18,90
Downside potential		**-49,11%**

Appendix 9: Adjusted Present Value Method

	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E	TV
FCFF	$301 020	$315 556	$274 775	$242 014	$234 081	$4 328 207
Re(unlevered)	5,96%	5,96%	5,96%	5,96%	5,96%	5,96%
FCFF + EV	$5 695 652	$5 394 632	$5 079 076	$4 804 301	$4 562 287	
PV	$4 171 633	$4 104 809	$4 074 782	$4 075 726	$4 084 660	
Debt Capacity	$196 449	$193 302	$191 888	$191 932	$192 353	
Interest Paid	$9 251	$9 103	$9 036	$9 038	$9 058	
Interest Tax Shield	$2 775	$2 731	$2 711	$2 712	$2 717	

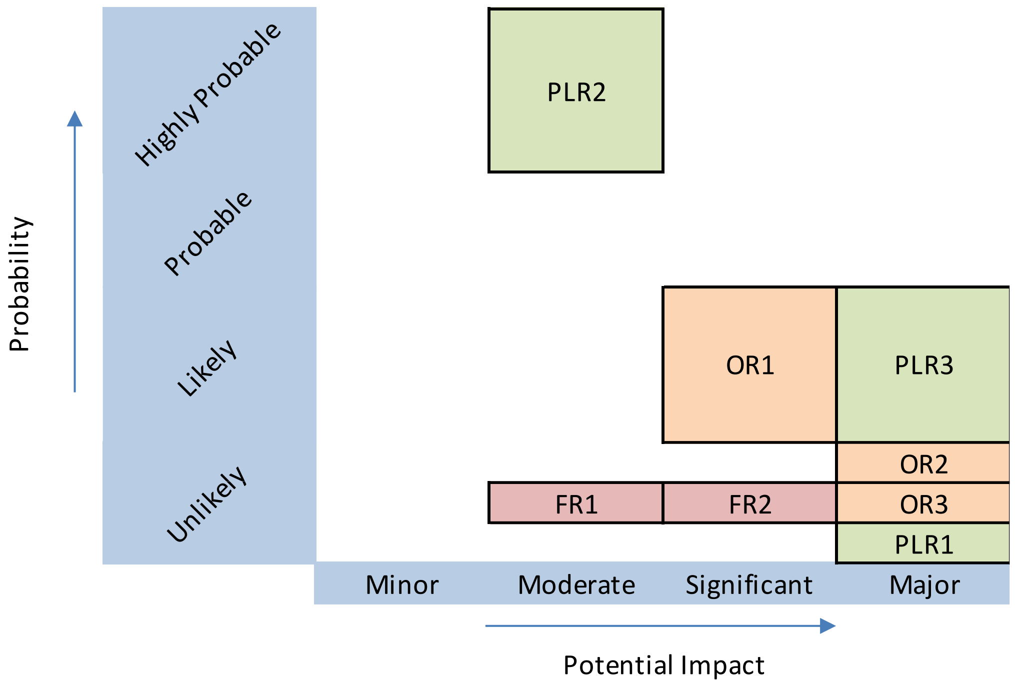
APV Valuation	
EV Unlevered	$4 108 472
PV (Int. Tax Shield)	$9 077
Entity Value	$4 117 548
Net Debt	$513 805
Intrinsic Value of Equity	$4 631 353
# Dilluted Shares	454 089
Price Target	**$10,20**
Share Price (Jul./2021)	$18,90
Downside potential	**-46,04%**

Appendix 10: Relative Valuation

MULTIPLES OF COMPARABLE FIRMS		
	EV/EBIT	EV/EBITDA
EUROPE		
Adidas	24,64	17,12
Puma	29,52	28,32
Average of European Firms	**27,1**	**28,3**
Median of European Firms	**27,1**	**28,3**
North America		
Nike	28,36	25,20
Skechers	12,53	10,53
Average of North American Frims	**20,4**	**17,9**
Median of North America Firms	**20,4**	**17,9**
Average of all	**23,5**	**21,4**
Median of all	**28,4**	**25,2**

FORECASTED UNDER ARMOUR PRICE TARGET FY 2021E		
	EBIT	EBITDA
	$131 551	$304 784
	EV/EBIT	EV/EBITDA
EV	$3 087 501	$6 507 142
Net Debt	($595 994)	($595 994)
Equity Value	$3 683 495	$7 103 135
# Shares	454 089	454 089
Price Target	**$8,11**	**$15,64**
Downside Potential	**57,08%**	**17,23%**
Average	**$11,88**	**37,16%**

Appendix 11: Risk Matrix



Appendix 12: Sensitivity Analysis

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

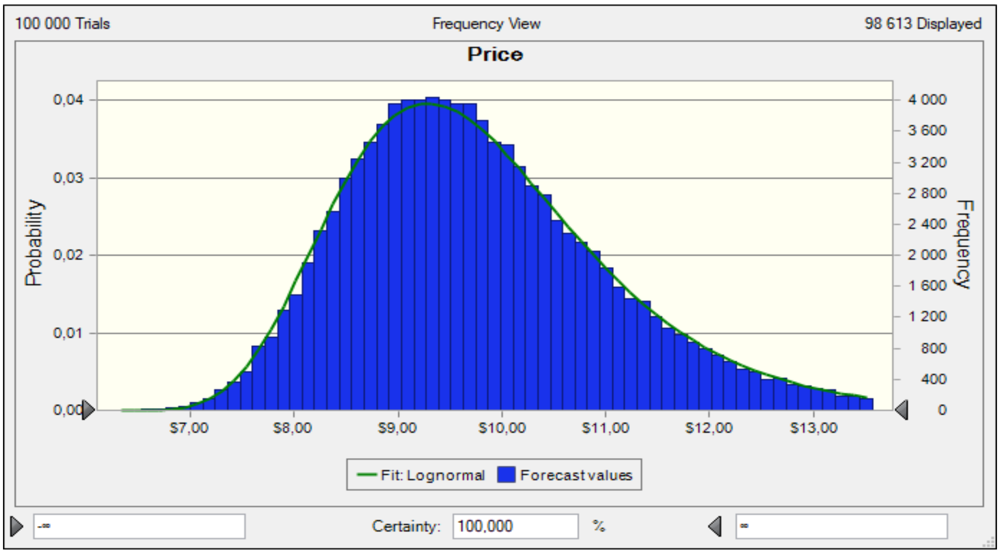
	High Risk
Sell	≤ 0%
Reduce	>0% and 10%≤
Hold	>10% and 20%≤
Buy	>20% and 45%≤
Strong Buy	≥ 45%

<	$18.90
$18.90	$20.79
$20.79	$22.68
$22.68	$27.41
$27.41	<

Under Armour Inc. - Sensitivity Analysis WACC - Terminal Growth Rates

Terminal Growth Rate	Discount Rate: 5,50%	6,00%	6,50%	**7,00%**	**7,49%**	8,00%	8,50%
0,0%	$ 10,27	$ 9,49	$ 8,82	$ 8,26	**$ 7,77**	$ 7,34	$ 6,96
1,0%	$ 11,95	$ 10,85	$ 9,94	$ 9,19	**$ 8,57**	$ 8,01	$ 7,54
2,0%	**$ 14,59**	**$ 12,89**	**$ 11,56**	**$ 10,50**	$ 9,65	**$ 8,91**	**$ 8,30**
3,0%	$ 19,35	$ 16,29	$ 14,11	$ 12,47	**$ 11,22**	$ 10,18	$ 9,34
4,0%	$ 30,44	$ 23,10	$ 18,69	$ 15,75	**$ 13,68**	$ 12,07	$ 10,85
5,0%	$ 85,92	$ 43,51	$ 29,37	$ 22,30	**$ 18,13**	$ 15,23	$ 13,21

Appendix 13: Monte Carlo Simulation



Statistics	
Trials	100 000
Base Case	$9,62
Mean	$9,81
Median	$9,62
Standard Deviation	$1,34
10th Percentile	
9th Percentile	

Abbreviations

APV- Adjusted Present Value

CAGR- Compounded Annual Growth Rate

CAPEX- Capital Expenditure

CAPM- Capital Asset Pricing Model

CEO- Chief Executive Officer

CFO- Chief Financial Officer

CRP- Country Risk Premium

DCF – Discounted Cash Flow

DDM- Dividend Discount Model

EBIT- Earnings Before Interested and Taxes

EBITDA- Earnings Before Interest, Taxes, Depreciation and Amortization EBT-Earnings Before Taxes

EMEA- Europe, Middle East, and Africa

EV- Enterprise Value

EVA- Economic Value Added

F- Forecast

FCFE – Free Cash Flow to the Equity

FCFF- Free Cash Flow to the Firm

FY- Forecasted Year

g- Growth Rate

GDP- Gross Domestic Product

ITS-Interest Tax Shield

IMF- International Monetary Fund

IPO- Initial Public Offering

ISEG- Instituto Superior de Economia e Gestão

ITS- Interest Tax Shield

$M- Million dollars

MRP- Market Risk Premium

WC-Working Capital

NWC- Net Working Capital

NYSE – New York Stock Exchange

PESTL- Political, Economic, Socio-Cultural and Technological

pp- Percentage Points

PP&E- Property Plant & Equivalent

PV- Present Value

ROA-Return on Asset

ROE- Return on Equity

Sh- Share

TV- Terminal Value

UA – Under Armour

U.S.A- United States of America

US- United States

USA- United States of America

USD– United States Dollar

WACC- Weighted Average Cost of Capital

YTM- Yield to Maturity

Y- Year

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Recommendation System

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