Equity Valuation
Philip Morris International Inc.

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Dissertation written under the supervision of Professor José Carlos Tudela Martins

Dissertation submitted in partial fulfillment of requirements for the MSc in Finance, at the Universidade Católica Portuguesa, Janeiro 2024.

Abstract

Title: Equity Valuation l Philip Morris International INC.

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The year 2022 brought unprecedented economic challenges, with inflation rates reminiscent of the 1980s and a surge in interest rates in response. This volatile landscape posed significant obstacles for companies like Philip Morris International, resulting in dwindling sales volumes and escalating production costs, ultimately reflected in a 0.6% decline in net income for the year. Amidst these dynamics, this thesis delves into the valuation of PMI, employing diverse valuation models that consider geopolitical tensions, market expansions, and evolving consumer preferences.

The study utilized discounted cash flow and relative valuation models, subjecting potential scenarios to Monte Carlo and sensitivity analyses. These analyses rigorously tested the valuation's sensitivity to variations in the discount rate and growth rate (by 0.1 percentage points), examining the share price's responsiveness to changes in growth, corporate tax rate, and key macroeconomic factors, such as the risk-free rate, country risk premium, and cost of traded debt. The resulting estimated share price of $93.06 reflects a 1.35% decline from November 24, 2023, value of $94.34, supporting the thesis's recommendation to Hold PMI shares.

Furthermore, a comparative assessment with Barclays' valuation reveals contrasting forecasts for PMI, highlighting the divergence of perspectives on the company's future trajectory. This comprehensive evaluation aims to provide nuanced insights into PMI's valuation landscape within a complex global economic paradigm, informing potential investment decisions.

Keywords: Equity Valuation, Philip Morris International, Tobacco, DCF Valuation, WACC, Relative Valuation, Multiples, Sensitivity Analysis, Monte Carlo Simulation, Share Price, Investment Bank.

Abstrato

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2022 foi economicamente desafiador, marcado por um aumento das taxas de inflação, lembrando a década de 80, e consequentemente um aumento das taxas de juro. Este cenário gerou obstáculos significativos para a Philip Morris, queda do volume de vendas e subsequente aumento dos custos de produção, refletindo uma queda de 0,6% do resultado líquido em 2022. Esta tese fornece uma avaliação da PMI, recorrendo a diversos modelos de avaliação que têm em conta as tensões geopolíticas, expansão do mercado e a evolução das preferências dos consumidores.

Para esta avaliação foram utilizados 2 modelos, *DCF e Relative Valuation*, submetendo posteriormente os potenciais cenários á análise de Monte Carlo e de sensibilidade. O objetivo de esta última análise é testar rigorosamente a sensibilidade da avaliação a variações da taxa de desconto e da taxa de crescimento, enquanto de Monte Carlo, é de avaliar a variação do preço da ação a alterações no potencial crescimento, Imposto sobre rendimentos de empresas, e nos principais fatores macroeconómicos. Com efeito, o preço estimado por ação de $93,06 reflete um declínio de 1,35% comparando com o valor registado a 24 de novembro de 2023, de $94,34, suportando a recomendação estratégica expressa por esta tese, de manter as ações da PMI.

Adicionalmente, comparando com a avaliação do Barclays, são reveladas provisões diferentes para a PMI, ressaltando a divergência de perspetivas sobre a trajetória futura da empresa. Esta avaliação visa proporcionar uma perspetiva diferenciada da avaliação da PMI num paradigma económico global complexo, contribuindo para potenciais decisões de investimento.

Palavras Chave: Avaliação Patrimonial, Philip Morris International, Tabaco, DCF Valuation, WACC, Relativa Avaliação, Multiplos, Análise de Sensibilidade, Simulação de Monte Carlo, Preço da ação, Banco de Investimento.

Acknowledgments

The completion of this dissertation, marking the final stretch toward the culmination of my master's degree, prompted profound reflections on the many experiences woven throughout my academic journey. Along this path, certain individuals remained steadfast, offering unwavering support through triumphs and challenges.

Looking back, I am deeply moved by the kindness extended by those who stood beside me.

To my family, the fundamental support in my life's journey, I owe an immeasurable debt of gratitude. Your unwavering love, encouragement, and sacrifices have been the guiding forces behind every accomplishment. Despite moments of misunderstanding, your unconditional support never faltered.

My heartfelt appreciation extends to my girlfriend and dear friends. Your care, patience, and understanding have been my pillars throughout this academic pursuit. The moments we've shared are etched in my memory. Your encouragement during periods of uncertainty and shared celebrations during successes have made this journey profoundly enriching. Please know that I am always here for you, just as you have been for me.

I extend profound gratitude to my esteemed professor supervisor, José Carlos Tudela Martins. Your guidance, expertise, and support were pivotal in shaping this thesis. Your mentorship not only enriched my academic knowledge but also provided clarity regarding my professional aspirations—a clarity I hadn't found until I had the privilege of being your student. To all the professors who illuminated my academic path, your teachings have indelibly shaped my intellectual curiosity and perspectives. Your collective impact has been instrumental in shaping the individual I am today.

This thesis stands as a testament to the collective stand, wisdom, and encouragement I've received. To all those who contributed, directly or indirectly, to this academic milestone, I extend my deepest gratitude and my sincerest wish for your everlasting happiness.

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List of Abbreviations

Abbreviation	Definition
RRP's	Reduced-Risk Products
RE	Refinitiv Eikon
CAGR	Compound Annual Growth Rate
CTP	Combustible Tobacco Products
SFP	Smoke Free Products
W&H	Wellness and Healthcare
COGS	Cost of Goods Solds
MA&R	Marketing, Administration and Research
D&A	Depreciations and Amortizations
ARD	Accounts Receivables Days
APD	Accounts Payables Days
ID	Inventory Days
CAPM	Capital Asset Pricing Model
CTD	Cost of Traded Debt
Kd	Cost of debt
Ke	Cost of equity
BV	Book Value
MV	Market Value
FCFF	Free Cash Flow to Firm
ETR	Effective Tax Rate
Rf	Risk-free rate
MRP	Market Risk Premium
CRP	Country Risk Premium
DS	Default Spread
CAPEX	Capital Expenditures
D/E	Debt to equity
DCF	Discount Cash Flow
DPS	Dividends per Share
EV	Enterprise Value
ESG	Environmental, Social and Governance

EBITDA	Earnings before Interest, Taxes, Depreciation, and Amortization
EBIT	Earnings before Interest and Taxes
EPS	Earnings per Share
FCF	Free Cash Flow
FCFE	Free Cash Flow to Equity
FCFF	Free Cash Flow to the Firm
PMI	Philip Morris International inc.
H3/23	Third half of 2023
NWC	Net Working Capital
EV/EBITDA	Enterprise Value to EBITDA
P/E	Price-to-Earnings
PPE	Property, Plant and Equipment
R&D	Research and Development
ROA	Return on Assets
ROE	Return on Equity
SG&A	Selling, General and Administrative
TV	Terminal Value
WACC	Weighted Average Cost of Capital
YTM	Yield to Maturity
NI	Net Income
GDP	Gross Domestic Product
CNTC	China National Tobacco Corp
BAT	British American Tobacco Plc
R&D	Research and Development

1. Introduction

This Dissertation provides an in-depth analysis of the stock valuation of Philip Morris International. The main objective is to evaluate the intrinsic value of Philip Morris using different valuation techniques and analyze the crucial factors that influence its financial worth.

It's structured as a multifaceted prism, beginning with an incisive literature review that dissects prevailing valuation techniques. The goal is to identify methodologies best suited to the idiosyncratic nature of Philip Morris. Further, by placing the company in its broader economic context, an Industry Overview will illuminate the intricate dynamics of the tobacco sector, while a detailed Company Overview will elucidate Philip Morris' historical performance and market positioning.

Subsequently, the valuation process unfolds, anchored by explicit delineation of underlying assumptions. This phase integrates selected methodologies, meticulously applied within the unique operational and financial paradigms of Philip Morris. In order to strengthen the credibility of the valuation, a comparative analysis is performed, comparing the results to a valuation performed by Barclays, a prominent investment bank.

This thesis rigorously traversing valuation methodologies, industry nuances, and company specifics, with the aim to unravel the intrinsic value of Philip Morris. Ultimately, it seeks to provide valuable insights into corporate decision-making and investment evaluation.

2. Literature Review

The literature review in equity valuation research serves crucial purposes. Firstly, it enables the researcher to comprehensively survey and consolidate existing research methodologies in practice. Secondly, it aids in grasping the theoretical foundations, strengths, weaknesses, and diverse applications of these valuation methods. Thirdly, it facilitates insights from empirical studies, shedding light on the performance and rationale behind the chosen valuation methods within the context of the dissertation.

" Valuation is always a function of three fundamental factors—cash, timing, and risk." (Timothy A. Luehrman,1997) being "critical to many important managerial decisions… and rarely identical across analysts" (University of Virginia - 2014).

It was used several methods to evaluate its worth from different perspectives. The first method, DCF, looked at future cash flows. The second method, relative valuation, provided a market comparison. The third method, sensitivity analysis, gauged the impact of variables, and the fourth method, Monte Carlo simulation, offered a probabilistic view of potential outcomes. Each method added a layer of depth to understand PMI's valuation, considering its financial nuances, market positioning, and risk factors.

2.1 Discounted Cash Flow Valuation

DCF valuation stands as one of the fundamental and widely employed methodologies in the field of financial analysis and valuation "is known as the most "technical" of the three major methods" (Paul Pignataro,2013). It is rooted in the principle that the intrinsic value of an asset, in this case, a company or an investment, is contingent upon the present value of its future cash flows.

It is important to acknowledge that the efficacy of DCF valuation is contingent upon the accuracy of underlying assumptions and projections, which inherently carry an element of uncertainty. As such, a meticulous and thoughtful approach to financial forecasting and the selection of appropriate discount rates is imperative to ensure the reliability and robustness of DCF-based valuations.

Below we have the formula to "estimate the value of an asset as the present value of the expected cash flows on it "(Damadoran,2012).

$$Estimated\ Value_{t-1} = \sum_{t=1}^{t} \frac{Expected\ cash\ flow_t}{(1+r)^t}$$

- Expected Cash flow = Expected Cash Flow in period t
- t = Forecast horizon
- r = Discount rate, used as WACC

2.1.1. Financial Projections

When utilizing the DCF method, it is essential to make an accurate prediction of the financial statements and cash flows of the company, considering both macroeconomic and industry-specific factors. Typically, a forecast period of 5 to 10 years is utilized, which should correspond to the period in which the company is anticipated to attain perpetual stable growth. This period is commonly referred to as the explicit period and is of utmost importance. (Hooke, 2010)

The choice of a 5-year forecast period for PMI stems from strategic considerations influenced by the company's innovation trajectory, notably with non-smoke products and entry into the competitive US market. PMI's dynamic and rapidly evolving environment, marked by innovation and unpredictability, led to a cautious forecasting approach. The 5-year explicit period was deemed fitting to capture these shifts accurately, reflecting PMI's evolving financial landscape.

2.1.2. Terminal Value

The terminal value is often calculated using the Gordon Growth Model, representing the estimation of an enterprise value beyond the forecasted period. In a DCF model, it captures the perpetual cash flow potential of a company, providing a crucial element in determining its total worth. It is expected that there will be a consistent rate of increase after the designated time frame.

The formula below shows "the standard perpetuity formula for terminal value relies on FCF from the last period of the explicit cash flow forecast" (Copeland et al., 2010)

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

2.1.3. Discount Rate

The discount rate, often synonymous with the required rate of return or cost of capital, serves as a critical parameter in determining the present value of future cash flows (Mckinsey & Company, 2020) or estimating the cost of financing a company's investments. The literature in finance extensively discusses the intricacies surrounding the selection of the discount rate, emphasizing its role in reflecting risk, opportunity cost, and the firm's capital structure. To calculate the WACC we can fallow the formula below (Pablo Fernández, 2011)

$$WACC = K_d \times \frac{D}{D+E} \times (1-t) + K_e \times \frac{E}{D+E}$$

- D=Debt
- E=Equity
- t=Effective Tax Rate

2.1.3.1. Cost of equity

The methodology used to calculate the Cost of Equity in this thesis was the CAPM, which is considered the most popular method to estimate the cost of equity (Bruner, Eades, Harris, and Higgins, 1998). In this case, it was supplemented by the CRP. The CAPM estimates the cost of equity centered on the stock's volatility in relation to the market and the risk-free rate. By incorporating the CRP, which accounts for the additional premium investors expect for bearing market risk (Damodaran, 2012), this approach acknowledges the global presence of PMI. Below is the original CAPM formula, which was developed by William Sharpe, Jack Treynor, John Lintner, and Jan Mossin in 1960, plus the CRP used in it.

$$Cost\ of\ Equity = Rf + B \times (E(r_m) - rf) + CRP$$

Where:

- B= Beta;
- $E(r_m) = Market\ expected\ return$;
- CRP = Country Risk premium

For the risk free "One must consider whether to use a 10-year treasury rate for the risk-free rate, or a 30-year rate." (Paul Pignataro,2013). It is important to note that risk-free rates are specific to a particular currency, (Damodaran, 2012), in this case PMI has its headquarters in the USA, and it was used the Treasury rate from US.

Given the prevailing period of uncertainty, characterized by targeted inflation rate of 2% by FED and its current trajectory nearing 3.49%, alongside a recent decline in treasury bond rates this December, the utilization of the current risk-free rate may lack coherence in assessing future cash flows. Considering this, an analysis of historical periods with rates marginally above 2% has been conducted. An averaging of treasury bond rates from the years 2017 to 2019 has been applied in consideration of future cash flow evaluations.

Therefore, when estimating cash flows, the choice of risk-free rate needs to consider the currency in which they are denominated.

The MRP represents the cost associated with risk in stock markets (Damodaran,2012) standing as a critical parameter in CAPM Calculation. In this thesis, the MRP utilized was derived from Damodaran's US Equity Risk Premium data table, actualized as of 24/11/2023.

The last item that is needed to calculate the CAPM, its Beta. Beta measures a stock's volatility in relation to market movements, and one of the approaches to calculate it can be by the expected rate of return. For this thesis, its used the 5 year beta calculated by Refinitiv eikon (Refinitiv eikon uses a regression analysis to calculate beta, derived by analyzing historical stock price data of PMI against SP500).

2.1.3.2. Cost of debt

The cost of debt is computed in this thesis by summing the segregating of two categories: traded and non-traded debt, "Debt issues are divided into hundreds of sectors that are grouped by several variables, such as rating or industry type" (Robbert Comment,2014). Traded debt cost relies on YTM from PMI's bond market data. Non-traded debt combines the Rf with a default spread retrieved from the Damodaran DS table, using PMI's Moody's (A2-) and Fitch (A) as credit ratings.

2.1.3.3. Capital Structure

The literature on capital structure offers insights into a company's financing decisions, emphasizing the interplay between debt and equity. In this thesis, the market value of equity was derived by multiplying the shares outstanding as of 24/11/2023 by the share price on that day "The market value of equity should be based on shares outstanding in the capital market" (Mckinsey & Company,2020).

The market value of debt was calculated by summing the market value of traded debt, reflecting the combined value of each bond with the market value of non-traded debt. To estimate the market value of non-traded debt, was applied the Damodaran formula:

$$MV\ of\ Non-traded\ Debt = Interest\ Expense \times \frac{1-\frac{1}{(1+K_D)^T}}{K_D} + \frac{BV\ of\ Non-traded\ Debt}{(1+K_D)^T}$$

2.1.4. FCFF Model

FCFF is a reliable measure that shows the cash generated by a company's operations and available to its providers of capital, including both debt and equity holders.

Given PMI's complex capital structure and significant debt obligations, FCFF provides a more comprehensive valuation perspective compared to the FCFE model (Damodaran,2012). The FCFE model only focuses on equity holders' cash flows and may overlook important financial aspects inherent in PMI's operational and financial dynamics.

$$FCFF_t = EBIT_t - Taxes_t - NCAPEX - \Delta\, OWC$$

2.1.5. Enterprise value

Enterprise Value, "is defined as the value of the entire business including debt lenders and other obligations". (Paul Pignataro, 2013)

With all the formulas needed to compute the EV already presented, below is the formula for calculating the Enterprise Value using the FCFF model approach:

$$Entreprise\ Value = \sum_{t=1}^{n} \frac{E[FCFF_t]}{(1+Wacc)^t} + \frac{Terminal\ Value}{(1+Wacc)^t}$$

2.1.6. Limitations of DCF Model

While Discounted Cash Flow (DCF) valuation is a powerful tool for assessing the intrinsic value of an investment, it has some limitations. Chief among these is its reliance on future projections, subject to inherent uncertainties and potential alterations "Tremendous distortions can be found of the model as it relies on over simplified assumptions" (Pengxu Chen, Kaiyuan Zhang, 2022).

2.2. Relative Valuation

Relative valuation is a used method of valuing a company by comparing it to similar firms "the value of an asset is compared to the values assessed by the market for similar or comparable assets" (Damodaran,2012). This approach is popular among investors because it is straightforward to implement and can be used to value a wide range of companies.

This valuation "estimates the value of an asset by looking at the pricing of comparable assets relative to a common variable like earnings, cash flows, book value, or sales." (Aswath Damodaran – 2012).

To perform relative valuation, investors initially identify a set of comparable companies, which should be like the target company in standings of profitability, growth, industry, and size prospects as the target company "similar assets should sell for similar prices" (Mckinsey & Company,2020).

After identifying the peers, investors calculate and compare their valuation multiples to those of the target company.

Combining relative valuation with other methods like the DCF method will conduct on a more precise evaluation of a company's worth and potential.

2.2.1. Peer Selection

Relative valuation is a powerful tool for assessing the value of a company, but its effectiveness depends on the careful selection of comparable peers, its assumed that “similar economic circumstances should receive similar accounting treatments” (Barth’s,2008).

Sharma & Prashar (2013) recognize the importance of selecting comparable firms using two key criteria: business profile and financial profile.

In the context of this study, the process of selecting an appropriate peer group involved 3 steps, that may not be in the order mentioned next. First, a list of the 15 most similar companies to PMI, as determined by a combination of factors including analyst coverage overlap, was obtained from Refinitiv eikon.

A detailed profitability (Liu et al.,2002) and growth “matching peer group by growth “(Boatsman and Baskin 1981) analysis was then performed on the identified companies. This analysis included critical metrics such as return on assets, gross profit, net profit margin, dividend yield, price to cash flow per share, revenue growth, EPS growth, dividend growth and total EPS growth were examined.

After completing these steps, companies with significant deviations from the PMI were systematically eliminated from consideration. The last stage was to evaluate the D/E ratios of the remaining potential peers, and to finally select the remaining that are in the same industry as PMI “firms in the same industry having similar economic characteristics” (Liu et al.,2002)

2.2.2. Multiple Valuation

The application of multiple valuation metrics, including P/E, EV/ EBITDA, EV/EBIT, and EV/Revenue ratios, forms a comprehensive approach extensively to achieve a share price (Damodaran,2012). These metrics, derived from the selected peer group.

In this thesis, utilizing forecasted data sourced from RE for the upcoming three years and the most recent year, these valuation ratios were calculated, “We forecast future multiples because we do not regard the current stock price as necessarily the best benchmark for assessing valuation accuracy.” (Sanjeev Bhojraj and Charles M.C. LEE,2001). The resulting EV for each year was determined by applying these metrics to the firm's forecasted financials. Subsequently, through a reverse calculation process, share prices for each year were estimated, yielding a range of potential prices.

3. World Economic Overview

The global economic landscape is a dynamic tapestry of interdependent nations, each contributing to the intricate web of international trade, investment, and economic activity. Understanding the broader trends that shape this landscape is essential for companies operating on a global scale, such as PMI.

One crucial barometer of economic health is the GDP In this analysis, i will concentrate on the European Union, South Asia, and Southeast Asia for both GDP and inflation, as these regions contribute the highest percentage of revenues of PMI.

In 2022, these regions demonstrated commendable economic performance. The European Union experienced a robust GDP growth of 3.6%, South Asia surged with an impressive 6.7% expansion, and Southeast Asia showcased notable growth at 5.7%. However, as transition into 2023, a shift in economic dynamics is anticipated. The implementation of rising interest rates to combat the sharp rise in inflation, throughout 2022 and into 2023, is projected to curtail consumer spending and investment, potentially leading to a moderated growth pace (expected 0.3% growth in the European Union).

Looking beyond 2023, a positive trajectory is anticipated. Projections suggest a gradual upturn in GDP for the European Union, South Asia, and Southeast Asia. These regions are poised to leverage their economic potential, benefiting from stabilizing market conditions and strategic policy measures.

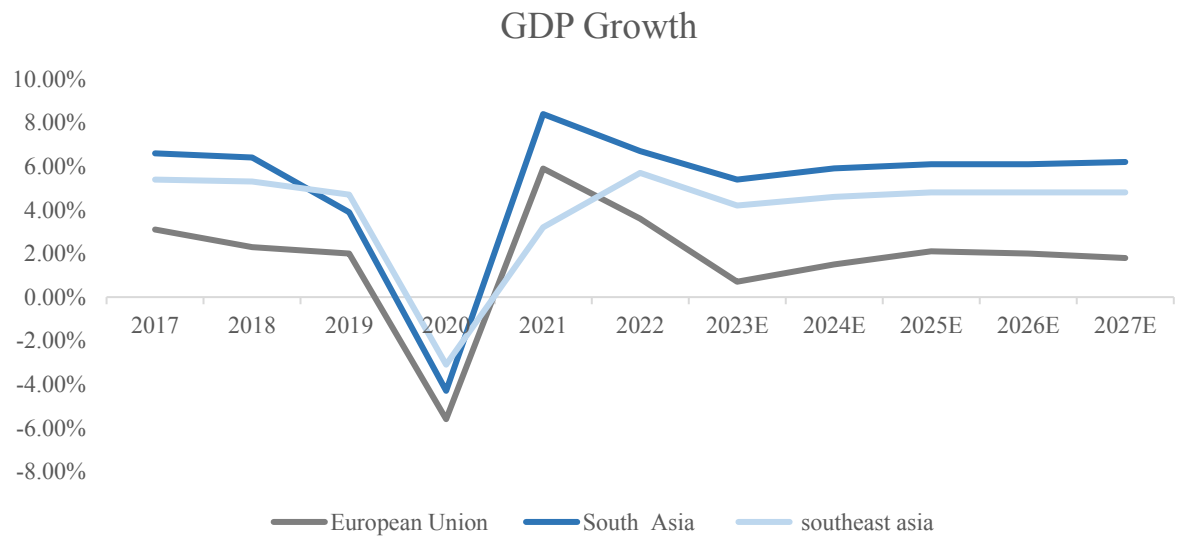

Figure 1. *Real GDP Growth - European Union, South Asia and Southeast Asia.*
Source: World Economic Outlook, December 2023 (IMF)

Regarding another crucial barometer, inflation, the economic landscape of the European Union, South Asia, and Southeast Asia has been notably influenced by a confluence of global events. In response to the pandemic's onset in 2020, central banks worldwide embarked on a strategy of lowering interest rates and introducing liquidity into the economy. This approach, coupled with pandemic-induced supply chain disruptions, created a conducive environment for inflationary pressures.

The year 2021 bore witness to the initial ramifications, with inflationary rates on the rise. The European Union saw inflation ascend to 5.4%, South Asia experienced a notable increase of 6.7%, and Southeast Asia registered a moderate uptick of 2.5%. However, it was in 2022 that inflationary pressures reached what is optimistically perceived as a peak. During this period, inflation surged to 10.6% in the European Union, 8.6% in South Asia, and 6.1% in Southeast Asia. In response to this surge, central banks embarked on a concerted effort to rein in inflationary pressures by initiating a series of interest rate hikes.

As transition into 2023, a cautiously optimistic outlook emerges. Projections indicate a gradual tapering of inflation rates. The European Union is expected to see inflation hover around 4%, South Asia at 7.5%, and Southeast Asia at 3%. This measured decline in inflationary pressures signifies the efficacy of central bank interventions.

Looking further ahead, the trajectory of inflation points towards a path of moderation. Projections for the subsequent years suggest inflation rates stabilizing within the range of 2% to 3%.

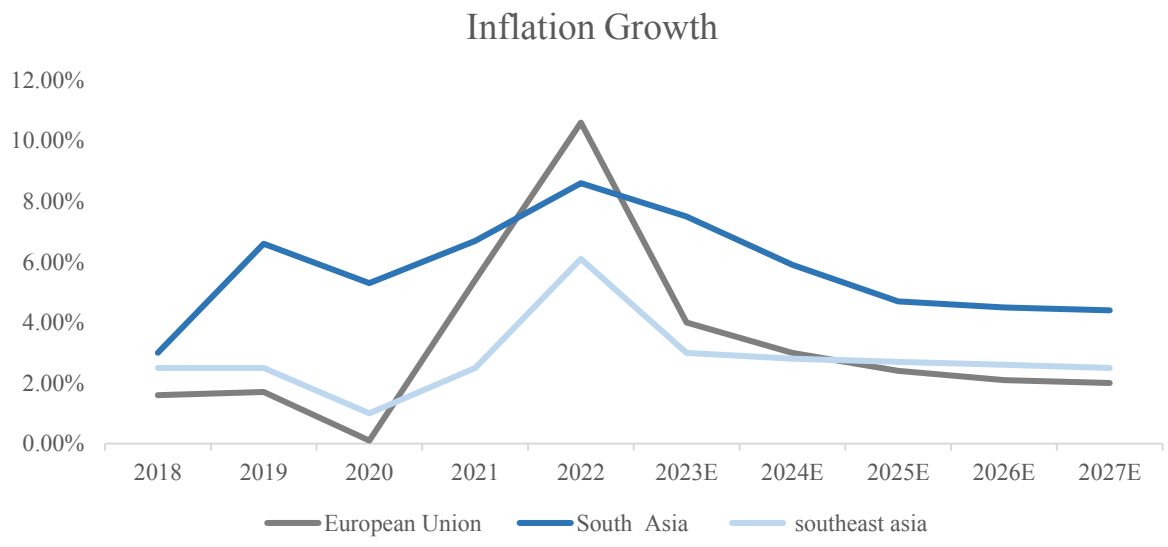

Figure 2. *Real Inflation Growth - European Union, South Asia and Southeast Asia*
Source: World Economic Outlook, December 2023 (IMF)

The Eastern Europe region, is currently facing a complex geopolitical landscape. Conflicts in Ukraine and Russia have created a climate of uncertainty with no clear resolution in sight Increased political instability, supply chain disruptions, and shaky investor confidence can potentially reduce both revenues and volumes for PMI in this region.

Adding to this complexity, Israel, another key country in the Eastern Europe region, has been embroiled in a conflict with Hamas, a militant group based in Palestine, since October 2023. The unpredictable nature of such conflicts creates further uncertainty for companies like PMI, making it difficult to predict market conditions and consumer behavior accurately.

These projections are backed by data from the IMF, lending credibility to their accuracy and dependability.

4. Industry Overview of Tobacco

The tobacco industry exists in a tapestry of uncertainty. From changing consumer preferences to the emergence of transformative products like IQOS, the industry is at a crossroads. Uncertainties loom, driven by societal shifts, regulatory landscapes, and evolving consumer behaviors.

At the heart of this uncertainty exists a fundamental question: What makes people smoke? It is a complex interplay of factors ranging from cultural and social influences to individual choice and physiological responses. For some, it is a ritual; for others, it is a means of relaxation or even a form of rebellion. Understanding these complex motivations is essential to unraveling the dynamics of the tobacco industry.

But uncertainty extends beyond individual preferences. Tax policy, a central lever in regulating tobacco consumption, casts a shadow of unpredictability over the industry. The flow of tax rates shape pricing strategies, affecting both consumer affordability and industry profitability. Moreover, as governments around the world grapple with the dual imperatives of public health and revenue generation, the trajectory of tobacco taxation remains in constant flux.

In the midst of this ambiguity, emerging products like IQOS, snus, moist snuff, and chewing tobacco (the last 3, products that PMI began marketing this year, following the acquisition of Swedish Match) stand as a testament to the industry's adaptability. These next-generation alternatives have the potential to usher in an era of smoke-free, minimally harmful products. Their consumer acceptance and regulatory response add another layer of uncertainty to the industry's narrative.

4.1. Market size and Value

The global tobacco industry has witnessed a dynamic interplay of market value and size over recent years. Between 2018 and 2022, the market value experienced a consistent upswing, exhibiting a CAGR of 2.19%. This growth trajectory reflects an increasing appetite for tobacco products across various demographics and regions, culminating in an estimated worth of 912 billion dollars in 2021. Projections indicate a further surge, with the market value expected to reach an estimated 1040.9 billion dollars by 2026.

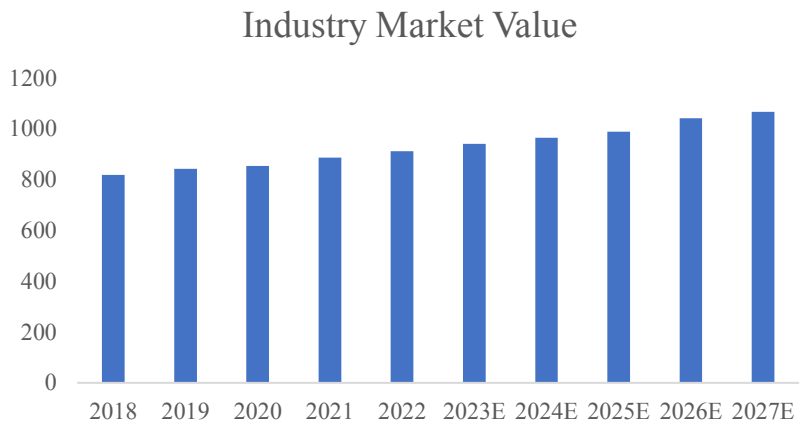

***Figure 3**. Tobacco Industry Worldwide Market Value, in Billion of Dollars.*
Source: Statista Outlook, 2023

In contrast, the market volume paints a different narrative. Over the same period, there has been a notable contraction, with a CAGR of -0.33%. This decline in market volume signifies a shifting consumer landscape. Factors such as heightened awareness of health risks, regulatory interventions, and the rise of alternative nicotine products have contributed to this evolving trend. In 2022, the market volume stood at approximately 5302 billion pieces and is expected to decrease to 5237 billion in 2026.

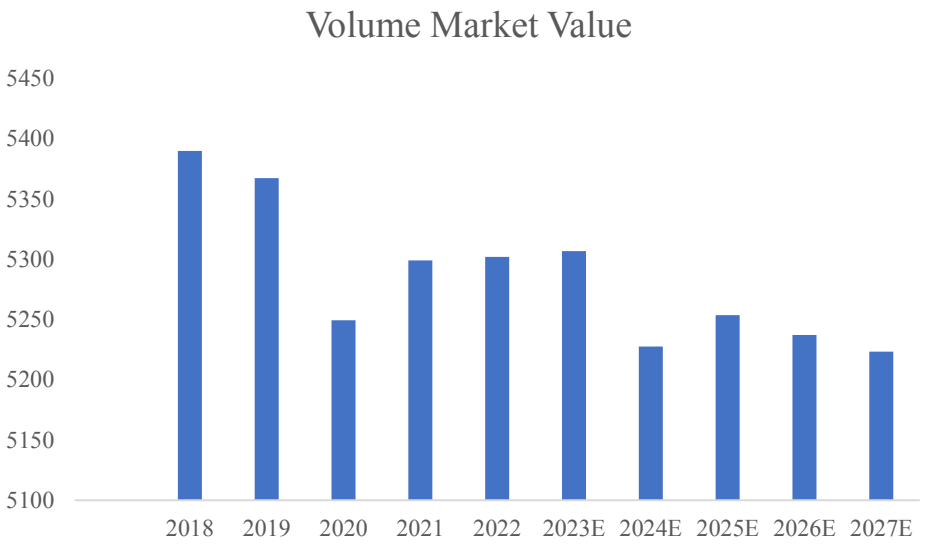

Figure 4. *Volume Worldwide Market Value, in Billion pieces*
Source: Statista Outlook, 2023

Concurrently, the industry has witnessed the ascent of new nicotine products, offering alternatives that seek to balance consumer choice with harm reduction. Products like e-cigarettes and heat-not-burn technologies have garnered traction, underlining a broader shift towards reduced-risk alternatives.

Furthermore, the regulatory landscape governing tobacco products has undergone significant transformation. Governments and regulatory bodies worldwide have intensified efforts to monitor and control the production, distribution, and marketing of tobacco items. Stricter labeling requirements, restrictions on advertising, and excise tax adjustments are among the mechanisms employed to curtail tobacco consumption.

These trends mutually underscore the dynamic nature of the tobacco industry, wherein shifting consumer behaviors, technological advancements, and evolving regulatory frameworks converge to redefine the market's landscape.

In conclusion, the data utilized in this chapter were sourced from Statista.

4.2. Market segmentation and market share

In the intricate tapestry of the global tobacco industry, market share is a key metric that delineates the competitive landscape. By 2021, CNTC emerged as the undisputed leader, with a staggering 49.4% market share by volume. This formidable presence is primarily concentrated

in the domestic market, with only about 1% of its products venturing into international territories.

In the wake of CNTC's dominance, PMI and BAT emerged as notable competitors, claiming the second and third largest volume shares with 11.8% and 10% of the market, respectively. However, their market reach takes a decidedly more global perspective. PMI's products find their way to an extensive international clientele, spanning continents from Europe and Asia to Africa and Oceania. Similarly, BAT's strategic distribution channels are primarily focused on the United States.

The tobacco industry is a diverse one, catering to a wide range of consumer preferences. In this dynamic sector, market segmentation plays a key role in catering to different tastes and lifestyles.

In terms of revenue, cigarettes prove to be the cornerstone of the industry, accounting for a significant share of approximately 88.95% and a CAGR of 1.95% (between 2018 to 2022). This durable popularity can be attributed to their widespread appeal and long presence in the market. Alongside cigarettes, cigars carve out a distinctive niche, accounting for 2.35% of industry revenues and a CAGR between 2018 to 2022 of 5.21%. With their unique flavor profiles and ritualistic consumption, cigars appeal to a dedicated consumer base.

As the industry evolves, so does the range of offerings. E-cigarettes, representing a contemporary foray into smoke-free alternatives, account for approximately 2.48% of industry sales and have the highest increase over the same period with a CAGR of 7.15%. This category caters to a growing demographic seeking reduced-risk options and customizable experiences. Meanwhile, smoking tobacco, which includes a range of loose-leaf products, accounts for a notable 6.23% of industry sales, further highlighting the diverse preferences within the market.

Market segmentation will continue to be a crucial factor for the tobacco industry to adjust and introduce new ideas in accordance with the ever-changing preferences of consumers in the consumption of tobacco.

Conclusively, the data integrated into this chapter were sourced from Statista

5. Philip Morris International Inc.

5.1. Company Overview

Founded in 1847 and headquartered in Stamford, USA, Philip Morris International Inc. is the world's second-largest tobacco company. Beyond its traditional cigarette business, PMI has diversified its portfolio to include a range of smoke-free products, including heat-not-burn, vapor, and oral nicotine products.

PMI has invested heavily in research and development to produce smoke-free alternatives to cigarettes. Its flagship heat-not-burn product, IQOS, heats tobacco instead of burning it, significantly reducing the production of harmful chemicals. Additionally, PMI offers a variety of vapor and oral nicotine products, such as VEEV and ZYN.

Recognizing the growing consumer demand for healthier alternatives, PMI has expanded its presence in the smoke-free products market through strategic acquisitions. In 2021, PMI acquired Vectura, a leader in inhalation technology, for $3.1 billion. Vectura's expertise in inhalation devices and drug development has proven invaluable to PMI's smoke-free product development efforts. To further strengthen its position in the growing smokeless tobacco market, PMI acquired Swedish Match, a leading manufacturer of smokeless tobacco products, for $16 billion in 2022.

PMI has already launched several innovative, less harmful versions of its products and remains committed to its mission of creating a smoke-free world. The company has invested in good cause protocols, such as its $100 million fund for anti-illicit trade efforts, to further its aim of promoting healthier lifestyles.

5.1.1. Shareholder Structure

As of November 8, 2023, PMI boasts a robust presence in the market with 1,552.41 million shares outstanding. The company is listed on the NYSE, underscoring its importance in the tobacco industry. With a market capitalization of approximately $141,703.62 million, PMI enjoys a substantial valuation that reflects investor confidence.

Institutional investors make up the majority of PMI's shareholder base, with investment managers representing 79.19% and brokerage firms representing 1.8% of institutional ownership, demonstrating a strong institutional interest in PMI's strategic direction and growth potential.

5 Largest Shareholders

	Shares (%)	Shares (#)	Shares ($,M)
The vanguard Group, Inc.	8.71%	135.25	13203.48 $
Capital World Investors	7.48%	116.19	11342.01 $
Capital International Investors	6.85%	106.29	10376.17 $
BlackRock Institutional Trust Company, N.A	4.41%	68.42	6679.01 $
State Street Global Advisors(US)	3.77%	58.59	5719.81 $

Table 1. *5 Largest Shareholders of PMI*
Source: Refinitiv Eikon, December 2023

5.1.2. Stock Performance

PMI has been a consistently strong performer on the stock market. Since its initial public offering in 2008, PMI's stock price has more than dcoubled, from an IPO price of $40.50 to a high of $105.62 in 2022. As of November 24, 2023, the price per share stands at $94.34.

Over the course of the past five years, the trends of PMI's stock have largely mirrored those of the S&P 500 index, however, S&P 500 has experienced a more significant increase in its price compared to PMI, as demonstrated by the chart below. There are distinct phases in this period, including the decline in 2020 due to the global impact of the COVID-19 pandemic, followed by a robust recovery in 2021. In 2022, both PMI and S&P 500 experienced a notable downturn, influenced by factors such as rising inflation and interest rates. While there are expectations of a potential increase in performance for the remainder of 2023, it is important to approach such projections with caution, given the dynamic nature of financial markets.

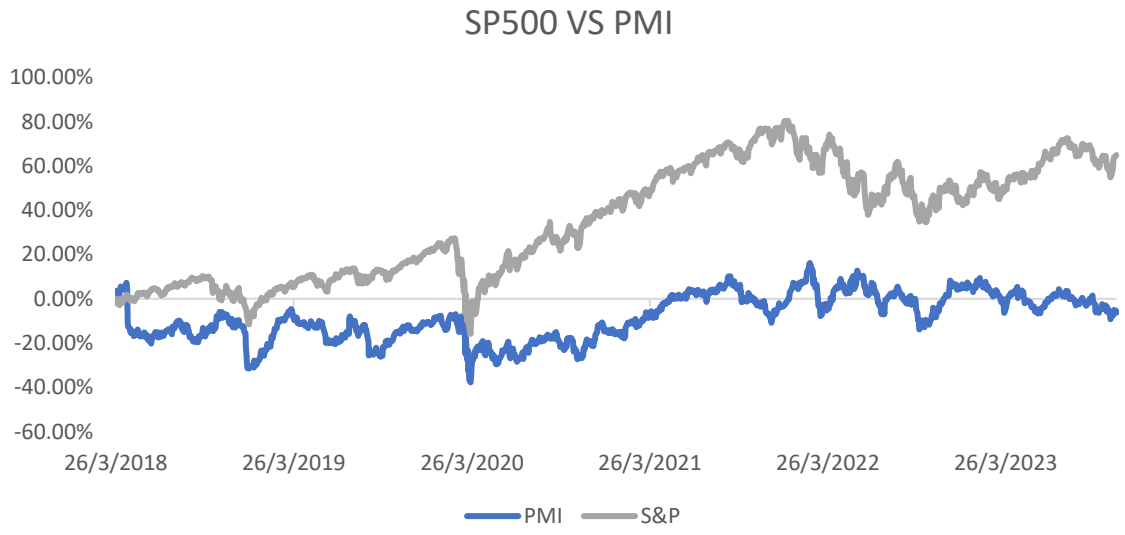

Figure 5*. PMI vs SP500 Stock performance (March 2018 till November 2023)*
Source: Refinitiv Eikon, December 2023

5.2. Financial Performance Overview

In this financial analysis section, was examined key metrics and indicators that provide insight into Philip Morris International's financial strength. By analyzing aspects such as revenue trends, profitability, and liquidity, we aim to provide a comprehensive view of PMI's financial position. This examination will help assess the company's capacity for sustainable growth, its risk management strategies, and its ability to weather economic fluctuations.

5.2.1. Revenues

Philip Morris International's revenue performance over the past five years reflects a nuanced trajectory. The company demonstrated a CAGR of 1.4% from 2018 to 2022, reaching a notable $31,726 million in revenue by the end of 2022. Notably, 2020 was a challenging year for PMI, as the onset of the COVID-19 pandemic led to a decline in revenue, falling from $29,805 million in 2019 to $28,694 million in 2020. However, the company showed resilience and quickly rebounded the following year, with a robust increase to $31,405 million in 2021.

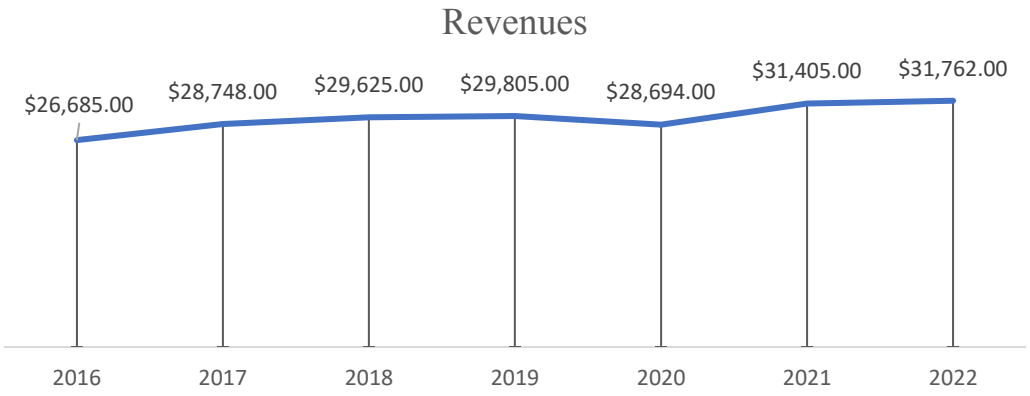

Figure 6. *Historical Net Revenues of PMI (2016 till 2022), in Million of Dollars.*
Source: PMI annual reports, own analysis

These revenues are intricately diversified into three key segments: combustible tobacco products, smoke-free products, and Wellness and Healthcare. In terms of combustible tobacco products, the company witnessed a notable decline with a CAGR of -3% from 2018 to 2022. This reflects a global trend of decreasing smokers, with specific regions experiencing more pronounced declines. The Americas and Canada, East Asia and Australia, and the European Union displayed CAGRs of -10%, -7%, and -3%, respectively. The international industry volume for cigarettes and HTUs, excluding China and the U.S., is estimated to decline by 1.5% to 2.0% a year.

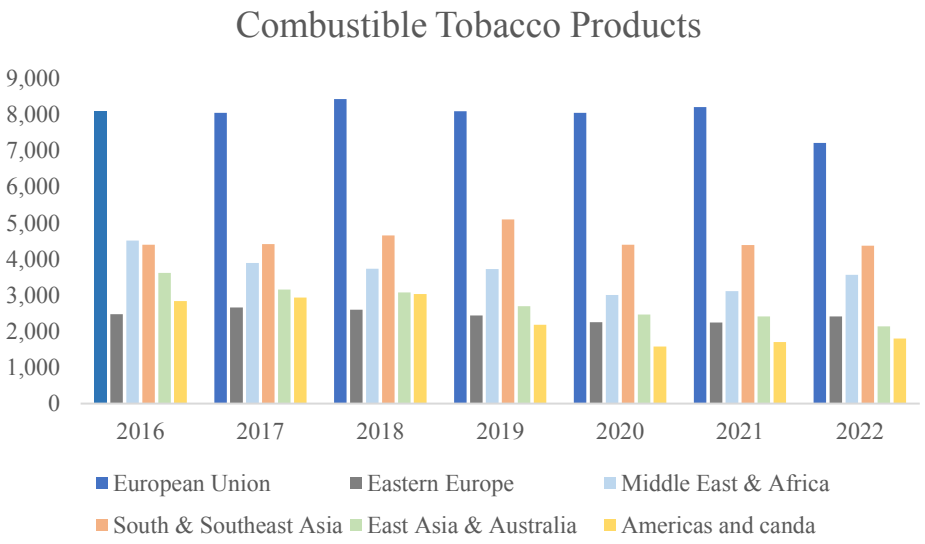

Figure 7. *Total Net Revenues of PMI Combustible Tobacco products by zone (2016 till 2022) in Million of Dollars*
Source: PMI annual reports, own analysis.

Conversely, the smoke-free products segment emerged as a tremendous success story, boasting an impressive CAGR of 15.43% from 2018 to 2022. This growth signifies a paradigm shift towards smoke-free alternatives. Within this category, the European Union demonstrated a remarkable CAGR of 42%, Eastern Europe with 32%, and the Americas and Canada with 39%. IQOS, a prominent smoke-free product, attracted approximately 27.4 million users by the end of the quarter, with 19.7 million successfully making the switch from traditional smoking.

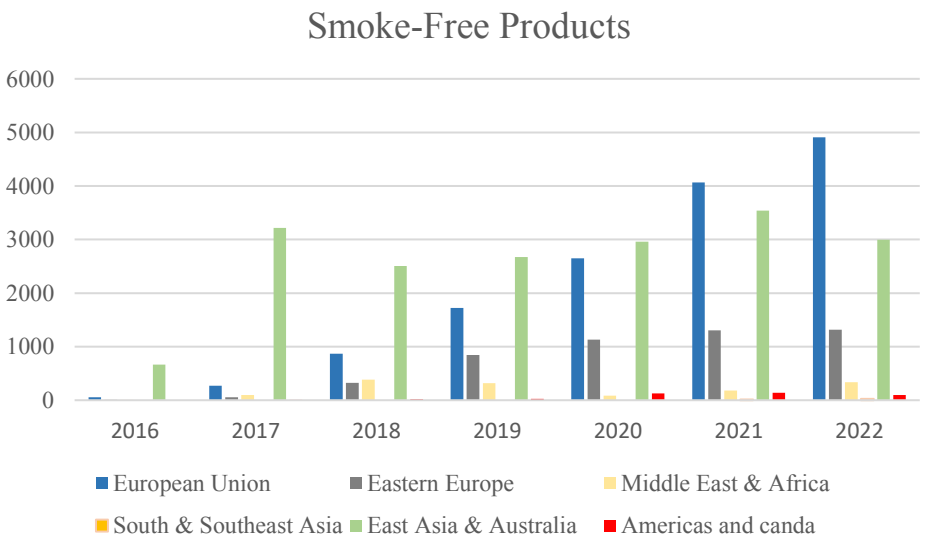

Figure 8*. Total Net Revenues of PMI Smoke-Free products by zone (2016 till 2022) in Million of Dollars*
Source: PMI annual reports, own analysis

The Wellness and Healthcare segment is a relatively recent addition to PMI's portfolio, initiated through the acquisition of Vectura in 2021. For 2023, PMI anticipates revenues of $300 million in this segment, projecting a robust CAGR of 63.8% between 2021 and 2022. Furthermore, the acquisition of Swedish Match aims to offer better alternatives for adult smokers. In the third quarter of 2023, ZYN nicotine pouch shipment volume in the U.S. witnessed substantial growth, reaching 105.4 million cans, reflecting a remarkable 65.7% increase compared to the same period in 2022.

5.2.2. Profitability

PMI has maintained a robust financial performance in terms of profitability over the years. The company's Gross Profit, EBITDA, EBIT, and Net Margins have exhibited stability, ranging within specified intervals.

A notable aspect contributing to the similarity between EBITDA and EBIT is the low amount of depreciation and amortization. As a primary cigarette manufacturer and distributor, PMI's products are not capital intensive, meaning that the Company does not need to invest heavily in fixed assets such as PPE’s. PMI invests significantly in R&D, but these expenses are expensed as incurred rather than capitalized, resulting in a lower level of intangible assets to be amortized.

This financial structure underscores PMI's strategic focus on operational efficiency and innovation rather than large capital investments. It allows the company to adapt to market trends and invest in areas critical to its growth without the burden of large amortization charges. Moreover, PMI has maintained a lucrative financial performance over the years, consistently achieving a Net Margin greater than 20%.

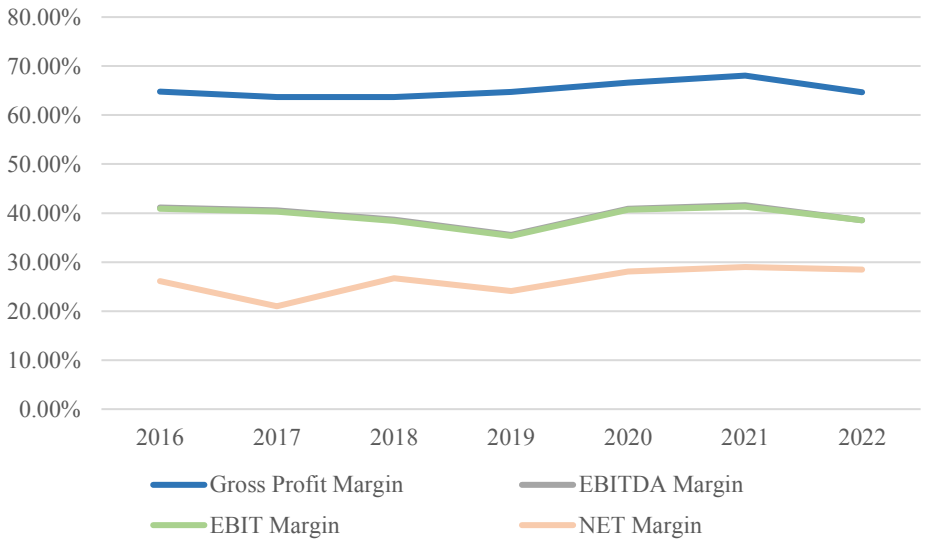

Figure 9. *PMI profitability ratios (2016 – 2022)*
Source: PMI annual reports, own analysis

However, it's noteworthy that the ROE has turned more negative over the years. This shift can be attributed to the company's share repurchase initiatives, which resulted in lower equity levels. While share repurchases can enhance earnings per share, they can also lead to a reduction in equity, impacting ROE negatively.

On the other hand, in terms of ROIC, PMI has exhibited a varied performance over the years. The fluctuations in ROIC underscore the dynamic financial landscape PMI navigates. Notably, the ROIC in 2022 experienced a substantial decline, dropping to 35.84%. This shift in financial metrics was influenced by PMI's strategic acquisition of Swedish Match, where the company incurred substantial debt through U.S. dollar credit facility borrowings and Euro credit facility borrowings related to the acquisition. The infusion of debt for this significant acquisition impacted the overall ROIC for the year.

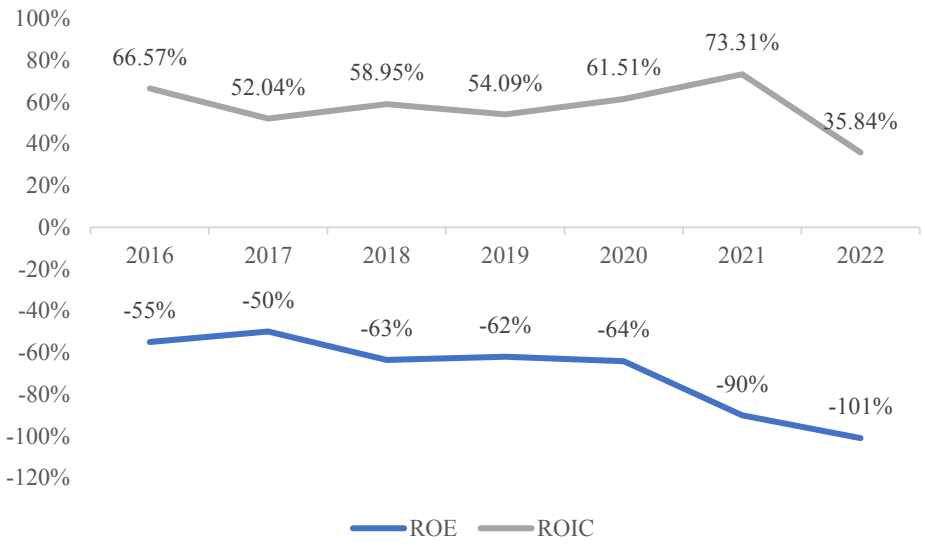

Figure 10. *PMI Return on Equity and Return on Capital (2016 – 2022)*
Source: PMI annual reports, own analysis

5.2.3. Efficiency, Liquidity and Solvency positions

PMI has a multi-faceted financial position that includes liquidity, efficiency and solvency positions. Since 2017, PMI has systematically reduced its liquidity metrics, containing the current ratio, quick ratio, and cash ratio. A significant decline occurred in 2022, largely driven by an increase in liabilities, which rose from $19,255 million in 2021 to $27,336 million in 2022. In particular, the significant increase in short-term debt related to the acquisition of Swedish Match played a key role in this increase.

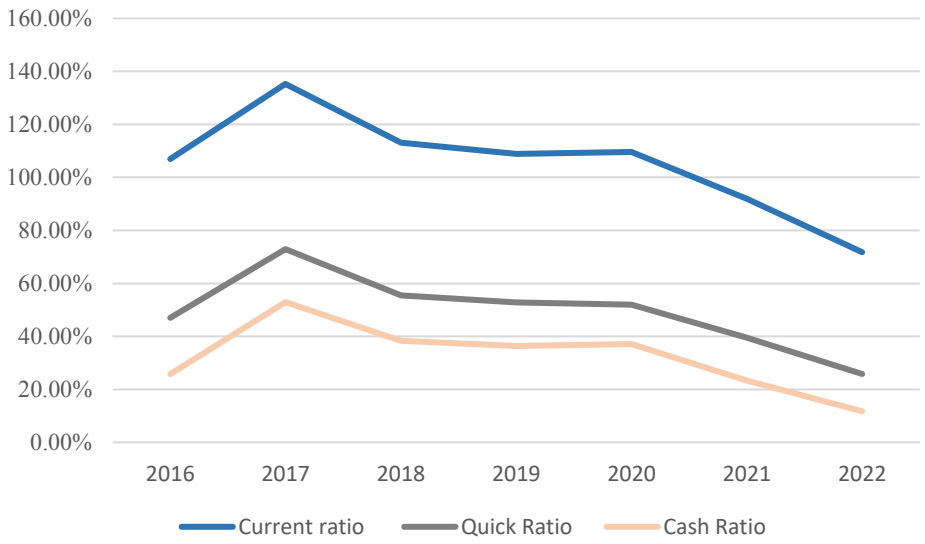

Figure 11. PMI Liquidity Ratios (2016 – 2022)
Source: PMI annual reports, own analysis

Efficiency metrics portray a resilient performance. The fixed asset turnover ratio has consistently maintained a high and stable range, fluctuating between 180% and 215%. This suggests that PMI effectively utilizes its fixed assets to generate revenue. The total assets to sales ratio, while generally stable between 130% and 150%, witnessed a notable spike from 131.48% in 2021 to 194.20% in 2022. This surge is attributed to a substantial increase in total assets, prominently influenced by a surge in net goodwill from $6,680 million in 2021 to $19,655 million in 2022. This increase is connected to strategic business units, the Wellness and Healthcare segment, and the recent acquisition of Vectura Fertin Pharma (2021).

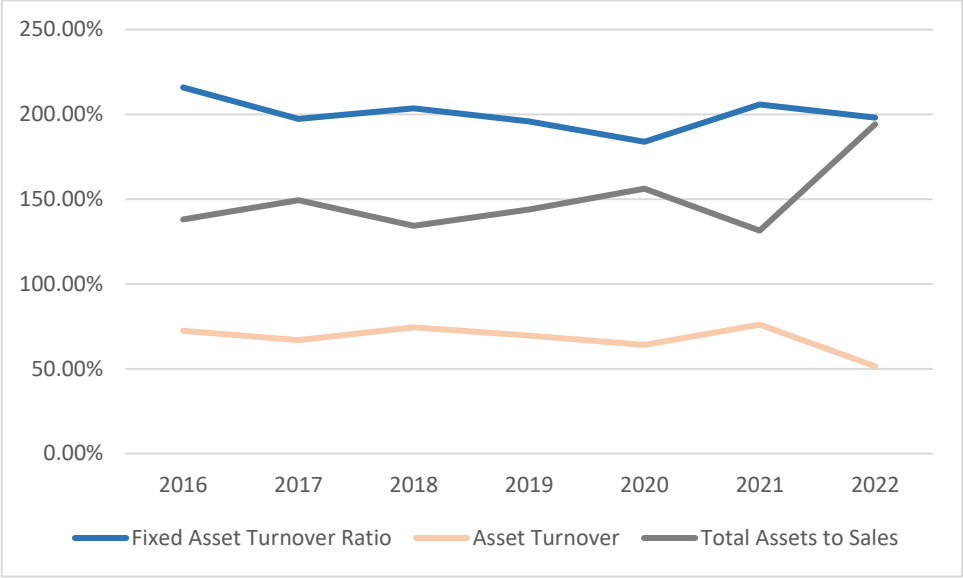

Figure 12. *PMI Efficiency Ratios (2016 – 2022)*
Source: PMI annual reports, own analysis

In terms of solvency, PMI's D/E ratio (based on book value) has been on a downward trajectory since 2016, reflecting prudent management of debt relative to total assets. However, the debt/equity ratio has taken a negative turn, reaching -481% in 2022. This shift is primarily a consequence of escalating debt levels over the years, coupled with the company's extensive share repurchase initiatives. PMI's strategic acquisitions, particularly the acquisition of Swedish Match in 2022, played a pivotal role in this financial dynamic. The company made this substantial acquisition, which not only brought in a significant amount of capital, but also resulted in a significant increase in debt. The highly negative debt/equity ratio is indicative of the impact of these strategic moves.

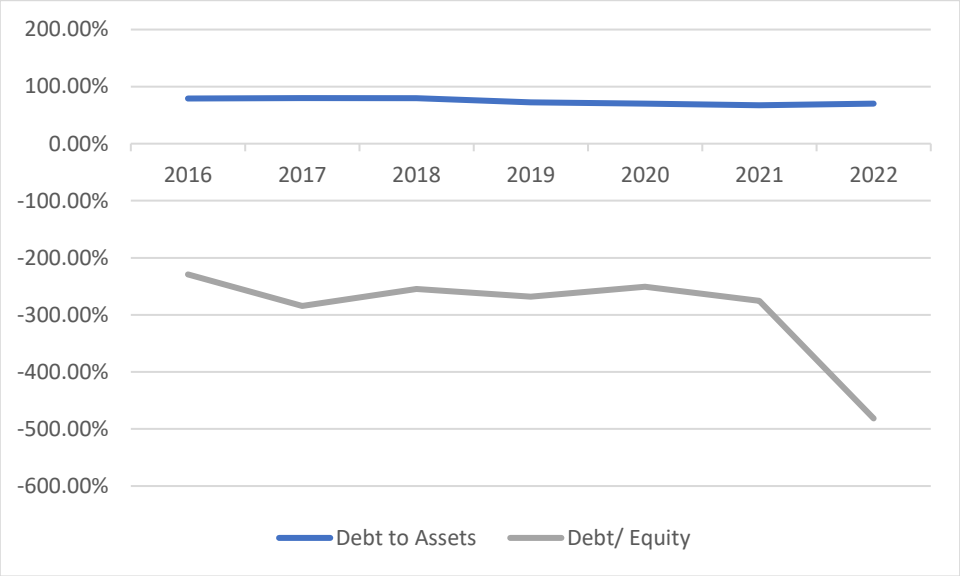

Figure 13. *PMI Debt to Assets and Debt to Equity (2016 – 2022)*
Based on Book Values
Source: PMI annual reports, own analysis

5.2.4. Dividend Policy and Shareholder Returns

PMI has consistently demonstrated its commitment to shareholder returns through a robust dividend policy. Since its IPO in 2008, PMI has increased its regular quarterly dividend by an impressive 176.1%, representing a compelling CAGR of 7.5%. This sustained growth underscores the company's commitment to delivering value to its shareholders.

In September 2023, the Board of Directors announced another increase in PMI's regular quarterly dividend, marking the sixteenth consecutive year of dividend growth. The new dividend of $1.30 per share, up from $1.27 per share, contributes to an annualized dividend of $5.20 per share. This decision reflects PMI's confidence in its financial position and cash flow and reinforces its commitment to a shareholder-friendly policy.

Looking at the evolution of PMI's gross dividend over the last five years (2018-2022), the company has achieved a CAGR of 2.31%, reflecting a steady increase in the returns distributed to shareholders.

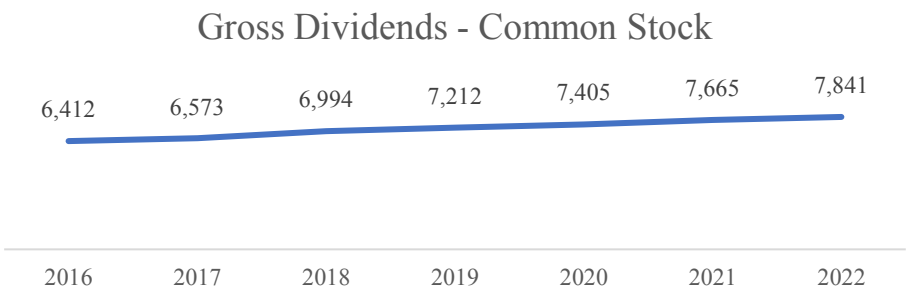

***Figure 14**. Yearly Gross Dividends (2016-2022), in Million of Dollars*
Source: PMI annual reports, own analysis

When comparing PMI's performance to the S&P 500 in terms of cumulative shareholder return over the past five years (since December 2017), both indices have delivered positive results. Based on an investment of $100 in December 2017, the PMI will have returned $127 by December 2022. In contrast, the S&P 500 has returned $143.6 over the same period, demonstrating the positive performance of both investments with dividends reinvested quarterly.

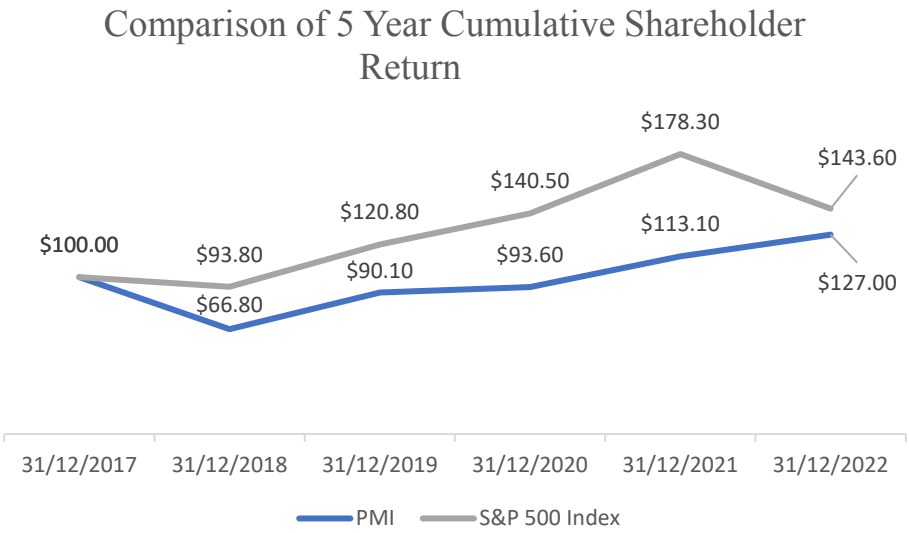

***Figure 15.** Comparing 5-Year Cumulative Shareholder Return: PMI vs S&P500*
Starting with a $100 investment on December 31, 2017.
Source: Refinitiv Eikon, own analysis

In addition, PMI's payout ratio, a key indicator of dividend sustainability, has consistently exceeded 80% over the past seven years. In particular, the payout ratio reached an impressive 107.82% in 2017. In 2022, the payout ratio stands at 86%. This consistent and robust dividend policy is in line with PMI's broader strategy of delivering long-term value and financial stability to its investors.

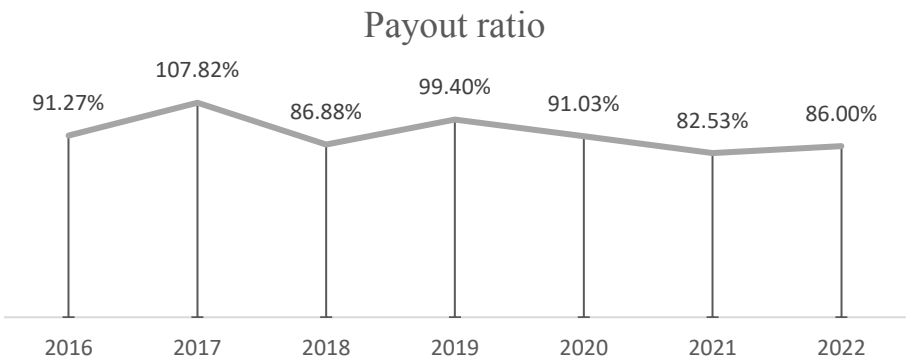

***Figure 16**. Payout Ratio (2016 till 2022)*
Source: PMI annual reports, own analysis

6. Assumptions of Valuation

The valuation of PMI is closely linked to the company's strategic vision and financial goals. Over a specified five-year period, the valuation model incorporates critical assumptions that are consistent with PMI's aspirational goals. Specifically, the model incorporates PMI's commitment to generate more than two-thirds of its total net sales from smoke-free products by 2030.

Key to this forecast is PMI's strategic plan to enter the US market in 2024, anticipating a regulatory environment favorable to smoke-free products. The valuation model considers the expected growth trajectory of smoke-free products, driven by increased acceptance and demand due to their perceived lower health risks.

An essential assumption is the timeframe until 2027, representing the period of introduction and consumer adaptation to smoke-free products in the US market. The model assumes robust growth during this period, followed by a decline after 2027. This expected decline is consistent with expectations of declining sales of combustible tobacco products and a gradual stabilization of margins.

The steady state expected to be reached by 2027 reflects a mature phase in PMI's transition to a predominantly smoke-free product portfolio. This phase includes a sustained decline in sales of combustible tobacco products, a reduced growth rate for smoke-free products, and stabilized margins.

6.1. Total Revenues

PMI's sales forecast is carefully crafted, taking into account the evolving landscape of consumer preferences and industry trends. The projections are multifaceted, balancing the continued growth of smoke-free and wellness and healthcare products with the continued decline of combustible tobacco products. This decline in traditional tobacco consumption is in line with the global shift towards alternative goods that are perceived as less harmful to health, further shaping the trajectory of PMI's revenue streams. For this forecast revenues referees to net revenues, because it provides a more realistic and precise estimate of the company's actual financial performance, reflecting the true revenue stream available for supporting the business's ongoing operations, growth, and potential returns to shareholders.

To project the forthcoming revenues of combustible tobacco products over the ensuing five years, a preliminary step involved a meticulous analysis of the revenue weights attributed to each geographical zone in the total revenue structure of this product. Noteworthy is the observation that these weights have exhibited a persistent stability over the preceding seven years. The European Union Zone consistently emerged as the predominant contributor, consistently occupying the highest percentage range, specifically fluctuating between 33% and 37% of the aggregate revenues of this segment.

Following this assessment, the CAGR of the total revenues in this segment over the last five years was calculated, obtaining a percentage of -3.31%. This percentage was subsequently applied over the next five years to derive the overall forecasted value of total revenues from CTP. To refine the analysis on a zone-specific basis, the weights of last year were meticulously applied, yielding precise revenue projections for each zone.

It is expected that the net revenues of Total CTP will decrease significantly from 21,572 million Dollars in 2022 to 18,228.3 million Dollars by 2027. This indicates a substantial drop. Furthermore, it is predicted that there will be an even more pronounced downturn after 2030, as smoke-free products and Wellness and Healthcare are expected (by PMI) to make up 60% of total net revenues in that year. This expectation is dependent on widespread acceptance and regulatory compliance across various countries.

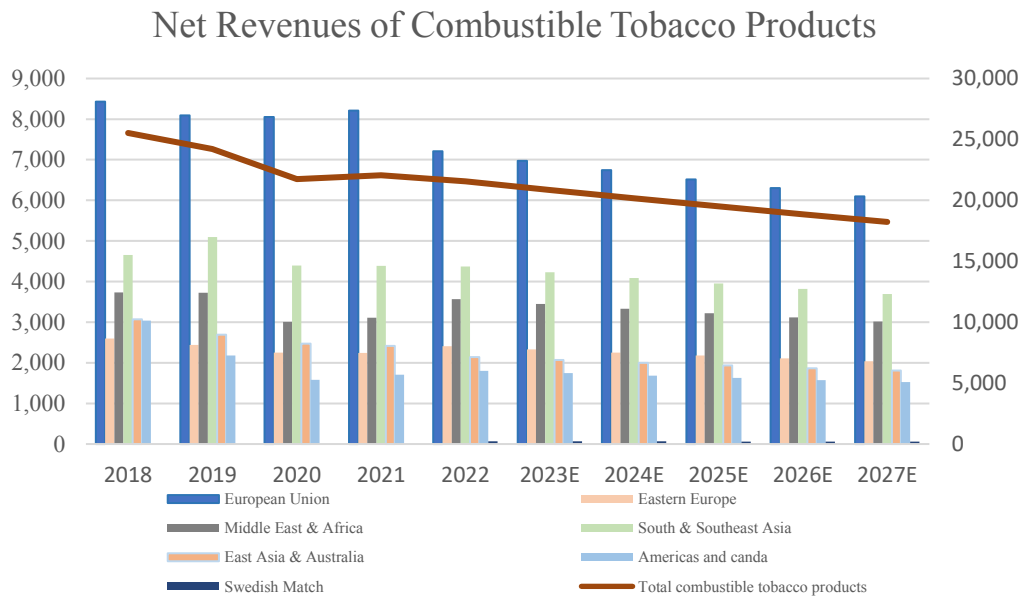

***Figure 17**. PMI Net Revenues of Combustible Tobacco Products Forecast (2018A - 2027E), in million of Dollars*
Source: PMI annual report , own analysis

In projecting revenues for smoke-free products, excluding wellness and healthcare, a similar analytical approach was employed as with combustible tobacco products. The CAGR for total revenues from SFP excluding W&H, over the last 5Y stood at an impressive 15.43%. This robust trend, indicative of a rapid ascent driven by market expansion and broader acceptance, underscores its potential as a substitute for traditional combustible tobacco products.

Anticipating this growth trajectory to continue its ascent until 2027, propelled by market entries into new geographies and growing market acceptance, the CAGR of 15.43% was applied to estimate revenues until 2027. This projection was further refined by considering the revenue weights attributed to each country from the preceding year. As a result, it's estimated that by 2027, this segment will amass a revenue of 20,327.3 million dollars. Among the regions, the European Union is expected to exhibit the most substantial revenue volume in this segment.

Furthermore, noteworthy regulatory strides, such as the U.S. Food and Drug Administration authorization of certain versions of our IQOS Platform 1 devices and consumables, along with Swedish Match's General snus, as Modified Risk Tobacco Products, are poised to bolster market acceptance and potentially augment future revenue streams in this category.

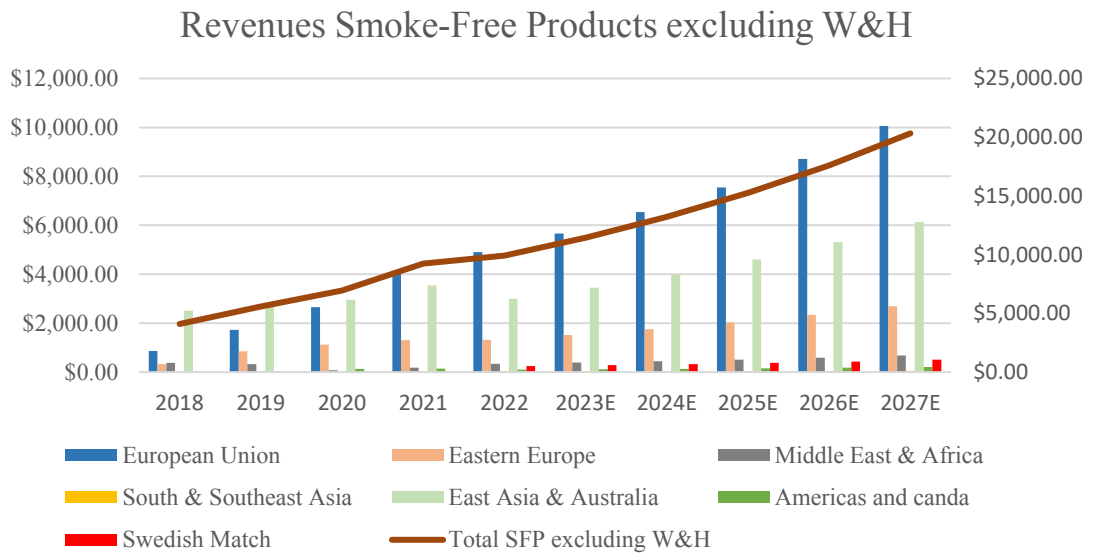

Figure 18. *PMI Net Revenues of Smoke-Free Products excluding W&H Forecast (2018A - 2027E), in million of Dollars*
Source: PMI annual report , own analysis

The Wellness and Healthcare segment within PMI's portfolio holds considerable promise. With an estimated revenue of $300 million in 2023, the segment showcases robust growth potential.

A 3-year CAGR of 43.74%, calculated between 2021 and 2023, has been employed to project revenues over the subsequent five years. It's essential to note that while this analysis forecasts robust growth, Philip Morris International has set an ambitious target for this segment: aiming for revenues surpassing $1 billion by 2025. However, considering the 3Y CAGR, it's projected that this target might be achieved only in 2027, indicating a more cautious and meticulous approach in this analysis. The accelerated growth in this segment is principally credited to the positive reception of products inherited from Vectura. Additionally, this growth is further bolstered by PMI's robust and expansive distribution network, facilitating the effective reach and accessibility of these innovative healthcare solutions and wellness products to diverse markets.

Moreover, PMI's overarching ambition extends beyond traditional tobacco and nicotine-based products. The company aims to generate over USD 1 billion in net revenues from non-nicotine products by 2025, marking a significant milestone in establishing new long-term revenue sources. This strategic direction emphasizes leveraging PMI's scientific and technological capabilities, particularly in inhalation and aerosolization, to create innovative, consumer-centric products that target unmet needs and deliver enhanced experiences. In the

wellness category, PMI is committed to developing and commercializing scientifically validated consumer health solutions designed to improve individuals' lives. Simultaneously, in the healthcare domain, the company has dedicated resources to advancing a pipeline of over-the-counter and prescription products, signifying a strategic shift toward innovative healthcare, offering.

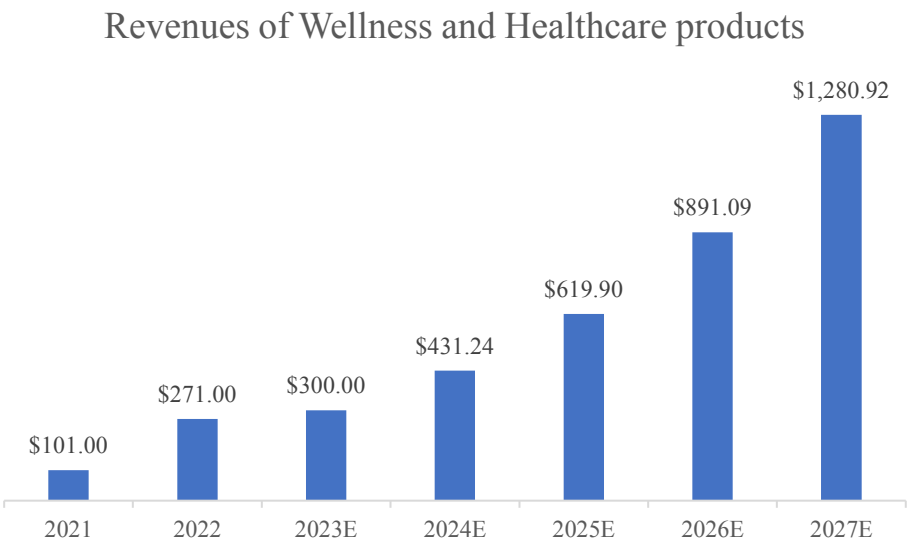

Figure 19. *PMI Net Revenues of Wellness and Healthcare products Forecast (2018A - 2027E), in Million of Dollars*
Source: PMI annual report , own analysis

In aggregate, PMI is anticipated to reach $39,836.5 million in revenues by 2027. Despite potential external factors such as geopolitical unrest and regulatory challenges, PMI remains optimistic about the reception of smoke-free products in both existing and new markets, reaffirming its commitment to combatting combustible tobacco.

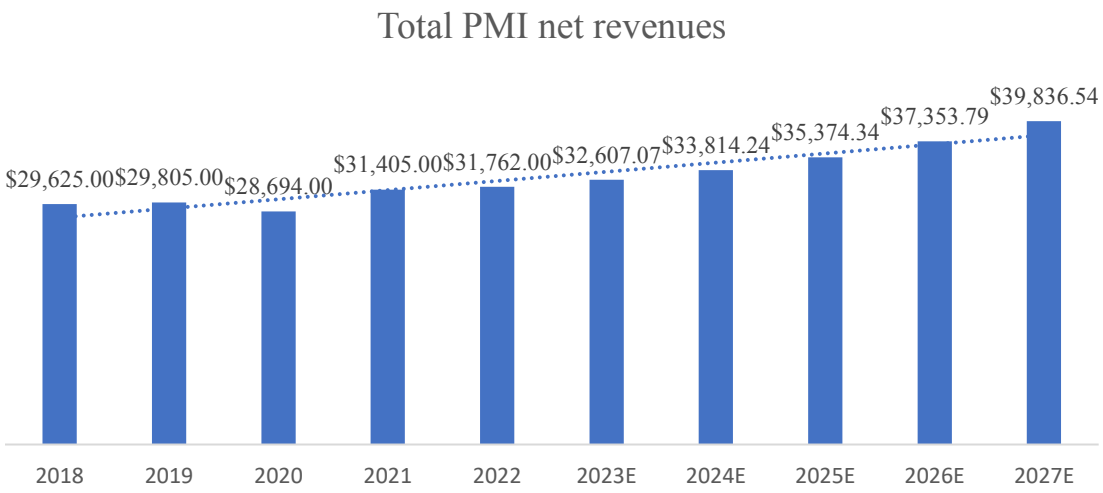

Figure 20. *PMI Total Net Revenues Forecast (2018A - 2027E),in Million of Dollars*
With a CAGR of 3.01% over the same period.
Source: PMI annual report , own analysis

6.2. Operating Income and Expenses

In the process of evaluating the Operating Income, a meticulous estimation of operating expenses holds paramount significance. Within PMI operational framework, these expenditures are distinctly categorized into four primary segments: COGS, MA&R, D&A, and Unusual Expenses.

In the realm of COGS, PMI anticipates an increase in its cost of sales due to the implementation of new regulations affecting traditional tobacco products. This shift will require adjustments in the production of both smoke-free devices and traditional tobacco products, thereby impacting the cost dynamics.

PMI's cost of sales primarily includes expenses related to various components, including tobacco leaf, non-tobacco raw materials, labor, manufacturing costs, shipping and handling expenses, and expenses related to devices sourced from third-party electronics manufacturing service providers. Additionally, costs associated with device warranty programs are generally recognized in cost of sales in the period corresponding to the recognized revenues.

To project COGS for the next five years, a careful analysis of the percentage of sales represented by this segment in recent years was performed, which has consistently averaged between 32% and 36% of sales. In particular, a significant increase was observed in 2022, jumping from 31.94% to 35.35%, largely due to inflationary pressures that significantly impacted COGS prices.

In projecting COGS for the upcoming five years, a strategic method was employed by utilizing the average percentage of sales over the last five years, which stood at 34.44%. Additionally, by examining the COGS over the last 12 years, we noticed a consistent pattern, with an average percentage of sales at 34.63%. This long-term stability reinforces the reliability of COGS, which closely resembles the figures from the recent 5-year average.

Therefore, considering this extended historical analysis alongside the more recent trends, the 34.44% utilized for the upcoming projections appears aligned with the long-standing consistency observed in COGS as a percentage of sales for PMI. As a result, the expected COGS for 2027 is estimated at USD 13,721.53 million.

PMI strategic emphasis on innovation and the continual development of new products, notably the IQOS, indicates a sustained commitment to investments in MA&R expenses.

These ongoing investments are crucial for PMI to uphold its competitive edge and allure to consumers, especially in the wake of its endeavor to regain traction in East Asia, marking an escalated marketing investment in this region. Given the stringent regulatory environment within the tobacco industry, the company anticipates potential increments in MA&R expenses driven by compliance efforts. Fluctuations in regulations or an augmented emphasis on corporate responsibility could further impact these expenses.

The forthcoming years are poised to witness augmented investments in smoke-free products by PMI. These investments encompass the launch of new products, market expansion initiatives, and amplified marketing and sales endeavors. Concurrently, PMI foresees forthcoming regulatory alterations in key markets, necessitating additional investments in compliance and reporting capabilities to align with evolving regulatory frameworks.

The company also envisions investments in the augmentation of administrative functions through the implementation of new digital tools. This strategic move aims to bolster the efficiency and efficacy of back-office operations by automating tasks, streamlining workflows, and simplifying reporting processes.

In the context of forecasting these expenditures, a consistent pattern has emerged in recent years, with MA&R expenses consistently accounting for approximately 23% to 26% of total sales.

Based on this historical trend, an average of the past 5 years (25.44% of sales) has been applied to forecast MA&R expenses for the upcoming 5-year period. This calculated estimate

anticipates that these combined expenses will reach approximately 10,113.01 million dollars, aligning with the company's strategic focus on innovation, marketing, compliance, and administrative enhancements to maintain its competitive edge and pursue growth opportunities.

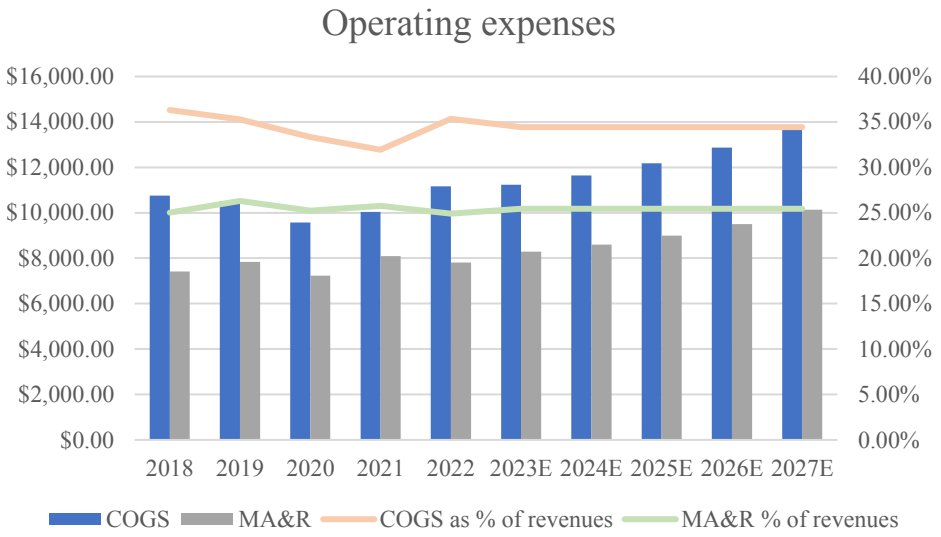

Figure 21. *Operating Expenses Forecast (2018A – 2027E), in Million of Dollars*
Source: PMI annual report , own analysis

The D&A expenses of PMI have historically ranged between 73 and 97 million dollars from 2010 to 2021. However, in 2022, there was a substantial upswing in D&A expenses, surging from 96 million dollars in 2021 to 159 million dollars. This considerable increase primarily stemmed from the augmented acquisition of intangible assets recorded in the third quarter of 2021 due to the Vectura acquisition.

Looking ahead, PMI foresees its annual amortization expenses to be $310 million or less, contingent upon the absence of additional transactions requiring intangible asset amortization. This estimate remains subject to alteration based on the finalization of the preliminary purchase price allocation following the Swedish Match acquisition.

In forecasting the anticipated amortization/depreciations expenses for the forthcoming five years, a comprehensive methodology was employed. Initially, the percentage of assets attributed to amortization plus depreciation expenses was calculated. Subsequently, the average growth rate of this percentage was determined (2018-2022), indicating a 0.011% annual increase in this percentage, as its possible to see in appendix 13.

In the last 12 years, the combined value of amortization and depreciation expenses has never surpassed 0.30% of the company's assets. Consequently, beyond 2026, it's anticipated that this

segment will stabilize or marginally decrease, remaining around 0.30% or slightly less of the company's total assets. This predictive analysis suggests an upward trajectory in amortization expenses, reaching an estimated 308.31 million dollars in 2027. This forecast aligns with PMI's strategic planning and ongoing trends related to the acquisition and treatment of intangible assets.

In terms of Unusual Expense, in 2022, PMI observed a notable surge in this segment relative to revenues. These expenses, amounting to 1.19% of sales, increased from 0.69% in 2021, totaling 378 million dollars compared to the previous year's 216 million dollars. This substantial escalation in expenses primarily stemmed from various sources, notably costs related to the IPO and mergers, primarily the Swedish Match acquisition, which accounted for 115 million dollars. Additional expenses comprised the impairment of intangibles excluding goodwill, amounting to 112 million dollars, alongside 151 million dollars attributed to disruptions in Ukrainian and Russian affiliates.

Looking back, the year 2019 was another significant period witnessing a sharp rise in unusual expenses. This increase primarily resulted from the optimization of PMI's global manufacturing infrastructure, with recorded asset impairment and exit costs amounting to 422 million dollars. Among these expenses, 239 million dollars were derived from the difference between the carrying value of assets and liabilities of Rothmans, Benson & Hedges Inc., PMI's Canadian subsidiary, upon deconsolidation, whereas an additional 194 million dollars arose from a litigation process initiated in 1998, culminating in a judgment by the court of Quebec, Canada, in 2019.

PMI has indicated the likelihood of incurring restructuring charges in 2023, aligning with its ongoing business transformation focused on smoke-free products. However, the company anticipates an increase in unusual costs for 2023 compared to 2022, mainly attributed to the ongoing conflict in Ukraine and succeeding sanctions against Russia. Given PMI's operations in both countries and the significant disruptions due to the conflict, these costs are anticipated to surpass previous figures.

Forecasting the next five years, an assumption based on the average of the last 5 years of unusual income as a percentage of sales (1.05%) is applied. This projection does not include future mergers or IPO-related expenses, since the company does not intend to make any new acquisitions. However, it does account for anticipated restructuring costs amid PMI's continuous shift towards smoke-free products.

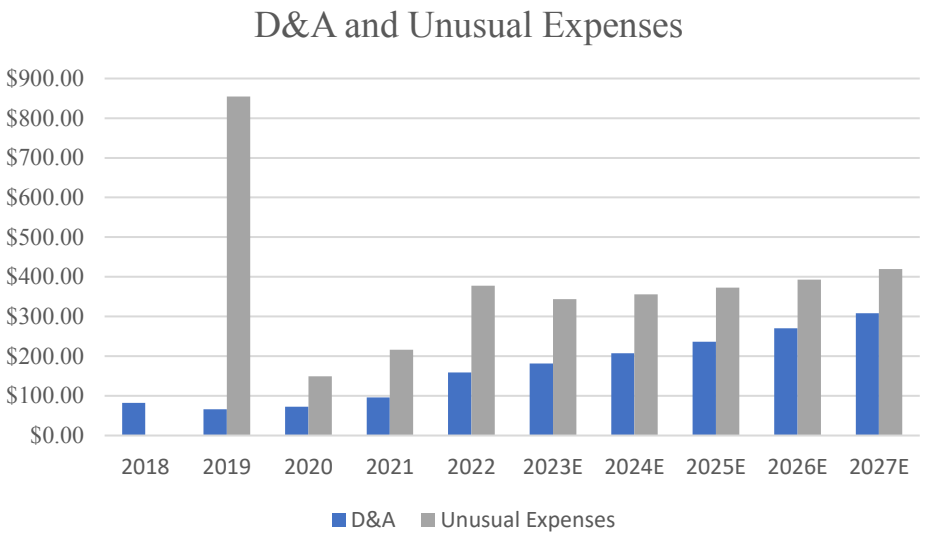

***Figure 22**. Depreciations & Amortizations, and Unusual Expenses Forecast (2018A – 2027E), in Million of Dollars*
Source: PMI annual reports, own analysis

In examining the trajectory of operating income for PMI, the forecast indicates a promising upward trend. Projections anticipate a substantial increase in operating income, reaching an estimated 15,254 million dollars by 2027, marking a notable growth from the 12,246 million dollars recorded in 2022. This forecast suggests a CAGR of approximately 3.73% between 2022 and 2027.

However, it's important to note that this anticipated growth might experience a temporary setback from 2022 to 2023 due to an expected decrease in operating income. This decline primarily stems from inflationary pressures leading to a significant increase in COGS), impacting on the overall profitability for the year. Despite this projected short-term dip, the overarching trend remains positive, reflecting PMI's strategic initiatives, innovations, and commitment to transitioning towards smoke-free products, all contributing to a sustainable and promising financial performance in the long term.

(in million EUR)	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E
Revenues	$29,625.00	$29,805.00	$28,694.00	$31,405.00	$31,762.00	$32,607.07	$33,814.24	$35,374.34	$37,353.79	$39,836.54
COGS	$10,758.00	$10,513.00	$9,569.00	$10,030.00	$11,170.00	$11,231.37	$11,647.18	$12,184.55	$12,866.36	$13,721.53
MA&R	$7,408.00	$7,840.00	$7,235.00	$8,088.00	$7,809.00	$8,294.09	$8,601.15	$8,997.98	$9,501.49	$10,133.01
D&A	$82.00	$66.00	$73.00	$96.00	$159.00	$181.52	$207.22	$236.56	$270.06	$308.30
Unusual Expenses	$0.00	$855.00	$149.00	$216.00	$378.00	$343.41	$356.12	$372.55	$393.40	$419.54
EBIT	$11,377.00	$10,531.00	$11,668.00	$12,975.00	$12,246.00	$12,556.69	$13,002.57	$13,582.69	$14,322.48	$15,254.15

***Table 2.** PMI EBIT Forecast (2018A – 2022E), in Million of Dollars*
Source: PMI annual reports, Own analysis

6.3. Capex and Related Assets

PMI's capital expenditures were strategically focused, totaling $1.1 billion in 2022 and $0.7 billion in 2021. These investments are primarily focused on expanding the company's smoke-free product manufacturing capabilities, a critical move in line with PMI's evolving strategic vision.

Looking ahead to 2023, PMI anticipates a substantial rise in total capital expenditures, estimated at approximately $1.3 billion. This increased investment is specifically earmarked for bolstering smoke-free product manufacturing capacity, including advancements for ILUMA and Swedish Match's portfolio, aligning perfectly with PMI's trajectory towards smoke-free alternatives.

In addition, PMI recognizes the need to be nimble in response to regulatory changes and understands that such changes may require further capital expenditures. As a result, the company is prepared to adapt its products or manufacturing processes to meet evolving regulations, demonstrating its commitment to regulatory compliance and product improvement.

It's noteworthy that PMI's competitors are also increasing their investments in smoke-free products, prompting PMI to prioritize sustained investments in enhancing its own smoke-free product manufacturing capabilities to maintain a competitive edge.

The significant acquisition of Swedish Match in 2022 marked a pivotal moment for PMI. As the company moves forward, the years beyond 2023 remain critical. PMI will devote significant resources to regulatory compliance, particularly with its anticipated entry into the important U.S. market.

Looking ahead to 2027, its estimated that capital expenditures to reach $1,552.59 million. This forecast is based on an observed compound annual growth rate of 4.54% between 2018 and 2023. It's expected that this investment will remain in line with sales as a percentage of sales, in the range of 1.5% to 5%, underscoring PMI's proactive approach to product innovation and manufacturing capabilities.

PMI's strategic focus on penetrating new markets and transitioning to smoke-free products reflects a forward-looking approach. The higher CAPEX relative to D&A signals a deliberate front-loaded investment strategy aimed at capturing market share and driving innovation. This phase represents a transitional period in which significant investments are being made in technology, research and market expansion. The initiatives are expected to bring stable returns

after 2027, leveraging current investments for sustainable growth and profitability in the evolving smoke-free product landscape.

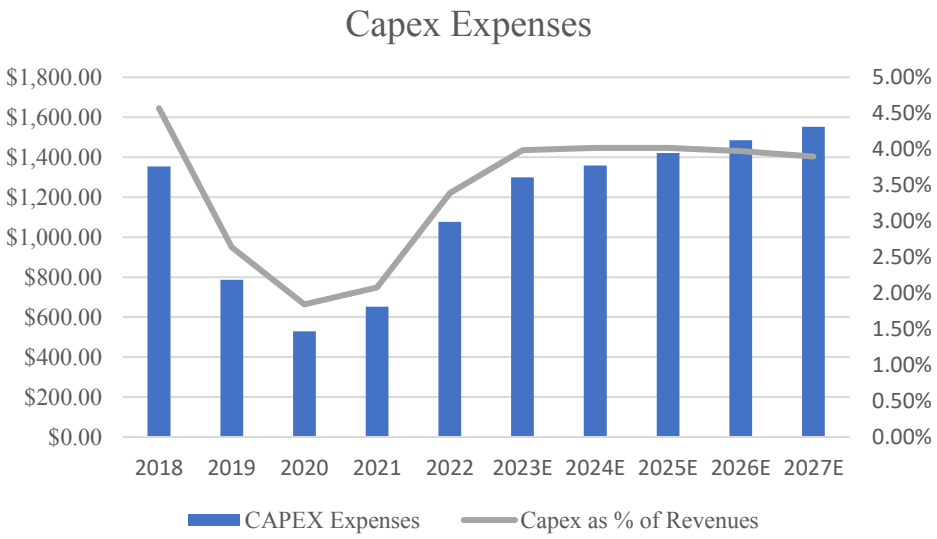

Figure 23. *CAPEX Expenses Forecast (2018A-2027E), in Million of Dollars*
Source: PMI annual reports, Own analysis

6.4. Net Working Capital

The evaluation of PMI's Net Working Capital necessitated a meticulous examination of several key components. This comprehensive assessment delved into critical metrics such as Accounts Receivables Days, Accounts Payables Days, Inventory Days, and the Accrued Expense Ratio. These parameters are crucial metrics that significantly impact PMI's financial well-being and operational efficiency, serving as the cornerstone for a comprehensive forecast. Additionally, the forecast indicates an anticipated trend where Accounts Payables Days are expected to surpass Accounts Receivables Days starting from 2025 onwards.

When accounts payable days exceed accounts receivable days, it typically means that the time it takes for a company to pay its outstanding invoices to suppliers is longer than the time it takes for customers to pay the company for its products or services.

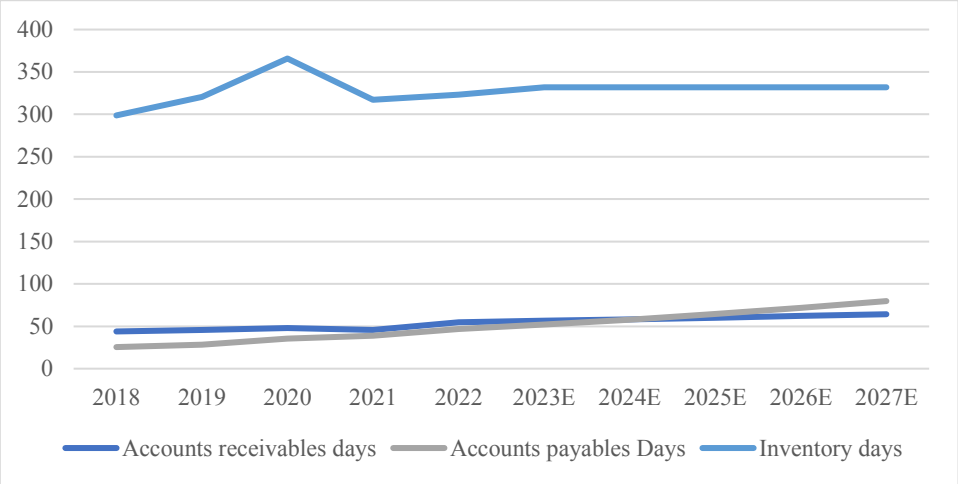

Figure 24. *PMI accounts receivables days, accounts payables days and Inventory days Forecast (2018A-2027E)*
Source: PMI annual reports, Own Analysis

To begin, the estimation of Total Current Assets excluding cash involved an intricate analysis of Account Receivables Net and Inventory. The examination of Account Receivables Days over the past decade revealed consistent trends, except for a slight deviation in the previous year. By applying a calculated average growth from 2018 to 2022 of Account Receivables Days to forecasted revenues, a projection emerged, anticipating the Total Account Receivables Net to attain 7,007 million dollars by 2027.

Moving to Inventory, the variability observed in Inventory Days over recent years necessitated a strategic approach. Employing a last three-year average of Inventory days, multiplied by forecasted COGS for each corresponding year, yielded a forecast projecting the Total Inventory to reach 1,2470 million dollars by 2027.

Further analysis extended to Other Current Assets, showcasing a consistent percentage range relative to sales. The strategic use of the average of the last three years of percentage comparative to revenues, revealed an estimate that anticipates Other Current Assets to amount to 1,375 million dollars in 2027.

In Million of $	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E
Total Net Accounts Receivables	$3,564.00	$3,717.00	$3,761.00	$3,940.00	$4,756.00	$5,042.27	$5,400.00	$5,833.95	$6,361.94	$7,006.75
Accounts receivables days	*43.91*	*45.52*	*47.84*	*45.79*	*54.65*	*56.44*	*58.29*	*60.20*	*62.17*	*64.20*
Total Inventory	$8,804.00	$9,235.00	$9,591.00	$8,720.00	$9,886.00	$10,207.01	$10,584.89	$11,073.24	$11,692.87	$12,470.05
Inventory days	*298.70*	*320.63*	*365.84*	*317.33*	*323.04*	*331.71*	*331.71*	*331.71*	*331.71*	*331.71*
Other Current Assets, Total	$481.00	$701.00	$860.00	$561.00	$1,770.00	$1,125.62	$1,167.29	$1,221.14	$1,289.48	$1,375.18
% of Total Revenues	*1.62%*	*2.35%*	*3.00%*	*1.79%*	*5.57%*	*3.45%*	*3.45%*	*3.45%*	*3.45%*	*3.45%*
Total Current Assets excluding cash	$12,849.00	$13,653.00	$14,212.00	$13,221.00	$16,412.00	$16,374.89	$17,152.18	$18,128.34	$19,344.29	$20,851.98

Table 3. *Total Current Assets Excluding Cash Forecast (2018A-2027E), in Million of Dollars*
Source: PMI annual reports, Own analysis

The exploration of Accounts Payable led to the observation of an upward trend in Account Payables Days. This trend was carefully modeled by averaging the growth from 2018 to 2022

and applying it to forecasted revenues, resulting in a forecasted Account Payables value of 8,698 million dollars in 2027.

Examining Accrued Expenses involved computing the Accrued Expenses Ratio over recent years. Applying the last 3Y average of this ratio to projected operating expenses revealed a projection of Accrued Expenses reaching 14,339 million dollars in 2027.

Moreover, the forecast extended to encompass Total Other Current Liabilities, following a similar methodology applied to Other Current Assets. However, instead of using revenues, COGS has been utilized. It is important to note that Dividend Payable has not been account for the calculations because it is not a part of Working Capital. It is worth mentioning that the income tax payables are included in the Total Other Current Liabilities category, and they have been calculated based on the average figures of the last three years. Based on this analysis, it is projected that Other Current Liabilities will reach an estimated value of 1,413 million dollars by 2027.

In Million of $	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E
Accounts Payable	$2,068.00	$2,299.00	$2,780.00	$3,331.00	$4,076.00	$4,653.76	$5,367.33	$6,244.72	$7,333.74	$8,698.38
Accounts Payable days	*25.48*	*28.15*	*35.36*	*38.71*	*46.84*	*52.09*	*57.94*	*64.43*	*71.66*	*79.70*
Accrued Expenses	$7,887.00	$9,425.00	$10,496.00	$9,918.00	$11,982.00	$11,737.11	$12,171.63	$12,733.20	$13,445.72	$14,339.40
Accrued Expenses Ratio	*43.42%*	*51.35%*	*62.46%*	*54.74%*	*63.13%*	*60.11%*	*60.11%*	*60.11%*	*60.11%*	*60.11%*
Other Current liabilities, Total	$669.00	$889.00	$1,091.00	$1,025.00	$1,040.00	$1,156.44	$1,199.25	$1,254.58	$1,324.78	$1,412.83
Income Taxes Payable	$576.00	$796.00	$1,091.00	$1,025.00	$1,040.00	$1,156.44	$1,199.25	$1,254.58	$1,324.78	$1,412.83
Other current Liabilities	$93.00	$93.00	--	--	--	--	--	--	--	--

Table 4. *Other Current Liabilities Forecast (2018A-2027E), in Million of Dollars*
Source: PMI annual reports, Own analysis

Conclusively, excluding short-term debt, the summation of Total Current Liabilities is anticipated to total 24,451 million dollars. Meanwhile, Current Assets excluding cash are expected to amount to 20,852 million dollars. This estimation leads to a Net Working Capital of -839 million dollars by 2027. For a detailed breakdown and the complete table illustrating the calculation of Net Working Capital, please refer to Appendix 19.

In Million of $	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E
Total Current Assets excluding cash	$12,849.00	$13,653.00	$14,212.00	$13,221.00	$16,412.00	$16,374.89	$17,152.18	$18,128.34	$19,344.29	$20,851.98
-										
Total Current Liabilities excluding short term debt	$10,624.00	$12,613.00	$14,367.00	$14,274.00	$17,098.00	$17,547.31	$18,738.21	$20,232.50	$22,104.24	$24,450.61
=										
Net Working capital	$2,225.00	$1,040.00	$155.00	$1,053.00	$686.00	$1,172.42	$1,586.03	$2,104.16	$2,759.95	$3,598.63
Δ Net Working capital	$366.00	$1,185.00	$1,195.00	$898.00	$367.00	$486.42	$413.62	$518.13	$655.79	$838.68

Table 5. *Net Working Capital Forecast (2018A-2027E), in Million of Dollars*
Source: PMI annual reports, Own analysis

7. Valuation

This section provides a comprehensive examination of the valuation methodologies utilized in this Dissertation. These include the DCF method, sensitivity analysis, Monte Carlo analysis, and a relative valuation framework. These methodologies collectively contribute to a robust evaluation of the company's financial standing and prospects. The culmination of these analyses serves as the basis for determining the final price, offering a comprehensive perspective on the company's valuation.

7.1. Discount Cash Flow Method

Now that assumptions are established, the focus shifts to executing the DCF model. The initial step post-assumptions involve calculating two crucial metrics: the WACC and the perpetuity growth rate. These figures form the foundational elements required for constructing the DCF model, facilitating a comprehensive evaluation of the company's valuation. These metrics lay the groundwork for an in-depth assessment of the company's intrinsic value based on projected cash flows and the time value of money.

7.1.1. WACC and Perpetuity Growth Rate

Cost of Equity

The Cost of Equity was meticulously estimated through the CAPM methodology. This approach involved deriving three essential parameters: the risk-free rate, the market risk premium, and the beta coefficient.

Determining a risk-free rate requires a keen understanding of prevailing economic conditions. In the current environment, global economies are grappling with rising inflation rates, prompting central banks to combat the problem by raising interest rates. In the United States, inflation rose to a staggering 9.06% in June 2022. To combat this inflationary surge, the Federal Reserve has initiated a series of interest rate hikes with the goal of stabilizing inflation at 2% in the coming year. As of October 2023, the inflation rate stands at 3.7%, showing promising progress toward the Fed's goal.

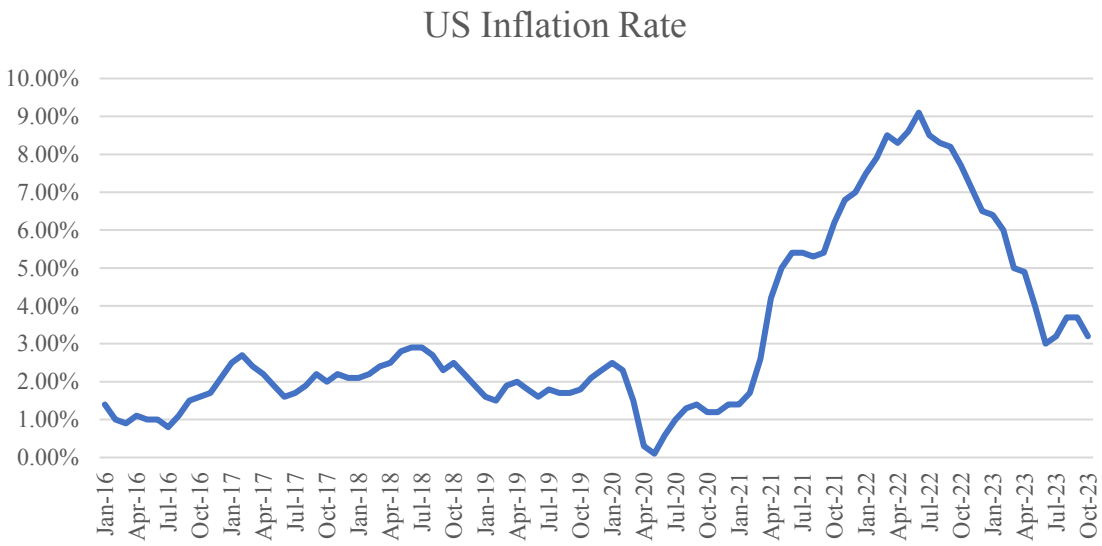

Figure 25. *Inflation Rate*
Source: US Inflation Calculator, Own analysis

Amidst varied expert opinions, including those of Susana Collins, head of the Federal Reserve Bank of Boston, some analysts doubt the likelihood of another rate hike. This skepticism arises due to the volatility in inflation rates, creating uncertainty in relying solely on the current 10-year US Treasury rate as a future benchmark for valuations. The projections, heavily dependent on future cash flows, face uncertainty given the downward trend in inflation. This trend hints at a potential future reduction in interest rates by the Federal Reserve, a move that could lead to a subsequent decline in the 10-year Treasury rate . Notably, since October 19, 2023, where the 10-year Treasury bonds reached 4.98%, they've been on a decline, registering at 3.81% on December 27, 2023 (Blomberg data). This downward trajectory aligns with the tendency of inflation rates, projected to reach 2%, further emphasizing the ongoing downward trend in rates.

To mitigate this uncertainty, I conducted an analysis over the past decade, focusing on the consecutive years in which inflation was slightly above 2% (2017-2019). This analysis included averaging the 10-year U.S. Treasury rates over this period, which resulted in a projected risk-free rate of approximately 2.43%. The calculated rate serves as a stable reference point for future cash flow projections and valuation assessments, amidst the fluctuating economic climate. It provides a reliable basis for cost of equity calculations, ensuring greater consistency and stability in projections despite the uncertainties triggered by the current economic volatility, particularly the fluctuations in inflation rates.

The ERP plays a key role in evaluating investment opportunities, particularly given PMI's US focus. ERP is the additional return investors expect to earn above the risk-free rate of return to compensate them for bearing the risks inherent in the market.

Based on research from Damodaran, a renowned financial expert, the current ERP for the U.S. stands at 5%

Estimating the beta coefficient, a measure of stock price volatility relative to the market, presented challenges. While attempting a peer group analysis, discrepancies arose due to certain companies in the group (most because of negative D/E of PMI and Altria), rendering the unlevered beta unrealistic for PMI. As a result, the 5-Year Monthly Beta obtained from Refinitiv Eikon, computed through a least squares linear regression analysis over a 5-year period, emerged as the more reliable approach for estimating PMI's beta at 0.79. This method offers a clearer understanding of PMI's stock volatility concerning the market, influencing the company's equity cost determination in the WACC computation.

In determining PMI's cost of equity, the inclusion of the CRP is imperative given PMI's global operations across continents. PMI's diverse market presence requires consideration of the unique risks associated with each country where it operates. The approach consisted of dividing the countries into zones as PMI does and assess the risk posed by each country within those zones.

The CRP for each zone was carefully assessed by averaging the risk premiums of the individual countries within that zone. By deriving a representative CRP per zone, we tailored the assessment to PMI's operational reach, weighing the impact of varying country risks.

Applying these CRPs to each zone's revenue contribution provided a nuanced understanding of the aggregate country risk across PMI's operations. The total CRP, which stood at 3.18%, served as a critical complement to PMI's overall cost of equity calculation.

	European Union	Eastern Europe	Middle East & Africa	Asia and Australia	Americas and canda	Swedish Match	Total
% of Total Revenues	38.16%	11.73%	12.28%	29.99%	5.99%	0.99%	100.00%
Average CRP per zone	1.36%	9.32%	5.87%	1.68%	5.66%	0.00%	23.90%
CRP per zone	0.52%	1.09%	0.72%	0.50%	0.34%	0.00%	3.18%

Table 6. *Country Risk Premium*
Source: Damodaran - Country and Equity Risk Premium table, Own analysis

Considering these fundamental components, the application of the CAPM model plus CRP resulted in the discernment of PMI's cost of equity standing at 9.56%.

Cost of Equity Calculations	
Risk-free rate	2.43%
5Y- Monthly Levered Beta	0.79
Expected Risk Premium	5.00%
Country Risk Premium	3.18%
PMI Cost of Equity	9.56%

Table 7. *PMI Cost of Equity*
Source: Refinitiv Eikon, Damodaran, US Inflation Calculator, Own analysis

Cost of Debt

To compute the Kd, essential for determining the WACC, a thorough analysis of PMI's corporate bonds in the market was conducted using RE data.

The CTD calculation involved computing the YTM of these bonds. This calculation yielded a CTD of 5.22%, a significant input for estimating the return anticipated by debtholders.

The assessment of the company's debt structure revealed that the value of the bonds accounted for 76% of the total debt, reflecting the traded portion. However, the remaining 24% of the debt, constituting the non-traded debt, necessitated a distinct evaluation. For this non-traded segment, the risk-free rate used for the cost of equity calculation was employed. Using data from the Moody's (A2-) and Fitch (A) ratings assigned to PMI, a default spread of 1.42% was taken from Damodaran's table to derive the cost of this non-traded debt.

Based on historical data, PMI has consistently shown robust financial performance over the past five years. Specifically, its NI has consistently exceeded $7 billion while its free cash flow has surpassed $8 billion. Moreover, the company's current ratio has remained above or nearby to 100% during this period, indicating its ability to cover short-term obligations in a healthy manner. Additionally, the company has consistently achieved a strong ROA, equaling or exceeding 15% showing its efficiency in generating earnings from its assets. These metrics confirms the capability of PMI to easily finance the 3.85% non-traded debt obligation, given its strong credit rating, large and loyal customer base, and diversified product portfolio.

Cost of Debt Calculations		Weights (%)
YTM 10Y Corporate Bonds	5.22%	76%
Cost of Non Traded Debt	3.85%	24%
Risk-free rate	2.43%	
Default spread	1.42%	
PMI Cost of Debt	4.90%	

Table 8. *PMI Cost of Debt*
Source: Refinitiv Eikon, Damodaran, Own analysis

7.1.2. Capital Structure and Effective tax rate

To compute the WACC, three crucial components are still missing: the market value of equity, the market value of debt and the effective tax rate.

Firstly, determining the market value of equity involved delving into the company's market capitalization, precisely gleaned from Refinitiv's data as of November 24, 2023. With 1552.41 million shares outstanding and a share price of $94.34, the market value of equity stood at an estimated $146,454.36 million.

Meanwhile, assessing the market value of debt involved a meticulous process. Where the total debt is often divided into traded debt, which includes bonds publicly traded in the market, and non-traded debt, such as bank loans or private debt instruments. The traded debt, entailed retrieving the TRPS/Composite Price for each outstanding bond, followed by dividing it by the FV and subsequently multiplying it by the amount issued for each bond. Summing the market values obtained from all bonds yielded a comprehensive market value of traded debt, totaling $36,613.42 million.

Non-traded debt forms a significant part of a company's financial obligations and requires a specific valuation methodology to assess its market value accurately. Converting BV into MV is a pivotal step in assessing non-traded debt within a company's financial landscape. In the case of PMI, this transformation involved treating the non-traded debt akin to a single coupon bond, mirroring the company's interest expense, and set with a maturity aligned with the weighted average maturity of these non-traded obligations. To compute the non-traded debt, the Damodaran Formula was used:

$$MV\ of\ Non-traded\ Debt = Interest\ Expense \times \frac{1-\frac{1}{(1+K_D)^T}}{K_D} + \frac{BV\ of\ Non-traded\ Debt}{(1+K_D)^T}$$

PMI's weighted average maturity, calculated at 3.16 years, was derived by scrutinizing the expected maturity amounts over each year and their proportional weight concerning the total amount owed.

Utilizing Damodaran's formula for estimating market value, the resultant calculation pegged the Market value of non-traded debt at a noteworthy $21,727.76 million, based on the interest expense as of December 31, 2022.

Market Value of Non-Traded Debt		
BV of Non-Traded Debt (in Million of $)	$	23,003.62
Cost of Debt (Kd)		4.90%
Interest Expense	$	768.00
Weighted Average Maturity of Non-Traded Debt		3.16
MV of Non-Traded Debt	$	21,726.76

***Table 9**. Market Value of Non-Traded Debt*
Source: Refinit Eikon, Own analysis

Upon amalgamating the market value of non-traded debt with the value derived from traded debt, PMI's comprehensive Market value of debt stands tall at $58,340.18 million.

Finally, while determining the WACC, an effective tax rate of 21% was employed. This decision was grounded in PMI's recent report, which indicated a decrease in the effective tax rate to 19.3% for 2022 and an estimated range of 20.5% to 21.5% for 2023 and beyond effective tax rate, excluding discrete tax events. The utilization of an average of these estimated values provided by PMI resulted in the effective tax rate of 21%.

Now, with all the essential components gathered to calculate the WACC, an estimated WACC of 7.49% has been derived for the upcoming years.

WACC Calculations	
Equity Market Value	$146,454.36
Cost of Equity	9.56%
Debt Market Value	$ 58,340.18
Cost of Debt	4.90%
Effective Tax Rate	21.00%
WACC	7.94%

***Table 10.** WACC Calculation*
Source:PMI annual Report, Refinitiv Eikon Own analysis

7.1.2. Terminal Value

After considering the theoretical underpinnings, the TV was determined following the perpetuity growth model. This approach necessitated forecasting the long-term growth rate, indicative of the perpetual growth in cash flows. This rate was established by amalgamating insights from three distinct analyses.

The first approach leveraged the average GDP growth rate of the United States over the past six years, resulting in an approximation of 2.24%.

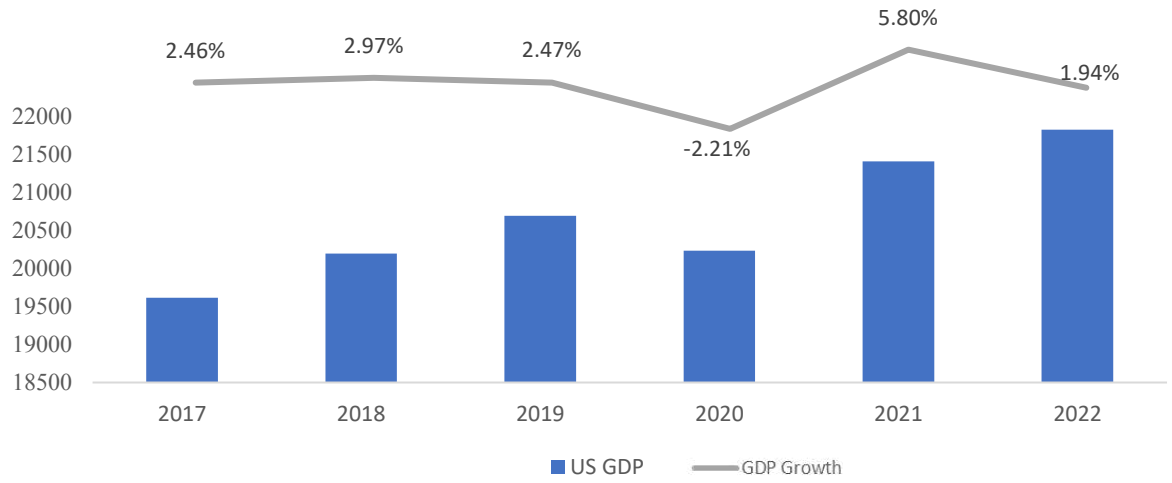

Figure 26. *US GDP Growth*
Source: IMF, Own analysis

Subsequently, the second method computed the average CAGR of the five largest companies (excluding China Tobacco) revenues over the last six years, arriving at an average of 2.29%.

Finally, the third analysis amalgamated the anticipated industry growth rates from sources like IBIS World, Statista, Grandview Research, and Yahoo Finance, producing an average growth expectation of 2.26%.

Revenues 6Y Growth	6Y CAGR
Philip Morris International Inc	1.68%
Altria Group Inc	-0.32%
British American Tobacco PLC	5.16%
Japan Tobacco Inc	3.68%
Imperial Brands PLC	1.23%
Average Last 6Y CAGR	2.29%

Estimated Industry Growth by:	
IBIS Wolrd	2.30%
Statista	2.55%
Grand View Research	2.10%
Yahoo Finance	2.10%
Average Industry Growth	2.26%

Table 12. *Revenues 6Y Growth by the 5 biggest Tobacco companies, excluding China Tobacco.*
Table 11. *Estimated Industry Growth by financial analysts*
Source of Table 11 and Table 12:Refinitiv Eikon, IBIS World, Statista, Grand View Research, Yahoo Finance

Pooling the outcomes of these three analyses led to a converged consensus on the expected long-term growth rate of 2.26%. Consequently, the Terminal Value was calculated based on the

FCFF projected for 2027, amounting to $11,909 million, culminating in a Terminal Value in 31 December of 2023 of $154,545 Million.

7.1.3. FCFF Calculation

The FCFF was carefully derived by considering the projected balance sheet and income statement items along with the estimated WACC, TV and the respective perpetuity growth rate.

(in million EUR)		2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E
Revenues		$29,625.00	$29,805.00	$28,694.00	$31,405.00	$31,762.00	$32,607.07	$33,814.24	$35,374.34	$37,353.79	$39,836.54
COGS		$10,758.00	$10,513.00	$9,569.00	$10,030.00	$11,170.00	$11,231.37	$11,647.18	$12,184.55	$12,866.36	$13,721.53
MA&R		$7,408.00	$7,840.00	$7,235.00	$8,088.00	$7,809.00	$8,294.09	$8,601.15	$8,997.98	$9,501.49	$10,133.01
D&A		$82.00	$66.00	$73.00	$96.00	$159.00	$181.52	$207.22	$236.56	$270.06	$308.30
Unusual Expenses		$0.00	$855.00	$149.00	$216.00	$378.00	$343.41	$356.12	$372.55	$393.40	$419.54
EBIT		$11,377.00	$10,531.00	$11,668.00	$12,975.00	$12,246.00	$12,556.69	$13,002.57	$13,582.69	$14,322.48	$15,254.15
*Tax Rate		22.62%	23.23%	21.70%	21.84%	19.29%	21.00%	21.00%	21.00%	21.00%	21.00%
Tax		$2,573.71	$2,446.07	$2,532.17	$2,833.24	$2,362.04	$2,636.90	$2,730.54	$2,852.37	$3,007.72	$3,203.37
NCAPEX		$1,272.00	$720.00	$456.00	$556.00	$918.00	$1,118.48	$1,151.79	$1,184.13	$1,215.11	$1,244.28
Δ OWC		$366.00	-$1,185.00	-$1,195.00	-$898.00	$367.00	-$486.42	-$413.62	-$518.13	-$655.79	-$838.68
FCFF		**$7,165.29**	**$8,549.93**	**$9,874.83**	**$10,483.76**	**$8,598.96**	**$9,287.71**	**$9,533.86**	**$10,064.32**	**$10,755.44**	**$11,645.17**
Discount Factor	**9.56%**							1.20	1.32	1.44	1.58
Discounted FCFF								**$7,942.68**	**$7,653.01**	**$7,464.91**	**$7,377.20**

Table 13. *FCFF and Discounted FCFF calculations, in Million of Dollars*
Source: PMI annual report, own analysis

After summing the discounted FCFFs from 2024 to 2027, this total was combined with the terminal value, resulting in an EV in 31 December 2023 of $184,983 million.

Company Value Dec 2023	
FCFF 2027	$11,908.53
WACC	7.94%
Perpetuity Growth rate	2.26%
Terminal Value	$154,545.14
Company's Value 31 December 2023	$184,982.95

Table 14. *Company's Value 31 December 2023, In million of Dollars*
Source: Own analysis

Firstly, after the valuation, the equity value was determined by deducting net debt, minority interests, and the underfunded pension plan. It's important to note that the underfunded pension plan needs to be deducted in this context because PMI is allocating assets to meet its pending pension obligations. Therefore, accounting for the underfunded pension plan is essential in

calculating the equity value. It's worth mentioning that PMI's pension plan operates on a funded basis.

This comprehensive FCFF model resulted in a final estimated stock price of 90.46$

Price per Share	
Entreprise Value 2022	$184,982,950,590.68
Cash - Debt	$39,916,000,000.00
Minority interest	$2,646,000,000.00
Pension Benefits - Underfunded	$1,984,000,000.00
Equity Value	$140,436,950,590.68
# of Shares (M)	1552410000
Price Per Share 31 December 2023	$90.46

Table 15. *Price Per Share 31 December 2023*
Source: PMI annual reports, Own analysis

7.1.4. Sensitivity Analysis

In this comprehensive sensitivity analysis, slight variations of ±0.1 percentage points in the WACC and growth rate were meticulously examined. These minute alterations, while seemingly modest, revealed significant implications for the valuation outcomes.

Entreprise Value

		WACC								
	$184,982.95	7.54%	7.64%	7.74%	7.84%	7.94%	8.04%	8.14%	8.24%	8.34%
Terminal Growth rate	1.86%	$186,681.65	$183,407.17	$180,246.73	$177,194.59	$174,245.38	$171,394.10	$168,636.04	$165,966.81	$163,382.29
	1.96%	$189,639.48	$186,254.65	$182,989.65	$179,838.35	$176,795.03	$173,854.35	$171,011.29	$168,261.20	$165,599.67
	2.06%	$192,705.32	$189,204.24	$185,829.20	$182,573.65	$179,431.45	$176,396.92	$173,464.73	$170,629.88	$167,887.71
	2.16%	$195,885.21	$192,261.55	$188,770.59	$185,405.31	$182,159.15	$179,026.03	$176,000.26	$173,076.52	$170,249.84
	2.26%	$199,185.61	$195,432.58	$191,819.40	$188,338.52	$184,982.95	$181,746.16	$178,622.08	$175,605.02	$172,689.71
	2.36%	$202,613.53	$198,723.80	$194,981.60	$191,378.85	$187,908.02	$184,562.13	$181,334.67	$178,219.59	$175,211.22
	2.46%	$206,176.49	$202,142.17	$198,263.67	$194,532.27	$190,939.91	$187,479.08	$184,142.83	$180,924.67	$177,818.55
	2.56%	$209,882.63	$205,695.21	$201,672.53	$197,805.21	$194,084.57	$190,502.55	$187,051.70	$183,725.05	$180,516.15
	2.66%	$213,740.77	$209,391.03	$205,215.68	$201,204.60	$197,348.42	$193,638.49	$190,066.79	$186,625.86	$183,308.78

Table 16*. Sensitivity Analysis, Impact on Enterprise Value, Million of Dollars*
Source: Own analysis

Share Price

Terminal Growth rate	$90.46	WACC 7.54%	7.64%	7.74%	7.84%	7.94%	8.04%	8.14%	8.24%	8.34%
	1.86%	$91.56	$89.45	$87.41	$85.45	$83.55	$81.71	$79.93	$78.21	$76.55
	1.96%	$93.46	$91.28	$89.18	$87.15	$85.19	$83.30	$81.46	$79.69	$77.98
	2.06%	$95.44	$93.18	$91.01	$88.91	$86.89	$84.93	$83.04	$81.22	$79.45
	2.16%	$97.49	$95.15	$92.90	$90.74	$88.64	$86.63	$84.68	$82.79	$80.97
	2.26%	$99.61	$97.20	$94.87	$92.63	$90.46	$88.38	$86.37	$84.42	$82.55
	2.36%	$101.82	$99.32	$96.90	$94.58	$92.35	$90.19	$88.11	$86.11	$84.17
	2.46%	$104.12	$101.52	$99.02	$96.62	$94.30	$92.07	$89.92	$87.85	$85.85
	2.56%	$106.50	$103.81	$101.21	$98.72	$96.33	$94.02	$91.80	$89.65	$87.59
	2.66%	$108.99	$106.19	$103.50	$100.91	$98.43	$96.04	$93.74	$91.52	$89.39

Table 17. *Sensitivity Analysis, Impact on Share Price*
Source: Own analysis

The results unfolded a spectrum of possibilities. In the best-case scenario, EV surged to $213,741 Million, reflecting an optimistic scenario for the firm's value. Correspondingly, the share price reached $108.99, indicating a favorable position for potential investors.

Conversely, the worst-case scenario painted a different picture. With the EV plummeting to $163,382 Million, the outlook appeared less promising. Consequently, the share price dropped to $76.55, marking a less favorable condition for prospective stakeholders.

This analysis showcases the inherent sensitivity of the DCF model to slight variations in critical inputs. The range between these extreme scenarios, encompassing the best and worst outcomes, emphasizes the necessity for a nuanced understanding of the variables driving valuation models.

7.1.5. Monte Carlo Simulation

A Monte Carlo simulation, comprising 1,000,000 trials, was performed to scrutinize the resilience of preceding outcomes within the DCF model. The focal variables under scrutiny encompassed the effective tax rate, components constituting the WACC (such as Rf, CRP, and CTD), and the perpetuity growth rate.

The ETR was explored through a uniform distribution ranging between 20.5% and 21.5%, mirroring the forecasted figures by PMI for the upcoming years. To simulate the rf, a triangular distribution was adopted. The most probable value was set at the Rf employed in estimating both the Kd and Ke (2.43%), while the lower limit was pegged at the minimum Rf within the last six years (0.54%), and the upper limit at the maximum Rf within the same period (4.91%).

The CRP was modeled using a triangular distribution, with the peak aligning with the calculated CRP used for deriving the Ke. Its lower and upper values were anchored at 2.5% and 3.5%,

respectively. Likewise, the CTD was simulated using a triangular distribution, ranging from the minimum to maximum YTM values of PMI's traded bonds (2.07% to 7.04%). The most probable value mirrored the yield on non-traded debt used for estimating the cost of debt (5.22%).

Regarding the growth rate, a triangular distribution was employed, with the lowest and highest values extrapolated from industry specialist predictions (2% to 2.5%). The most probable value was set at the growth rate applied in the DCF model (2.26%)

As we can see in the fallow graph, the simulation shows a range of share price between 55.25$ and 182.67$, with the mean equal to 92.77$, Skweness to 0.52, and a Standard Deviation of 16.18$.

Percentil	Forecast valu
0%	$55.25
10%	$72.82
20%	$78.34
30%	$82.94
40%	$87.14
50%	$91.21
60%	$95.43
70%	$100.22
80%	$106.22
90%	$114.97
100%	$182.67

Figure 27. *Monte Carlo Simulation*
Source: Own analysis

7.2. Relative Valuation

Unlike intrinsic valuation like DCF Model, which delves into the fundamental characteristics of an asset, relative valuation examines an asset's value by juxtaposing it against analogous assets in the market.

This method seeks to evaluate a company's worth by comparing its financial metrics or multiples with those of its peers within the same industry or sector. It relies on key multiples like EV/Revenue, EV/EBITDA, EV/EBIT, and P/E (to gauge a company's relative value within its competitive landscape).

In the context of this analysis, the application of the relative valuation method assumes a pivotal role in the final recommendation process. Leveraging multiples and statements sourced from

RE, this approach aids in comprehending the company's performance and valuation vis-à-vis its industry peers.

7.2.1- Peer Group Selection

The process of delineating a peer group involved a meticulous three-step analysis. Initially, a comprehensive evaluation was conducted using Refinitiv's list of 11 companies deemed most akin to PMI. This entailed a scrutiny of analogous ratios centered around Growth and Profitability metrics. Growth comparisons focused on factors such as Revenue, EBITDA, and EPS growth over 3 and 5-year periods, while Profitability measures spanned ROA, various margin components, and current dividend yield for common stock.

Profitability Comparison								
	ROA Total Assets	Pretax ROA	Net Profit Margin (FY0)	EBITDA Margin	EBITDA Margin 5 YR Avg	EBIT Margin (FY0)	P/E	EPS IBES (FY0)
Philip Morris International Inc	18.24%	22.60%	28.41%	43.02%	43.43%	39.75%	17.38	5.98
Altria Group Inc	15.07%	19.32%	22.92%	50.23%	45.09%	48.15%	14.34	4.84
British American Tobacco plc	4.71%	6.41%	24.10%	47.48%	44.93%	42.06%	11.11	4.50
Diageo PLC	10.44%	13.13%	21.82%	37.40%	34.14%	31.10%	20.49	1.96
Imperial Brands PLC	8.13%	10.29%	7.17%	12.52%	12.12%	10.60%	6.61	3.48
Mondelez International Inc	3.42%	4.67%	8.63%	19.56%	20.22%	14.48%	33.80	2.95
Coca-Cola Co	10.23%	12.49%	22.19%	31.29%	32.60%	28.20%	28.85	2.48
PepsiCo Inc	9.82%	11.60%	10.41%	18.37%	19.27%	14.57%	27.98	6.79
Kraft Heinz Co	2.58%	3.23%	8.92%	22.61%	23.90%	18.39%	21.12	2.78
ITC Ltd	23.88%	31.77%	25.08%	34.82%	34.04%	31.20%	24.59	0.18
Japan Tobacco Inc	7.21%	9.63%	16.66%	31.17%	31.56%	25.32%	10.67	
KT&G Corp	8.47%	11.94%	17.51%	23.60%	29.88%	21.66%	10.78	6.71

Table 18. *1° Peer Group Selection, Profitability Comparison*
Source: Refinitiv Eikon, Own analysis

Growth Comparison									
	Revenue 3 YR Growth	Revenue 5 YR Hist Growth	Revenue Per Share, 3 Yr CAGR	Revenue Per Share, 5 Yr CAGR (FY0)	EBITDA, 3 Yr CAGR (FY0)	EBITDA, 5 Yr CAGR (FY0)	Dividend Growth Hist 5 YR	EPS IBES Actual 3 YR Hist Growth	EPS IBES Actual 5 YR Hist Growth
Philip Morris International Inc	2.66	2.90	2.23%	2.03%	3.80%	2.09%	3.68%	1.40	4.06
Altria Group Inc	-0.35	1.31	1.17%	0.88%	4.10%	4.33%	8.13%	2.53	4.72
British American Tobacco plc	0.02	2.10	2.60%	5.04%	1.73%	9.53%	16.82%	1.95	5.21
Diageo PLC	3.24	9.89	14.71%	9.10%	12.12%	7.19%	4.14%	10.95	7.05
Imperial Brands PLC	-4.50	-3.21	0.54%	2.14%	1.18%	1.40%	-4.80%	-0.14	-1.93
Mondelez International Inc	4.98	6.79	8.63%	6.10%	2.00%	1.71%	19.63%	3.21	6.06
Coca-Cola Co	5.50	7.31	4.60%	3.37%	4.15%	3.83%	3.57%	4.73	5.93
PepsiCo Inc	4.77	8.20	9.28%	7.11%	5.45%	3.60%	7.39%	5.02	6.58
Kraft Heinz Co	0.55	15.76	1.67%	0.20%	-1.56%	-5.56%	-8.17%	-0.35	13.52
ITC Ltd	6.16	7.37	13.81%	9.62%	9.95%	9.25%	19.88%	5.62	5.20
Japan Tobacco Inc	-0.56	-0.05	6.97%	4.64%	6.79%	4.27%	6.07%	0.52	-0.66
KT&G Corp	-1.59	2.22	7.55%	5.76%	-1.78%	-1.51%	4.56%	-8.28	-2.67

Table 19. *1° Peer Group Selection, Growth Comparison*
Source: Refinitiv Eikon, Own analysis

Following this primary analysis, companies that exhibited stark disparities in Profitability and Growth metrics were excluded from subsequent assessments. Notably, entities like Kraft Heinz Co, PepsiCo Inc, and others were omitted due to discernible variations in these critical parameters.

The secondary analysis honed in on D/E ratios, allowing for identifying comparable companies within this financial dimension. Based on this evaluation, entities divergent in terms of D/E, exemplified by Diageo PLC, were consequently excluded from the ensuing analysis.

The final selection stage emphasized industry alignment, emphasizing the importance of sector relevance in constructing a relevant peer group. Companies not aligned with the tobacco industry were excluded, solidifying the inclusion of firms like Altria Group Inc and British American Tobacco plc as the definitive peers for the subsequent peer valuation exercises.

Industry, Debt to Equity, and Market Cap Comparison

	GICS Industry Name	Market Cap (Million USD)	Total Debt (FY0, Million USD)	Total Equity (FY0, Million USD)	D/E
Philip Morris International Inc	Tobacco	141899.8741	43123	-8957	-4.81
Altria Group Inc	Tobacco	73788.28318	26680	-3973	-6.72
British American Tobacco plc	Tobacco	69038.72698	51551.44257	91172.8059	0.57
Diageo PLC	Beverages	82444.75026	21533.37991	9937.114908	2.17
Coca-Cola Co	Beverages	239914.6502	39149	24105	1.62

Table 20. *Last Peer Group Selection, Industry, D/E and Market Cap Comparison*
The Peers used are marked in green, Altria Group Inc. and British American Tobacco plc
Source: Refinitiv Eikon, Own analysis

This stringent selection process ensures that the chosen peer group accurately reflects industry alignment and essential financial comparability, setting the stage for a robust and insightful peer valuation analysis.

7.2.2. Peer Valuation

Using the multiples of the peers, as shown in table 38 (Appendix 18), the forward-looking multiples indicate an average derived price ranging between $51.29 and $90.11, as detailed in the table 19. Through these multiples, the projected price range provides a valuable insight into the potential valuation scenarios.

It's noteworthy that PMI holds the apex position as the largest company in the tobacco sector, excluding China Tobacco, which primarily serves its domestic market. The comparison of ratios for peer valuation revealed that similar companies exhibit notably lower ratios than PMI in

terms of Price to Earnings, EV/EBITDA, EV/EBIT, and EV/Revenues. This divergence in ratios underscores PMI's leadership in the next-generation tobacco market and its consistent ability to maintain higher operating margins compared to counterparts like BAT and MO. This trend owes itself to PMI's strategic focus on premium brands and its robust international footprint.

Peer Valuation

	2022	2023E	2024E	2025E
PMI's Debt	$43,123	$47,157	$47,524	$44,646
PMI's Cash	$3,207	$4,450	$5,965	$5,273
PMI's Shares Outstanding	1552	1552	1552	1552

EV/Revenue Analysis	2022	2023E	2024E	2025E
PMI's Revenues	$31,762	$35,084	$36,798	$39,390
Weighted average EV/Reven.	4.73	4.54	4.44	4.27
PMI's Implied EV	$150,340	$159,398	$163,260	$168,064
PMI's Estimated Equity	$110,424	$116,691	$121,701	$128,691
PMI's estimated share price	**$82.28**	**$85.34**	**$87.48**	**$90.11**

EV/EBITDA Analysis	2022	2023E	2024E	2025E
PMI's EBITDA	$13,938	$14,358	$15,980	$17,201
Weighted average EV/EBITDA	9.64	9.45	8.91	8.48
PMI's Implied EV	$134,409	$135,683	$142,329	$145,807
PMI's Estimated Equity	$94,493	$92,976	$100,770	$106,434
PMI's estimated share price	**$60.88**	**$59.91**	**$64.93**	**$68.58**

EV/EBIT Analysis	2022	2023E	2024E	2025E
PMI's EBIT	$12,908	$13,318	$14,602	$16,001
Weighted average EV/EBIT	11.36	10.00	9.46	8.96
PMI's Implied EV	$146,635	$133,180	$138,184	$143,422
PMI's Estimated Equity	$106,719	$90,473	$96,625	$104,049
PMI's estimated share price	**$68.76**	**$58.29**	**$62.26**	**$67.04**

P/E Analysis	2022	2023E	2024E	2025E
PMI's EPS (TTM)	5.80	5.06	6.41	7.05
Weighted average P/E	14.30	10.14	9.67	9.01
PMI's Estimated share price	**$82.96**	**$51.29**	**$62.01**	**$63.50**

Table 21. *Share Price Calculation by Peer Group Valuation (EV/Revenue, EV/EBITDA , EV/EBIT, P/E), using Forward Multiples, for the years (2022 – 2025E)*
Source: Refinitiv Eikon, Own analysis

7.3. Price Recommendation

Through 2022, PMI's share price ranged from $83.01 to $111.90, closing the year at $101.21. The culmination of the various analyses, encompassing a spectrum of valuation methodologies, was summarized in the football field representation.

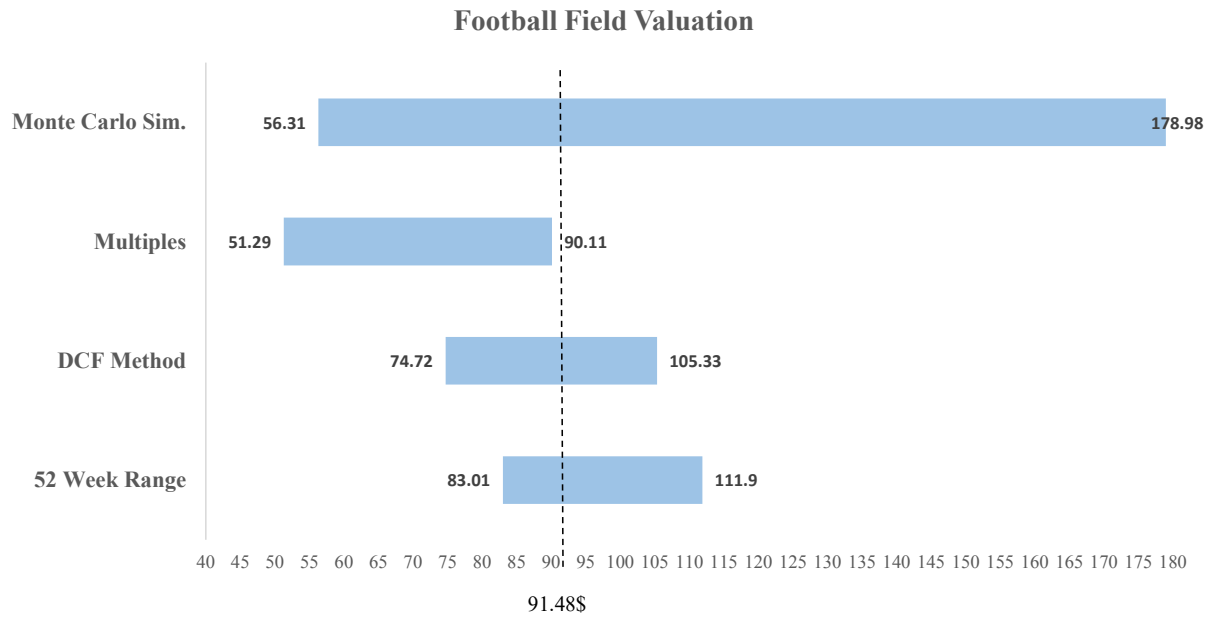

Figure 28. *Football Field Valuation*
Source: Own analysis

Considering the comprehensive evaluations carried out, a price target of $91.48 has been established for this thesis, which reflects a potential drop of 3.03% compared to the November 24, 2023, value of 94.34$. Consequently, a "HOLD" recommendation is recommended, given the prevailing volatility and instability in the international markets.

8. Comparison with Investment Bank's Valuation Model

A detailed comparison was conducted with Barclays Equity Research as of September 21, 2023. Barclays, following PMI's positive H2/23 results, maintained its OVERWEIGHT rating while marginally reducing the target price by 4% from $115 to $110.

Barclays expresses a positive outlook on the long-term potential of Swedish Match to sustain a 15% CAGR, while projecting the rest of the revenues to grow above 7%. This growth is primarily attributed to the ongoing success of ZYN US, which continues to exceed expectations, and the penetration of new markets by IQOS, such as Indonesia and the US.

This comparison aimed to juxtapose the assumptions made in this Dissertation's DCF model with Barclays' model, specifically focusing on the forecast period from 2023 to 2025.

In terms of revenue projections, a substantial disparity arises. Barclays anticipates a robust CAGR of 8.4%, expecting revenues to soar to $40,447 million by 2025. This high CAGR is predominantly driven by the expected substantial increase in sales from Swedish Match, with

an anticipated CAGR of 124%, and a 10% growth from Europe, as illustrated in the table below. In contrast, my forecast foresees a more conservative CAGR of 2.73%, projecting revenues of $35,374.34 million by 2025.

This marked difference in CAGR and revenue projections underscores the divergent viewpoints between the assessments, primarily driven by varying expectations concerning Swedish Match's growth trajectory and Europe's sales performance. Barclays' outlook demonstrates much higher growth expectations than those predicted in this thesis.

Forecasted Revenues Own Analsysis	2022	2023E	2024E	2025E	CAGR
Europe	$15,844.00	$16,485.41	$17,285.52	$18,266.87	4%
SSEA,CIS&MEA	$8,296.00	$8,088.13	$7,897.46	$7,725.04	-2%
EA,AU&PMI DF	$5,132.00	$5,523.19	$5,988.01	$6,537.39	6%
Americas and canda	$1,903.00	$1,858.52	$1,818.38	$1,782.88	-2%
Swedish Match	$316.00	$351.64	$393.22	$441.63	9%
Wellness and Healthcare	$271.00	$300.00	$431.24	$619.90	23%
Total Revenues	$31,762.00	$32,607.07	$33,814.24	$35,374.34	3%

Table 22. *Forecasted Revenues , in million of Dollars*
Source: Own analysis

Barclays Revenue Analysis	2022	2023E	2024E	2025E	CAGR
Europe	$12,869.00	$14,604.00	$15,811.00	$17,208.00	10%
SSEA,CIS&MEA	$10,467.00	$10,206.00	$10,190.00	$10,656.00	1%
EA,AU&PMI DF	$5,936.00	$5,890.00	$5,906.00	$6,205.00	1%
Americas and canda	$1,903.00	$1,937.00	$2,205.00	$2,426.00	8%
Swedish Match	$316.00	$2,653.00	$3,086.00	$3,552.00	124%
Wellness and Healthcare	$271.00	$300.00	$350.00	$400.00	14%
Total Revenues	$31,762.00	$35,590.00	$37,547.00	$40,447.00	8%

Table 23*. Barclays Forecasted Revenue Analysis, in Million of Dollars*
Source: Barclays Equity Research about PMI, own analysis

Regarding EBIT, Barclays predicts a substantial increase, estimating it to reach $16,147 million by 2025 with a CAGR of 7.7%. Conversely, my estimation suggests a more modest CAGR of 2.14%, projecting PMI's EBIT to reach only $13,582.69 million by 2025.

As shown in the two tables below, the margins (EBITDA, EBIT, Net Income) analyzed in this thesis are quite like those analyzed by Barclays. The primary difference lies in the projections,

with Barclays forecasting a higher PMI growth in the upcoming years. In contrast, the analysis conducted in this thesis takes a more balanced approach.

Forecasted Margins own analysis	2022	2023E	2024E	2025E
EBITDA	$13,861.00	$13,081.61	$13,565.91	$14,191.80
EBITDA margin	44%	40%	40%	40%
EBIT	$12,908.00	$12,556.69	$13,002.57	$13,582.69
EBIT margin	41%	39%	38%	38%
Net Income	$9,281.00	$9,919.78	$10,272.03	$10,730.33
Net margin	29%	30%	30%	30%

Table 24. *Forecasted Margins, in Million of Dollars*
Source: Own analysis

Barclays Margin Analysis	2022	2023E	2024E	2025E
EBITDA	$13,861.00	$14,901.00	$15,830.00	$17,360.00
EBITDA margin	44%	42%	42%	43%
EBIT	$12,908.00	$13,833.00	$14,703.00	$16,147.00
EBIT margin	41%	39%	39%	40%
Net Income	$9,281.00	$9,571.00	$9,993.00	$10,958.00
Net margin	29%	27%	27%	27%

Table 25. *Barclays Forecasted Margins Analysis, in Million of DOllars*
Source: Barclays Equity Research about PMI, own analysis

Barclays has presented two different scenarios that could affect the share prices of a certain product. The share prices could range between $75 and $135 depending on the scenario. The optimistic scenario of reaching $135 involves the product experiencing notable growth and potential competition in the market. On the other hand, the more pessimistic scenario leading to $75 entails issues such as a weaker foreign exchange market, device shortages, and flavor bans that could significantly impact the product's valuation.

The comparison between Barclays' valuation models highlights how different growth expectations and revenue projections can lead to divergent market valuations for PMI. This disparity underscores the dynamic nature of forecasting, where multiple viewpoints come into play. The contrasting assessments reflect the complexity of predicting future market trajectories, emphasizing the importance of incorporating diverse perspectives and uncertainties in valuation analyses.

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10. Appendix

10.1. Appendix – Unemployment Rate US and Euro area

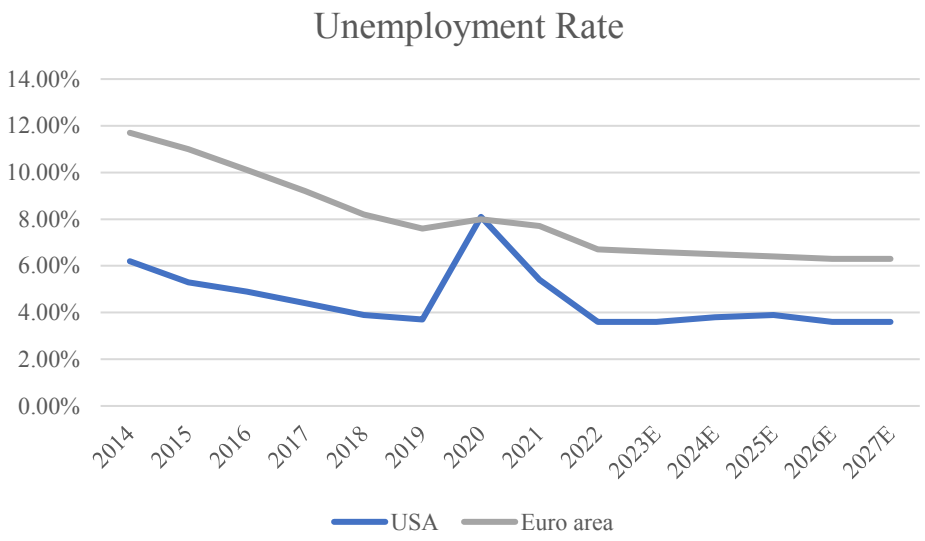

Figure 29. *Unemployment Rate of US and Euro area*
Source: IMF, Own analysis

10.2. Appendix – Global Tobacco Industry EVA Fundamentals

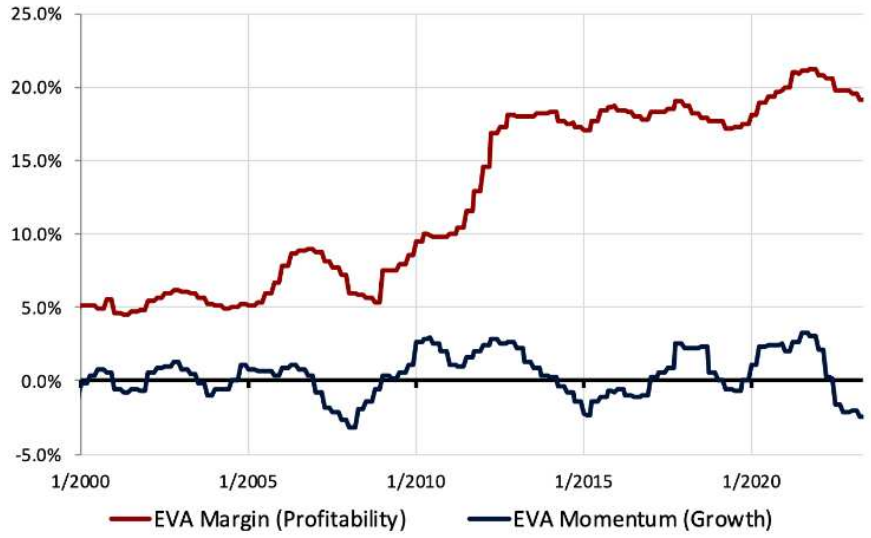

Figure 30. *Global Tobacco Industry Economic Value Added*
Source: ISS EVA

10.3. Appendix – Regulation taxes

The imposition of taxes on tobacco products constitutes a critical lever in the broader endeavor to strike a balance between public healthiness objectives and revenue generation. In 2018, 38 countries, encompassing merely 14% of the global population, met the threshold for sufficiently high tobacco taxes. This benchmark necessitated the taxation of at least 75% of the overall cost

of these health-harming products. This discrepancy, highlighted by the World Health Organization, underscores the imperative for nations to reassess and fortify their taxation policies.

Levies on tobacco products not only deter initiation among potential smokers but also incentivize current smokers to reduce their consumption or quit altogether.

From a health perspective, Europe's concerted efforts to increase tobacco taxation have yielded tangible results in reduced smoking rates. Eurobarometer surveys since 2017 have consistently indicated an average 3% decline in tobacco consumption across the bloc. In addition, Colombia's decision to escalate tobacco taxes in 2016, with the support of the WHO, resulted in a significant 34% reduction in cigarette consumption. As part of a broader fiscal reform, not only did cigarette consumption fall by 34% by 2018, but excise tax revenues, earmarked for the funding of universal health coverage, nearly doubled.

In the European Union, member states have used taxation as a powerful tool to curb tobacco consumption. By 2022, the average EU member state had imposed taxed cigarettes at more than 80 percent of the retail selling price, representing a tax-induced price surge of over 500 percent. Notably, vapor products are presently excluded from the ambit of the EU's tobacco tax directive.

For stakeholders within the tobacco industry, excise taxes present a multifaceted landscape. On one hand, they are emblematic of the broader commitment towards reducing the health impacts of smoking, aligning with the World Health Organization's global health agenda. On the other hand, they prompt industry players to reevaluate their strategies and product offerings.

In light of these dynamics, PMI has embarked on a transformative journey toward a smoke-free future. This ambitious shift, articulated in a comprehensive paper, not only acknowledges the imperatives of excise taxation but also signifies a paradigm shift in the company's approach to harm reduction.

10.4. Appendix - U.S. FDA allows IQOS as a modified risk tobacco product (MRTP)

PMI's IQOS has reached a significant milestone with the FDA granting it MRTP status, making it the first electronic nicotine product to receive such authorization. The FDA has recognized IQOS as fundamentally different from combustible cigarettes. This is due to the fact that IQOS uses a heating, not burning, approach, which significantly reduces the number of harmful chemicals produced. Studies confirm that fully switching from cigarettes to IQOS results in a

notable decrease in the body's exposure to harmful substances. This decision mirrors international findings, where the UK, Germany, and the Netherlands acknowledge that IQOS emits lower levels of toxicants. The FDA's approval marks a new era in endorsing safer alternatives for adults looking to transition away from traditional smoking. The aim is to lauch IQOS in 2 US states in 2024

Source: Reuters, PMI Media center

10.5. Appendix - 10 Biggest Companies excluding China Tobacco because it is a state-owned company:

Rank	Name	Symbol	marketcap (Millions)	Price (USD)	Country
1	Philip Morris	PM	144878.6493	93.325	United States
2	Altria Group	MO	71479.99232	40.415	United States
3	ITC	ITC.NS	68483.69183	5.49	India
4	British American Tobacco	BTI	65236.30387	29.1701	United Kingdom
5	Japan Tobacco	2914.T	46383.33023	26.13	Japan
6	Imperial Brands	IMB.L	20425.09295	23.11	United Kingdom
7	KT&G (Korea Tobacco)	033780.KS	7922.699343	70.23	South Korea
8	Sampoerna	HMSP.JK	6647.816094	0.06	Indonesia
9	RLX Technology	RLX	2949.923328	1.8684	China
10	Gudang Garam	GGRM.JK	2500.633481	1.3	Indonesia

Table 26. *10 Biggest Companies in Tobacco Industry excluding China Tobacco, price with the date of 26 December 2023*
Market Cap is in Million of Dollars
Source: CompaniesMarketCap, Own analysis

10.6. Appendix – Smoking Population

The dynamics of tobacco consumption are influenced by a variety of factors, reflecting changing social preferences, targeted marketing strategies, and the introduction of innovative products. In particular, the rising number of smokers in the developing regions of Asia-Pacific and Africa has marked a significant growth trend. This increase can be attributed to a combination of extensive marketing campaigns orchestrated by major industry players and the introduction of new products that have piqued consumer interest.

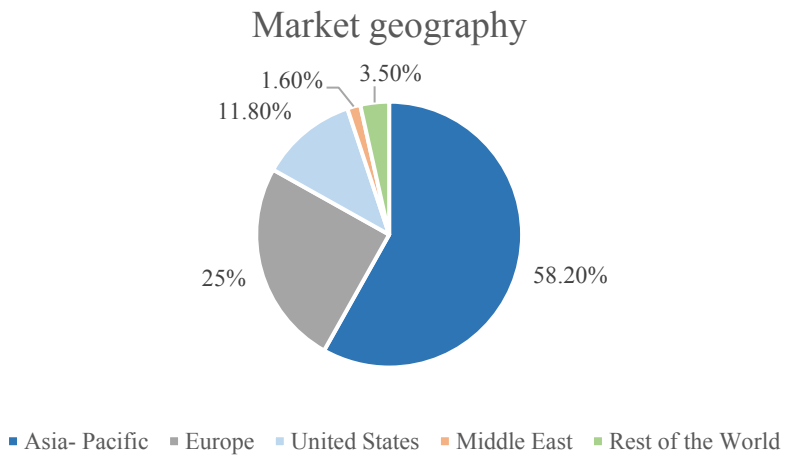

Figure 31. *Tobacco Industry Market Geography*
source: MarketLine Industry Data, 2023

The outbreak of the global pandemic unleashed a notable increase in product stockpiling. Cigarettes, among other products, became a focal point for consumers seeking a sense of familiarity and comfort amid the prevailing uncertainty. This surge in demand underscored the enduring appeal of tobacco products, even in times of unprecedented global challenges.

The tobacco industry's innovative strides towards producing products with reduced health risks and ultimately, smoke-free alternatives, signal a transformative shift. As these advancements gain traction, traditional cigarettes may gradually yield ground to these new, promising alternatives. This transition underscores the industry's commitment to striking a balance between consumer choice and harm reduction, ushering in a new era in tobacco consumption.

The data employed throughout this chapter have been gathered from MarketLine.

10.7. Appendix – PMI Products

Traditionally, PMI has been synonymous with renowned cigarette brands like Marlboro, L&M, and Chesterfield, anchoring its position as a key player in the combustible tobacco sector. However, PMI's vision extends beyond conventional smoking products.

PMI has embarked on a transformative journey toward smoke-free alternatives, catalyzed by an innovative approach to harm reduction. This paradigm shift heralds a new era in tobacco consumption, marked by the introduction of novel products designed to mitigate health risks while preserving consumer choice.

PMI delves into smoke-free alternatives, featuring innovations like the IQOS device, which releases nicotine-containing vapor by heating tobacco without combustion complemented by a range of branded tobaccos like TEREA and HEETS for this device. Other options include E-Vapor products, which produce an aerosol from heated e-liquid (as seen with VEEV brands), as well as Nicotine Pouches for discreet consumption and an alternative to traditional smoking.

Figure 32. *Snapshot of PMI's Diverse Product Line:*
1º. Combustible tobacco ("traditional tobacco");
2º. Heated Tobacco Products ("IQOS");
3º. E-Vapor Products ("VEEV");
4º Oral Smokeless Products ("Snus");

In tandem with these innovations, PMI continues to explore an array of other free-smoke products, marking a concerted commitment to redefining the landscape of tobacco consumption and ushering in a future characterized by reduced harm and enhanced choice.

10.8. Appendix – Competitive Advantages of Philip Morris International Inc.

- Powerful Brand Collection:

  Philip Morris has a vast collection of globally recognized cigarette brands. These brands have established a strong reputation and loyal customer base over the years, providing PMI with a competitive advantage in the market.

- Expansive Global Network and Distribution Channels:

  The company operates on 5 continents, giving it an extensive global reach. Its extensive network allows the company to distribute its products widely, reach diverse markets and appeal to a wide range of consumers. As part of its global expansion, PMI is actively seeking to enter new markets, with a particular focus on the United States. The company aims to introduce its innovative smokeless and reduced-risk products to American consumers and anticipates this entry to occur in 2024. PMI is optimistic that the evolving regulatory landscape will pave the way for the acceptance and adoption of these

products in the U.S. market, which is an important strategic step for the company's growth and market diversification.

- Meeting Customer Needs:

  PMI has taken the lead in developing smoke-free products due to the changing preferences of consumers and the growing demand for RRPs. The company's dedication to its vision has established PMI as a leader in the ever-changing tobacco consumption industry.

- Research and Development:

  Investing in advanced technologies and driving product innovation is a top priority for PMI. The company's commitment to R&D has borne fruit in the creation of groundbreaking products such as IQOS, a heated tobacco device. This innovative offering meets the evolving needs of consumers by providing a smoke-free alternative that aims to decrease the health risks associated with smoking. The success of IQOS and other innovative products show up the company's ability to adapt to changing consumer preferences and regulatory environments and position itself as a leader in the development of reduced-risk alternatives.

- Steady Suppliers:

  The company's solid base of dependable raw material suppliers allows it to overcome any obstacles that may arise in its supply chain.

- Effective Responsibility to ESG:

  The company has made significant progress in enhancing its ESG programs, including environmental sustainability goals, ethical marketing practices and minimizing environmental impact. These initiatives are in line with growing investor demand for socially responsible investments In 2022, PMI introduced a new sustainability index that uses 19 key performance indicators across the most important sustainability issues and is weighted by the health impact of their products. The index, which provides additional transparency on how PMI measure ESG performance, has been integrated into the long-term executive compensation to further align management incentives with PMI smoke-free transformation.

10.9. Appendix - PMI Historical Growth

Historical Growth	2018	2019	2020	2021	2022	CAGR 5 Y
Revenues	$29,625.00	$29,805.00	$28,694.00	$31,405.00	$31,762.00	
gYoY%	3.05%	0.61%	-3.73%	9.45%	1.14%	1.40%
Dividends	$6,994.00	$7,212.00	$7,405.00	$7,665.00	$7,841.00	
gYoY%	6.40%	3.12%	2.68%	3.51%	2.30%	2.31%
EBIT	$11,377.00	$10,531.00	$11,668.00	$12,975.00	$12,246.00	
gYoY%	-1.76%	-7.44%	10.80%	11.20%	-5.62%	1.48%
Net Income	$7,911.00	$7,185.00	$8,056.00	$9,109.00	$9,048.00	
gYoY%	31.09%	-9.18%	12.12%	13.07%	-0.67%	2.72%
CAPEX	-$1,436.00	-$852.00	-$602.00	-$748.00	-$1,077.00	
gYoY%	7.24%	40.67%	29.34%	-24.25%	-43.98%	-5.59%
Debt	$31,759.00	$31,045.00	$31,536.00	$27,806.00	$43,123.00	
gYoY%	-7.51%	-2.25%	1.58%	-11.83%	55.09%	6.31%

Table 27. *Historical Growth (2018 - 2022)*
Source: PMI annual reports, own analysis

10.10. Appendix – Financial ratios of the last five years

Financial Ratios	2018	2019	2020	2021	2022
ROE	-63%	-62%	-64%	-90%	-101%
ROA	20%	17%	18%	22%	15%
ROIC	58.95%	54.09%	61.51%	73.31%	35.84%
Ebitda Margin	39%	36%	41%	42%	39%
EBITDA/Total Debt;	36.08%	34.13%	37.23%	47.01%	28.40%
Gross profit Margin	63.69%	64.73%	66.65%	68.06%	64.65%
Dividend Payout	88%	100%	92%	84%	87%
Payout ratio	86.88%	99.40%	91.03%	82.53%	86.00%
EBIT Margin	38.40%	35.33%	40.66%	41.32%	38.56%
NET Margin	26.70%	24.11%	28.08%	29.00%	28.49%
Current ratio	113.09%	108.93%	109.57%	92.01%	71.77%
Quick Ratio	55.51%	52.79%	51.92%	39.57%	25.82%
Cash Ratio	38.35%	36.43%	37.11%	23.35%	11.73%
Fixed Asset Turnover Ratio	203.51%	195.93%	183.87%	205.83%	198.05%
Asset Turnover	74.43%	69.52%	64.03%	76.06%	51.49%
Total Assets to Sales	134.35%	143.85%	156.18%	131.48%	194.20%
Debt to Assets	79.79%	72.41%	70.37%	67.34%	69.91%
Debt/ Equity	-255%	-268%	-251%	-275%	-481%

Table 28. *Financial Ratios of the last 5 Years*
source: PMI annual reports, own analysis

10.11. Appendix – Consolidated Income Statement

Consolidated Income Statement	2018	2019	2020	2021	2022
Total Revenue	29,625	29,805	28,694	31,405	31,762
Cost of Revenue, Total	10,758	10,513	9,569	10,030	11,228
Gross Profit	18867	19292	19125	21375	20534
Selling/General/Admin. Expenses, Total	7,408	7,840	7,235	8,088	7,910
Depreciation/Amortization	82	66	73	96	0
Interest/Investment Income - Operating	--	--	--	--	--
Unusual Expense (Income)	0	855	149	216	378
Total Operating Expense	18,248	19,274	17,026	18,430	19,516
Operating Income	11377	10531	11668	12975	12246
Interest Expense, Net Non-Operating	(855)	(796)	(728)	(737)	(768)
Interest/Invest Income - Non-Operating	190	226	110	109	180
Interest Income(Exp), Net Non-Operating	--	--	--	--	--
Interest Inc.(Exp.),Net-Non-Op., Total	(665)	(570)	(618)	(628)	(588)
Gain (Loss) on Sale of Assets	--	--	--	--	--
Other, Net	(41)	(89)	(97)	(115)	(24)
Net Income Before Taxes	10671	9872	10953	12232	11634
Provision for Income Taxes	2,414	2,293	2,377	2,671	2,244
Net Income After Taxes	8257	7579	8576	9561	9390
Minority Interest	(375)	(543)	(536)	(601)	(479)
Equity In Affiliates	60	149	16	149	137
Net Income Before Extra. Items	7942	7185	8056	9109	9048
Total Extraordinary Items	(31)	--	--	--	--
Net Income	7911	7185	8056	9109	9048

Table 29. *Consolidated Income Statement, In million of Dollars*
Source: PMI annual reports, own analysis

10.12. Appendix – Consolidated Balance Sheet

Consolidated Balance Sheet	2018	2019	2020	2021	2022
Cash and Short Term Investments	6,593	6,861	7,280	4,496	3,207
Accounts Receivable - Trade, Net	2,950	3,080	2,905	3,123	3,850
Total Receivables, Net	3,564	3,717	3,761	3,940	4,756
Total Inventory	8,804	9,235	9,591	8,720	9,886
Prepaid Expenses	--	--	--	--	--
Other Current Assets, Total	481	701	860	561	1,770
Total Current Assets	**19442**	**20514**	**21492**	**17717**	**19619**
Property/Plant/Equipment, Total - Gross	14,557	15,212	15,606	15,258	16,037
Property/Plant/Equipment, Total - Net	7,201	7,397	7,062	6,694	7,304
Goodwill, Net	7,189	5,858	5,964	6,680	19,655
Intangibles, Net	2,278	2,113	2,019	2,818	6,732
Long Term Investments	1,269	4,635	4,798	4,463	4,431
Note Receivable - Long Term	--	--	--	--	--
Other Long Term Assets, Total	2,422	2,358	3,480	2,918	3,940
Total Assets	**39801**	**42875**	**44815**	**41290**	**61681**
Liabilities ($ Millions)					
Accounts Payable	2,068	2,299	2,780	3,331	4,076
Payable/Accrued	--	--	--	--	--
Accrued Expenses	7,887	9,425	10,496	9,918	11,982
Notes Payable/Short Term Debt	730	338	244	225	5,637
Current Port. of LT Debt/Capital Leases	4,054	4,051	3,124	2,798	2,611
Other Current liabilities, Total	2,452	2,720	2,971	2,983	3,030
Total Current Liabilities	**17191**	**18833**	**19615**	**19255**	**27336**
Total Long Term Debt	26,975	26,656	28,168	24,783	34,875
Total Debt	31,759	31,045	31,536	27,806	43,123
Deferred Income Tax	898	908	684	726	1,956
Minority Interest	1,720	1,978	1,936	1,898	2,646
Other Liabilities, Total	5,476	6,077	6,979	4,734	3,825
Total Liabilities	**52260**	**54452**	**57382**	**51396**	**70638**
Shareholders Equity					
Additional Paid-In Capital	1,939	2,019	2,105	2,225	2,230
Retained Earnings (Accumulated Deficit)	31,014	30,987	31,638	33,082	34,289
Treasury Stock - Common	(35,301)	(35,220)	(35,129)	(35,836)	(35,917)
Other Equity, Total	(10,111)	(9,363)	(11,181)	(9,577)	(9,559)
Total Equity	(12,459)	(11,577)	(12,567)	(10,106)	(8,957)

Table 30. *Consolidated Balance Sheet, in Million of Dollars*
Source: PMI annual reports, Own analysis

10.13. Appendix – Philip Morris Strategie

PMI is on a path to redefine its future by envisioning a world without cigarettes. By investing more than $10.5 billion in innovative, smoke-free alternatives, PMI aims to accelerate the end of traditional cigarettes. The company has set a bold goal of generating more than two-thirds of its net revenues from smoke-free products by 2030.

Key to this strategy is the relentless development and promotion of less harmful alternatives. PMI is actively investing in the creation, marketing, and distribution of smoke-free products, signaling a decisive shift away from traditional cigarettes. Expansion into new markets, including an anticipated entry into the U.S. in 2024, further underscores PMI's commitment to a smoke-free, compliant future.

Beyond product innovation, PMI is deeply committed to sustainability, taking concrete steps to reduce its environmental impact. The company also prioritizes social and economic well-being, reflecting a holistic approach to corporate responsibility.

At its core, PMI's future strategy revolves around innovation, sustainability, and societal health - a roadmap aimed at replacing cigarettes with smoke-free alternatives and contributing to a healthier, more sustainable world.

10.14. Appendix – PMI Closing Price (01/01/2010 – 24/11/2023)

Figure 33. *The closing price of PMI (started on 01/01/2010 till 24/11/2023), in Dollars*
source: Refinitiv Eikon, Own analysis

10.15. Appendix – NYSE Index - Closing Price (01/01/2010 – 24/11/2023)

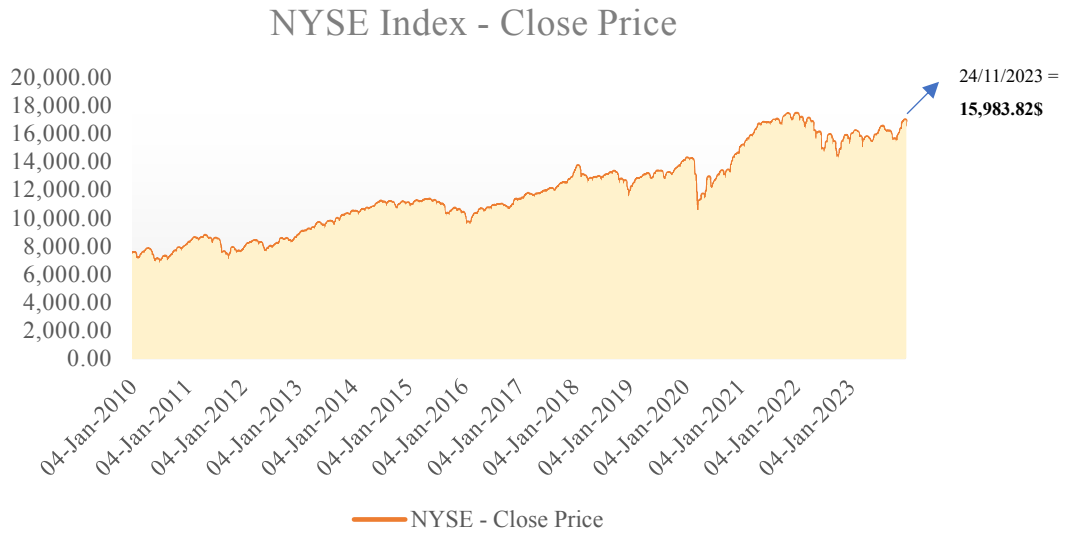

Figure 34. *NYSE Index – Closing Price, (started on 01/01/2010 till 24/11/2023), in Dollars*
Source: Refinitive Eikon, Own analysis

10.16. Appendix – Historical FCFF Calculation

(in million USD)	2018	2019	2020	2021	2022
EBIT	**$11,377.00**	**$10,531.00**	**$11,668.00**	**$12,975.00**	**$12,246.00**
gYoY%	-1.76%	-7.44%	10.80%	11.20%	-5.62%
Corporate tax rate	22.62%	23.23%	21.70%	21.84%	19.29%
Tax	$2,573.71	$2,446.07	$2,532.17	$2,833.24	$2,362.04
NOPAT	**$8,803.29**	**$8,084.93**	**$9,135.83**	**$10,141.76**	**$9,883.96**
Total current assets - Cash	$12,849.00	$13,653.00	$14,212.00	$13,221.00	$16,412.00
Total current liabilites - ST Debt	$12,407.00	$14,444.00	$16,247.00	$16,232.00	$19,088.00
NWC	**$442.00**	**-$791.00**	**-$2,035.00**	**-$3,011.00**	**-$2,676.00**
Change in NWC	**$252.00**	**-$1,233.00**	**-$1,244.00**	**-$976.00**	**$335.00**
gYoY%	250.00%	-589.29%	-0.89%	21.54%	134.32%
CAPEX	$1,436.00	$852.00	$602.00	$748.00	$1,077.00
Amortizations	$82.00	$66.00	$73.00	$96.00	$0.00
NCAPEX	**$1,354.00**	**$786.00**	**$529.00**	**$652.00**	**$1,077.00**
gYoY%	-7.26%	-41.95%	-32.70%	23.25%	65.18%
FCFF	**$7,197.29**	**$8,531.93**	**$9,850.83**	**$10,465.76**	**$8,471.96**

Table 31. *Historical FCFF Calculation, In Million of Dollars*
Source: PMI annual reports, own analysis

10.17. Appendix – Forecasted Revenues by Product and Zone

Net Revenues	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E
combustible tobacco products										
European Union	$8,433.00	$8,093.00	$8,052.00	$8,211.00	$7,212.00	$6,973.12	$6,742.15	$6,518.83	$6,302.91	$6,094.14
Eastern Europe	$2,597.00	$2,438.00	$2,250.00	$2,240.00	$2,410.00	$2,330.17	$2,252.99	$2,178.37	$2,106.21	$2,036.45
Middle East & Africa	$3,732.00	$3,721.00	$3,005.00	$3,110.00	$3,567.00	$3,448.85	$3,334.62	$3,224.16	$3,117.37	$3,014.11
South & Southeast Asia	$4,656.00	$5,094.00	$4,395.00	$4,385.00	$4,372.00	$4,227.19	$4,087.17	$3,951.79	$3,820.90	$3,694.34
East Asia & Australia	$3,074.00	$2,693.00	$2,468.00	$2,414.00	$2,138.00	$2,067.18	$1,998.71	$1,932.51	$1,868.50	$1,806.61
Americas and canda	$3,037.00	$2,179.00	$1,577.00	$1,706.00	$1,804.00	$1,744.25	$1,686.47	$1,630.61	$1,576.60	$1,524.38
Swedish Match					$70.00	$67.68	$65.44	$63.27	$61.18	$59.15
Total combustible tobacco products	**$25,529.00**	**$24,218.00**	**$21,747.00**	**$22,067.00**	**$21,572.00**	**$20,857.48**	**$20,166.62**	**$19,498.64**	**$18,852.79**	**$18,228.34**
Smoke-free products excluding Wellness and Healthcare										
European Union	$865.00	$1,724.00	$2,650.00	$4,064.00	$4,907.00	$5,664.20	$6,538.24	$7,547.15	$8,711.75	$10,056.05
Eastern Europe	$324.00	$844.00	$1,128.00	$1,304.00	$1,315.00	$1,517.92	$1,752.15	$2,022.52	$2,334.61	$2,694.87
Middle East & Africa	$382.00	$321.00	$83.00	$183.00	$334.00	$385.54	$445.03	$513.70	$592.97	$684.48
South & Southeast Asia				$11.00	$23.00	$26.55	$30.65	$35.37	$40.83	$47.13
East Asia & Australia	$2,506.00	$2,671.00	$2,961.00	$3,539.00	$2,994.00	$3,456.00	$3,989.30	$4,604.88	$5,315.46	$6,135.69
Americas and canda	$19.00	$27.00	$124.00	$137.00	$99.00	$114.28	$131.91	$152.27	$175.76	$202.88
Swedish Match					$246.00	$283.96	$327.78	$378.36	$436.74	$504.13
Total SFP excluding W&H	**$4,096.00**	**$5,587.00**	**$6,947.00**	**$9,237.00**	**$9,919.00**	**$11,449.60**	**$13,216.38**	**$15,255.79**	**$17,609.91**	**$20,327.29**
Wellness and Healthcare				**$101.00**	**$271.00**	**$300.00**	**$431.24**	**$619.90**	**$891.09**	**$1,280.92**
Total smoke-free products	**$4,096.00**	**$5,587.00**	**$6,947.00**	**$9,338.00**	**$10,190.00**	**$11,749.60**	**$13,647.62**	**$15,875.69**	**$18,501.00**	**$21,608.20**
Total PMI net revenues	**$29,625.00**	**$29,805.00**	**$28,694.00**	**$31,405.00**	**$31,762.00**	**$32,607.07**	**$33,814.24**	**$35,374.34**	**$37,353.79**	**$39,836.54**

Table 32 . *Forecasted Revenues by Product and Zone, In million of Dollars*
Source: PMI annual reports, own analysis

10.18. Appendix – Forecasted Cost of Sales as a Percentage of Sales

In Million of $	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E
Cost of Sales	$10,758.00	$10,513.00	$9,569.00	$10,030.00	$11,228.00	$11,736.79	$11,915.06	$12,440.42	$13,123.69	$13,995.97
COGS as % of revenues	36.31%	35.27%	33.35%	31.94%	35.35%	34.44%	34.44%	34.44%	34.44%	34.44%
2018- 2022 Average	34.44%									

Table 33. *Forecasted Cost of Sales as % of Sales, in Million of Dollars*
Source:PMI annual reports, own analysis

10.19. Appendix – Forecasted Amortization

In Million of $	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E
Amortizations/Depreciations	$82.00	$66.00	$73.00	$96.00	$159.00	$181.52	$207.22	$236.56	$270.06	$308.30
(Amortizations/Depreciations) as % of assets	0.21%	0.15%	0.16%	0.23%	0.26%	0.27%	0.28%	0.29%	0.30%	0.30%
Growth	0.001%	-0.052%	0.009%	0.070%	0.025%					
2018- 2022 Average Growth	0.011%									

Table 34. *Forecasted Amortizations, in Million of Dollars*
Source: PMI annual reports, own analysis

10.20. Appendix – Forecasted Unusual Expenses

In Million of $	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E
Unusual Expense (Income)	$0.00	$855.00	$149.00	$216.00	$378.00	$343.41	$356.12	$372.55	$393.40	$419.54
Unusual Exp (% of revenues)	0.00%	2.87%	0.52%	0.69%	1.19%	1.05%	1.05%	1.05%	1.05%	1.05%
2018- 2022 Average	1.05%									

Table 35. *Forecasted Unusual Expenses, in Million of Dollars*
Source: PMI annual reports, own analysis

10.21. Appendix – Calculation of Country Risk Premium

CRP	% of Revenues	x	Total CRP	=	CRP WA
European Union	38.16%		1.36%		0.52%
Eastern Europe	11.73%		9.32%		1.09%
Middle East & Africa	12.28%		5.87%		0.72%
Asia and Australia	29.99%		1.68%		0.50%
Americas and canda	5.99%		5.66%		0.34%
Swedish Match	0.99%		0.00%		0.00%
Wellness and Healthcare	0.85%		0.00%		0.00%
Total CRP					3.18%

Table 36. *Country Risk Premium Calculation,*
Source: Damodaran, Own analysis

10.22. Appendix – Monte Carlo Simulation, Company Value

- The entire range is from $130,310.82 (Million of $) to $328,124.25 (Million of $)
- The base case is $184,982.95 (Million of $)
- After 1,000,000 trials, the mean equals to $188,573.59 (Million of $)

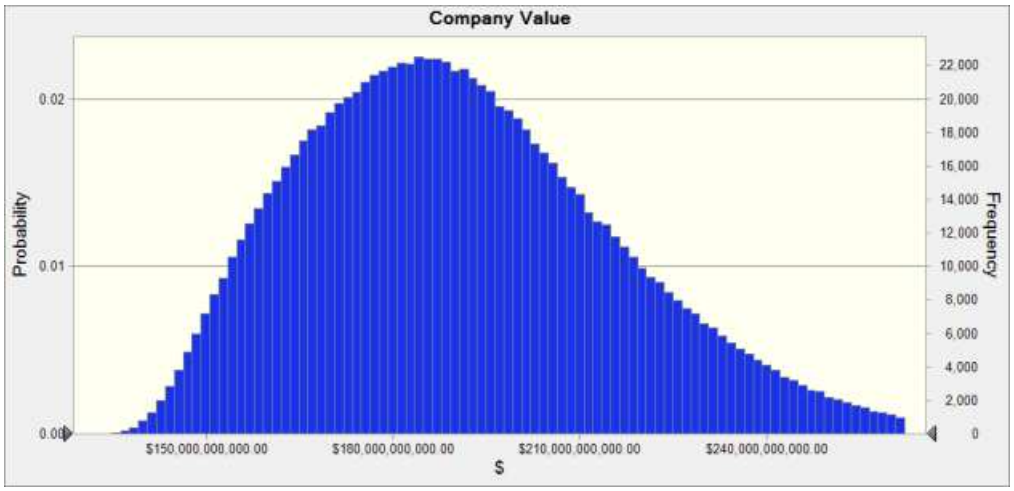

Figure 35. *Company Value*
Source: own analysis

10. 23. Appendix – Damodaran Interest Coverage Ratios and Default Spread

>	≤ to	Rating is	Spread is
-100000	0.199999	D2/D	20.00%
0.2	0.649999	C2/C	17.50%
0.65	0.799999	Ca2/CC	15.78%
0.8	1.249999	Caa/CCC	11.57%
1.25	1.499999	B3/B-	7.37%
1.5	1.749999	B2/B	5.26%
1.75	1.999999	B1/B+	4.55%
2	2.2499999	Ba2/BB	3.13%
2.25	2.49999	Ba1/BB+	2.42%
2.5	2.999999	Baa2/BBB	2.00%
3	4.249999	A3/A-	1.62%
4.25	5.499999	A2/A	1.42%
5.5	6.499999	A1/A+	1.23%
6.5	8.499999	Aa2/AA	0.85%
8.50	100000	Aaa/AAA	0.69%

Table 37. *Table that relates the interest coverage ratio of a firm to a "synthetic" rating and a default spread that goes with that rating." (Damodaran)*
Source: Damodaran Web page

10.24. Appendix – Peer's Multiples

Company	RIC	Market CAP	Market Valuation		EV/REVENUES				EV/EBITDA				EV/EBIT				P/E			
			Equity Value	Enterprise Value	2022	2023E	2024E	2025E	2022	2023E	2024E	2025E	2022	2023E	2024E	2025E	2022	2023E	2024E	2025E
Philip Morris	PM	$141,900	$156,335	$199,458	6.0	5.4	5.2	4.9	13.7	13.2	12.0	11.1	15.8	14.3	13.1	11.9	17.4	15.2	14.3	13.0
British American Tobacco	BATS.L	$83,714	$83,714	$135,852	3.4	3.4	3.3	3.2	7.2	7.0	6.8	6.6	9.7	7.5	7.3	7.0	11.2	6.6	6.4	6.0
Altria Group Inc	MO.N	$73,788	$77,940	$104,620	4.8	4.8	4.8	4.7	8.1	8.1	7.9	7.7	8.6	8.2	8.0	8.0	14.3	8.6	8.3	8.0
Mean					4.7	4.5	4.4	4.3	9.6	9.5	8.9	8.5	11.4	10.0	9.5	9.0	14.3	10.1	9.7	9.0
Median					4.8	4.8	4.8	4.7	8.1	8.1	7.9	7.7	9.7	8.2	8.0	8.0	14.3	8.6	8.3	8.0

Table 38. *Multiples of the Peers, Forward Multiples*
Source: Refinitiv Eikon, Own analysis

10.25. Appendix – Net working Capital Calculation

In Million of $	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E
Total Net Accounts Receivables	$3,564.00	$3,717.00	$3,761.00	$3,940.00	$4,756.00	$5,042.27	$5,400.00	$5,833.95	$6,361.94	$7,006.75
Accounts receivables days	*43.91*	*45.52*	*47.84*	*45.79*	*54.65*	*56.44*	*58.29*	*60.20*	*62.17*	*64.20*
Total Inventory	$8,804.00	$9,235.00	$9,591.00	$8,720.00	$9,886.00	$10,207.01	$10,584.89	$11,073.24	$11,692.87	$12,470.05
Inventory days	*298.70*	*320.63*	*365.84*	*317.33*	*323.04*	*331.71*	*331.71*	*331.71*	*331.71*	*331.71*
Other Current Assets, Total	$481.00	$701.00	$860.00	$561.00	$1,770.00	$1,125.62	$1,167.29	$1,221.14	$1,289.48	$1,375.18
% of Total Revenues	*1.62%*	*2.35%*	*3.00%*	*1.79%*	*5.57%*	*3.45%*	*3.45%*	*3.45%*	*3.45%*	*3.45%*
Total Current Assets excluding cash	$12,849.00	$13,653.00	$14,212.00	$13,221.00	$16,412.00	$16,374.89	$17,152.18	$18,128.34	$19,344.29	$20,851.98
Accounts Payable	$2,068.00	$2,299.00	$2,780.00	$3,331.00	$4,076.00	$4,653.76	$5,367.33	$6,244.72	$7,333.74	$8,698.38
Accounts Payable days	*25.48*	*28.15*	*35.36*	*38.71*	*46.84*	*52.09*	*57.94*	*64.43*	*71.66*	*79.70*
Accrued Expenses	$7,887.00	$9,425.00	$10,496.00	$9,918.00	$11,982.00	$11,737.11	$12,171.63	$12,733.20	$13,445.72	$14,339.40
Accrued Expenses Ratio	*43.42%*	*51.35%*	*62.46%*	*54.74%*	*63.13%*	*60.11%*	*60.11%*	*60.11%*	*60.11%*	*60.11%*
Other Current liabilities, Total	$669.00	$889.00	$1,091.00	$1,025.00	$1,040.00	$1,156.44	$1,199.25	$1,254.58	$1,324.78	$1,412.83
% of COGS	*22.79%*	*25.87%*	*31.05%*	*29.74%*	*27.13%*	*29.31%*	*29.31%*	*29.31%*	*29.31%*	*29.31%*
Income Taxes Payable	$576.00	$796.00	$1,091.00	$1,025.00	$1,040.00	$1,156.44	$1,199.25	$1,254.58	$1,324.78	$1,412.83
% of Total other current Liabilities	*86.10%*	*89.54%*	*100.00%*	*100.00%*	*100.00%*	*100.00%*	*100.00%*	*100.00%*	*100.00%*	*100.00%*
Other current Liabilities	$93.00	$93.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total Current Liabilities excluding short term debt	$10,624.00	$12,613.00	$14,367.00	$14,274.00	$17,098.00	$17,547.31	$18,738.21	$20,232.50	$22,104.24	$24,450.61
Total Current Assets excluding cash	$12,849.00	$13,653.00	$14,212.00	$13,221.00	$16,412.00	$16,374.89	$17,152.18	$18,128.34	$19,344.29	$20,851.98
-										
Total Current Liabilities excluding short term debt	$10,624.00	$12,613.00	$14,367.00	$14,274.00	$17,098.00	$17,547.31	$18,738.21	$20,232.50	$22,104.24	$24,450.61
=										
Net Working capital	$2,225.00	$1,040.00	$155.00	$1,053.00	$686.00	$1,172.42	$1,586.03	$2,104.16	$2,759.95	$3,598.63
Δ Net Working capital	$366.00	$1,185.00	$1,195.00	$898.00	$367.00	$486.42	$413.62	$518.13	$655.79	$838.68

Table 39. *Net Working Capital Calculation, Full table, In million of Dollars*
Source: Pmi annual report, own analysis