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Equity Valuation - Philip Morris International Inc.

Francisco Fonseca
Student ID: 152418036

Dissertation written under the supervision of Professor José Carlos Tudela Martins

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Abstract

Title: Equity Valuation – Philip Morris International Inc.

Author: Francisco Machado Pereira da Fonseca

This dissertation illustrates the equity valuation of Philip Morris International (PMI), one of the world-leading companies operating in the tobacco industry, that is traded in the New York Stock Exchange. Regarding the valuation process, two techniques were executed. Starting with the main one, the DCF-model, projected a price per share of \$88.9. On a complimentary basis, a relative valuation was executed to better understand the market perception regarding PMI's value. These valuations were followed by sensitive analyses, with the purpose of stress-testing the assumptions behind the DCF-model. Lastly, the results were benchmarked with a PMI valuation executed by Barclays in December 2019.

Keywords: Equity Valuation, Philip Morris International, Tobacco Industry, DCF-model, Relative Valuation

Resumo

Título: Equity Valuation – Philip Morris International Inc.

Autor: Francisco Machado Pereira da Fonseca

Esta dissertação ilustra a avaliação da Philip Morris International, uma das líderes mundiais a operar na indústria tabaqueira, cotada na bolsa de Nova Iorque, nos Estados Unidos. Relativamente ao processo de avaliação, foram utilizados dois métodos. Começando pelo método principal, o Fluxos de Caixa Descontados projeta um preço por ação de \$88,9. Como método complementar, foi aplicada uma avaliação relativa com o propósito de perceber melhor o valor que o mercado atribui à PMI. Após estas avaliações, realizou-se uma análise de sensibilidade onde os pressupostos considerados no Fluxo de Caixa Descontados, foram alvos de teste. Por fim, comparou-se os resultados obtidos com uma avaliação da PMI realizada pelo banco de investimento Barclays, em Dezembro de 2019.

Palavras-chave: Avaliação, Philip Morris Internacional, Indústria Tabaqueira, Fluxos de Caixa Descontados, Avaliação Relativa

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List of Abbreviations

APV – Adjusted Present Value

CAGR – Compounded Annual Growth Rate

CAPEX – Capital Expenditures

CAPM – Capital Asset Pricing Model

COGS – Cost of Goods Sold

D&A – Depreciation and Amortization

DCF – Discounted Cash Flow

DPO – Days Payable Outstanding

DSI – Days Sales of Inventory

DSO – Days Sales Outstanding

EBIT – Earnings Before Interest and Taxes

EBITDA – Earnings Before Interest, Taxes, Depreciation and Amortization

EV – Enterprise Value

FCFE – Free Cash Flow to Equity

FCFF – Free Cash Flow to Firm

GDP – Gross Domestic Product

ITS – Interest Tax Shield

PP&E – Property Plant and Equipment

PMI – Philip Morris International

ROIC – Return on Invested Capital

RRP's – Reduced Risk Products

R&D – Research and Development

TV – Terminal Value

WACC – Weighted Average Cost of Capital

WC – Working Capital

YoY – Year-over-Year

YTM – Yield to Maturity

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Introduction

This dissertation will be developed as an applied project to scrutinize distinct valuation models and their practical applications. Having this said, Philip Morris International will be the company in focus. To begin with, one will construct a Literature Review, with an explanation of the main valuation techniques with the purpose of selecting the most suitable one considering PMI characteristics. Moreover, in order to understand the business dynamics and the ecosystem in which the firm operates, the following chapters will be an Industry and a Company Overview. Thirdly, considering the previous chapters, the Valuation itself will be constructed, based-on assumptions that will be further explained, as well as tested. Finally, the result achieved will be compared with a valuation performed by an Investment bank, more specifically, with the one reported by *Barclays*.

1. Literature Review

“Valuation is neither the science that some of its proponents make it out to be nor the objective search for the true value that idealists would like it to become” (Damodaran, 2012). Due to this midpoint among certainty and subjectivity, some may argue that “valuation is an art, not an exact science”. Thus, as any other kind of art, to comprehend it better, one should debate on its different methods and approaches. The main objective of this section is exactly that, comprehend and reflect on the different valuation models – theory, inputs, computation process, drawbacks, advantages. Only after such analysis, it is possible to know which methods fit better to PMI’s characteristics, and therefore, which ones deliver more reliable valuations.

Relative Valuation

Multiple Valuation

In this approach, an asset is evaluated accordingly with its “comparables” already priced in the market (Damodaran, 2012). The asset characteristic and, thus the similarities with other assets, are the basis of this valuation method. Due to its simple application and intuitive comprehension, this practice is commonly used by analysts and investors during valuation activities. Also, comparing to other valuation methods, fewer assumptions are taken into consideration to implement it.

Still, it can be easily manipulated, and that condition is even more severe when comparing business. As it goes without saying, two companies can ever be completely equal regarding profitability or risk, thus the concept of “comparable” is subjective. Besides, as mentioned previously, the value is entirely given by the market, and so under or overvaluations can be incorporated in the same output. (Damodaran, 2012). As a consequence, it can also misguide, as distinctive multiples can lead to contrary conclusions. In one multiple, an asset can be traded at a premium, but in another at discount, leading managers and analysts to use the ones which fit best their purpose (Koller, Goedhart and Wessels, 2010).

Yet, it can never be seen as quicker path to reach a valuation, and it is more advantageous after executing a valuation applying another approach since allows us to benchmark the valuation achieved and recognize the differences between the asset valued and its “comparables” (Fernández, 2001 & Koller, Goedhart and Wessels, 2010).

In order to overcome the pitfalls of this approach and assist companies to apply multiples more accurately, one should apply four principles: 1) To select the peer group, find firms with similar forecasts for ROIC and growth; 2) Avoid historical multiples based on past

earnings, and use forward-looking multiples based on forecast; 3) Give preference to enterprise value multiples rather than P/E multiples - vulnerability to capital structure changes and volatile earnings; 4) Correct the EV/EBITA multiple for non-operating items as pensions, employee stock options, operating leases and excess cash and other non-operating assets (Koller, Goedhart and Wessels, 2010).

After computing all multiples, to increase their performance rather than use the mean or the median of the peer group, the best measure is the harmonic mean (Liu, Doron and Jacob, 2001).

The Peer Group

Selecting an accurate peer group is the key to reach a realistic valuation adopting multiples. Even if the multiples are calculated correctly, having an erratic peer group sample leads to unrealistic valuations.

A simple method to identify the peer group is to use the Global Industry Classification Standard (GICS) system or the Standard Industrial Classification (SIC) codes, although this groups tend to be too inclusive, making possible that companies with different core business end up in the same group (Koller, Goedhart and Wessels, 2010). Lee and Bhojraj (2001), suggest an alternative way of finding the correct peer group. According to them, the “*choice of comparable firms should be a function of the variables that drive cross-sectional variation in a given valuation multiple*”. For instance, regarding the EV/Revenues multiple, a comparable business would be nominated based on “*variables that drive cross-sectional differences in this ratio*”. Further, the authors use these variables, alongside with the ones suggested by valuation theory, to create the “warranted multiple” for each firm within a certain dataset, and then include the ones with similar valuation multiples to for peer group.

Discounted Cash Flow Valuation (DCF)

The DCF approach comes along with a fundamental rule that defines all the method itself, “*the value of any asset is the present value of expected future cashflows that the asset generates*”, which can be demonstrated in the following equation (Gilbert, 1990 and Damodaran 2012):

$$Value = \frac{CF_1}{(1+i)^1} + \frac{CF_2}{(1+i)^2} + \dots + \frac{CF_\infty}{(1+i)^\infty} = \sum_{n=1}^{\infty} \frac{CF_n}{(1+i)^n}$$

where,

CF = cash flow

i = discount rate

n = time periods from one to infinity

There are thousands of DFC models, nevertheless, Damodaran (2012) stresses out the three paths to discounted cash flow valuation, and two of them will be described in this section. One only takes into account the equity pole of the business, whereas the other considers the total value of the company - it also incorporates the other claim holders of the company.

When working with DCF model, it is mandatory to comprehend that the value of an asset comes from the relation between with three major aspects, which are, Cash Flow, Risk and Timing (Luerhman, 1997). The future value is generated by the sum of all expected cash flows, nevertheless, those cash flows are not guaranteed, so it is necessary to discount them. Since the cash flows are uncertain and bear risk, investors demand a certain rate to discount those cash flows. And finally, those cash flows are not generated at the same time, therefore it is mandatory to time all of them (Luerhman, 1997). At a certain point in time, those cash flows are all joined together in the Terminal Value, which will be explained further.

Generally speaking, the FCF is the addition of all sources of cash minus the capital expenses needed for the firm to continue to operate at the expected rate. In addition, it should also take into consideration “*the capital equipment, cash to finance working capital, and any additional debt*”. An alternative to assess the CF’s is to base the forecast on the firm’s financial history, by constructing a financial model of the firm (Gilbert, 1990). In order to achieve the Free Cash Flow to the Firm, the following formula should be applied:

$$FCFF = EBIT (1 - Tax Rate) + D\&A - \Delta Net Working Capital - Capex$$

The Free Cash Flow to Equity calculation is slightly different since it only takes into account the value of Equity. It demonstrates total value claimed by the shareholders, and to reach that amount it is necessary to compute the following formula:

$$FCFE = Cash from Operations - Capex + Net Debt Issued$$

Regarding risk, the required discount rate, both paths consider different levels of risk. To value Equity, only the risk that shareholders bear, and consequently the rate of return asked to bear that risk, is taken into consideration – cost of equity (r_e). To discount the CF to the firm, a different rate of return is required, since in this case both Equity and Debt participate in

the equation. To account for that, normally the discount rate used is the Weight Average Cost of Capital (WACC) (Luerhman, 1997).

As advocated previously, regarding Timing, the major concern is computing the Terminal Value. Cash Flows cannot be estimated accurately for indeterminate periods, so, at a certain time, the Terminal Value is incorporated in the formula to solve that problem (Damodaran, 2012). It is important to underline that the estimation of the TV is one of the most essential parts of the DCF approach, since it counts for over 50% of the total value of an asset (Gilbert, 1989). Further in this dissertation, the Terminal Value computation will be discussed in more detail.

The formula of the DCF model regarding the Value of Equity, adding what was state before, is the following:

$$\text{Value of Equity} = \sum_{n=1}^t \frac{CF_n}{(1 + r_e)^n} + \frac{TV}{(1 + r_e)^n}$$

where,

CF_n = Cash Flow d

r_e = cost of equity

TV = Terminal Value

It is important to keep in mind that the “*cost of equity is a function of the levered beta*”. Parrino (2005) underlines this since changes in the value of debt affect the debt to capital ratio and, consequently, the value of the firm. Thus, for the cost of equity to be consistent with the CF projection, is mandatory to forecast as well, the debt to equity ratios that are coherent with the interest within the CF projections. All of these adjustments can be hard to implement and may involve numerous iterations over the calculations to reach a reasonable outcome. Therefore, it is simpler to utilize the WACC to price the entire business and then deduct the value of debt, to forecast the value of equity (Parrino, 2005).

Regarding the Value of the Firm, the general DFC formula is:

$$\text{Value of the Firm} = \sum_{n=1}^t \frac{FCFF_n}{(1 + WACC)^n} + \frac{TV}{(1 + WACC)^n}$$

where,

$FCFF_n$ = Free Cash Flow to the Firm

$WACC$ = Weight Average Cost of Capital

g = Growth rate

TV = Terminal Value

“The DCF valuation approach is theoretically the most “correct” valuation approach” (Gilbert, 1989), nevertheless it reveals some drawbacks as well. Damodaran (2012) presents us with some situations, in which this approach has difficulties to be applied to:

“Firms in trouble” - Whenever a company is facing a strong probability of bankruptcy, forecasting its earning is a difficult task. If they do present negative cash flows, this approach fails since it perceives the value of a company as a *“going concern providing positive cashflows to its investors”*. Thought, even if the firm subsists, the forecast period needs to be extended until the cashflow delivers positive earning, otherwise, the approach will output a negative value for the equity or the firm.

“Firms in the process of restructuring” - The DFC approach depends deeply on the capital structure of a company, or in other words, the riskiness of the firm. Thus, if a forecast is done based on the historical data and for some reason the company changes its capital structure, the expected cash flow will not be discount at the update cost of capital, which severely compromises the final result.

“Cyclical firms” - The profitability of these companies is very much correlated by the state of the economy, *“rising during economic booms and falling during recessions*. When using the DCF approach in one of these periods, without considering the cyclicity of the company, the value attributed will always be over or underestimated.

Adjusted Present Value (APV)

As stated previously, this method is one of the paths to discounted cash flow valuation. Differently from the WACC, instead of estimating the value of a firm as a whole, the *“APV’s approach analyzes financial maneuvers separately and then add their value to that of the business”* (Luehrman 1997). This approach first values a firm considering that it is completely financed with equity, and then sums up the results of the company’s financing assessments to this unlevered company value (Parrino 2005).

According to Luehrman (1997), when implementing this approach, firstly, one should *“layout the base case cash flows”*, by constructing financial projections – cash flows – as in any DFC approach. Then, the next step is to *“Discount the flows using an appropriate discount rate and terminal value”*. In this case, the appropriate one is the cost of equity when the company has no debt since this approach considers an all-equity capital structure. The general formula is the following (Parrino, 2005):

$$Value_{Unlevered Firm} = \sum_{n=0}^n \frac{FCFF_t}{(1 + Unlevered WACC)^t}$$

where,

Unlevered WACC = Cost of equity

FCFF_t = Free Cash Flow to the Firm

Thus, according to CAPM, the general formula for the Unlevered WACC is the following (Parrino, 2005):

$$Unlevered WACC = r_f + \beta_A \times Market Risk Premium$$

where,

r_f = Risk-free rate

β_A = Asset beta

Market Risk Premium = expected market return less the risk-free rate

After, the third step consists of “*Evaluate the financing side effects*”. One of the side effects is the interest tax shield due to the deductibility of interest payments on the corporate tax return. To discount this side effect the appropriate rate is the cost of debt since “*tax shields will be realized when the firm is able to make its debt payments; therefore, the tax shields are about as risky as the debt*” (Parrino, 2005). The general formula of this side effect is the following:

$$Value of Tax Shield = \sum_{n=0}^n \frac{Tax rate_t \times Interest_t}{(1 + r_d)^t}$$

For that reason, one might suggest that according to APV more debt is always beneficial. Since in reality that’s not true, due to financial distress, analysts should take into account the benefits of debt – tax shield –, as well as the costs – bankruptcy costs (Parrino, 2005). Which lead us to the next stage, called “*Add the pieces together to get the initial APV*”. The general formula for the APV approach is the following:

Value of the firm

$$= Value_{Unlevered Firm} + \sum_{n=0}^n \frac{Tax rate_t \times Interest_t}{(1 + r_d)^t} - \pi_a \times PV_{bankruptcy costs}$$

where,

π_a = Probability of Bankruptcy

r_d = Cost of Debt

One of the main benefits of this model compared to others is the fact that one can forecast CF and appropriate discount rates separately for each section – interest tax shield, margin improvement, net working capital improvement, assets sales – and, consequently, obtain more accurate assessments of value (Luehrman, 1997 and Damodaran 2012). In addition, it also adapts better whenever there are changes in the debt structure of a company.

Nevertheless, there is no consensus regarding the APV approach. Booth (2002), argues that this method should be used alongside with other valuation methods, due to its regular unreliability regarding some assumptions of the model – estimation of the unlevered cost of equity and the optimal amount of debt. The advantages of this approach are even more evident in circumstances as leveraged buyouts, real estate financing, project financing and structured financing (Booth, 2002).

Dividend Discount Model (DDM)

Whenever an investor acquires shares in the market, the only cash flow she receives in return is the dividend, for that matter, “*the simplest model for valuing equity is the dividend discount model*” (Damodaran, 2012). Similarly to the DFC model, the value of a stock is the present value of expected cash flows it delivers, dividends in this case (Parrino, 2005). Again, as the DCF model, this approach lies in the present value rule, therefore the expected cash flows are discounted at the riskiness of the business, in this case, at the cost of equity.

One of the versions of this model is “*The Gordon Growth Model*”, and its main driver is considering that future dividends will grow at a constant rate (g). The general formula of this model is the following:

$$\text{Value of stock} = \frac{DPS_1}{(r_e - g)}$$

where,

DPS_1 = Expected Dividends one year from now (next period)

r_e = Required rate of return for equity investors

g = Growth rate in dividends forever

Due to its simplicity, this version is extremely sensitive to the inputs for the growth rate (Damodaran, 2012). If it is incorrectly calculated, can lead to misleading results or even illogical results, when the growth rate converges to the cost of capital, which as an exponential effect on the value of the stock. And, if the growth rate goes beyond the cost of capital, the value of the stock turns negative, which is impossible to occur “*because equity is an option on the underlying assets of the firm and options cannot have negative values*” (Parrino, 2005).

In order to overcome the unrealistic constant growth rate, there is another version of the Dividend Discount Model, the “*Two-stage Dividend Model*”. In this case, there are two stages of growth, an unsteady initial one, and a subsequent constant rate. The general formula of this model is the following (Damodaran, 2012):

$$P_0 = \sum_{t=1}^{t=n} \frac{DPS_t}{(1 + k_{e,hg})^t} + \frac{P_n}{(1 + k_{e,hg})^n} \text{ where } P_n = \frac{DPS_{n+1}}{(k_{e,st} - g_n)^t}$$

Where

DPS_t = Expected dividends per share in year t

k_e = Cost of Equity (hg: High Growth period; st: Stable growth period)

P_n = Price (terminal value) at the end of year n

g = Extraordinary growth rate for the first n years

g_n = Steady state growth rate forever after year n

Although it tries to solve some problems, this version comes along with some drawback itself. The first one is the uncertainty in identifying the exact duration of the high growth period, which can result in a price overestimation (under) of the price if a longer (shorter) period is incorrectly assumed. Secondly, this version expects a sudden drastic change in the growth rate instead of considering gradual changes over time, which is more realistic (Damodaran, 2012). As a general review, Damodaran (2012) stresses out the fact that since Dividend Discount Models only considers dividends, these models underestimate firms that, in order to accumulate cash or to reinvest within its business, “*payout little in dividends*”.

Finally, it is important to underline the fact that these models can be applied as a backup of other valuation methods, and also as a standalone approach for estimating the intrinsic value of a share straight away (Parrino, 2005).

WACC Assumptions

The Cost of Capital

“In an enterprise valuation, free cash flows are available to all investors”, thus the appropriate discount rate for FCF must include the risk that all investors bear (Koller, Goedhart and Wessels, 2010). Consequently, the WACC is the proper rate of return to discount the cash flow, by merging the rate required of both equity holders and debt holders. The general formula for the cost of capital is the following (Koller, Goedhart and Wessels, 2010):

$$WACC = \frac{D}{D + E} k_d \times (1 - T_m) + \frac{E}{D + E} k_e$$

where,

D = Market Value of Debt

E = Market Value of Equity

k_d = Cost of Debt

k_e = Cost of Equity

T_m = Marginal tax rate

It is pertinent to refer that both Equity and Debt value should be computed according to its market value, instead of the book value. In addition, one also needs to incorporate the effect of the marginal tax rate on the cost of debt, since the tax shield resultant from interest has been eliminated from the FCF. Thus, considering that the ITS – interest tax shield - has value, it needs to be integrated into the assessment, by decreasing the WACC (Koller, Goedhart and Wessels, 2010).

The Cost of Debt

The cost of debt represents the expected return debtholders count on achieving on their investments and it needs to include a premium related to the default risk (Damodaran, 2012). Regarding its estimations, “the cost of debt for a company with investment-grade debt, yield to maturity is a suitable proxy” and “should be calculated on liquid, option-free, long-term debt (Koller, Goedhart and Wessels, 2010).

On the other hand, for firms with only short-term bonds or whose debt trades infrequently, one should consider the firm’s debt rating to estimate the yield to maturity, and consequently the cost of debt. This is justified by the fact that short-term bonds do not represent the firm’s FCF duration and that bonds rarely traded induces to outdated bonds prices. These conditions, consequently, lead to outdated yields (Koller, Goedhart and Wessels, 2010).

The Cost of Equity

As advocated previously, the rate of return required by equity holders bear the risk of the firm represents the cost of capital, it represents the expected return equity holders ambition (Damodaran, 2012). In order to achieve the appropriate, expected return, it is common practice to use the CAPM, and the formula is the following (Parrino, 2005):

$$\text{Cost of Equity} = r_f + \beta \times [E(r_m) - r_f]$$

where,

r_f = Risk-free rate

β = Beta

$E(r_m)$ = Expected market return

$E(r_m) - r_f$ = Expected market risk premium (MRP)

Risk-free rate

In a risk-free investment, an investor knows from the beginning that the actual return equals the underlying expected return. This is only possible when two requirements are fulfilled - “no default risk” and “no reinvestment risk” (Damodaran, 2008).

Only governments and central banks can issue securities with a risk-free rate since they are the ones who control the printing of currency, therefore they should be able to comply with their promises, in nominal terms at least. For firms based in the US, one should adopt the 10-year government STRIPS, and for European ones 10-year German government bonds, since they are traded more often and present “*lower credit risk than bonds of other European countries*” (Koller, Goedhart and Wessels, 2010).

The second condition is linked with the first one since “*for an investment to have an actual return equal to its expected return, there can be no reinvestment risk*”. Therefore, the suitable risk-free rate to apply in the cost of equity calculation is a government zero-coupon bond that matches the investment lifetime (Damodaran, 2008).

Parrino (2005) advocates that there are three measures of the risk-free rate, being long-term government bonds a proxy for long-term investments, intermediate-term Treasury notes for a time span between 5 to 7 years, and for short-term investments an investor should consider the short-term Treasury bills.

Finally, to estimate the risk-free rate one should utilize government bond yields expressed in the same currency as the firm's cash flows, and monitor if the inflation rate assumed in the cash flows calculation is coherent with the inflation rate assumed in the government bond rate selected (Koller, Goedhart and Wessels, 2010).

Beta

“The core question for a company's cost of equity is how to estimate a company's risk relative to the market, and consequently beta” (Koller, Goedhart and Wessels, 2010). The authors just state, advocate that beta is an estimate of the firm's exposure to the market risk. In order to estimate the firm's beta in the industry sample, one should execute a linear regression, as indicated beneath (Koller, Goedhart and Wessels, 2010):

$$R_i = \alpha + \beta \times R_m + \varepsilon$$

where,

R_i = stock's return

β = raw beta

R_m = market portfolio return

As betas tend to move toward the overall average, which is one, there is an adjustment process named *Smoothing*. In industries where comparable businesses are hard to find, this method can be useful (Koller, Goedhart and Wessels, 2010 and Damodaran, 2012). The beta can be adjusted by adopting the following method (Bloomberg):

$$\text{Adjusted Beta} = 0.33 + 0.67 (\text{Raw beta})$$

Market Risk Premium

Generally speaking, the market risk premium *“represents the risk premium required by investors for bearing the risk of owning the market portfolio”*, or in other words, is simply *“the difference between the expected return on the market - R_m - and the expected risk-free rate - R_f ”* (Peterson, Peterson, 1996). While there are still various approaches to estimate this measure, one commonly uses the historical market risk premium approach, which is basically, *“subtracting the return on government bonds from the return on a large sample of companies over some time frame”* (Koller, Goedhart and Wessels, 2010).

Nevertheless, some may argue about its pitfalls. Thus, to overcome them, one may follow the suggestions gave by Koller, Goedhart and Wessels (2010). The authors suggest calculating the risk premium based on long-term government bonds since long-term bonds pair better the duration of the firm's CF's than short-term. Also suggest using the longest period possible, to decrease the estimation errors, and to use an arithmetic average of longer-dated intervals, instead of a geometric one.

Still, *“historical risk premiums for markets outside the United States cannot be used in risk models”* (Damodaran, 2012). To overcome this issue, Damodaran recommends an adjustment, by adding a country risk premium - country's default spread – to the equity risk premium from the historical premiums of representative markets – Europe, US, etc.). The general formula that represents the adjustment is the following:

$$\text{Market Risk Premium} = \text{Premium for Mature Equity Market} + \text{Country's Default Spread}$$

Growth Rate

“The most critical input in valuation is the growth rate to use to forecast future revenues and earnings, and there are three sources for growth rates” (Damodaran, 2012).

The first one takes into consideration the firm's historical returns and it is very useful to estimate the value of stable companies. Nevertheless, when valuing high growth firms, the historical growth rate is not suitable, since sometimes it cannot be estimated and when it's possible *“it cannot be relied on as an estimate of expected future growth”*.

The second source is the estimate of growth indicated by equity research analysts who follow the firm. According to Damodaran (2012), even though these analysts may be privy to information that the market does not have access, *“the quality of growth estimates, especially over longer periods, is poor”*, which can guide to erratic and inconsistent valuations.

The last source to guesstimate the growth rate is the firm's fundamentals. The connection between fundamentals and growth depends on which growth rate one is estimating. For example, to estimate growth in profits, one should replace the retention ratio with the equity reinvestment rate, or to evaluate growth in operating income, one should use return on capital and reinvestment rate. *By measuring these inputs, in a sense, one is estimating the firm's fundamental growth rate* (Damodaran, 2012).

Terminal Value

As one cannot forecast cash flows indeterminately, once it stops being an accurate estimate, it needs to stop. To address this problem one should compute the Terminal Value, which represents the value of the firm at that point in time (Damodaran, 2012). There are three methods to compute this value - *Liquidation Value*, *Stable Growth Model* and *Multiple Approach* (Damodaran, 2012). The first one considers the circumstances in which the firm ceases its operations and sell all the assets at a certain time in the future. Basically, this approach bases its valuation on the book value of the assets and then adjusts it for any inflation during the period. Since there is no indication about Philip Morris shutting down its business in the near future, this method will have no practical approach in this dissertation.

Moving to the next method, firms can extend their time span by reinvesting some of their cash flow into the firm. Following that thought, *Stable Growth Model* assumes that cash flow will grow at a constant rate and therefore firms can thrive perpetually. The general formula for the Terminal Value regarding this approach is the following (Damodaran, 2012).

$$\text{Terminal Value} = \frac{\text{Cashflow to Firm}_{n+1}}{(r - g)}$$

where,

r = Cost of capital

g = Stable growth rate

On the other hand, for the Multiple Approach “*the value of a firm in a future year is estimated by applying a multiple to the firm’s earnings or revenues in that year*”. Nevertheless, according to Damodaran (2012), the most reliable path to measure the Terminal Value within a DCF model is using either the liquidation value or the stable growth model, instead of this one.

Conclusion

After mentioning all these methods and procedures, it is possible to determine which ones suit best to PMI’s characteristics, and, therefore, will lead to more reliable valuations. The primary method chosen is the DCF-WACC, since none of its principal pitfalls affect PMI – changes in capital structure, cyclicalities or bankruptcy. On the other hand, Philip Morris is not facing any circumstances such as leveraged buyouts, real estate financing, project financing and structured financing, therefore the APV model will not be considered. On a secondary basis,

the relative valuation, due to its beneficial characteristics – straightforward comprehension, simplicity to apply and wider usage - will also be applied to estimate PMI value.

2. Industry Overview

More than ever, the tobacco industry's future is facing uncertainty, where different regions around the globe are adopting distinct patterns. In order to comprehend these tendencies, first, one should understand what affects consumer behavior regarding tobacco products. According to World Health Organization (WHO), the consumption of tobacco is mainly driven by the following factors:

- Price of tobacco products
- Disposable income of the consumer
- Demographic characteristics of the population (e.g., gender, age, ethnicity)
- Socio-economic status of the population (e.g., education, employment status)
- Rural versus urban area of residence
- Tobacco control interventions (e.g., smoking restrictions, bans on advertising and promotion of tobacco products)
- Knowledge and information about the health effects of tobacco use

Regarding all these factors, WHO states that price and consumer income are the main drivers of tobacco products' demand. Also, WHO explains that, independently of the income status of a given country, the increase in prices leads generally to a consumption decline. Furthermore, especially in low- and medium-income environments, which aggregates 80%¹ of the world's smokers, an increase in income provokes an upper movement in tobacco consumption. Whereas, in wealth settings, an increase in income, shifts the consumers' demand for higher-priced products.

Smoking Population

WHO estimates that nowadays there are 1.1¹ billion in the world, of which 85%¹ are male. Despite the world's growing awareness of the negative effects of tobacco, by 2025, it is projected a very low reduction of the total smoking population - CAGR of -0.2%¹. Although the difference is not significant on a global level, two distinct forces are driving forecast. Both Europe and America, are expected to report a downer trend - CAGR of -1.6%¹ -, whereas, African and Eastern Mediterranean, are expected to record an upper trend - CAGR of 2.6%¹. Moreover, while breaking down the projections by income disposable, there are also two different aspects affecting future results. High-income and Upper middle-income, by 2025, is

¹ World Health Organization - global report on trends in the prevalence of tobacco smoking 2000-2025 - Second edition

expected to report a CAGR of -0.92%², whereas, Lower middle-income and Low-income have a projected CAGR of 1%².

Market Size and Value

The tobacco industry in 2017 reported a market value of \$663.8B³, and, until 2026 is expected to record a CAGR of 4.8%³, which represents an incremental increase of \$348.4B³.

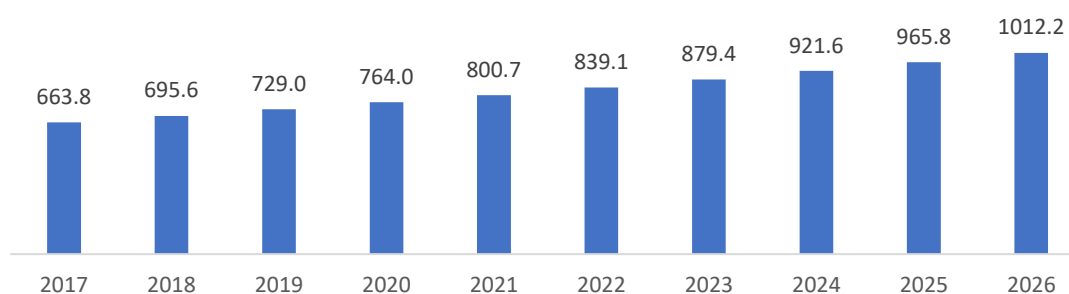


Exhibit 1 – Tobacco Industry Market Size and Value

Source: Statistisc MRC

As previously mentioned, consumer preferences across different regions of the globe are shifting. Nowadays, the demand for these products is moving from developed regions to emerging markets, mainly in Asia and African. The reasons behind could rely on increasing disposable income levels, rising population and lower government control. On the other hand, in developed regions such as Europe and North America, the demand for cigarettes is facing several threats. Due to the increasing health awareness, government agencies are increasing the regulations and taxations against tobacco products, which consequently declines the smoking prevalence across these populations.

In terms of volume, the market reported a CAGR of 1.5%⁴ from 2011 until 2018, reaching a total volume of 8.2⁴ million tons. Furthermore, between 2019 and 2024, the total tobacco volume is expected to report a CAGR of 1.4%⁴, around 0.1 tons every year. In addition to all economic factors mentioned above, the introduction of various premium tobacco - long, flavored, colored, etc. - and e-cigarettes by the main players has positively contributed to the prosperity of the industry.

Moreover, the promotion of Heated Tobacco Products (HTP's) is another important factor that will deeply influence the market. As mentioned before, the world is increasingly

² World Health Organization - global report on trends in the prevalence of tobacco smoking 2000-2025 - Second edition

³ Statistisc MRC - Tobacco Market - Global Market Outlook (2017-2026)

⁴ IMARC Group - Tobacco Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2019-2024

more concerned about health matters and consumers are starting to search for less-harmful options. HTP's have been precisely introduced in the market to meet those expectations, since this device does not burn the tobacco, but it heats it instead - which allegedly produces less aerosol. Consequently, these products are expected to report a CAGR of 19.3%⁵ from 2019 to 2025. Due to the significantly large smoking population and social acceptance, the Asia-Pacific region – the majority - and Europe will hold almost the entire portion of the overall market of HTP's products. Some main players, such as PMI, BAT and Japan Tobacco already started to develop and commercialize these types of products.

Excise Taxes

Just like fuel and alcohol, tobacco products are also under strict excise taxes. This type of taxation is not consistent worldwide, thus different countries can apply distinct taxation systems. In some cases, specific excises taxes are added to the retailing price. The US, for instance, follows this system by adding a certain amount - \$1.81⁶ per pack on average - over the retailing price. There is another system named *ad valorem*, in which a given % is applied over the retailing price. In Europe, both systems are applied, thus there is an excise tax of at least 90€⁷ per 1000 cigarettes and also an excise tax over the weighted average retail selling price of at least 60%.⁷

According to WHO, these taxation methods are one of the most effective methods to, simultaneously, reduce tobacco consumption - especially for young and low-income people - and increase government revenue. Regarding the relation between tax excise and consumption, a tax that raises tobacco prices by 10% will have a negative effect on consumption of 4%⁸ in high-income countries and about 5%⁸ in low and middle-income countries. Thought, high excise taxes over tobacco products are not commonly used since only 38⁸ countries - 14% of the world's population - impose a tax of, at least, 75%⁸ over the retail price.

Types of Tobacco products

Due to scientific and technological developments, nowadays there are several products classified as tobacco. The main products available in the market are the following:

- Cigarette (tobacco, filter and paper wrapping)

⁵ 6W Research - Global Heat-Not-Burn Tobacco Product Market (2019-2025): Market Forecast

⁶ The Tax Burden on Tobacco, 1970-2018

⁷ Directive 2011/64/EU

⁸ World Health Organization - Relationship between tax and price and global evidence

- Cigars, Little Cigars and Cigarillos (cured tobacco encased in leaf tobacco or a substance containing tobacco)
- Dissolvable Products (sold as lozenges, strips, or sticks)
- Electronic Cigarettes (heats a liquid that usually contains nicotine from tobacco and flavorings, into an aerosol that is inhaled)
- Heated Tobacco (instead of burning, heats the tobacco)
- Smokeless Products (chewing tobacco and moist snuff)

Market Competition

The tobacco industry is characterized by being a highly concentrated market since the three main manufactures cover more than two-thirds of the total market share - PMI, British American Tobacco (BAT) and China National Tobacco Corporation (CNTC). The major players of this sector already possess a strong brand awareness, as well as, established distribution networks, which represent tremendous barriers for new entrants. Regarding both revenue and unit volume, CNTC is the dominant tobacco player, followed by PMI and BAT, as one can disclose from Exhibit 2 and 3, respectively.

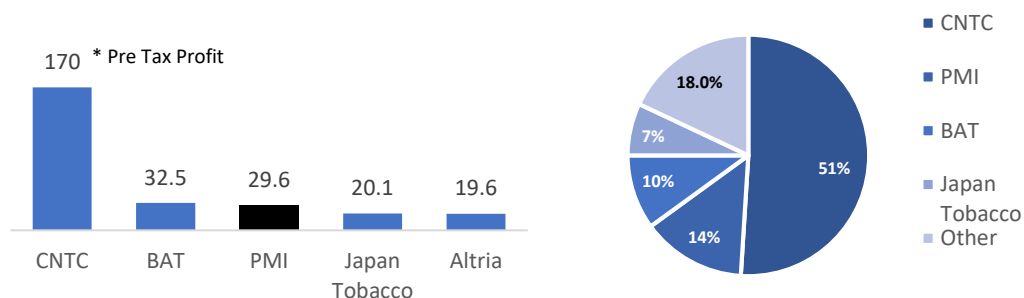


Exhibit 2 & 3 – 2018 Net Revenues and 2017 Market Share of leading tobacco companies

Source: Revenues - Thomson Reuters EIKON; Market Share: MarketLine

3. Company Overview

Philip Morris is an American-based company that operates within the Tobacco Market. The company started its operations in 1987 and, since then, its core business has been the manufacture and sale of cigarettes. In 2016, the firm started to produce a new line of products called *IQOS* - smoke-free products and other nicotine-containing products. The company manages six of the world's top 15 international cigarette brands such as *Marlboro*, *Bond Street*,

Chesterfield, L&M, Parliament and Philip Morris. Their presence is spread throughout 180⁹ markets - all outside of US - in which “*they hold the number one or number two market share position*”. By the end of 2018, the company directly owned 44⁹ manufacturing facilities and employed seventy thousand people, worldwide.

Strategy

Since 2016, PMI has been dramatically changing their business strategy due to the world’s increasing awareness regarding the health effects provoked by cigarette smoking. Nowadays, consumers are looking for less harmful but still satisfying alternatives. As a result, to address this shift in consumers’ demand, PMI committed to transform “*the cigarette company to one that is focused on Reduced-Risk Product*”. Thus, from 2016 on, they started groundbreaking researches to develop and sell smoke-free products that, while not risk-free, are still a better option than the previous cigarettes. Therefore, their objective is to gradually replace cigarettes with less-harmful alternatives – Reduced-Risk Product (RRP) - and become a global leader in this new segment of the tobacco industry.

The RRP’s are characterized as products with the potential of inducing “*less risk of harm*” to smokers, comparing to cigarettes. The major difference relies on the fact that these products do not burn tobacco but heat it instead. By doing so, RRP’s produce an “*aerosol that contains far lower quantities of harmful*” than found in cigarettes.

Segments

PMI divides its business through two major approaches - geographically and by product. Regarding the first one, the company’s revenue is divided into the following segments:

1. European Union - includes all European Union countries, as well as, Norway, Switzerland and Iceland;
2. Eastern Europe - aggregates Southeast Europe, Ukraine, Israel, Russia and Central Asia;
3. Middle East & Africa - includes Africa, Middle East and Turkey
4. South & Southeast Asia - covers Indonesia, Philippines and other surrounding markets

⁹ PMI 2018 Annual Report

5. East Asia & Australia - consists of Australia, Japan, South Korea, China, as well as, other markets in the region
6. Latin America & Canada - combines South America, Central America, Mexico, the Caribbean and Canada;

The weight of each segment within Total Net sales has not suffered major differences, over the last years. As one can observe through Exhibit 5, Eastern Union is by far the principal segment of PMI with 33.4% of total net sales, whereas Latin America & Canada is placed as the smaller market covering only 7.48% of the firm's total net sales.

As previously mentioned, the tobacco company also broke down its revenues on a product basis. In this case, the division results in only two sections, Combustible Products and Reduced-Risk Products. The first category includes predominantly American blend cigarette brands - Chesterfield, Marlboro, Philip Morris, etc. On the other hand, the RRP category covers IQOS smoke-free products, which includes nicotine-containing vapor products and heated tobacco. From all the 180 markets covered by PMI, the latest category, since the beginning of 2019, was already being commercialized in 44 markets.

Due to PMI's changing strategy, the weight of each category has considerably changed over the last years. While in 2016, the year RRP were introduced, this section represented only 2.8% of Total Net Sales, in the first three quarters of 2019, it covered already 18.3% of total sales.

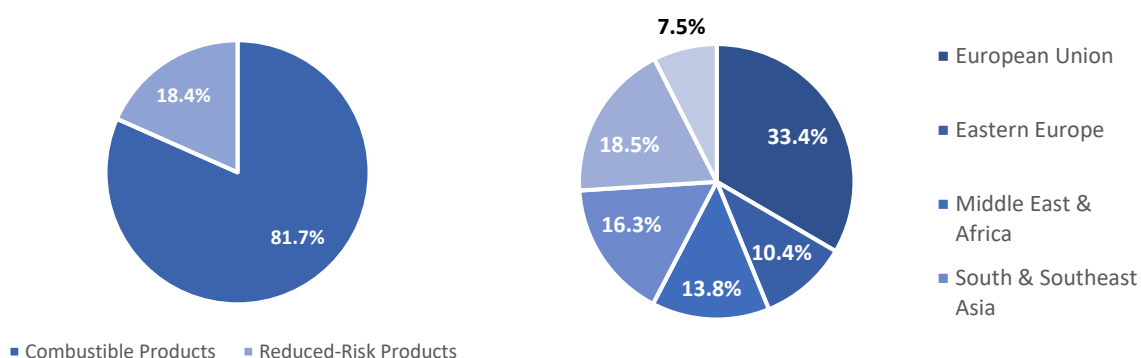


Exhibit 4 & 5 – Segment Distribution and Geographical Distribution

Source: PMI Q3 report

Ownership Structure, Stock Market, Dividends

Regarding the ownership structure, 75%¹⁰ of PMI shares are held by institutional investors, which is higher than the standard in the tobacco industry. Within that group, the top 10 shareholders gather up to 32%¹⁰ of outstanding shares. *The Vanguard Group* is the main investor of PMI with 7.9%¹⁰ of outstanding shares followed by *BlackRock* with 6.1%¹⁰.

PMI became a public company in 2008 when it was listed at the New York Stock Exchange, where nowadays presents 1,552 million outstanding shares. As Exhibit 6 reveals, in the last 5 years, PMI stock has generally followed the patterns of the S&P 500 index. Over that period, the shares of the tobacco company reported a return close to zero, although displaying a volatility of 12.6%.

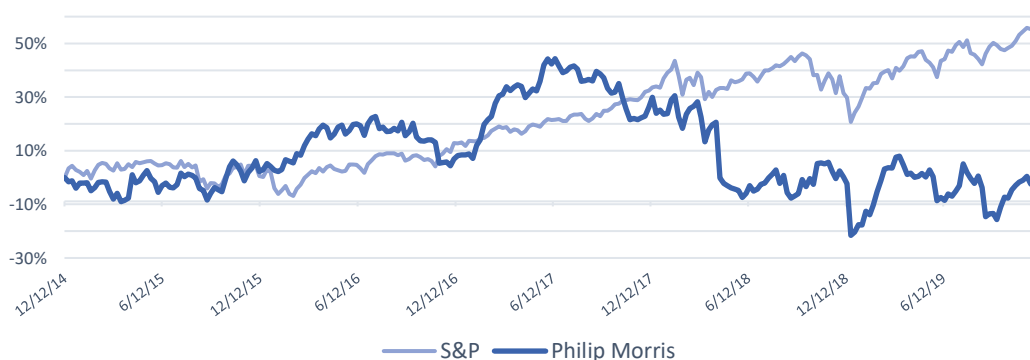


Exhibit 6 – PMI price Performance against S&P 500

Source: Thomson Reuters EIKON

Since 2008, PMI has been gradually increasing its dividend payments. More precisely, since it became a public company, dividends have reported a CAGR of 8.9%¹¹, which can be seen as a strong indicator of sustainability.

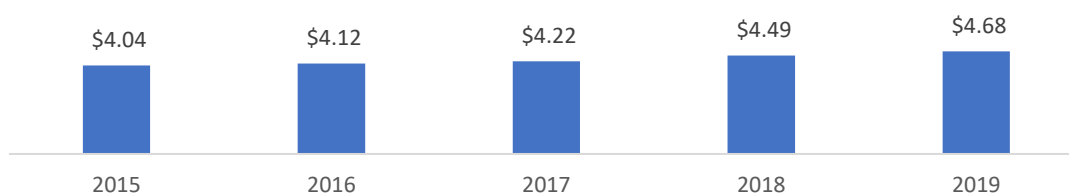


Exhibit 7 – Dividend payments from 2015 to 2019

Source: PMI respective annual reports

¹⁰ Thomson Reuters EIKON

¹¹ PMI Q3 Financial Report

Historical Performance

In this section, it will be analyzed and discussed the past performance of all necessary inputs to determine the valuation of Philip Morris.

Net Sales

PMI, when reporting the sales performance, gives greater importance to the measure “Net Revenues” than to “Revenues”. The difference between these two is the Excise Taxes imposed by the governments. Over the last years (footnote between 2015 and 2018), Net Revenues have represented 36.1% of Revenues. Since PMI possesses no control over this tax, “Net Revenues” is assumed as the principal measure when referring to Sales. Thus, in this dissertation one will follow that same approach.

On a global view, from 2015 until 2018, Net Revenues have reported a CAGR of 3.4%, which goes in line with the growth rate of the tobacco industry. Regarding the year of 2019, until August, Net Revenues remained quite constant on YoY terms, recording only a decrease of 0.15%.

Starting with a geographical breakdown:

1. European Union, from 2016 to 2018, reported a CAGR of 6.7%. The CAGR increase felt, was highly influenced by the 2018 YoY increase of 11.8%, which can be primarily explained by the appreciation of the US Dollar over the Euro, and by a favorable pricing variance and increase of heated tobacco volume sold, on a secondary base.

2. Eastern Europe recorded a CAGR of 8.4% over the previously mentioned period., which was driven by positive pricing variance and by a rise of heated tobacco volume sold.

3. Middle East & Africa, the results progressed in the other way around, since it reported a CAGR of -4.6%. The main driver of this decrease was the 2017 YoY Net Sales Results, which record a decline of 11.7% caused by negative currency variance.

4. South & Southeast Asia reported a CAGR of 2.9%, which was primarily driven by favorable price variance.

5. Regarding East Asia & Australia Net Revenues results, PMI accounted for completely distinct results for 2017 YoY – an increase of 48.8% - and 2018 YoY – a decline of 12.4%. The 2017 YoY results were driven by an increase in price and on sales volume, whereas

YoY 2018 YoY results were caused by an increase in tax-driven retail prices in Japan and Australia.

6. Latin America & Canada reported a steady growth, which led to a CAGR of 3.7%, mainly caused by favorable price variance.

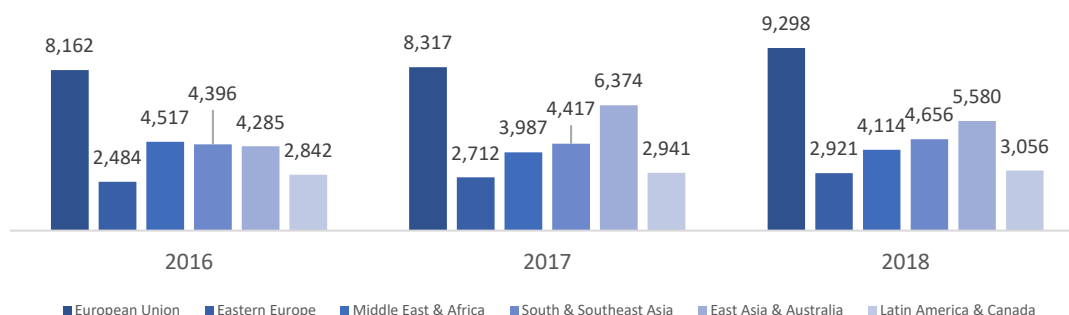


Exhibit 8 – Net sales per geographical segment

Source: PMI Annual Reports

When doing a breakdown by product, the two categories reported completely different trends, due to the radical strategy transition. Starting with Combustible Products, from 2016 until 2018, this category reported a CAGR of -0.8%, which was caused by the decrease of cigarettes' shipment volume of 8.9%. On the other hand, RRP's units shipped, during the same period, reported an increase of 360%, which lead to an increase in total sales from 2.8% to 13.8%.

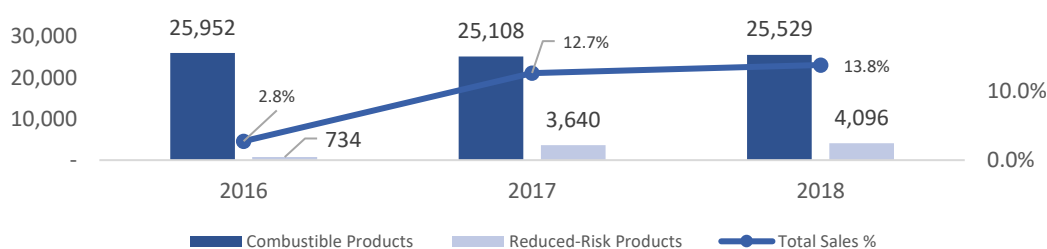


Exhibit 9 – Net sales per product segment

Source: PMI Annual Reports

Operating Expenses

Regarding the operating expenses, the company divides them into three principal components, which are Cost of Sales; Marketing, Administration and Research; and Amortization of Intangible.

From 2015 to 2018, the cost of sales of PMI registered a CAGR of 4.3%. This considerable increase is correlated with the same upward trend of Net Sales, which reported an equal CAGR. The tobacco company includes in this cost section expenses such as tobacco leaf and non-tobacco raw materials, labor and manufacturing costs and shipping and handling costs. The cost of sales is the main segment within the total operational expenses, weighting 75.9% (footnote 2018), as can be seen in Exhibit 10.

Moving to Marketing, Administration and Research, this section includes the cost of marketing, the cost of selling the products and the investments applied in the creation of new products. Over the past years, it reported a CAGR of 3.6%, which was driven by an increase in investments to create new products. Due to that rise, its weight on total operating expenses increased to 25%, at the end of 2018.

Regarding the last component, Amortization of Intangible, due to its irrelevance - since it represents less than 0.3% of total operating expenses - it will be included directly in the Depreciation and Amortization analyses and subsequent calculation.

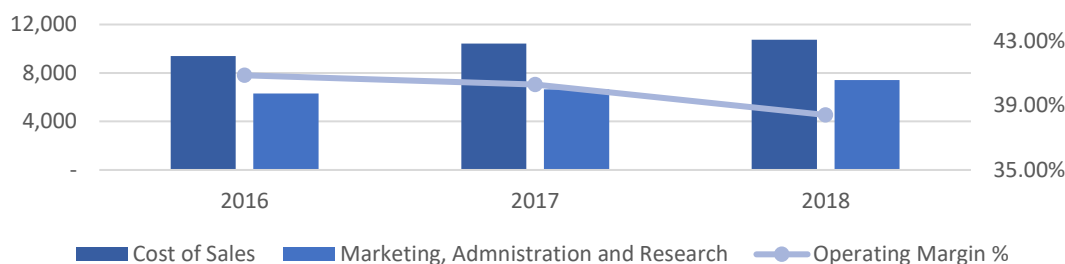


Exhibit 10 – Operational Expenses and Operating Margin

Source: PMI respective annual reports

Capital Expenditure

Regarding the Capex, PMI does not segment this measure, it only reports the total. As Exhibit 11 reveals, between 2015 and 2017, Capex recorded a CAGR of 61%, which is mainly driven by the investments allocated to the production and development of RRP. Due to a shift in PMI's strategy, the company had to support capacity expansion, mainly for heated tobacco units. Nevertheless, after this initial investment, PMI was able to decrease its Capex expenses in 2018 by 7% and until September 2019 the firm reported a YoY of -36.8%, which led to a decrease of this expenses over Net Revenues

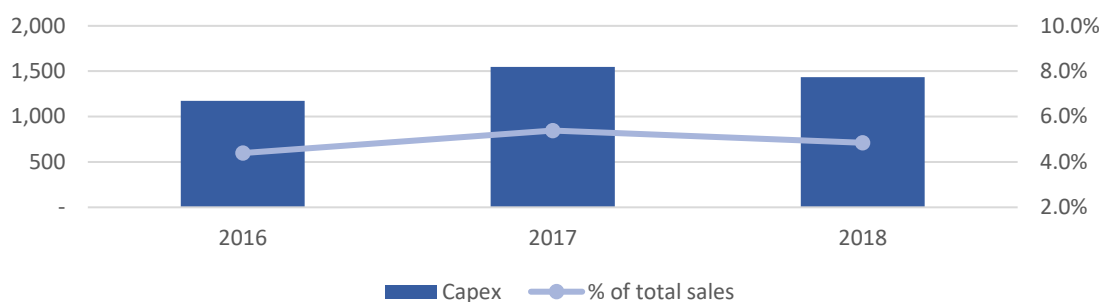


Exhibit 11 – Capital Expenses

Source: PMI respective annual reports

EBITDA & EBITDA Margin

It is a fact that PMI’s EBITDA increased between 2016 and 2018, nevertheless, operational costs reported a higher CAGR - 4.3% vs 3.4% -, which led to a decrease of the EBITDA Margin. As mentioned before, these operating expenses increase is related to RRP’s production.

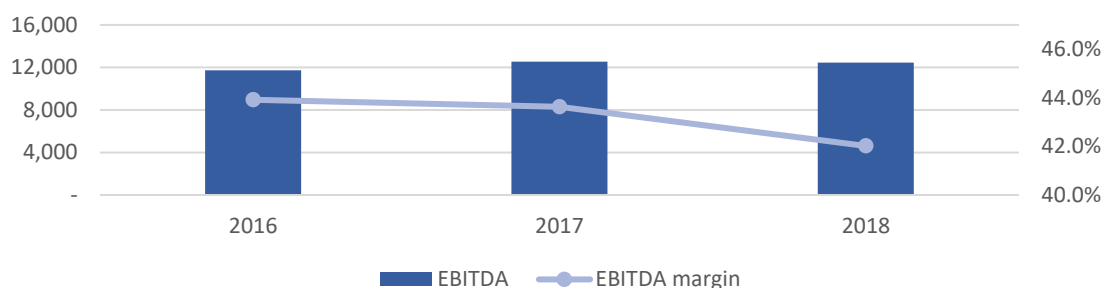


Exhibit 12 – EBITDA & EBITDA margin

Source: PMI respective annual reports

Operating Income, EBT and Net Income

Just like EBITDA, between 2016 and 2018, EBIT, EBT and Net Income reported positive CAGR. However, the costs stated before also induced a decline in both, the EBIT margin and EBT margin. In 2016, the EBT margin reported an unusually low value, due to an increase in interest expenses – a one-time event.

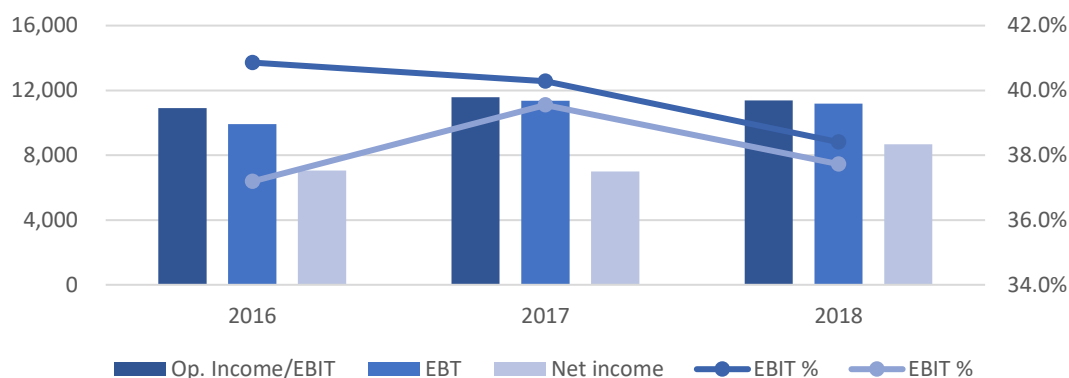


Exhibit 13 – Operating Income, EBT and Net Income

Source: PMI respective annual reports

Depreciation and Amortization

Commonly, depreciation and amortization are connected with the value of Net Property, Plant and Equipment of the previous. As one can observe through the Exhibit below, D&A has been reporting a fairly constant percentage of Net Property, Plant and Equipment. It is also pertinent to note that, Amortizations represent a considerably low portion of Total D&A.

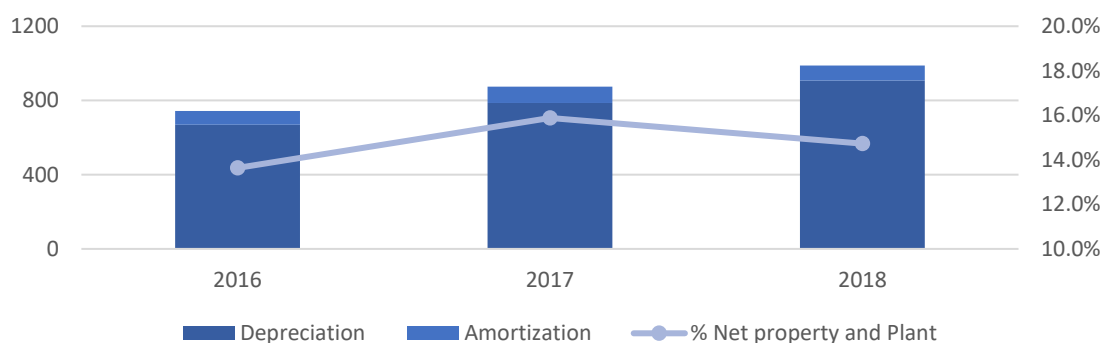


Exhibit 14 – Depreciation & Amortization

Source: PMI respective annual reports

Working Capital

In this section, 2019 final year estimates are equal to the ones reported by PMI, by the end of the third quarter. The underlying assumption was assumed since considering the previous year's results, there are no significant differences between the ones reported by the end of the third quarter and the ones record in the end of the underlying year.

Regarding the WC, PMI reports, by far, Inventory and Accrued Liabilities¹² as the major components. Since this is a manufacturer company, traditionally Inventory assumes a greater position within the Working Capital. Moving to the second component mentioned, the main items identified as Accrued Liabilities are Taxes and Dividend Payable. As previously stated, PMI, as a tobacco company, is obliged to pay a great amount of excise taxes, which, consequently, will assume a greater concern in the Working Capital. Further, since the firm pays a considerable amount of dividends, the WC will also be deeply affected by that. Finally, it is also pertinent to note that the Net Working Capital does not suffer considerable changes YoY and it has been consistently assuming positive values, which, generally speaking, means that current assets are superior to current liabilities.

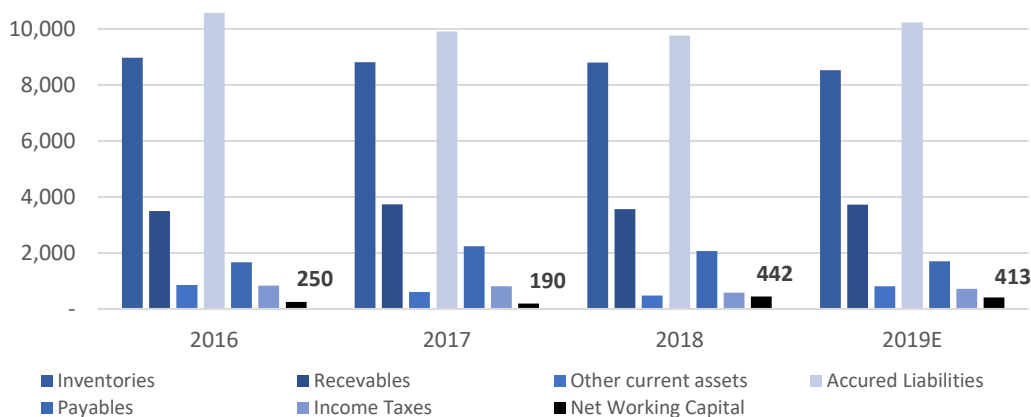


Exhibit 15 – Working Capital

Source: PMI respective annual reports

¹² Within this measure PMI includes Marketing and Selling, Taxes (excluding income taxes), Employment costs, Dividends Payable and Other.

4. Valuation

After discussing and analyzing PMI's past performance, as well, as the main growth drivers, one can already project the future of the tobacco company. First, one will start by explaining the reasoning behind the explicit period selection. Then, the revenues and operational forecast will be discussed, followed by the WACC and DCF valuation. Additionally, as a complementary method, the Multiple Valuation will be executed, and lastly, a sensitivity analysis will be performed and subsequently commented upon its overall results.

Explicit Period

As mentioned previously, PMI is facing the biggest strategic change in its existence. Their ultimate goal is to eliminate cigarettes and give greater importance to Reduced-Risk Products. The tobacco company indeed wants to complete this transition as soon as possible, nevertheless, PMI does not disclose any kind of forecast or target regarding this cigarette reduction. As much as the firm wants to reduce it, PMI would never do it at a pace that would mean reporting a revenue decline by the end of the year. Therefore, this expected slow pace reduction will be influenced by customers' demand for both cigarettes and heated-tobacco products. Having this in mind, and since 2019 projected CF is not included in the valuation, the projections will be executed until 2029. In addition, composing a projection longer than that would come along with high uncertainty levels.

Revenues

Since 2016, PMI changed dramatically its strategy, by focusing primarily on Reduced-Risk Products and eliminating cigarettes from its portfolio. Thus, this setting will have a major impact on Net Revenues projections. In addition to the new strategic plan, the average industry growth, as well as, product growth was also a major driver for the Net Revenues estimation. By gathering all this information, in addition to PMI's past performance, the company is expected to report a CAGR of 2.7%, between 2019 and 2029, which will be explain in detail in the next paragraphs.

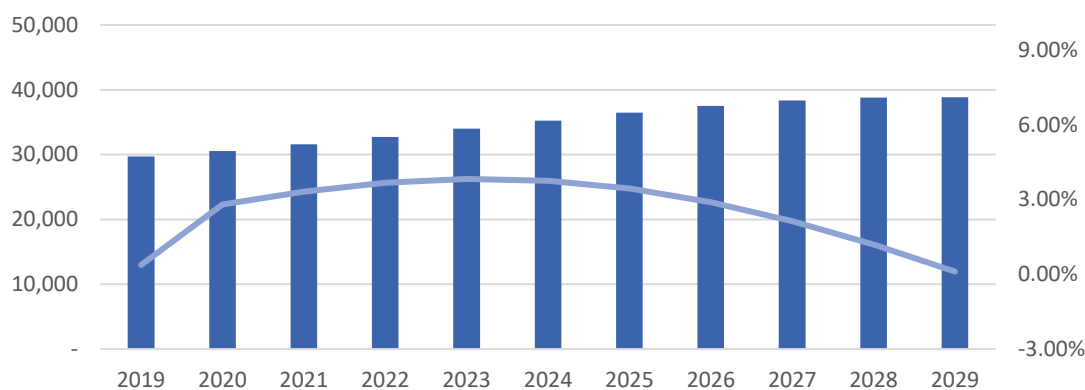


Exhibit 16 – Net Sales forecast

Source: PMI's 2019 Q3 and own estimation

Furthermore, regarding the currency effect, its influence in this projection is assumed as zero, for simplicity principles. PMI operates in 180 different markets, which can be translated into a wide range of different currencies. Thus, developing any kind of assumptions would come along with a severe bias risk, either upwards or downwards.

In this dissertation one opted to project Net Revenues based on a product division, mainly due to the new strategy. On a geographical basis PMI do not discloses any kind of target or intention, and some regions do not report a clear pattern, which would lead to an uncertain estimation. Whereas, on a product level, the company has a clear objective, decrease the combustible products segment and focus on the RRP's segment. Thus, one selected this path since it has a lower level of uncertainty than the previous one.

Product Division

As stated previously, to estimate 2019 Net Revenues, one annualized the results until September, to main the reported patterns.

By analyzing, on a product division basis, the Net Revenues' trend of the last four years, one can already observe the effects of this new plan. Starting with Combustible Products category, this section has been decreasing since 2016, reporting a CAGR of -2.12%, from that year until 2019. These results walk closely with PMI's primary objectives, reducing cigarette offer. Then, when moving to the other category - Reduced Risk Products -, the patterns shift completely. Since 2016, when it started to become separated from the rest, RRP's reported an enormous CAGR of 64.7%. Once again, this growth goes in line with PMI objectives, of increase significantly RRP's Net Revenues over Total Net Revenues.

PMI does not disclose any information regarding its long-term targeted cigarette reduction. Having that said, to project the Net Sales of Combustible Products, one will assume

the reduction reported since the strategy was implemented until 2019, as the main foundation. Thus, by analyzing the reported that since strategic shift, one can observe that between 2016 and 2019, Net Revenues reported a CAGR of - 2.12%

Also, note that as much as the company wants to reduce the cigarette offer, the decrease needs to be entirely offset by RRP's increase, otherwise Net Revenues would decrease. Thus, based on the assumption that the company wants to perform this change, at least, without downgrading its Net Revenues amount, and to incorporate a conservative approach, one assumed that this decrease would be slowly and gradually executed.

Thus, to estimate the Net Revenues concerning the combustible products segment, one will assume a similar CAGR already registered since the of the new strategy. This means, from 2020 until 2029, one projects a negative CAGR of -2.12%.

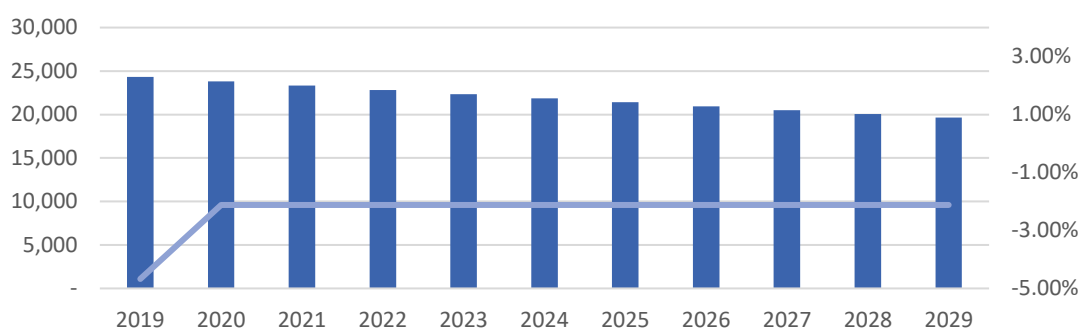


Exhibit 17 – Combustible Products Net Sales projections

Source: PMI's 2019 Q3 and own estimation

Moving to the other category, Reduced-Risk Products, the expectations are completely distinct. The heat-not-burn tobacco is the major product within this category, thus it will be the major growth driver. Between 2019 and 2025, this product is expected to report a CAGR of 19.3%, as discussed previously on the Industry Overview. Instead of applying directly the same growth each year, to be more accurate, one will assume a decreasing growth. This means, the growth rate will be higher in the first years comparing to the last ones. Based on that, and 2019 YoY growth - 31% -, one expects that this category will report a 2020 YoY of 25%, with a decrease of 2.5 percentage points each year, until 2025 – 2025 YoY expected to be 12.5%. This would represent a CAGR of 18.7%, from 2019 to 2025, which goes in line with the expected product growth already mentioned. In order to maintain the consistency of the previous assumptions, one will expect a continuous decrease of 2.5 percentage points each year of YoY growth until

2019 -2029 YoY expected to be 2.5%. Thus, by gathering all these assumptions, RRP's segment is expected to report a CAGR of 13.5% between 2019 and 2029.

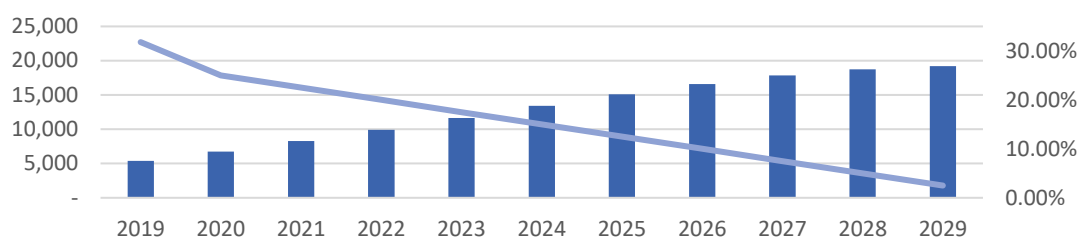


Exhibit 18 – RRP's Net Sales projections

Source: PMI's 2019 Q3 and own estimation

By gathering these two segment projections, Net Revenues is expected to report a CAGR of 2.7%, between 2019 and 2029.

As Exhibit 19 demonstrates, according to the previous assumptions, by 2029 half of the PMI revenue source will come from Reduce-Risk Products. From this period onwards, one expects no significant growth, since the cigarette reduction will equalize RRP's increase.

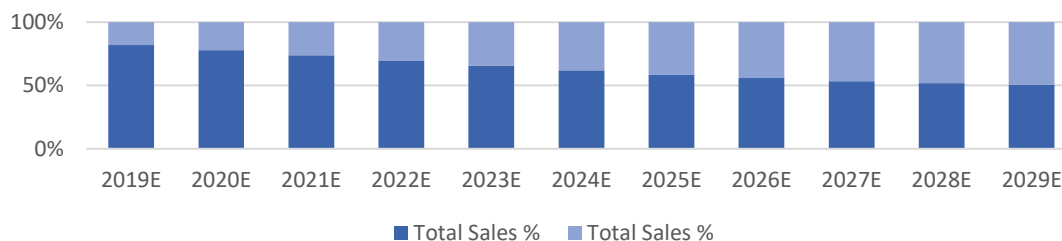


Exhibit 19 – Contribution of each segment to total Net Sales

Source: PMI's 2019 Q3 and own estimation

Operational Expenses

As previously mentioned, the company divides its operational expenses into three sections. Nevertheless, due to the Intangible Assets irrelevance compared to the other two, this section will be included in Depreciation & Amortization.

PMI does not disclose the proportion of each section on a geographical level, thus the projection will be made on a consolidated basis. Furthermore, just as it was done in Net Revenues, to predict 2019 operational expenses, one annualized the costs reported until the end of September.

Regarding the Cost of Sales, this section reported quite constant values over Net Revenues. Tobacco leaf and non-tobacco raw materials, labor and manufacturing costs are the main drivers of this section. Both labor and manufacturing costs are expected to remain the same. Nevertheless, due to new strategy tobacco leaf is expected to decrease, which is offset by the expected increase regarding the non-tobacco raw material costs. Thus, from 2020 on, this section will be assumed as the ratio of sales. More precisely, an average of the five years before 2020 - incorporates all the year since the strategy changed -, which is 35.6% of Net Sales.

On the other hand, due to higher investments in RRP's, Marketing, Administration and research costs have increased its ratio over Net Revenues. Since PMI wants to keep developing and advertising these new products, one expects this ratio to keep reporting similar percentages to the years in which the costs increased. Thus, this section's values will be assumed as an average of the last three years – between 2017 and 2019 -, which represents 25.5% of Net Sales.

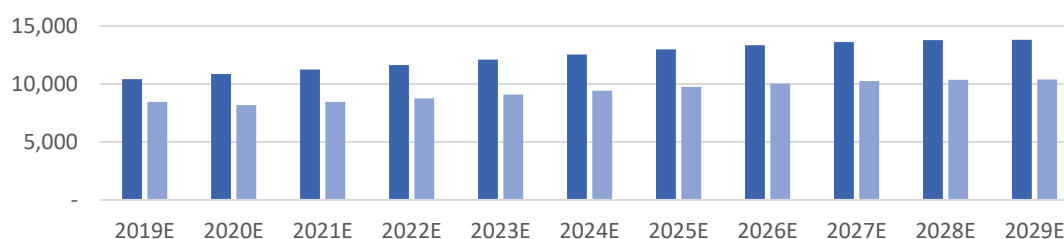


Exhibit 20 – Operational Expenses projections

Source: PMI's 2019 Q3 and own estimation

EBITDA

Regarding the EBITDA calculation, according to the assumptions previously considered, PMI will report a quite constant EBITDA margin of 42%.

Capital Expenditures

Once again, to forecast the capital expenditures in 2019, the costs at the end of September were annualized. The company does not disclose how much is allocated to tangible assets or intangible assets. Thus, this measure will also be projected having Net Revenues as its driver. Due to PMI's changing strategy, the company had to raise its investments on heated tobacco unit production capacity expansion, which increased the ratio Capex over Net Revenues. Nevertheless, after this intensive investment, in 2019 the company was already able to decrease this ratio to 4%. Thus, since the company will continue to give greater importance to the heated tobacco products, during the forecast period, capital expenses will be projected as 4% of the Net Revenues.

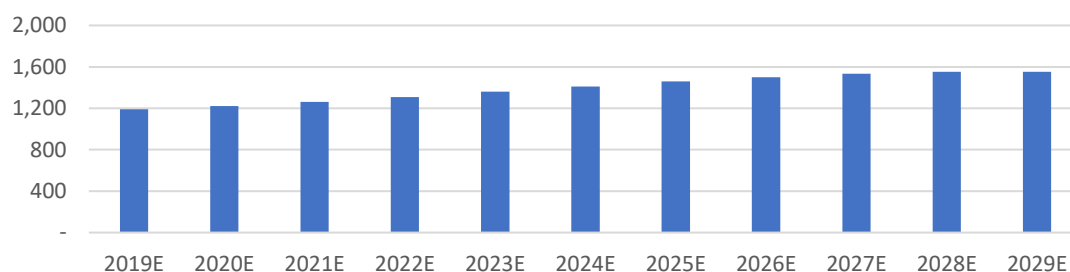


Exhibit 21 Capital Expenses projections

Source: PMI's 2019 Q3 and own estimation

Depreciation and Amortization

Since Amortizations represent a very small portion of total D&A, there is no added value on forecasting this measure with Depreciation and Amortization separately. As mentioned in the previous chapter there is, commonly, an intrinsic relation between the measure in question and PP&E of the previous year. Thus, D&A will be forecasted as the average ratio of D&A over Net PP&E, of the last five years, which represents 14.3% of the Net PP&E₋₁. From 2019 onwards, one assumed that the value of Net PP&E would increase at the same pace as sales growth. Thus, since Capex also has Net Revenues as its main driver, both Capex and Net PP&E will always follow the same patterns. In addition, since D&A is projected as a % of Net PP&E, this measure will also follow a similar path of Capex and Net PP&E.

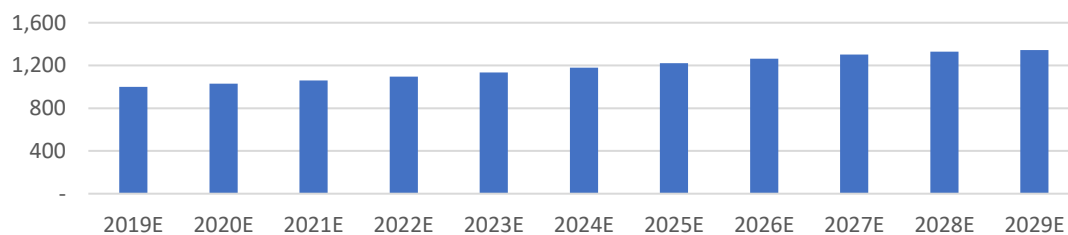


Exhibit 22– D&A projections

Source: PMI's 2019 Q3 and own estimation

Working Capital

Regarding the Working Capital requirements, other than the traditional categories - Receivables, Inventory and Payables -, PMI also includes Accrued Liabilities, Other Assets and Income Taxes. As previously mentioned, the 2019 final results were forecasted according to reported until September.

Starting with receivables, this measure has recorded similar DSO¹³ over the last year. Thus, to projected it, an average DSO of the last three years will be assumed - 46 days. In addition, both inventory and payables reported similar patterns. Therefore, once again, inventory will be assumed as an average DSI¹⁴ of the last three years - 177 days - and payables will be projected as an average DPO¹⁵ of the last three years - 41 days. Moving to Accrued Liabilities, within this measure, PMI includes Marketing and Selling, Taxes (excluding income taxes), Employment costs, Dividends Payable and Other (PMI do not discriminate what is included). In order to predict, due to its stable ratio over Net Revenues, from 2020 on, Accrued Liabilities will be assumed as 33.9% of Net Sales. Moreover, both Other current assets and Income Taxes, were also estimated as the average ratio over Net Sales of the last three years. More specifically, the first one was projected as 2.1% and the second as 2.4% of the Net Revenues.

Also, in order to compute the Net Deferred Income Tax, one will use the Net Revenues as main driver. Regarding the measure of Deferred Income Tax Assets, the company as reported constant values. For that reason, this item will be projected as an average % of sales between 2015 and 2018, which corresponds to 3.8% of Net Revenues. On the other hand, the Deferred Income tax liabilities suffered a considerable reduction between 2016 and 2017, due to

¹³ DSO – on average, how many days it takes a company to receive the payments after selling the products

¹⁴ DSI – on average, how many days it takes a company to turn its inventory into sales

¹⁵ DPO – on average, how many days it takes a company to pay its liabilities to trade creditors

Unremitted Earnings and Foreign Exchange. Thus, one will assume this measure as a % of Net Revenues average of 2017 and 2018, which is 3.1%.

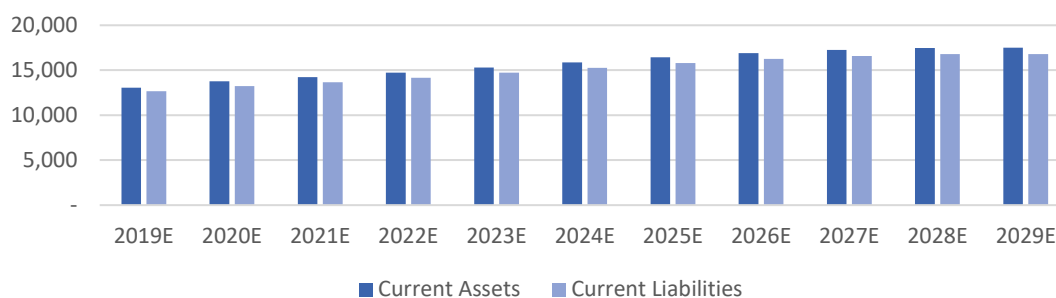


Exhibit 23 – Working Capital Projections

Source: PMI respective annual reports and own calculations

Free-Cash Flow to the Firm

After projecting all the necessary inputs for the FCF calculation, in this section, one will present its calculation. The method applied was the one stated in the literature review, as appendix 8 reveal. The overall results demonstrate a constant YoY growth of 2.7%, from \$8,979M in 2019 to \$11,430M in 2029.

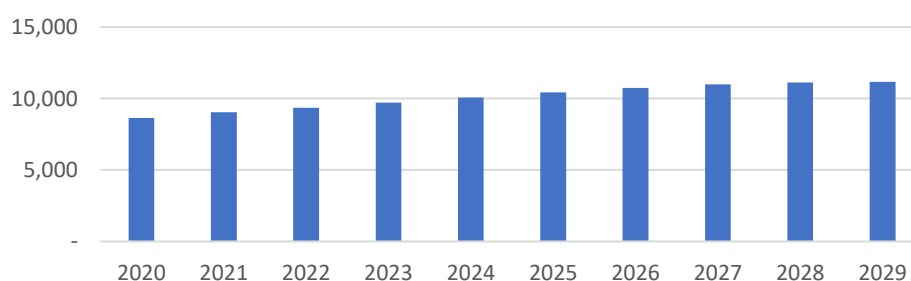


Exhibit 24 – FCFF projections

Source: PMI respective annual reports and own calculations

WACC

In order to compute the appropriate discount rate - weighted average cost of Capital -, the method mentioned in the literature review was applied. After gathering and forecasting all inputs needed (discussed below), the result was 7,2%.

Cost of Equity		Cost of Debt	
Risk-free	1.79%	Kd	1.97%
D/(D+E)	19.89%	Kd (1-t)	1.53%
D/E	0.248		
Beta Unlevered			
Beta Levered	0.81		
Tax rate	22.55%		
Market Risk Premium	8.38%		
Ke	8.57%	WACC	7.2%

Exhibit 25 – WACC

Source: Bloomberg and PMI annual reports

Capital Structure

One of the most critical components of the WACC calculation is the capital structure assumption. In order to compute the Equity Value of PMI, one multiplied the total number of shares outstanding - 1556M - with the price per share - \$84.3¹⁶ -, which resulted in a value of \$131.1B. Regarding the Market Value of debt, only traded debt was included in the calculation, thus, only traded bonds, since PMI does not have loans. To compute the market value of the traded bonds, the price² of each one was multiplied by the correspondent outstanding amount, which represents a total of \$32.6B. Thus, PMI's Debt to Equity ratio is 0,25. PMI capital structure has remained constant over the last year, and there no indication concerning a capital structure change for the upcoming year (see appendix 1).

Cost of Equity

Regarding the discount rate required by equity holders, to reach that value the CAPM Model was implemented. Considering all the inputs calculated below the cost of equity is 8,57%.

Risk-free

Since Philip Morris is an American company and its official currency is the US Dollar (\$), as mentioned previously in the literature review, the best proxy for the risk-free considering these conditions is the YTM of a 10-year's zero-coupon American Bond. In this case, it was used a bond issued on 12th of December of 2019, with a rate of 1.79%¹⁷.

¹⁶ Thomson Reuters EIKON, 12th December 2019

¹⁷ Source: Treasury American Government, 12th December 2019

Beta

In order to estimate PMI's beta, the method mentioned in the literature review was applied. Before running the regression, one gathered weekly data from the last 5 years, of both PMI and S&P 500 stock price. After executing the regression, its outcome returned a raw beta of 0,73. Then, the Bloomberg smoothing method was applied, and the final value of the levered beta was 0,81.

Market Risk premium

Regarding the expected market risk premium, to calculate this measure, one used a weighted-average process. Meaning, extracted from Bloomberg, one gathered the expected risk premium of all regions where Philip Morris operates. Then, to achieve a more accurate value, those values were weighted-average, accordingly with the revenues amount of each region. After executing all these steps, a Market Risk Premium of 8.4% was achieved (see appendix 2).

Cost of Debt (tax rate)

In order to compute the rate of return required by debtholders, one executed a weighted average YTM of the treated Bond. As stated in the literature review, commonly, when a company has traded debt, the yield-to-maturity of that debt is the best proxy for the company's cost of debt. After being extracted, all these YTM's were weighed-averaged accordingly with the correspondent market value of the underlying bond, which resulted in a cost of debt of 1.97% (see appendix 3).

Regarding the effective tax rate, one will assume a rate of 22.5%¹⁸, which is precisely the average between 2018 and 2019 until September. The reasoning behind it is the fact that, those years are the only ones already update with the most recent US federal statutory rate, which in 2018, change from 35% to 21%.

	2016	2017	2018	2019 Q3
Effective Tax	27.90%	40.70%	22.90%	22.20%

Exhibit 26 – Effective Tax Evolution

Source: PMI respective annual reports

¹⁸ Source: PMI's 2019 Q3

Terminal Value (Terminal Growth Rate)

In order to fulfill all the inputs necessary to compute the Terminal Value, the terminal growth rate still needs to be estimated. The current worldwide GDP annual growth – driver for g - is 3%¹⁹. Nevertheless, the long-term growth of the tobacco industry is expected to be negatively affected by several trends, such as tobacco prevalence decrease, the world's growing awareness of the negative effects of tobacco, etc. Thus, since a terminal growth rate higher than 2% is unrealistically high and considering all due those negative influences just mentioned, one will assume a conservative approach, by expecting half of that rate – 1%. Having that said, the expected discounted terminal value is \$94B, which represents 60% of the total valuation.

Discount Cash Flow Valuation

After prosecuting the steps need to reach PMI valuation, one is already able to execute it. According to all the projections mentioned before, PMI's total value is \$165B, which is proclaimed by two main holders. The firm's market value of debt is \$32.6B, deducting Cash and Cash Equivalents, one reaches a Net Debt of 26.1B. In order to calculate PMI's Equity Value, one needs to subtract the Net Debt and the minority interest, over the total value. Thus, the firm's Equity Value is \$138B, which can be translated in a target price of 88.9\$ per share.

Enterprise Value	164678
Net debt	26062
Non-Controlling interests	-375
Equity Value	138240
Number of shares	1556
Price per Share	\$88.9

Exhibit 27 – Enterprise Value, Equity Value and Price per Share

Source: Own calculations

Sensitivity Analyses

After performing a certain valuation, it is crucial to execute a sensitivity analysis, to understand the impact of smaller deviations on the inputs assumed – WACC, terminal growth rate, etc.).

¹⁹ The World Bank

Since 60% of PMI valuation derives from the Terminal Value, in this first analysis, one will evaluate the impact of smaller changes of both WACC and Terminal Growth Rate, considering that all the other assumptions remain constant. In addition, the sensitivity of the share price regarding the inputs just mentioned will also be tested. If there is a decrease of 50 percentage points in the WACC and an increase of that amount on the Terminal Growth Rate, PMI's Terminal Value and price per share rise almost 20% and 14%, respectfully. Whereas, if the complete opposite occurs, the Terminal Value decreases 14% and share price declines 11%. These results demonstrate that both TV and share price are very sensitive to changes in WACC and Terminal Growth Rate. It is also pertinent to note that, measures tested, are more sensitive to WACC changes than perpetuity growth shifts.

		WACC				
Perpetuity Growth	88.9	6.57%	6.87%	7.17%	7.47%	7.97%
	0.00%	89.2	84.4	80.0	75.9	69.8
	0.50%	94.4	89.0	84.1	79.6	72.9
	1.00%	100.5	94.4	88.9	83.8	76.4
	1.50%	107.8	100.8	94.5	88.8	80.5
	2.00%	116.8	108.5	101.2	94.7	85.3

		Growth Rate				
WACC	187016	0.00%	0.50%	1.00%	1.50%	2.00%
	6.17%	185165	202492	223170	248273	279391
	6.67%	171290	186091	203500	224275	249496
	7.17%	159350	172147	187016	204507	225380
	7.67%	148966	160147	173003	187942	205515
	8.17%	139852	149711	160943	173859	188868

Exhibit 28 – Sensitivity Analyses of Terminal Value and Price per Share

Source: Own calculations

Hence, there still some conditions that can still deeply affect the revenues, and consequently the share price, such as, inflation and foreign exchange. Furthermore, the operating margin is also one of the most crucial measures for the final valuation result. Thus, in order to evaluate the impact of these variables, one executed four distinct scenarios, as Exhibit 28 illustrates.

	Revenue Growth	OPEX Margin	Share Price
Optimistic	2%	2%	\$110.8
	1%	1%	\$98.1
Pessimist	-1%	-1%	\$76.2
	-2%	-2%	\$66.8

Exhibit 29 – Sensitivity Analyses of Price per Share

Source: Own calculations

One the first scenario, which is the most optimistic one, PMI's stock price would increase by almost 28% over the target price mentioned in the DCF valuation. Considering the second scenario, within the optimistic setting, the stock price would rise by 13%. Whereas, if one considers the most pessimist overview, the price would decline by 23%.

Relative Valuation

In this section, on a complementary side, a relative valuation will be performed. Regarding this method specifically, the quality of the overall outcome is highly dependable on the peer group selected. Thus, to obtain a result with higher consistency and reliance, one gathered two distinct groups. The multiples selected were P/E, P/Revenues and EV/EBITDA, which includes both Equity and Enterprise multiples. The first two were mainly chosen since ultimately, they are based on the shareholders' value – the main question of this dissertation -, whereas EV/EBITDA was selected, to include a multiple focused on the operational performance of the company.

The first one only contains firms operating in the tobacco industry and were selected based on the following criteria: global presence, net revenues and market capitalization of a similar size to those of PMI.

Tobacco Peer Group	P/E	EV/EBITDA	P/Net Revenue
Altria Group Inc	54.21	11.49	3.72
British American Tobacco PLC	11.27	10.12	2.71
Japan Tobacco Inc	12.05	8.27	2.30
Philip Morris International Inc	17.42	12.94	4.41
Harmonic Average	15.78	9.78	2.79

Price per Share	\$87.93	\$61.20	\$53.21
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Exhibit 30 – Tobacco Peer Group

Source: Thomson Reuters EIKON 12/12/2019

Based on those requirements, only three companies were selected, Altria and BAT, both from US, and Japan Tobacco. As one can observe from the Table above, regarding the last two multiples, the market perceives PMI share as overvalued, since they are being traded at price over the one the market perceives as fair. Meaning, according to the market, for the size that PMI possesses and for the current price per share, the company should report superior EBITDA and Net Revenues, respectfully. On the other hand, regarding the multiple P/E, PMI shares are being traded at a fair value, still according to market perception.

Due to the limited number of tobacco companies similar to PMI present in the market, one felt the need to execute this method with a second and wider peer group. Thus, the peer group elected by PMI was the chosen one for the valuation process. Every year, the tobacco company has been reporting its own peer group, which is based on the following requirements: global presence, net revenues, focus on consumer products and market capitalization of a similar size to those of PMI. By spreading the scope across different industries, the number of peers within that group increased significantly, up to 19 firms (peer group list, Appendix 9).

Philip Morris International Inc	17.42	12.94	4.41
Harmonic Average	19.65	13.09	3.16
Price per Share	\$109.51	\$87.49	\$60.17

Exhibit 31 – PMI Peer Group

Source: Thomson Reuters EIKON 12/12/2019

This time, the market perceives PMI shares as overvalued in the last multiple, whereas, based on the multiple EV/EBITDA, PMI stock is being fairly traded. Nevertheless, regarding the first multiple, the stocks are being traded at a higher than it should. From a general perspective, this second analyzes returns values closer to PMI's actual price.

All in all, the relative valuation reports distinct signals depending on the peer group, and on the multiple itself. Nevertheless, this method is commonly used only as a complementary approach, with the objective of getting a sense of how the market values these firms, and not as a primary source for an investment decision.

5. Comparison with Investment Bank

The objective of this chapter is to compare the valuation executed in this dissertation with one performed by an Investment Bank. In this case, the valuation developed will be compared with the one produced by *Barclays* on 19th November of 2019.

Based on a Multiple Valuation, *Barclays* considers a target of \$100, which symbolized a potential upside of 18%, on the day the recommendation was realized. This target priced is based on a projected 2020 P/E of 15.4.

One of the principal reasons for the difference between this dissertation target price and *Barclays*'s is the fact that both values were estimated based on distinct valuation models. The DCF model considers, by far, many more assumptions, which can deviate the target price. In addition, both methods assume very different explicit periods, which also influences the target price.

Although the target price is based on a multiple valuation, *Barclays* also estimates PMI results until 2021, which can give a sense of some assumptions considers by the investment bank. Regarding sales, there is a considerable difference between the two valuations, mostly because *Barclays* considers a slower pace regarding cigarette reduction and predicts higher Net Revenues for the RRP's segment.

Revenue	2019E	2020E	2021E	CAGR
Barclays	30277	31864	33717	5.5%
Dissertation	29734	30568	31581	3.1%

Exhibit 32 – Net Revenues comparison

Source: *Barclays* data and own calculations

By the EBITDA margin reported by *Barclays*, one can conclude that the investment bank assumes higher saving costs then the ones assumed in this dissertation. *Barclays* does not disclose further information regarding these assumptions.

EBITDA Margin	2019E	2020E	2021E	Average
Barclays	41.9%	42.5%	43.1%	42.5%
Dissertation	39.7%	42.1%	42.1%	42.1%

Exhibit 33 – EBITDA margin comparison

Source: *Barclays* data and own calculations

Regarding both Capex and D&A, Barclays estimated similar values to those projected in this dissertation, which can indicate some similarities assumption behind those numbers.

D&A	2019	2020	2021
Barclays	987	1036	1096
Dissertation	1000	1031	1060
Capex	2019	2020	2021
Barclays	999	1243	1248
Dissertation	1189	1223	1263

Exhibit 34 – D&A and Capex comparison

Source: Barclays data and own calculations

After analyzing both estimations, one can conclude that the difference between the estimated target price – \$100 vs \$88.9 - relies on Net Revenues assumptions. Barclays assumes a more optimist setting regarding both RRP's segment growth and cigarette consumption.

6. Conclusion

This dissertation was developed under the intention of performing an equity research valuation on a company trading in the stock market, more precisely, Philip Morris International.

In addition to that, an analysis of the tobacco market was also executed. Considering that matter, this industry is suffering considerable changes due to the decrease of tobacco prevalence, as well as, the world's growing awareness of the negative effects of tobacco. Due to that, RRP's are expected to become the main consumed option within the industry, on a long-term horizon.

As stated before, every valuation technique is characterized by both down and upsides. Moreover, putting that together with PMI characteristics, the DCF-model was the elected one to conduct the valuation. Considering the selected assumptions, the DCF-model projected an Equity Value of \$138B, which corresponds to a price per share of \$88.9. PMI is considered to be slightly undervalued by the market since on 3rd of January of 2020 the price was trading at \$85. Thus, the recommendation is to Hold, as one expects an upside of 4.55%.

Appendixes

7. Appendixes

Book Value	2016	2017	2018	2019
Debt	29067	34339	31759	31800
Equity	24212	22842	23296	22802
Assets	36851	42968	39801	41420
D/E	54.6%	60.1%	57.7%	58.2%

Credit Rating	2016	2017	2018	2019
S&P	A	A	A	A
Moody's	A2	A2	A2	A2

Appendix 1 – Book Value of Equity & Debt and Credit Rating

Source: PMI respective Annual Reports

	Market Premium	%
European Union	9.65%	33.41%
Eastern Europe	7.19%	10.41%
Middle East & Africa	6.54%	13.84%
South & Southeast Asia	8.48%	16.33%
East Asia & Australia	8.76%	18.53%
Latin America & Canada	6.56%	7.48%
PMI MP	8.38%	

Appendix 2 – Market Risk Premium

Source: Bloomberg 05/12/2019

SUMMARY OUTPUT	
<i>Regression Statistics</i>	
Multiple R	0.408
R Square	0.167
Adjusted R Square	0.163
Standard Error	0.029
Observations	260

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.044	0.044	51.622	0.000
Residual	258	0.221	0.001		
Total	259	0.265			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-0.001	0.002	-0.506	0.613	-0.005	0.003	-0.005	0.003
X Variable 1	0.728	0.101	7.185	0.000	0.528	0.928	0.528	0.928

Appendix 2 – Beta

Source: Thomson Reuters Eikon (05/12/2019) and own calculations

Maturity Date	Amount Outstanding	Coupon	Yield	YTM	Last Price		Market Value	%
21-Feb-2020	1,000,000,000	2.00	1.96	2.06	100.01	1.000061	1,000,061,000	3.07%
21-Feb-2020	300,000,000	2.31	1.89	1.89	100.09	1.000908	300,272,400	0.92%
19-Mar-2020	1,384,500,000	1.75	-0.14	-0.15	100.52	1.00523	1,391,740,935	4.27%
26-Mar-2020	1,000,000,000	4.50	1.98	2.00	100.76	1.007602	1,007,602,000	3.09%
18-Sep-2020	328814245	1.00	-0.59	-0.59	101.24	1.01239	332,888,253	1.02%
25-Feb-2021	750000000	1.88	1.93	1.93	99.93	0.999339	749,504,250	2.30%
03-Mar-2021	830700000	1.88	-0.01	-0.01	102.32	1.02323	849,997,161	2.61%
17-May-2021	350000000	4.13	1.99	2.00	103.03	1.030314	360,609,900	1.11%
15-Nov-2021	750000000	2.90	1.86	1.98	101.97	1.019728	764,796,000	2.35%
06-Dec-2021	303520842	2.00	-0.24	-0.27	104.47	1.04468	317,082,153	0.97%
18-Feb-2022	500000000	2.63	2.05	2.06	101.23	1.012273	506,136,500	1.55%
17-Aug-2022	750000000	2.38	2.09	2.09	100.75	1.007499	755,624,250	2.32%
22-Aug-2022	750000000	2.50	2.06	2.10	101.15	1.011548	758,661,000	2.33%
02-Nov-2022	750000000	2.50	2.02	2.07	101.36	1.013564	760,173,000	2.33%
06-Mar-2023	600000000	2.63	2.14	2.17	101.52	1.015224	609,134,400	1.87%
10-May-2023	500000000	2.13	2.08	2.12	100.16	1.001569	500,784,500	1.54%
15-Nov-2023	500000000	3.60	2.16	2.20	105.40	1.053994	526,997,000	1.62%
01-May-2024	900000000	2.88	2.18	2.17	102.88	1.028839	925,955,100	2.84%
16-May-2024	252934035	1.63	0.07	0.12	106.89	1.06893	270,368,778	0.83%
30-May-2024	664560000	2.88	0.24	0.29	111.70	1.11703	742,333,457	2.28%
08-Nov-2024	553800000	0.63	0.45	0.04	100.84	1.00839	558,446,382	1.71%
10-Nov-2024	750000000	3.25	2.20	2.22	104.89	1.048945	786,708,750	2.42%
19-Mar-2025	830700000	2.75	0.50	0.45	111.66	1.11663	927,584,541	2.85%
11-Aug-2025	750000000	3.38	2.33	2.32	105.54	1.055442	791,581,500	2.43%
25-Feb-2026	750000000	2.75	2.49	2.44	101.48	1.014821	761,115,750	2.34%
03-Mar-2026	1107600000	2.88	0.59	0.53	113.95	1.13945	1,262,054,820	3.87%
03-Aug-2026	553800000	0.13	0.68	0.60	96.42	0.9642	533,973,960	1.64%
17-Aug-2027	500000000	3.13	2.54	2.55	104.03	1.040341	520,170,500	1.60%
02-Mar-2028	500000000	3.13	2.72	2.72	102.96	1.029596	514,798,000	1.58%
14-May-2029	553800000	2.88	1.05	1.00	116.32	1.16324	644,202,312	1.98%
15-Aug-2029	750000000	3.38	2.80	2.77	104.82	1.048194	786,145,500	2.41%
01-Aug-2031	830700000	0.80	1.34	1.28	94.19	0.94194	782,469,558	2.40%
03-Jun-2033	553800000	3.13	1.51	1.47	119.60	1.19602	662,355,876	2.03%
09-May-2036	553800000	2.00	1.59	1.56	105.89	1.05888	586,407,744	1.80%
06-Nov-2037	553800000	1.88	1.76	1.73	101.78	1.01784	563,679,792	1.73%
16-May-2038	1500000000	6.38	3.55	3.44	137.93	1.379332	2,068,998,000	6.35%
01-Aug-2039	830700000	1.45	2.00	1.93	91.13	0.91132	757,033,524	2.32%
15-Nov-2041	750000000	4.38	3.56	3.55	112.27	1.122738	842,053,500	2.59%
20-Mar-2042	700000000	4.50	3.68	3.62	112.46	1.124641	787,248,700	2.42%
21-Aug-2042	750000000	3.88	3.53	3.55	105.29	1.052896	789,672,000	2.42%
04-Mar-2043	850000000	4.13	3.56	3.50	108.96	1.089604	926,163,400	2.84%
15-Nov-2043	750000000	4.88	3.68	3.59	118.89	1.188945	891,708,750	2.74%
10-Nov-2044	1,250,000,000	4.25	3.53	3.52	111.84	1.118372	1,397,965,000	4.29%
-	30,637,529,122	-	-	--	-	--	32,573,259,897	100.00%
							WA	1.97

Appendix 3 – Cost of Debt

Source: Thomson Reuters Eikon 12/12/2019

Income Statement	2017	2018	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Total Revenue	28,748	29,625	29,734	30,568	31,581	32,739	33,991	35,266	36,478	37,532	38,332	38,789	38,831
Operating Expenses	(17,167)	(18,248)	(18,933)	(18,737)	(19,358)	(19,995)	(20,759)	(21,538)	(22,361)	(23,007)	(23,497)	(23,777)	(23,803)
Cost of Sales	10,432	10,758	10,411	10,867	11,227	11,639	12,084	12,538	12,968	13,343	13,628	13,790	13,805
Marketing, Administration and Research	6,647	7,408	8,522	7,870	8,131	8,355	8,675	9,000	9,393	9,664	9,870	9,987	9,998
Amortization of Intangible	88	82	-	-	-	-	-	-	-	-	-	-	-
Op. Income	11,581	11,377	10,801	11,830	12,222	12,745	13,232	13,728	14,117	14,525	14,834	15,011	15,028
<i>EBIT %</i>	<i>40.3%</i>	<i>38.4%</i>	<i>36.3%</i>	<i>38.7%</i>	<i>38.7%</i>	<i>38.9%</i>	<i>38.9%</i>	<i>38.9%</i>	<i>38.7%</i>	<i>38.7%</i>	<i>38.7%</i>	<i>38.7%</i>	<i>38.7%</i>
Interest expenses	(134)	(159)	(149)	(153)	(158)	(164)	(170)	(177)	(183)	(188)	(192)	(194)	(195)
Pension and other employee benefit	(78)	(41)	(73)	(75)	(78)	(81)	(84)	(87)	(90)	(93)	(94)	(96)	(96)
EBT	11,369	11,177	10,579	11,601	11,986	12,500	12,978	13,464	13,844	14,244	14,548	14,721	14,737
<i>EBIT %</i>	<i>39.55%</i>	<i>37.73%</i>	<i>35.58%</i>	<i>37.95%</i>	<i>37.95%</i>	<i>38.18%</i>	<i>38.18%</i>	<i>38.18%</i>	<i>37.95%</i>	<i>37.95%</i>	<i>37.95%</i>	<i>37.95%</i>	<i>37.95%</i>
Provision for Income Taxes	(4,307)	(2,445)	(2,349)	(2,576)	(2,661)	(2,775)	(2,881)	(2,989)	(3,073)	(3,162)	(3,230)	(3,268)	(3,272)
Equity investments and securities (income)/loss, net	(59)	(60)	(75)	(77)	(80)	(83)	(86)	(89)	(92)	(95)	(97)	(98)	(98)
Non controlling	(306)	(375)	(336)	(345)	(357)	(370)	(384)	(399)	(412)	(424)	(433)	(438)	(439)
Net income	7,003	8,672	8,155	8,949	9,246	9,642	10,011	10,386	10,679	10,987	11,221	11,355	11,368

Appendix 4 – Income statement

Source: PMI respective annual reports and own calculations

Balance Sheet	2017	2018	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Non-Current assets													
Property and equipment	14,566	14,557	14,164	14,791	15,281	15,842	16,447	17,064	17,650	18,160	18,547	18,768	18,789
Land	639	600											
Buildings	3,989	3,975											
Machinery and Equipment	8,976	9,096											
Construction in Progress	962	886											
Less accumulated D&A	-7,295	-7,356	-7,528	-7,824	-8,083	-8,380	-8,700	-9,027	-9,337	-9,606	-9,811	-9,928	-9,939
Goodwill	7,666	7,189	5,720	7,884	8,142	8,538	8,856	9,231	9,490	9,857	10,061	10,177	10,188
Other intangible assets, net	2,432	2,278	2,088	2,568	2,650	2,844	2,944	2,997	3,144	3,304	3,368	3,405	3,408
Investments in unconsolidated subsidiaries and equity securities	1,074	1,269	4,499	1,306	1,346	1,424	1,443	1,615	1,614	1,656	1,688	1,749	1,751
Deferred income taxes	1,007	977	968	1,096	1,131	1,170	1,213	1,306	1,380	1,416	1,443	1,459	1,464
Total	19,450	18,914	19,911	19,821	20,467	21,437	22,203	23,186	23,942	24,787	25,296	25,631	25,662
Current assets													
Cash and cash equivalents	8,447	6,593	6,507	6,758	6,982	7,239	7,515	7,797	8,065	8,298	8,475	8,576	8,585
Trade receivables	3,194	2,950	3,073	3,829	3,955	4,101	4,257	4,417	4,569	4,701	4,801	4,858	4,863
Other receivables	544	614	656										
Inventories	8,806	8,804	8,529	9,106	9,408	9,717	10,089	10,467	10,867	11,181	11,419	11,556	11,568
Leaf tobacco	2,606	2,318											
Other raw materials	1,563	1,405											
Finished product	4,637	5,081											
Other current assets	603	481	810	657	678	703	730	758	784	806	824	833	834
Total	21,594	19,442	19,575	20,350	21,024	21,760	22,592	23,439	24,285	24,986	25,519	25,823	25,851
Other Assets		1,445	1,934	1,940	2,092	2,063	2,284	2,307	2,376	2,436	2,481	2,507	2,510
Total Assets	41,044	39,801	41,420	42,111	43,584	45,260	47,079	48,932	50,603	52,209	53,297	53,961	54,023

Appendix 4 – Balance Sheet - Assest

Source: PMI respective annual reports and own calculations

	2017	2018	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Common stock, no par value	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional paid-in capital	1,972	1,939	1,981	1,981	1,981	1,981	1,981	1,981	1,981	1,981	1,981	1,981	1,981
Earnings reinvested in the business	29,859	31,014	31,197	31,197	31,197	31,197	31,197	31,197	31,197	31,197	31,197	31,197	31,197
Accumulated other comprehensive Losses	-8,535	-10,111	-8,966	-9,825	-10,151	-10,523	-10,926	-11,335	-11,825	-12,089	-12,421	-12,567	-12,581
Less: cost of repurchased stock	-35,382	-35,301	-35,222	-35,500	-35,500	-35,500	-35,500	-35,500	-35,500	-35,500	-35,500	-35,500	-35,500
Non Controlling interest	1,856	1,720	1,855	1,901	1,964	2,036	2,114	2,193	2,269	2,334	2,384	2,412	2,415
Total Equity	-10,230	-10,739	-9,155	-10,246	-10,508	-10,809	-11,133	-11,464	-11,878	-12,077	-12,359	-12,477	-12,488
Non-Current liabilities													
Long Term Debt	31,334	26,975	26,426	27,500	28,411	29,454	30,580	31,727	32,817	33,765	34,485	34,896	34,934
Deferred Income taxes	799	898	905	928	959	994	1,032	1,071	1,108	1,140	1,164	1,178	1,179
Employment costs	2,271	3,083	2,859	3,060	3,162	3,278	3,403	3,530	3,652	3,757	3,837	3,883	3,887
Income Taxes and other liabilities	2,832	2,393	2,340	2,437	2,518	2,611	2,710	2,812	2,909	2,993	3,056	3,093	3,096
Total	37,236	33,349	32,530	33,926	35,050	36,337	37,726	39,141	40,486	41,655	42,543	43,050	43,097
Current liabilities													
Short-term borrowings	499	730	355	559	578	599	622	645	667	686	701	709	710
Current portion of long-term debt	2,506	4,054	5,035	4,680	4,835	5,012	5,204	5,399	5,584	5,746	5,868	5,938	5,945
Accounts payable	2,242	2,068	1,704	2,086	2,155	2,226	2,311	2,397	2,489	2,561	2,615	2,647	2,650
Accrued liabilities	9,903	9,763	10,228	10,373	10,717	11,110	11,535	11,967	12,379	12,736	13,008	13,163	13,177
Marketing and selling	708	732	677										
Taxes, except income taxes	5,324	5,088	5,130										
Employment costs	856	794	813										
Dividends payable	1,669	1,783	1,831										
Other	1,346	1,366	1,777										
Income Taxes	812	576	723	734	758	786	816	846	876	901	920	931	932
Total	15,962	17,191	18,045	18,431	19,042	19,732	20,487	21,255	21,995	22,630	23,113	23,388	23,414
Total Liabilities	53,198	50,540	50,575	52,357	54,092	56,069	58,213	60,396	62,480	64,286	65,656	66,438	66,511
Total Shareholders equity & Liabilities	42,968	39,801	41,420	42,111	43,584	45,260	47,079	48,932	50,602	52,209	53,297	53,961	54,023

Appendix 5 – Balance Sheet – Equity & Liabilities

Source: PMI respective annual reports and own calculations

Working Capital	2017	2018	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Net Working Capital	398	521	602	594	614	609	632	656	709	730	745	754	755
Investment (-) / Divestment (+) in WC	(1,186)	(123)	(82)	8	(20)	5	(23)	(24)	(54)	(20)	(16)	(9)	(1)
Receivables	3,738	3,564	3,729	3,829	3,955	4,101	4,257	4,417	4,569	4,701	4,801	4,858	4,863
Trade Receivables	3,194	2,950	3,073										
Other Receivables	544	614	656										
<i>DSO</i>	<i>47.5</i>	<i>43.9</i>	<i>45.8</i>	<i>45.7</i>	<i>45.7</i>	<i>45.7</i>	<i>45.7</i>	<i>45.7</i>	<i>45.7</i>	<i>45.7</i>	<i>45.7</i>	<i>45.7</i>	<i>45.7</i>
<i>% of Sales</i>	<i>13.00%</i>	<i>12.03%</i>	<i>12.54%</i>	<i>12.52%</i>	<i>12.52%</i>	<i>12.52%</i>	<i>12.52%</i>	<i>12.52%</i>	<i>12.52%</i>	<i>12.52%</i>	<i>12.52%</i>	<i>12.52%</i>	<i>12.52%</i>
Inventories	8,806	8,804	8,529	9,106	9,408	9,717	10,089	10,467	10,867	11,181	11,419	11,556	11,568
<i>DIH</i>	<i>189</i>	<i>176</i>	<i>167</i>	<i>177</i>	<i>177</i>	<i>177</i>	<i>177</i>	<i>177</i>	<i>177</i>	<i>177</i>	<i>177</i>	<i>177</i>	<i>177</i>
<i>% of Sales</i>	<i>30.63%</i>	<i>29.72%</i>	<i>28.68%</i>	<i>29.68%</i>	<i>29.68%</i>	<i>29.68%</i>	<i>29.68%</i>	<i>29.68%</i>	<i>29.68%</i>	<i>29.68%</i>	<i>29.68%</i>	<i>29.68%</i>	<i>29.68%</i>
Payables	2,242	2,068	1,704	2,086	2,155	2,226	2,311	2,397	2,489	2,561	2,615	2,647	2,650
<i>DPO</i>	<i>48</i>	<i>41</i>	<i>33</i>	<i>41</i>	<i>41</i>	<i>41</i>	<i>41</i>	<i>41</i>	<i>41</i>	<i>41</i>	<i>41</i>	<i>41</i>	<i>41</i>
<i>% of Sales</i>	<i>7.80%</i>	<i>6.98%</i>	<i>5.73%</i>	<i>6.84%</i>	<i>6.84%</i>	<i>6.84%</i>	<i>6.84%</i>	<i>6.84%</i>	<i>6.84%</i>	<i>6.84%</i>	<i>6.84%</i>	<i>6.84%</i>	<i>6.84%</i>
Accrued Liabilities	9,903	9,763	10,228	10,373	10,717	11,110	11,535	11,967	12,379	12,736	13,008	13,163	13,177
<i>% of Sales</i>	<i>34.45%</i>	<i>32.96%</i>	<i>34.40%</i>	<i>33.9%</i>	<i>33.9%</i>	<i>33.9%</i>	<i>33.9%</i>	<i>33.9%</i>	<i>33.9%</i>	<i>33.9%</i>	<i>33.9%</i>	<i>33.9%</i>	<i>33.9%</i>
Marketing and Selling	708	732	677										
<i>% of Sales</i>	<i>2.46%</i>	<i>2.47%</i>	<i>2.28%</i>										
Taxes, except income taxes	5324	5088	5130										
<i>% of Sales</i>	<i>18.52%</i>	<i>17.17%</i>	<i>17.25%</i>										
Employment costs	856	794	813										
<i>% of Sales</i>	<i>2.98%</i>	<i>2.68%</i>	<i>2.73%</i>										
Dividends Payable	1669	1783	1831										
<i>% of Sales</i>	<i>5.81%</i>	<i>6.02%</i>	<i>6.16%</i>										
Other	1346	1366	1777										
<i>% of Sales</i>	<i>4.68%</i>	<i>4.61%</i>	<i>5.98%</i>										
Other current assets	603	481	810	657	678	703	730	758	784	806	824	833	834
<i>% of Sales</i>	<i>2.1%</i>	<i>1.6%</i>	<i>2.7%</i>	<i>2.1%</i>	<i>2.1%</i>	<i>2.1%</i>	<i>2.1%</i>	<i>2.1%</i>	<i>2.1%</i>	<i>2.1%</i>	<i>2.1%</i>	<i>2.1%</i>	<i>2.1%</i>
Income Taxes	812	576	723	734	758	786	816	846	876	901	920	931	932
<i>% of Sales</i>	<i>2.8%</i>	<i>1.9%</i>	<i>2.4%</i>	<i>2.4%</i>	<i>2.4%</i>	<i>2.4%</i>	<i>2.4%</i>	<i>2.4%</i>	<i>2.4%</i>	<i>2.4%</i>	<i>2.4%</i>	<i>2.4%</i>	<i>2.4%</i>
Net Deferred Tax liabilities	208	79	190	195	202	209	217	225	233	239	245	248	248
Tax Assets	1026	1089	1120	1151	1189	1233	1280	1328	1374	1413	1443	1461	1462
<i>% of Sales</i>	<i>3.6%</i>	<i>3.7%</i>	<i>3.8%</i>	<i>3.8%</i>	<i>3.8%</i>	<i>3.8%</i>	<i>3.8%</i>	<i>3.8%</i>	<i>3.8%</i>	<i>3.8%</i>	<i>3.8%</i>	<i>3.8%</i>	<i>3.8%</i>
Tax Liabilities	818	1010	930	956	988	1024	1063	1103	1141	1174	1199	1213	1214
<i>% of Sales</i>	<i>2.8%</i>	<i>3.4%</i>	<i>3.1%</i>	<i>3.1%</i>	<i>3.1%</i>	<i>3.1%</i>	<i>3.1%</i>	<i>3.1%</i>	<i>3.1%</i>	<i>3.1%</i>	<i>3.1%</i>	<i>3.1%</i>	<i>3.1%</i>

Appendix 6 – Working Capital

Source: PMI respective annual reports and own calculations

	2017	2018	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Capex	1,548	1,436	1,189	1,223	1,263	1,310	1,360	1,411	1,459	1,501	1,533	1,552	1,553
<i>% of total sales</i>	<i>5.4%</i>	<i>4.8%</i>	<i>4.00%</i>	<i>4.00%</i>	<i>4.00%</i>	<i>4.00%</i>	<i>4.00%</i>	<i>4.00%</i>	<i>4.00%</i>	<i>4.00%</i>	<i>4.00%</i>	<i>4.00%</i>	<i>4.00%</i>

Appendix 7 – Capex

Source: PMI respective annual reports and own calculations

DCF-Valuation	2017	2018	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	TV
Revenues	28,748	29,625	29,734	30,568	31,581	32,739	33,991	35,266	36,478	37,532	38,332	38,789	38,831	-
<i>Growth (%)</i>	7.7%	3.1%	0.4%	2.8%	3.3%	3.7%	3.8%	3.7%	3.4%	2.9%	2.1%	1.2%	0.1%	
OPEX	(17,167)	(18,248)	(18,933)	(18,737)	(19,358)	(19,995)	(20,759)	(21,538)	(22,361)	(23,007)	(23,497)	(23,777)	(23,803)	
Operating Income	11,581	11,377	10,801	11,830	12,222	12,745	13,232	13,728	14,117	14,525	14,834	15,011	15,028	-
Gross margin (%)	40.3%	38.4%	36.3%	38.7%	38.7%	38.9%	38.9%	38.9%	38.7%	38.7%	38.7%	38.7%	38.7%	
EBITDA	12,544	12,448	11,801	12,861	13,282	13,839	14,367	14,907	15,339	15,790	16,136	16,340	16,373	-
<i>EBITDA margin (%)</i>	43.6%	42.0%	39.7%	42.1%	42.1%	42.3%	42.3%	42.3%	42.1%	42.1%	42.1%	42.1%	42.2%	
D&A	963	1,071	1,000	1,031	1,060	1,095	1,135	1,178	1,223	1,265	1,301	1,329	1,345	
EBIT	11,581	11,377	10,801	11,830	12,222	12,745	13,232	13,728	14,117	14,525	14,834	15,011	15,028	-
<i>EBIT margin (%)</i>	40.3%	38.4%	36.3%	38.7%	38.7%	38.9%	38.9%	38.9%	38.7%	38.7%	38.7%	38.7%	38.7%	
Operational taxes	2,612	2,566	2,436	2,668	2,756	2,874	2,984	3,096	3,183	3,275	3,345	3,385	3,389	
NOPAT	8,969	8,811	8,366	9,162	9,466	9,871	10,248	10,632	10,933	11,250	11,489	11,626	11,639	-
D&A	963	1,071	1,000	1,031	1,060	1,095	1,135	1,178	1,223	1,265	1,301	1,329	1,345	
Operating cash flow	9,932	9,882	9,366	10,193	10,526	10,966	11,383	11,811	12,156	12,514	12,791	12,955	12,984	-
Δ Working capital	(1,186)	(123)	(82)	8	(20)	5	(23)	(24)	(54)	(20)	(16)	(9)	(1)	
Capex	1,548	1,436	1,189	1,223	1,263	1,310	1,360	1,411	1,459	1,501	1,533	1,552	1,553	
FCFF	7,198	8,323	8,094	8,979	9,243	9,661	10,000	10,377	10,643	10,993	11,242	11,395	11,430	187,015
<i>Growth (%)</i>		15.6%	-2.8%	10.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	
PV FCFF	-	-	8094	8378	8047	7848	7580	7339	7024	6769	6459	6109	5717	93547

Appendix 8 – DCF-model

Source: PMI respective annual reports and own calculations

Identifier	Company Name	Market Cap	Revenue	EV	Dividend Yield
PM	Philip Morris International	130,537,880,702	29,625,000,000	157,701,880,702	5.58%
BATS.L	British American Tobacco	90,263,981,285	31,244,578,252	152,255,571,078	6.78%
2914.T	Japan Tobacco Inc	45,998,160,074	20,226,013,143	54,532,079,117	6.07%
MO.N	Altria Group Inc	93,499,731,826	25,364,000,000	119,929,731,826	6.71%
IMB.L	Imperial Brands PLC	20,848,213,178	38,819,467,483	36,643,609,800	12.33%
UNA.AS	Unilever NV	157,714,072,363	58,470,960,639	185,702,979,775	2.97%
ABI.BR	Anheuser Busch Inbev	132,387,561,489	54,619,000,000	244,760,561,489	2.55%
PEP.O	PepsiCo Inc	190,019,703,509	64,661,000,000	216,887,703,509	2.80%
MDLZ.O	Mondelez International	77,836,905,496	25,938,000,000	95,969,905,496	2.11%
ROG.S	Roche Holding AG	264,053,256,154	57,923,374,771	275,591,561,377	2.87%
KMB	Kimberly-Clark Corp	46,662,698,136	18,486,000,000	54,266,698,136	3.03%
DGE.L	Diageo PLC	94,588,776,732	16,331,996,344	112,322,345,428	2.23%
CL	Colgate-Palmolive Co	58,219,013,865	15,544,000,000	65,920,013,865	2.53%
MCD	Mcdonald's Corp	146,815,543,904	21,025,200,000	191,059,243,904	2.56%
JNJ	Johnson & Johnson	368,435,817,136	81,581,000,000	379,208,817,136	2.71%
HEIN.AS	Heineken NV	60,531,248,048	25,771,859,804	79,726,302,740	1.74%
KO	Coca-Cola Co	230,377,101,341	31,856,000,000	261,835,101,341	2.98%
NESN.S	Nestle SA	310,161,919,223	93,171,999,185	350,958,097,948	2.38%
PG	Procter & Gamble Co	309,906,023,205	67,684,000,000	331,436,023,205	2.40%
KHC.O	Kraft Heinz Co	38,930,601,394	26,268,000,000	67,420,601,394	5.02%

Appendix 9 – Peer Group

Source: Thomson Reuters Eikon 12/12/2019

PMI Peer Group	P/E	EV/EBITDA	P/Sales	EV / Revenue
British American Tobacco PLC	11.27	10.12	2.71	4.59
Japan Tobacco Inc	12.05	8.27	2.30	2.72
Altria Group Inc	54.21	11.49	3.72	4.76
Imperial Brands PLC	15.85	7.32	0.50	0.88
Unilever NV	15.37	14.91	2.82	3.30
Anheuser Busch Inbev NV	16.69	11.04	2.44	4.50
PepsiCo Inc	16.77	16.68	2.88	3.28
Mondelez International Inc	20.26	18.02	3.03	3.73
Roche Holding AG	22.19	11.53	4.41	4.58
Kimberly-Clark Corp	23.22	13.15	2.53	2.94
Diageo PLC	23.66	19.25	5.59	6.64
Colgate-Palmolive Co	24.34	15.83	3.76	4.26
McDonald's Corp	25.48	18.59	7.03	9.15
Johnson & Johnson	26.69	13.19	4.51	4.64
Heineken NV	29.16	12.43	2.37	3.11
Coca-Cola Co	30.45	23.16	6.53	7.43
Nestle SA	33.02	17.45	3.3	3.72
Procter & Gamble Co	76.96	18.10	4.5	4.82
Kraft Heinz Co	-	10.91	1.54	2.66

Appendix 10 – Peer Group

Source: Thomson Reuters Eikon 12/12/2019

8. Exhibit Index

- Exhibit 1: Tobacco Industry Market Size and Value (in billions of dollars)
- Exhibit 2: PMI Net Revenues in 2018 (in billions of dollars)
- Exhibit 3: Market Share of leading tobacco companies in 2017
- Exhibit 4: PMI Segment Distribution
- Exhibit 5: PMI Geographical Distribution
- Exhibit 6: PMI price Performance against S&P 500
- Exhibit 7: Dividend payments from 2015 to 2019 (in dollars)
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- Exhibit 10: Operational Expenses and Operating Margin (in millions of dollars)
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- Exhibit 27: Enterprise Value, Equity Value and Price per Share
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- Exhibit 30: Tobacco Peer Group (in dollars)
- Exhibit 31: PMI Peer Group (in dollars)
- Exhibit 32: Net Revenues comparison (in millions of dollars)
- Exhibit 33: EBITDA margin comparison
- Exhibit 34: D&A and Capex comparison (in millions of dollars)

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