

The Investment Analysis for Philip Morris Based on Quantitative Indicator Comparison

Chonghe Li, Zhongyu Wang, and Di Xie

Abstract—Contemporarily, the American tobacco industry has experienced a great development, which attracts plenty of investors. According to previous literatures, Philip Morris International has become an excellent investment target. The data of this paper comes from Philip Morris' financial statements. In this paper, quantitative indicator analysis is carried out to illustrate the investment value of Philip Morris in terms of valuation, growth, profitability, and payout. Based on the analysis, Philip Morris is a well performance investment target because of the steady growth and the powerful profitability. Besides, as the rapid development of North American tobacco industry, some policies permit the sale of tobacco in North America, which lead to the promotion of Philip Morris. Therefore, Philip Morris will keep the occupation status in this industry, i.e., investors will be able to earn profit by investing in Philip Morris. Additionally, it might attract more investors in the future. This paper paves a path to quantitatively analysis whether a company is deserved to be invested based on evidence from Philip Morris.

Index Terms—Philip Morris, Indicator analysis, EBITDA, EPS.

I. INTRODUCTION

Philip Morris is a large multinational corporation, which is the world's largest tobacco manufacturer and the second largest food manufacturer. Philip Morris is mainly engaged in tobacco, food, beer, finance, and real estate. It has five major operating subsidiaries and more than 100 companies of various types in more than 180 countries and regions around the world. Philip Morris International Inc. (PMI) is a holding company, which is engaged in the manufacture and sale of cigarettes and other tobacco products in markets outside of the United States through its subsidiaries and affiliates and their licensees. It experienced a dramatic development during the past decade. Plenty of investors choose Philip Morris as the invest target. The tobacco industry has long sought interactions with the health and medical communities that will enhance its legitimacy and augment profits [1]. In this article, we will explain why Philip Morris is a good investment target. Besides, the current situation of tobacco industry will be discussed. It is hoped to share the way to choose a good investment target with more investors using this article.

Global tobacco (combustible and heated) volumes

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declined by 4.4% in 2020, while the industry revenue pool (at manufacturer selling price) grew by 0.8%, the lowest growth rate in the past seven years. Emerging market (EM) revenues were particularly soft; excluding the US (where tobacco revenues increased by 8%), the industry revenue pool declined by 1.0%. Including growth in vaping and modern oral revenues, total nicotine revenues grew by 1.4% in FY20, which is a historically low growth rate. Philip Morris has been helping supervise American Tobacco's smoking and health stance since many companies was semi-privatized. For nearly 20 years, details of many public statements by American Tobacco on matters of smoking and health have been routinely shown to Philip Morris authorities for approval [2]. Many former scholars have studied funding in Philip Morris, who advocate establishing an independently verified database collating information on health researchers' financial interests [3]. The establishment of healthcare policies determinates the future profit of tobacco companies. Therefore, previous research pays more attention to the relation between the policy and those companies. Besides, the way to choose a stock and the stock market forecast has become a challenging problem to solve [4]. A number of theories has emerged so as to provide academic with opportunities to predict the future tendency of those stocks. Specifically, investors can earn profits from the fluctuation of the price of stocks which is determined by the law of supply and demand [5], [6].

On account of the relevant policies, product-specific and demographically focused public health interventions targeting young adults could be leveraged to prevent and discourage tobacco product use among young adults [7]-[10]. Some scholars hold the opinions that the reasons why those tobacco companies are worth investing is the policies impact. Therefore, these researchers pay more attention to the impact of policies to tobacco companies, who hold the belief that good policies can is the key factor for bringing prosperity to the company. Some emphasize the importance of company operation, who believe only the operator run the company in an appropriate way can the company become a worthy target for investors. There has been a great number of studies related to stock market prediction. Recently, the focus has changed to prediction models based on artificial intelligence, especially with deep ANNs. Besides, models based in deep learning have shown great performance for classification and prediction tasks [7]. On this basis, people are used to predict companies' future development based on financial statements. In this paper, we applied different models to recommend Philip Morris, which can also fill in the gaps in previous studies.

We will analyze the company from the fundamentals in this paper. The results will show the reason why Philip

Morris is better than other tobacco companies. The rest part of the paper is organized as following. The Section II will introduce the data origination and the selected indicator information (e.g., calculation formulae, evaluation metric). The Section III will demonstrate the results and present some discussions to state the reason for choosing Philip Morris as the target. Finally, a brief summary will be given in Section IV.

II. DATA & METHOD

All the data used to calculate various ratios is collected from accurate sources. The data related to Philip Morris International is collected from Investor Relation in Philip Morris website. The data related to Altria Tobacco company comes from Altria Investors Relation website. The data about British American Tobacco comes from the Investor part of the website, and the sources related to the Vector group also are collected from the Investor Relations part of the website. We analyze the company's stock from four different perspectives: valuation, growth, payout and profitability. Specifically, the formulas used here include Enterprise value, EBITDA growth rate, EPS growth rate, dividend yield, dividend per share, growth margin ratio and GP/A ratio. For valuation part, enterprise value is utilized to measure the total value of the company, which follows $EV = \text{stock price} \times \text{outstanding number of shares}$. For growth, we used EBITDA growth rate and EPS growth rate, both formulas are used to determine the growth trend of a company. $EBITDA \text{ growth rate} = \frac{(2020 \text{ EBITDA} - 2019 \text{ EBITDA})}{2019 \text{ EBITDA}}$ and $EPS \text{ growth rate} = \frac{(2020 \text{ EPS} - 2019 \text{ EPS})}{2019 \text{ EPS}}$. For payout, there are two formulas we used here: dividend per share and dividend yield. Dividend yield shows how much a company pays out in dividend each year compared to its stock price, so most investors consider this carefully. $\text{Dividend per share} = \frac{\text{Dividend}}{\text{outstanding number of shares}}$. $\text{Dividend yield} = \frac{\text{dividend per share}}{\text{price per share}}$. For the fourth part Profitability: we used growth margin ratio and GP/A ratio to determine how profitable the company is. When comparing GP/A ratio, which is used to help determine how efficiently a firm uses its assets to generate Gross Profits. In detail, the higher the ratio, the higher efficiency. $\text{Growth margin ratio} = \frac{\text{Gross profit}}{\text{Revenue}}$, $\text{GP/A ratio} = \frac{\text{Gross profit}}{\text{Asset}}$.

III. RESULT & DISCUSSION

A. Valuation

The first result from our research is the valuation. There are two pieces of data to show the advantages of the Philip Morris. The first one is the Enterprise Value. Obviously, Philip Morris owned the highest EV in the industry in these five years. In other words, Philip Morris has acquired a monopoly in this industry. In 2020, Philip Morris even exceeded 60,000 billion dollars more than its competitor Altria in Enterprise value. Apparently noticed in Fig. 1, every company's EV experienced a sharp decline. This situation was caused by the Smoking ban. Due to the high rates of smoking, a great number of people were dead or got diseases. As a result, the FDA announced a comprehensive

plan for tobacco and nicotine regulation in order to control the rate of smoking and protect the children.

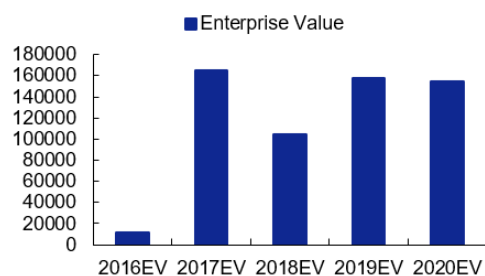


Fig. 1. Philip Morris' enterprise value.

Tobacco use and exposure to SHS are the leading preventable causes of morbidity and mortality in the United States and worldwide, killing more people than Tuberculosis, HIV, and Malaria combined [8,9]. Consequently, the tobacco industry did not have a surge after 2017. Back to the valuation data, another significant point is the stock price. This can also show the Philip Morris company has a perfect valuation. Enterprise value is calculated by the stock price multiplying the outstanding number of shares. Therefore, high stock prices help Philip Morris to gain high enterprise value.

B. Growth

We used two ways to determine whether the company is in the growth or not: EBITDA growth rate and EPS growth rate. One sees from Fig. 2 that all companies in the tobacco industry, including Philip Morris' competitors, are in the growth. Several companies showed varying amounts of growth since 2018.

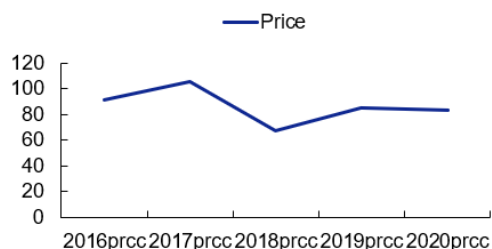


Fig. 2. Philip Morris' stock price.

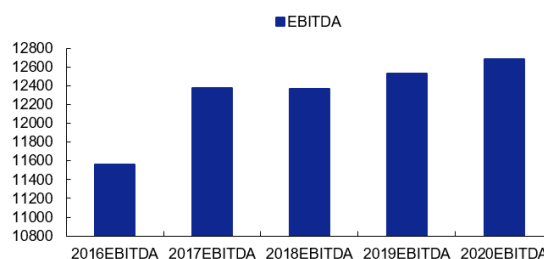


Fig. 3. Philip Morris' EBITDA.

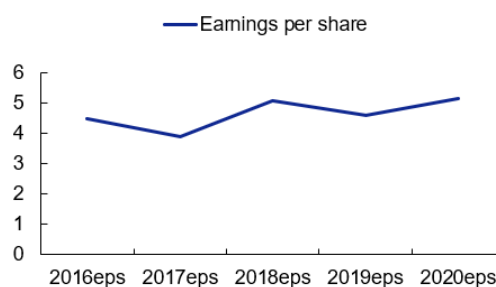


Fig. 4. Philip Morris' earnings-per-share.

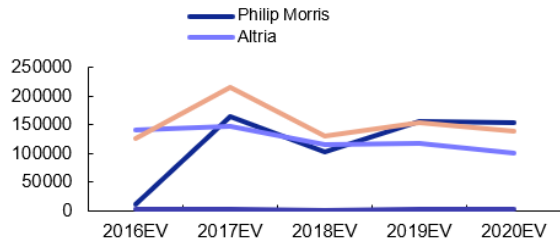


Fig. 5. Philip Morris' enterprise value.

As mentioned earlier, there was an economic blow through the whale tobacco industry during 2017-2018, and almost all tobacco companies have been affected during the period. However, the Philip Morris was the least affected one since it has a great operating system and good efficiency to react to different emergencies. As illustrated in Figs. 3-5, Although Philip Morris seems like the least growing company compared to other competitors, its EBITDA growth rate is only from -0.1% to 0.9% and EPS growth rate from about -10% to 13.25%, it is not very easy for a company to maintain stable growth with such huge enterprise value.

C. Payout

For Payout, the company was a pleasant surprise. From the diagram, we can see that the dividend per share of this company increased from 4.49\$ to 4.75\$ (depicted in Fig. 6), which is higher than all the other tobacco companies, e.g., Altria, British American tobacco, etc. Among the 5000 companies we analyzed, it ranked 50th, which is a pretty good rank. With regard to the dividend yield, it maintained its ratio about 5-6%, that also is a great number. Although it is relatively lower than its competitors, Philip Morris has the highest stock price and is least affected by the 2017-2018 economic blow. Some tobacco companies with high dividend yield might because their stock price goes down, Philip Morris is not in that case. It is not easy for a company to maintain such a high dividend yield for its investors.

D. Profitability

There are three pieces of data to illustrate the profitability of Philip Morris. Gross margin is the most direct one. Seen from Fig. 7 and Table. I, Philip Morris has the highest gross margin in the tobacco industry in 2018 to 2020. Although Philip Morris is the flagship company in the industry, the gross margin of Philip Morris is still increasing in these years. Obviously, the gross margin ratio and GP/A ratio are increasing accordingly. Compared with the competitors, Vector Group and British Amer Tobacco are completely unable to compete with Philip Morris. Only Altria has a similar gross margin ratio, but Altria only has 60% of Philip Morris's gross margin. Besides, the GP/A ratio can not only describe the Philip Morris has a great profitability, but also shows Philip Morris has a high efficiency of converting assets into profit.

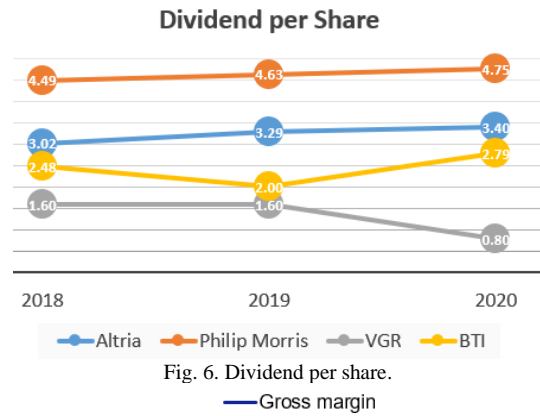


Fig. 6. Dividend per share.

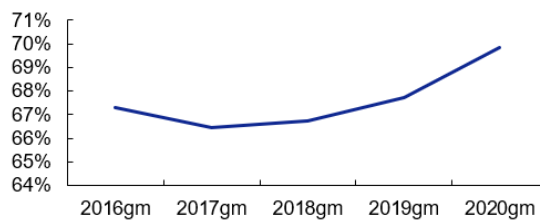


Fig. 7. Gross margin of Philip Morris.

TABLE I: COMPARATION OF PROFITABILITY

Year	Gross margin			Gross margin ratio			GP/A ratio		
	2018	2019	2020	2018	2019	2020	2018	2019	2020
Philip Morris	19774	20190	20033	66.75%	67.74%	69.82%	44.7%	47.09%	49.7%
Altria	12510	12895	13669	63.74%	65.14%	65.59%	22.48%	26.17%	28.83%
Vector Group	595	625	652	42.53%	43.07%	42.36%	38.43%	41.56%	48.59%
British Amer Tobacco	13429	14895	15029	43.42%	43.46%	43.42	7.2%	7.98%	8.13%

IV. CONCLUSION

In summary, it is found that Philip Morris is a well performance company in the tobacco industry. Specifically, it has a high valuation and profitability, the stock price and enterprise value are firmly at the top of the tobacco industry. Although Philip Morris did not have a sharp growth rate, it still increased steady. Philip Morris also has a substantial dividend, which ranks 50th out of 5,000 companies. The dividend yield of Philip Morris beats 94.6% of stocks in these years can certify this company has a stable payout too. However, the tobacco industry will not have a conspicuous development in the future. A growing number of people

would not like to smoke and an increasing number of governments in every country enact smoking ban policies. Most large workplaces today ban smoking inside. If workers want a smoke, they must use break times and go outside. Most people prefer the smoke-free interior atmosphere. For the first few years of the smoking ban movement, a lot of us worried about the abuse of freedom. If customers want to avoid smoke, they can go to the smoke-free area, restaurants also have ability to decide if customers can smoke in there. After bans, such as the one in Columbia, patronage is robust. Except for a few disgruntled holdouts, restaurant and bar operators seem satisfied with the new regulatory environment. In addition, children' health also needs to be

attended to. High smoking rates will destroy children's lungs and cause related diseases. With the emphasis on global health, the tobacco industry will not have a good prospect. In the end, in order to find out the most valuable company in the tobacco industry, this investigation has been carried out based on P/E ratio, EV/EBITDA ratio and growth rates to judge the best company. In this bad environment, Philip Morris continues to perform well. This company is working hard and following the trend of global health, they are working to find a new healthy substance without nicotine to replace the cigarette. Hopefully Philip Morris can succeed. Overall, these results shed light on Philip Morris has an obvious potential, and it is really recommended people to invest.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Chonghe Li, Zhongyu Wang, and Di Xie conducted the research; Chonghe Li, Zhongyu Wang, and Di Xie wrote the paper; all authors had approved the final version.

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