

Microsoft Accounting Analysis Based on Profit Analysis and Market Value Prediction

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Abstract. Microsoft is a world-renowned technology company with a range of business scopes including operating systems, productivity suites, cloud services, and search engines. Based on its position in the world, the analysis of Microsoft's financial situation has a certain guiding significance. First, it analyzes Microsoft's income statement from 2020 to the second quarter of 2023, using different growth assumptions, and calculates and compares Microsoft's Net income attributed to shareholders through two aspects: linear relationship, and index relationship. Then, using EXCEL and SPSS, an earnings forecast is given through the calculation and comparison of P/E ratios for different years. Finally, the article predicts Microsoft's market capitalization. Although Microsoft's market capitalization fell for a time in 2022, as of May 2023, Microsoft's market capitalization has recovered. The article believes that Microsoft's market value is still likely to continue to grow in the future. This is mainly because Microsoft has a wide range of layouts and applications in emerging technologies such as cloud computing and artificial intelligence, and is expected to continue to expand its business scope and improve market competitiveness in the future. With the development of emerging technologies such as cloud computing and artificial intelligence, the research results of this article can provide some development suggestions for emerging big data companies.

Keywords: Microsoft, market value, profit, P/E ratio, Accounting Analysis.

1. Introduction

With the rapid development of the technology industry and the intensification of market competition, Microsoft faces challenges from other technology companies. To meet these challenges, it has continuously launched new products and expanded its business scope in the past few years, such as Azure cloud services and DynamicsCRM [1]. These initiatives have brought it more revenue streams, making it one of the largest software companies in the world, and many businesses have followed its path to success. Its outstanding achievements and methods to get out of difficulties are worth learning from other enterprises, which has strong guiding significance for the development of small and medium-sized enterprises.

Over the past decade, academia and industry have done a lot of research on Microsoft's profit analysis. These studies have focused on the following areas. Some studies have compared Microsoft's profit margin over time and found that its profit margin has gradually increased over time [2]. This may have something to do with Microsoft's continued investment in product research and development and its broad business scope. Some studies also have paid attention to Microsoft's cost control strategy and found that its cost control ability is relatively strong, which gives it an advantage in market competition [3]. Some studies have analyzed the return on investment of Microsoft in different periods and found that its return on investment is relatively high, indicating that it has certain rationality in investment decisions [4]. In addition, Microsoft's market capitalization forecasting is also a research area that has attracted much attention [5]. The main research methods include forecasting methods based on financial indicators, forecasting methods based on stock markets, and comprehensive forecasting methods based on financial and stock markets.

According to the above literature review and review, it is found that few articles analyze the net profit attributable to the parent company in Microsoft's income statement, and the net profit attributable to the parent company can fully reflect the good or bad operating conditions of the enterprise. The starting point of commercial companies is to maximize profits, and sustainable development is possible only if the enterprise obtains enough profits. When the net profit attributable

to the parent of the enterprise is higher, it indicates that the enterprise has stronger operating ability and better economic benefits. Therefore, this article provides an in-depth analysis of the net profit attributable to the parent company of Microsoft, and predicts Microsoft's market capitalization on this basis, aiming to help readers better understand the financial situation and future development prospects of Microsoft.

2. Data and method

2.1. Data

Because this article focuses on the Analysis of net profit attributable to the parent company and price-to-earnings ratio, it is pre-processed Microsoft's 2020-2023 income statement, retaining the relevant data [6]. Based on Table 1, this article focuses on the following data as a basis for analysis: Net profit attributable to the parent company.

Table 1. Microsoft Corporation's income statement for 2022-2023 (Unit: billion)

	(FY)2023/06/30	(FY) 2022/06/30	(FY) 2021/06/30	(FY) 2020/06/30
Net profit attributable to the parent company	72.361 (-0.52%)	72.738 (18.72%)	61.271 (38.37%)	44.281 (12.85%)

2.2. Models

First, this article introduces the two data processing methods used in this analysis of the parent company's net profit.

2.2.1. Linear Regression Models

The linear regression model is denoted as Equation (1). It can be unified in the form of Equation (2).

$$y = w_1x_1 + w_2x_2 + \dots + w_nx_n + b = [w_0w_1w_2 \dots w_n] \begin{pmatrix} x_0 \\ \dots \end{pmatrix} + b \quad (1)$$

$$y = \sum_{i=1}^n w_i x_i + b = w^T x + b \quad (2)$$

Thereinto

y is the prediction function

$w_1 w_2 \dots w_n$ is a model parameter

$x_1 x_2 \dots x_n$ is the feature input

b is the amount of bias

2.2.2. Exponential Relationship

Exponential regression is a regression model with the following equation as Equation (3).

$$y = ab^x \quad (3)$$

Where y is the response variable, x is the predictors, and a and b are regression coefficients describing the relationship between x and y.

2.3. Research Step Description

The above is the introduction of the principle of the data calculation model to be used in this article, and then the above two methods will be used to calculate the growth model curve of the net profit attributable to the parent company Microsoft obtain the corresponding forecast model, in order to

verify the growth trend reflected in the model and the results of the following forecast trend of the Microsoft market capitalization.

3. Analysis of Net Profit Attributable to The Parent Company

3.1. Linear Relationship

From fiscal 2020 to fiscal 2023, Microsoft's annual net profit attributable to parents increased from \$44.281 billion to \$72.361 billion substituting the data from Table 1 into Equations (1) and (2) [7]. Taking time as the independent variable and net profit attributable to the parent as the dependent variable, the approximately linear relationship is $Y = 9.5707X + 38.736$ (The value of this equation X starts in 2020, denoted 2020 as 1, and so on), $R^2 = 0.8554$. This equation shows that based on previous years' data, Microsoft's annual growth rate of net profit attributable to the parent company is about 9.57, which is in a high growth trend, which also corresponds to the trend of the market capitalization forecast below. R^2 is the coefficient of determination, also known as goodness-of-fit, which is usually used to describe how well the data fit the model, indicating the degree to which the independent variable X explains the dependent variable Y . The value of the R square is between $[0,1]$, and the closer to 1, the better the regression fitting effect. Here R^2 is 0.8554, indicating that this regression equation fits well and the conclusion derived from this equation is small in deviation.

As shown in Fig.1, the net profit attributable to the parent fluctuates greatly from year to year, and there is no obvious pattern. There is an upward trend, which means that Microsoft's market capitalization is likely to rise year by year.

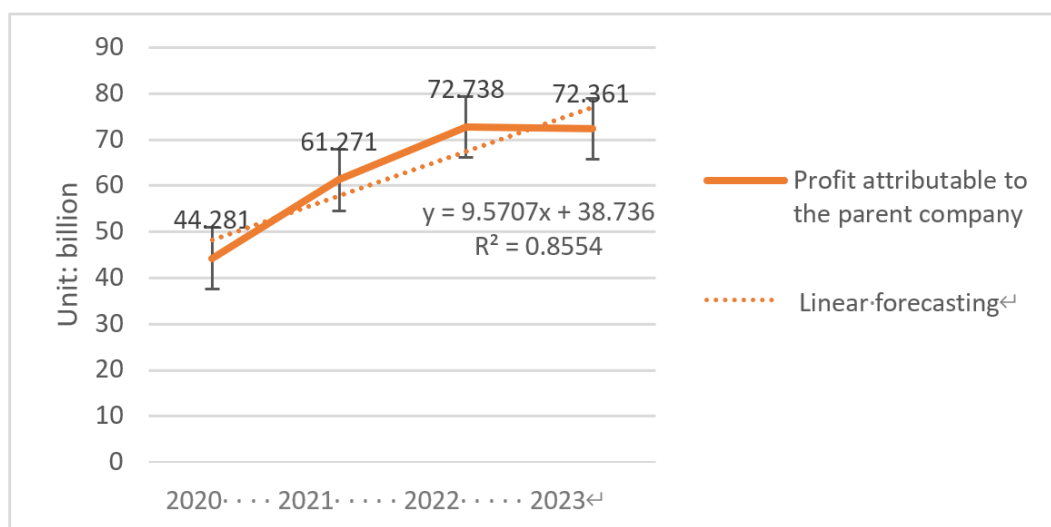


Figure 1. Profit attributable to the parent company (Photo credit: Original)

3.2. Exponential Relationship

From 2020 to 2023, Microsoft's average growth rate of net profit attributable to the parent company is 23.14%. Substituting the data from Table 1 into Equations (3) [8]. Taking time as the independent variable and net profit attributable to the parent as the dependent variable, the approximate exponential relationship is $Y = 40.747e^{0.1645x}$ (The value of this equation X starts in 2020, denoted 2020 as 1, and so on), $R^2 = 0.8324$. The coefficient of this equation is 40.747, which shows an exponential increase of 0.1645 times, which is also consistent with the growth trend in the linear model above, which is a high multiple growth, and also corresponds to the trend of market capitalization forecasts below. Among them, R^2 also indicates the goodness-of-fit and the value here is 0.8324, indicating that the degree of fitting is good and the deviation of this equation is small.

As shown in Fig.2, it can be seen that the results of the exponential regression model are consistent with the conclusions of the linear regression model, and it can be concluded that Microsoft's net profit

attributable to the parent company is increasing year by year, which also tests the results of the following market value forecast.

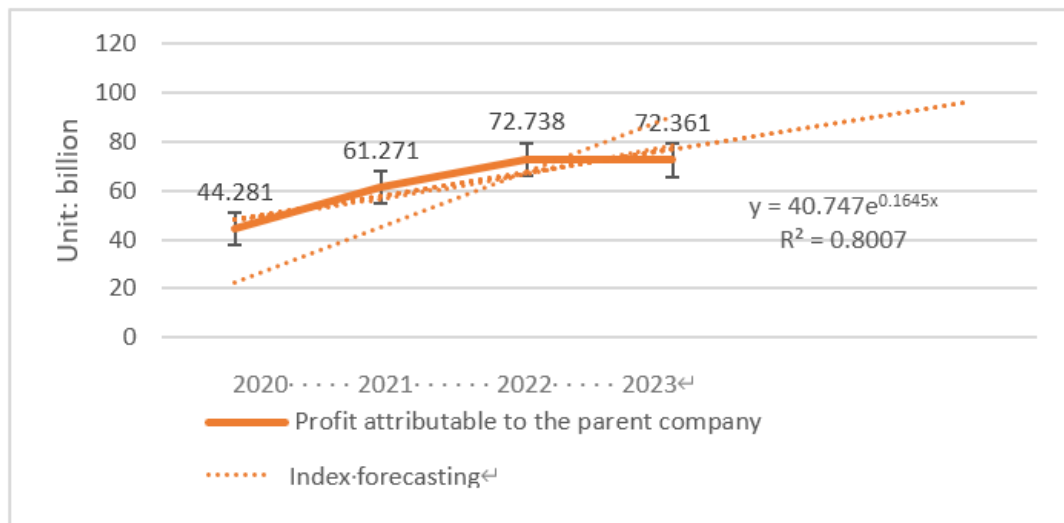


Figure 2. Profit attributable to the parent company (Photo credit: Original)

3.3. P/E Ratio Analysis

The P/E ratio is calculated as:

$$PE = \text{Market capitalization} / \text{net profit} \quad (4)$$

As shown in Fig.3, From fiscal 2020 to fiscal 2022, Microsoft's P/E ratio ranged from 12.30 times to 34.51 times, with an average of 21.3 times.

As shown in Table 1, net profit attributable to owners in FY2020 totaled US\$44.281 billion, with a market capitalization of US\$765 billion at the end of FY2020 (end of June 2020) and a price-to-earnings ratio of 17.28 times.

Net profit attributable to owners in FY2021 totaled US\$61.217 billion, and the market capitalization at the end of FY2021 (end of June 2020) was US\$753.155 billion, with a price-to-earnings ratio of 12.30 times.

Net profit attributable to owners in FY2022 totaled US\$72.738 billion, with a market capitalization of US\$2.51 trillion at the end of FY2022 (end of June 2020) and a price-to-earnings ratio of 34.51 times.

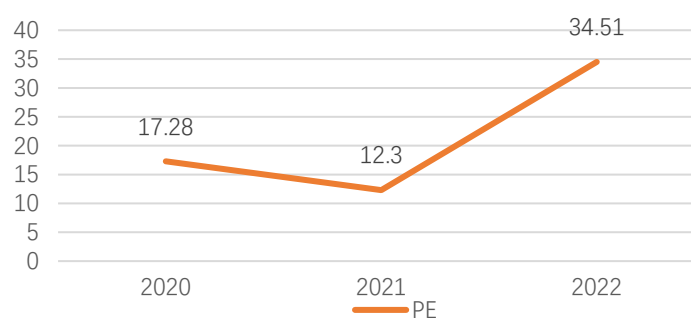


Figure 3. PE (Photo credit: Original)

3.4. Market Capitalization Forecast

Combined with the above calculation and forecast of net profit attributable to the parent company, it can be seen that from 2020 to 2023, the net profit attributable to the parent company Microsoft will

increase year by year, and according to the linear and exponential forecast curves, the value will continue to rise in the following years. Then, through the linear forecasting model $Y = 9.5707X + 38.736$, the number represented by the year is substituted (the specific rules are explained above), and the forecast value of net profit attributable to the parent company for the fiscal year is calculated. Then, based on the above GAAP (generally accepted accounting principles) average P/E ratio of 21.3 times for the fiscal year 2020-2023[9], the market capitalization forecast for the fiscal year is obtained according to $PE = \text{Market capitalization} / \text{net profit}$. The market capitalization of Microsoft at the end of fiscal year 2024 (end of June 2024) and beyond is calculated as follows.

GAAP net income attributable to parents is expected to be \$86.59 billion in fiscal 2024 and \$1.84 trillion at the end of fiscal 2024 (end of June 2024).

GAAP net income attributable to parents is expected to be \$96.16 billion in 2025 and a market capitalization of \$ 2.05 trillion at the end of fiscal 2025 (end June 2025).

GAAP net income attributable to parents is expected to be \$105.73 billion in fiscal 2026 and \$2.25 trillion at the end of fiscal 2026 (end June 2026).

In addition, because fiscal year 2023 is currently incomplete, only three PE values can be calculated, so this article will only discuss these three values (see. Fig.4).

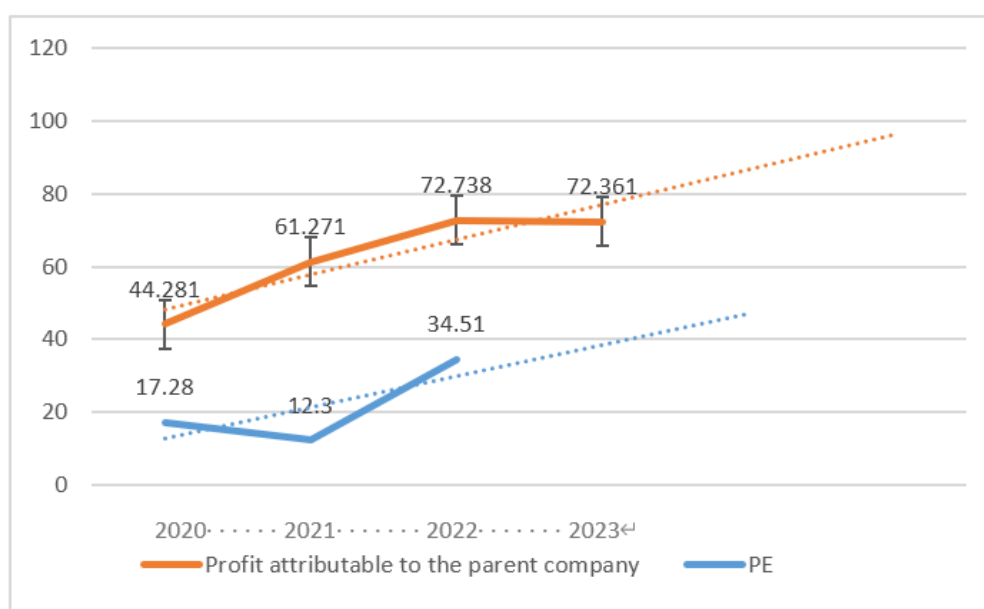


Figure 4. Net profit attributable to the parent company/PE (Photo credit: Original)

4. Discussion

4.1. Market Capitalization Predictive Analytics

Over the past few decades, the market capitalization of Microsoft has experienced tremendous volatility and growth. According to the above analysis of Microsoft's net profit attributable to the parent company, the three most important elements of net profit attributable to the parent company are the net profit of the parent company, the net profit of subsidiaries, and the comprehensive equity ratio. From the above data analysis, it can be seen that the market value of Microsoft is rising, and the total market value is very large. And the reasons why Microsoft's market capitalization is so large are as follows:

First, Microsoft has been expanding its business scope and market share in the past few years and has experienced several large acquisitions, such as Xbox, LinkedIn, etc. In addition, Microsoft has made significant progress in cloud computing, artificial intelligence and the Internet of Things [10]. Microsoft's Azure cloud service platform has become one of the world's leading cloud service platforms, and Microsoft has also made important progress in the field of artificial intelligence and

the Internet of Things. The rapid development of these businesses has led to the continuous growth of Microsoft's revenue and profit, driving its market value.

Second, Microsoft has been increasing investment in technological innovation and R&D over the past few years. Microsoft has always been a technology-driven company, and technological innovation in artificial intelligence, cloud computing, blockchain and other fields has been at the forefront [11]. These R&D investments not only helped Microsoft launch new products such as the Surface Laptop Studio, the redesigned Surface Pro 8, the new Surface Go 3 and the upgraded Surface Pro X, but also helped improve its market competitiveness.

Third, Microsoft has been strengthening its brand presence and market recognition over the past few years. Microsoft has a large number of users and customers around the world, and the reliability and stability of its products and services have been widely recognized. These brand influences and market recognition not only helps Microsoft gain more market share and revenue but also help increase the attractiveness of its market capitalization.

4.2. The Role of Market Capitalization Forecasting

Microsoft's market capitalization forecasts can help investors and company management make more informed investment decisions and strategic planning.

First, assess investment risk and return: Market cap projections can help investors assess Microsoft's investment risk and return. Investors can develop corresponding investment strategies and risk control measures according to the predicted market value growth trend and future market prospects to obtain better investment returns [12], for example, between 2020 and 2022, the global economic downturn, many investors will reduce the corresponding investment, and according to the market value of these years, predict that the future Microsoft market value will increase to a large extent after the lowest value, and make timely decisions.

Second, make strategic planning and business decisions: Microsoft's market capitalization forecasts can help company management make more informed business decisions and strategic planning[13]. The company can formulate corresponding business strategies and investment plans according to the predicted market value growth trend and future market prospects to promote the long-term development of the company. Microsoft is a good example of large-scale acquisitions in recent years, in the case of an increase in competitors in the same industry, Microsoft management has found through horizontal and vertical market capitalization comparisons that it is not possible to focus on only one area, but short-term innovation is unrealistic. Therefore, we will expand our scale and increase our business areas through acquisitions in response to market changes and competitive pressures.

Third, assess company value and stock price: Microsoft market capitalization forecasts can help investors assess its value and stock price. Investors can formulate corresponding investment strategies and risk control measures according to the predicted market value growth trend and future market prospects to obtain better investment returns [14].

In conclusion, Microsoft's market capitalization forecasts can help investors and company management better understand market trends, competitive landscape, and future development prospects, so that they can make more informed investment decisions and strategic planning to drive the company's long-term growth [15].

5. Conclusion

Through linear forecasting, index forecasting, price-earnings ratio calculation and market value prediction analysis of Microsoft's net profit attributable to the parent company, this paper concludes that Microsoft can still overcome difficulties and achieve steady growth in market value under the difficult situation of the global economic situation. All in all, after the above forecast of market capitalization, its market value has increased year by year in the following years, indicating that Microsoft's future development is very impressive. Its success is also closely related to the economic

policies it adopts, such as acquisitions, corporate integration, and innovative development. The analysis in this paper also has certain reference significance for other developing SMEs and refers to Microsoft's development trend and its successful methods, which is conducive to their more stable development.

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