Ratio-Based Financial Performance Analysis of Pepsi

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ABSTRACT
Pepsi Co is a leading global food and beverage company with a broad portfolio of brands that have won the hearts and minds of consumers around the world. Despite the impact of the COVID-19 pandemic, the company's performance remained strong and satisfied consumers. The basic purpose of this report is to gain some professional knowledge about ratio analysis by understanding the company's performance in the industry. The study collects Pepsi Co's financial data from 2017 to 2021 and analyzes the company's financial position, liquidity, profitability, and cash flow, as well as any possible risks to solvency. The results demonstrate Pepsi's financial performance in terms of profitability and liquidity, is stable and reassuring. However, more concern should be provided on quick debt collection and asset conversion. Although Pepsi Co's shares are overvalued, it's still a good company to watch for the long term.

***Keywords**: Financial ratio, Financial statement, Relative valuation*

1. INTRODUCTION

1.1. Background

Pepsi Co is a leading global beverage and snack food company. It is the world's fourth-largest food and beverage company. The company is headquartered in New York City. Pepsi was founded in 1965 by Pepsi and Frito-Lay, Inc. Amalgamated. According to the annual list of the World's Top 100 Food and Beverage companies for 2021 released by Us-based industry media Food Engineering, Pepsi has overtaken Nestle to become the new dominant food and beverage company in the world. Nestle previously topped the list for many years. Nestle experienced negative growth in the Chinese market due to the reduction of out-of-home channels and limited consumer hoarding during the COVID-19 lockdown during the Chinese New Year in 2020. For comparison, Pepsi's full-year organic revenue growth was 4.3% in 2020. Overall sales rose to about $70.4 billion from about $67.2 billion in 2019. That means Pepsi is one of the food and beverage giants that can grow despite the pandemic. Through fundamental analysis and relative valuation, this paper explores the changes in Pepsi Co's operating conditions and financial health before and during the epidemic which could be helpful to the company's stakeholders.

1.2. related research

Siekelova et al. studied whether there is a statistically significant relationship between the timeliness ratio representing the ability to pay and the selected financial indicators, and applied the Pearson correlation coefficient to a sample of 9821 Slovak companies. These results can help enterprises choose the indicators needed to evaluate customer credit. Research shows that accounts receivable management is an important tool to eliminate payment risk. Therefore, it is an important part of every enterprise's financial management. Accounts receivable are an inherent part of current assets. Commercial credit should not be granted [1]. Alexander et al. researched that the use of financial ratios can also motivate farmers to consider the results of agricultural management sustainability assessment. To this end, the CEO will maximize the use of annual data rather than long-term data and benchmark with other farms that may have a similar structure. Finally, given the positive correlation, reducing the economic ratio in sustainability assessment seems to be an option. This will reduce the effort required and encourage more frequent (economic) assessments of sustainability [2]. Bunia and others conducted a sample survey of 1253 Romanian energy companies. To determine the most powerful engine of rare earth, the author uses a linear regression model. In addition, three enterprise groups divided by scale are analyzed to test whether the enterprise belongs to a specific group and the differences between ROE factors. Other financial ratios

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were introduced into the study. The purpose is to identify financial indicators that have a significant impact on the return on equity (ROE) of the Romanian energy sector. Literature shows that companies with higher ROE usually have certain competitive advantages and can obtain higher profits, to bring higher returns to investors. Therefore, five indicators/ratios considered to have a significant impact on ROE were used in this study. The results show that asset turnover, P / E ratio, book value, and leverage ratio have the greatest impact on the rate of return, indicating that asset turnover and P / E ratio have the greatest impact on the rate of return [3].

Lachowitzer collected relevant quantitative and qualitative data from 2014 to 2018 to better understand the current financial environment of the otter tail company. Courtney evaluated the otter tail and compared it with the current share price in the same period. Courtney said that as of December 31, 2018, the current selling price of otter tail's shares was $48.64. According to Courtney's valuation, the value of the company's shares on that day was $33.41. This shows that otter tail's stock is currently overvalued, so Courtney will advise investors to sell otter tail's stock [4].

Alneyadi et al. discussed and analyzed the financial performance of Emaar real estate in the past four years (2017-2020) using the financial ratio method. Aimar properties are one of the largest multinational construction companies in the UAE and are famous for building the world's largest shopping and entertainment center. In this case, all financial ratios are derived from Reuters' annual balance sheet, income, and cash flow statement. The report shows the company's success and areas for improvement [5].

Arnott et al. Studied the two relative valuation predictors and the subsequent return of smart beta strategy, as well as the impact of price on stock selection and asset allocation. Like asset allocation and stock selection, relative valuation can predict the long-term future returns of strategies and factors, although not accurate and without significant short-term impact, sufficient to increase substantive value [6].

Almenhali et al. conducted a study based on Tesla's financial analysis to understand its financial situation from 2017 to 2020. More specifically, in terms of liquidity, cash flow and debt, Tesla's financial performance is sustainable for four years with no liquidation risk on debt solvency. On the contrary, the author found that Tesla suffered huge losses in asset use, accounts receivable management, and net profit margin. Therefore, it is suggested that the management pay more attention to capital and asset management, pay attention to the timely recovery of accounts receivable and cost control, and improve operational efficiency and improve long-term profit prospects [7]. Vasilaki and tsakalidis studied the valuation of Apple stock. The first part of the report introduces the business profile of the company and its peers, as well as SWOT analysis, relevant industries, and industry profiles. The second part introduces some of the company's main financial ratios and compares them with its main competitor Samsung. Using the company's reporting indicators, try to estimate Apple's financial position and possible short-term future potential. The third part is Apple's forecast and provides information about future expectations. The fourth part introduces various evaluation models (DCF, DDM, RIM, and P / E) used by the author and their evaluation results. Each result represents an estimate of the intrinsic value of Apple's share price. To overcome the limitations of the model, one method used by researchers is to estimate the average value of prices. This report can be used as an example to illustrate the limitations of equity valuation based on various assumptions and the model coordination problems caused by inconsistent valuation processes [8].

Lorentzen uses the company's free cash flow discounted cash flow model for valuation. To challenge or strengthen the valuation results of discounted cash flow, this paper proposes a relative valuation model using multiples. The P / E ratio is based on Coca-Cola's main competitors and companies with similar characteristics. The reasonable price of the evaluation is USD 53.82. Finally, the results are compared with the valuation of Barclays, an internationally renowned investment bank. The results were lower than the recommendations of investment banks. The possible explanation is different assumptions about the rate of income growth [9].

Ginting analyzed the financial performance from 2012 to 2017 based on the ratio of PT. Mustika Ratu, TBK. The data analysis techniques used in this study are qualitative and descriptive analysis. As a result, TBK's financial performance fluctuated year by year from 2012 to 2017. As for the impact of PT's financial ratio volatility, from 2012 to 2017, TBK was affected by several external and internal factors of the company, requiring PT to take further measures to improve the company's performance. TBK meets the market demand and is close to the market itself [10].

1.3. Objective

This study selected Pepsi Co as the research object, analyses the financial data of the company from 2017 to 2021, compares it with the competitors and the industry indicators, and explores the principle of the change of financial indicators. The structure of this paper is mainly composed of three chapters: a summary of financial statement analysis, financial analysis, and the resulting suggestions. The first chapter introduces the analysis method, detailed ratio, and relevant evaluation methods for analysis. The second chapter applies analytical methods to practice. The third chapter describes the results of the analysis and the possible explanations behind the results and summarizes the conclusions and suggestions of the analysis.

2. FINANCIAL INDICATORS ANALYSIS OVERVIEW

2.1. Common size analysis

The aim of using the common size analysis is to see how a firm's capital structure compares to rivals. The common size analysis represents the percentage of each line of the financial statements in the basic amount of the period. Using horizontal common-size analysis helps compare line item ratios across several years to look for recurring trends. It is supported by the data from three financial statements. The three financial statements are the income statement, the balance sheet, and the cash flow statement.

2.2. Ratios analysis

Ratio analysis is used to examine a company's financial statements, including profitability ratio, activity ratio, liquidity ratio, and solvency ratio, to determine the company's future performance.

Profitability ratio:

$$\text{Net profit margin} = \frac{\text{Net income}}{\text{Revenue}} \times 100 \tag{1}$$

$$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Total Assets}} \tag{2}$$

$$\text{Return on Equity} = \frac{\text{Net Income}}{\text{Shareholders' Equity}} \tag{3}$$

Activity ratio:

$$\text{Accounts Receivable Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average Accounts Receivable}} \tag{4}$$

$$\text{Inventory Turnover} = \frac{\text{COGS}}{\text{Average Value of Inventory}} \tag{5}$$

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} \tag{6}$$

$$\text{Quick ratio} = \frac{\text{Cash + Marketable securities + Account receivable}}{\text{Current liabilities}} \tag{7}$$

Solvency ratio:

$$\text{Debt - to - asset ratio} = \frac{\text{Total debts}}{\text{Total assets}} \tag{8}$$

2.3. Relative valuation

The relative valuation includes the analysis of PE ratio, PB ratio, PEG ratio, EV/EBITDA, and other valuation methods. The main method is to compare the company's historical data or compare data of the industry to determine the company's position in the industry.

3. FINANCIAL ANALYSIS OF PEPSI CO INC, INC.

3.1. Common size analysis

The balance sheet reflects the composition and status of the assets of the corporate, the total liabilities at a certain date and their structure, reveals the source and composition of the assets, explains, evaluates, and forecasts the short-term solvency of the corporate.

Table 1. The balance sheet of Pepsi Co, Inc (million)

	2017	2018	2019	2020	2021
Total assets	79,804	77,648	78,547	92,918	92,377
Total current assets	31,027	21,893	17,645	23,001	21,783
Total fixed assets	39,106	40,164	43,003	46,340	46,828
Total liability	68,823	63,046	63,679	79,366	76,226
Total shareholders' equity	10,981	14,602	14,868	13,552	16,151

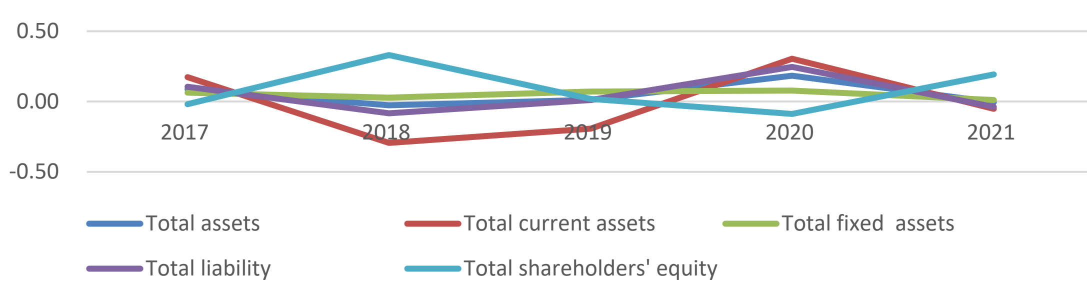

Figure 1. Each indicator growth rate from 2017 to 2021 (%)

Throughout the balance sheet and the growth rate of each indicator for the last five years, Pepsi Co had two negative growth in total assets in 2018 and 2021, the main is the decrease of current assets. During the same period, the total liability also has been negative growth of varying degrees. It reflects a reduction in liability leads to a decrease in total assets. Although the growth rate of other indicators is flat and stable, the growth rate of liability is still higher than total assets, it can be considered that this situation has brought some pressure to the company's financial risk control. Except in 2017 and 2020, total shareholders' equity has grown more than total assets most of the time, which shows that Pepsi's financial position is relatively stable.

The income statement is a statement that reflects the operating results of an enterprise within a certain accounting period. It reflects the source and composition of corporate profits, and can also be used to analyse the profitability of the enterprise and forecast the future cash flow of the enterprise.

Table 2. Income statement of Pepsi Co, Inc from 2017 to 2021 (million)

	2017	2018	2019	2020	2021
Net income	4,908	12,559	7,353	7,175	7,679
Revenue	63,525	64,661	67,161	70,372	79,474
COGS	28,796	29,381	30,132	31,797	37,075
SG&A	24,453	25,170	26,738	28,495	31,237
Interest expenses	4,694	-3,370	1,959	1,894	2,142

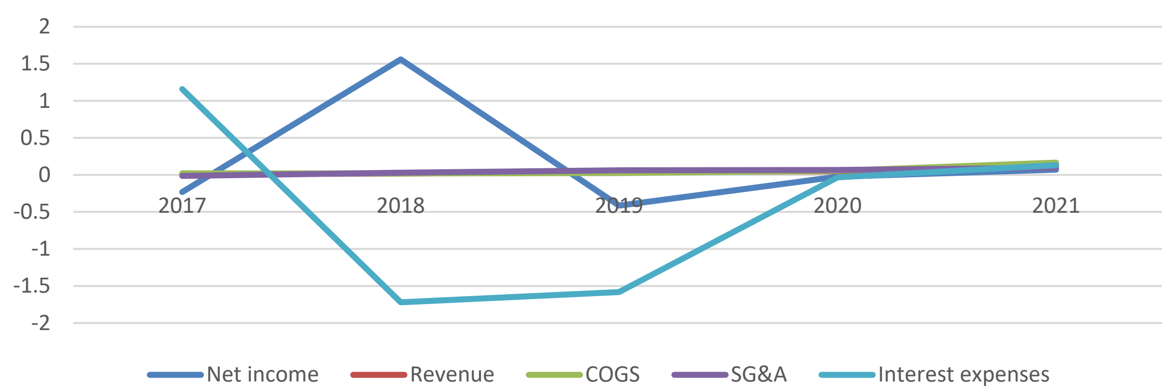

Figure 2. Each indicator growth rate from 2017 to 2021

As shown in Figure 2, there was a significant increase in net income in 2018 compared to 2017, which increased by 1.56%. However the growth of total operating income in 2018 is not obvious, it is due to a sharp rise in interest expenses. The performance of revenue in 2021 is mainly due to the improvement of net income and interest expenses. Over the past five years, net income growth has been slower than revenue, it is mainly caused by the quick growth of three expenses. In general, the company's financial situation is relatively stable, and there is no trend of increasing financial risks. However, Pepsi's net income growth rate is not very fast, so it should strengthen the management of the company.

3.2 Ratios analysis

The profitability ratios, activity ratios, liquidity ratios, and solvency ratios, can analyze the enterprise's ability to obtain profits, reflect the enterprise's capital turnover situation, and explain the enterprise's ability to repay short-term debt and long-term debt.

Table 3. Profitability ratios of Pepsi Co, Inc from 2017 to 2021

	2017	2018	2019	2020	2021
Net profit margin	0.077	0.194	0.109	0.102	0.097
Return on Assets	44.19%	98.52%	49.92%	50.42%	51.65%
Return on Equity	6.34%	15.90%	9.37%	8.30%	8.22%

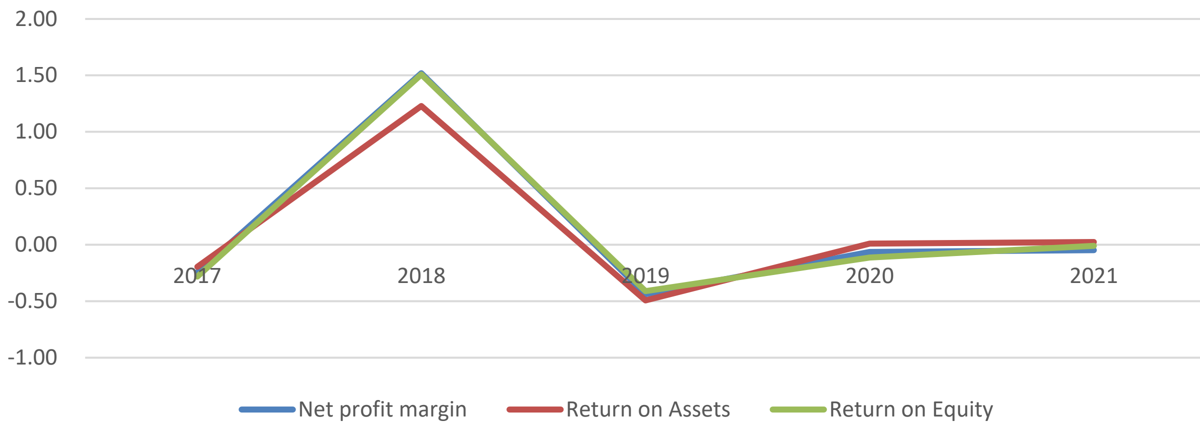

Figure 3. Profitability ratios growth rate from 2017 to 2021

The stronger the profitability of the enterprise, the higher the return to shareholders, and the greater the value of the enterprise. The net profit margin, ROA, and ROE showed a big leap from 2017 to 2018, with the index growth rate reaching 1.52, 1.23, and 1.51 respectively. Reviewing Table 1, it is not difficult to find that it is because of the substantial increase in net income in that year. This shows that the benefit created by unit sales, unit assets, and unit equity is increasing. In the following years, the above indicators declined slightly but generally remained at a stable level. It also reflects the state of weak growth.

Table 4. Activity ratios of Pepsi Co, Inc from 2017 to 2021 (time)

	2017	2018	2019	2020	2021
A/R turnover	9.26	9.13	8.98	8.67	9.30
Inv turnover	10.15	9.67	9.32	8.47	8.70

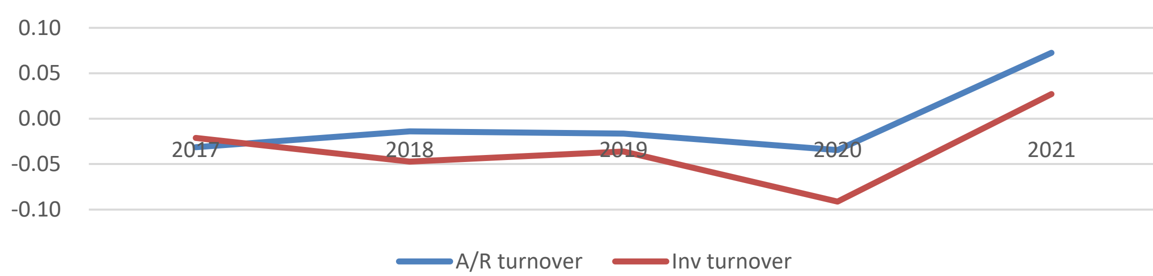

Figure 4. Activity ratios growth rate from 2017 to 2021

The account receivable turnover shows the flexibility of accounts receivable, and the inventory turnover shows the speed of selling inventory. In the four years before 2021, the A/R turnover and Inv turnover are negative growth, which shows that the recovery capacity of accounts receivable is poor, the amount used for inventory in working capital is gradually increasing, and the operating capacity is weak. However, the A/R turnover and Inv turnover are positive growth under the COVID-19 pandemic from 2020 to 2021, which shows Pepsi's strong ability to deal with systemic risk.

Table 5. Liability ratios of Pepsi Co, Inc from 2017 to 2021

	2017	2018	2019	2020	2021
Current ratio	1.51	0.99	0.86	0.98	0.83
Quick ratio	1.37	0.85	0.7	0.81	0.67

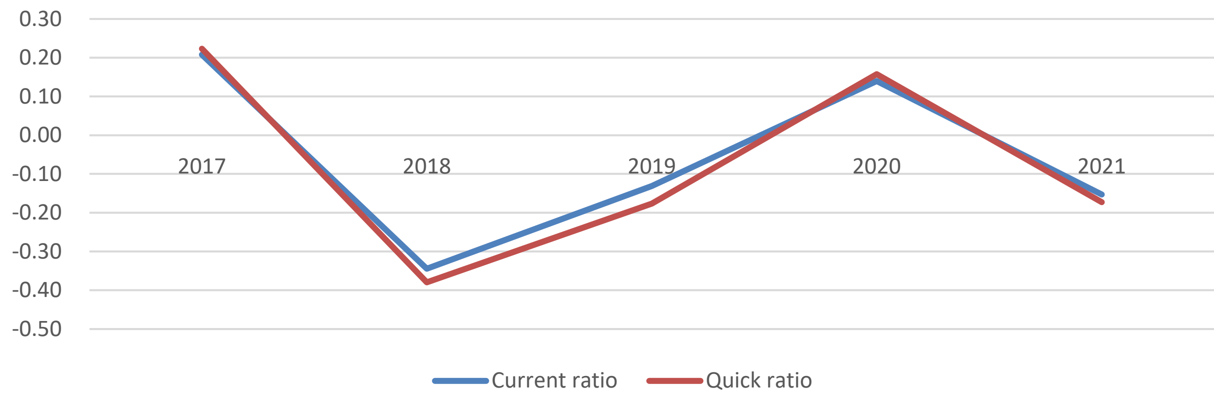

Figure 5. Liability ratios growth rate from 2017 to 2021

The Current Ratio is a measure of an enterprise's ability to pay off current liabilities by cashing in working capital, reflecting the enterprise's solvency in the short term. The quick ratio can be used to indicate the number of current assets with good liquidity to pay off recent liabilities. As can be seen from table 5, Pepsi Co's current ratio has been declining for nearly five years and began to fall below 1.5 in 2018, indicating that the risk of capital chain rupture is increasing. The quick ratio is also declining year by year, indicating that the short-term solvency of Pepsi Co is becoming weaker and weaker.

Table 6. Solvency ratios of Pepsi Co, Inc from 2017 to 2021

	2017	2018	2019	2020	2021
Debt to assets ratio	86.24%	81.19%	81.07%	85.42%	82.52%

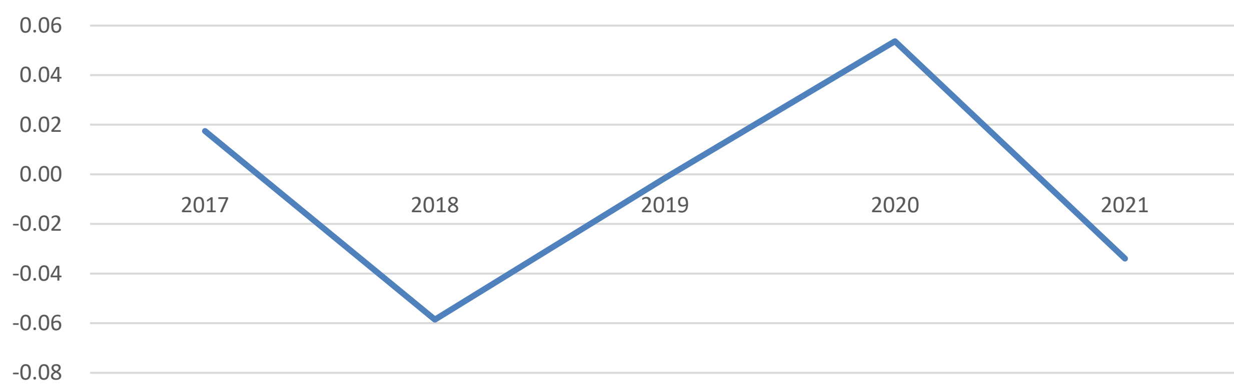

Figure 6. Solvency ratios growth rate from 2017 to 2021

The debt to assets ratio is an important indicator of the solvency ratio. It reflects how much of an enterprise's total assets are obtained by borrowing. It can be seen in table 6 that the debt to assets of Pepsi Co is much higher than 70%, reflecting the high financial risk and weak long-term solvency.

4. VALUATION

4.1 Valuation ratios

Valuation ratios usually select the average value of comparable companies and industries as the comparable benchmark to measure and evaluate whether the enterprise valuation is reasonable. This paper adopts the method of P/E, P/B, and PEG ratios to evaluate the investment value of Pepsi, Coca-Cola, and Nongfu spring companies.

The formula for P/E, P/B, and PEG ratios:

$$\text{P/E Ratio} = \frac{\text{Market Price per Share}}{\text{Earnings per Share}} \tag{9}$$

$$\text{P/B} = \frac{\text{Market Price per Share}}{\text{Book Value per Share}} \tag{10}$$

$$\text{PEG} = \frac{\text{Price/ Earnigs per Share}}{\text{EPS Growth}} \tag{11}$$

Table 7. Valuation ratios of Pepsi, Coca Cola, and industry average in 2021

	P/E	P/B	PEG
Pepsi	31.44	14.93	3.25
Coca Cola	28.32	12.03	1.08
Nongfu spring	53.73	18.55	11.84
Industry average	42.49	5.54	

According to the information in Table 7, in 2021, the P/E ratio of Pepsi is higher than that of Coca Cola and lower than the industry average, and the P/B ratio is higher than Coca Cola and the industry average, indicating that the long-term invest-able value of the Pepsi is relatively lower than that of Coca Cola and the industry average, and PEG is far greater than 1. Pepsi's value is now overestimated.

5. CONCLUSION

Therefore, based on the above discussion and evaluation, it can be proved that financial ratio analysis helps to analyse and understand the potential risks of an enterprise's financial position, liquidity, profitability, cash position, and solvency. According to the five-year financial analysis of Pepsi, its financial shape is more referential in the industry. The results demonstrate the efficacy of Pepsi's diversified portfolio, its flexible supply chain and market channel systems, and effective market execution amid the pandemic. Regarding profitability and liquidity, Pepsi's financial performance is reliable. Specifically, in terms of profitability and liquidity, Pepsi's financial performance is stable and reassuring. On the contrary, however, in terms of solvency, management is suggested to provide more concern on quick debt collection and asset conversion measurement. It would provide efficiency to operations while enhancing the profitability outlook in the long run. Although Pepsi Co's shares are overvalued, it's still a good company to watch for the long term.

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