

Coffee Industry Analysis Based on Indicators: Evidence from Starbucks, Luckin and Nestle S.A.

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Abstract. Coffee is a favorite beverage worldwide, and its unique ability to keep people awake and energized has dramatically increased the sales volume. Its high popularity has led to a considerable investment market. Therefore, whether the coffee industry is worth investing in and how to evaluate it has become one of the most critical research classes today. Based on previous investigations, most investment evaluations of the coffee industry have focused on companies in the same geographic area. However, there is a research gap in whether the international coffee industry is worth investing in. On this basis, this study will analyze whether the coffee industry is worth investing in by collecting data on stock prices and financial reports as well as calculate WACC values and compare them using the data. According to the analysis, the WACC values of all three companies selected are generally high, which means that the investment risk is high. It is indicated that the coffee industry is not worth investing in nowadays because of the high risk and high cost. These results shed light on guiding further exploration of how to do the right choice of investment in the coffee market.

Keywords: Coffee Industry, WACC, Invest.

1. Introduction

Coffee is one of the most popular drinks in the world, which is made from roasted coffee beans. The caffeine contained in coffee has a stimulating effect on humans and keeps people awake. There are two theories about the origin of coffee. The first origin comes from Kaldi, an Ethiopian shepherd in the ninth century, who discovered the stimulating effects of coffee when he noticed that his goats became excited after eating the beans of the coffee tree. However, since there is no direct evidence to prove the authenticity, it is mostly believed to be a legend or fabrication [1]. The second origin comes from an ancient chronicle, now preserved in the Abd-Al-Kadir manuscript, which attributes the discovery of coffee to Sheikh Omar. He drank the brown liquid produced by boiling coffee beans on his way to exile, and then rejuvenated [2]. In fact, the earliest reliable evidence of coffee consumption appears in the accounts of Ahmed al-Ghaffar of Yemen in the mid-15th century, in Arabia, where coffee beans were roasted in a near-modern model and the use was to keep awake [3].

After the 16th and 17th centuries, coffee was gradually introduced to the world through the maritime trade. As people rely more and more on the role of coffee, its commercial value is gradually increasing. From the 19th century to the 20th century, coffee ranked second in Third World commodity exports by value according to the 2022 United Nations Conference on Trade and Development Commodity Yearbook [4]. According to the USAID report, the coffee consumption is expected to increase in most countries, with the largest increases in the EU, the US and Japan. The commercial value of coffee is rising, and its research value is increasing. Scholars analyze how Starbucks has restructured from a value perspective in a retail model in Business Economics Research [5]. In the China market, other researchers analyze how the coffee industry can conduct more effective marketing strategies and provide quality services to consumers in the era of big data. The combination of "online" and "offline" to enhance business turnover [6]. In Modern Business, the research analyzes the difference between the marketing models of traditional coffee giant Starbucks and new retail representative Luckin [7]. Jiangsu Institute of Technology analyzes the advantages and problems of Luckin's development from the perspective of business risks and proposes corresponding risk

avoidance [8]. The authors in Business Watch analyze the emergence of some cross-industry competitors in the coffee industry (e.g., Sinopec) [9].

However, most of the studies analyze the business operation models of coffee companies located in the same country, and there are still a lot of gaps in the studies analyzing the international coffee industry. Therefore, three well-known coffee companies located in different countries were selected for this study, which are Starbucks, Luckin Coffee and Nestle S.A. This research used the financial reports data and stock price data from to calculate the WACC and determine whether the coffee industry is worth investing in. It can also predict the future performance of the coffee industry.

2. Data & Method

The data is retrieved from Yahoo finance and balance sheets. The metric used in this report is the weighted average cost of capital (WACC), which represents the average after-tax cost of capital of a company from all sources, including common stock, preferred stock, bonds, and other forms of debt. The WACC is the average rate at which a company expects to finance its assets. A high WACC value usually indicates that the risk associated with the company's operations is higher because the company is paying more for the capital investors put into the company. A low WACC value means that the company is not paying as much for the equity and debt used to grow the business. Such companies are usually more mature, larger, and safer to invest in because the company have demonstrated value to lenders and investors. By demonstrating long-term value, the company can raise capital at a lower cost [10]. The calculation formula used is $WACC = E/V \times Re + D/V \times Rd \times (1 - Tc)$. In the formula, re equal to cost of equity, which is the necessary rate of return for investors; Rd is means cost of debt. E is the market value of the firm's equity; D equal to the market value of the firm's debt; $V = E + D$ is the market value of the firm. E/V is equity as a percentage of total financing, capitalization ratio; D/V is debt as a percentage of total financing, gearing ratio. Tc equal to corporate tax rate [11].

Starbucks' market capitalization is \$114229.056 million, and the beta is 0.99 according to Yahoo Finance data. Starbucks' short-term debt and capital lease obligation for the fiscal quarter ending September 2022 were \$3170 million. As short-term debt, the paper uses the nearest two years average number, which is \$2709.95 million. Starbucks' long-term debt and capital lease obligation was \$20635 million in the third quarter of 2022 [12]. As for long-term debt, the author gets the number is \$20995 million. Starbucks' total stockholders' equity for the quarter ending September 2022 was \$-8,707 million [13]. Starbucks' debt-to-equity ratio for the fiscal quarter ending September 2022 was -2.73. Hence, the total book value of debt is \$23704.95 million, and the author can calculate 0.8281 as the weight of equity and 0.1719 as the weight of debt using the formula. To calculate the cost of equity, the report uses the US 10-year Treasury note, which has a risk-free rate of return of 3.689% and a market risk premium of 6% [14], so the equity cost is 9.629%. Then, one divides the last fiscal year's end Interest Expense by the most recent two-year average debt to calculate the cost of debt. Starbucks' interest expense was \$482.9 million, and the total book value of debt is \$23704.95 million (i.e., the cost of debt is 2.0371%) according to the annual report. The tax rate is 22% because its tax expense is divided by its pre-tax income. WACC is 8.25% based on the information available to the study.

Luckin Coffee's short-term debt and capital lease obligation for the quarter that ended in Jun. 2022 was \$104 million, and the Luckin 's long-term debt and capital lease obligation was \$230 million [15]. The report uses the most recent two-year average numbers as the debt, which is \$277.0679 million and \$ 274.6401 million. Therefore, the total book value of debt is \$551.7081 million [16]. Then, one can get 0.8802 as the weight of equity and 0.1198 as the weight of debt. To calculate the cost of equity, the paper use the U.S. 10 years Treasury Note which is at 3.944% as the risk-free rate of return, and the average of the S&P 500 at 9.944% as the expected return of the market, so the market risk premium is 6%. Therefore, the cost of equity is -0.796%. Then, this study uses the last fiscal year's end interest expense divided by the nearest two years average debt to get the cost of debt. From the

annual report, it is known that Luckin's interest expense was 5.6 million, and the total book value of debt was 551.7081million, so the cost of debt is 1.01%. For the tax rate, the research uses the same approach as before. Additionally, one gets the tax expense for the three months ended in Jun. 2022 was \$15 Mil, and Luckin Coffee's pretax income was \$-2 Mil. Therefore, Luckin coffee's tax rate it's set to 0%, because it is less than 0%. Based on the information the author had, WACC is -0.58%.

Nestle S.A. has a market capitalization of \$328020.000 million and a beta of 0.50, according to Yahoo Finance content. Nestle S.A.'s short-term debt and capital lease obligation was \$ 16012 million for the quarter that ended in June 2022 [17]. This study obtains the short-term debt is \$12243.2353 million. Nestle S.A.'s long-term debt and capital lease obligation was \$39674 million for the fiscal quarter that ended at the same time. Then, one calculates long-term debt using the same way, so the numerical is 35523.7910 million [18]. Nestle's Total Stockholders' Equity was \$45,814 million in the fiscal quarter that ended in June 2022. Nestle's debt to equity ratio for the quarter ending June 2022 was 1.22. So, if the total book value of debt is \$47767.0263 million, one can calculate the weight of equity to be 0.8729 and the weight of debt to be 0.1271. For the cost of equity, the paper uses the risk-free rate of return on a 10-year Treasury note in the United States, which is 1.1200%, and the market risk premium is 6%. As a result, the equity cost is 4.12%. From the annual report, the author know Nestle S.A.'s interest expense was \$1032.5733million, and the total book value of debt is \$47767.0263 million, so the cost of debt is 2.1617%. For the tax rate, one reaps the value is 22.545%. Based on the information the author had, WACC is 3.81%.



Figure 1. Starbucks 2 years stock price.

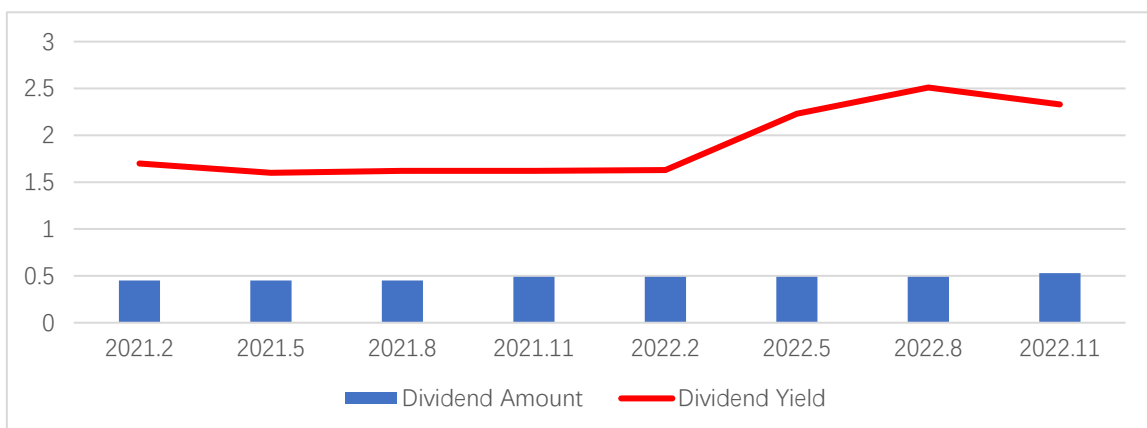


Figure 2. Dividend Amount and yield of Starbucks

3. Results & Discussion

3.1. The Starbucks

As shown in Fig. 1, the stock price shows Starbucks' stock price first on an upward trend, peaking in August 2021. Then, it starts to gradually decline, reaching a bottom in June 2022. After June, it is gradually recovering again. In summary, stock prices are more volatile. Based on Fig. 2, single stock dividends are relatively flat overall. Dividend yield was first relatively flat then trended upward and then recently trended downward. The summary is that it can be invested moderately. The debt to equity is -2.73 , because the equity is negative, this means that the owner's equity was negative, and the company's losses accrue over the original investment. This is generally seen as a sign of high risk and a motivation to possibly seek bankruptcy.

3.2. Luckin

Seen from Fig. 3, Luckin's price shows an overall upward trend, peaking at 19.080 in November 2022. There is a brief downward trend in February 2021, September 2021, and March 2022, with a trough in February 2021 at 5.690. Individual stock dividends, in general, show a fluctuating form, according to Fig. 4, with a dividend yield of 0. This indicates that the company is experiencing adverse economic conditions or financial difficulties. The debt-to-equity ratio was 0.33, which means that it is relatively safe, and the investment risk is low.

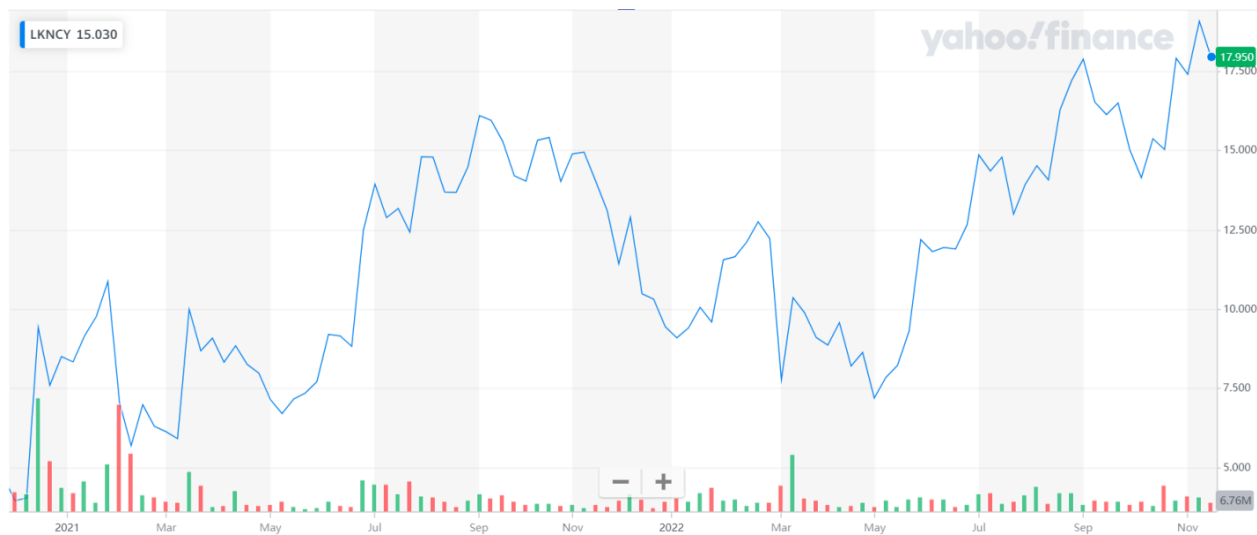


Figure 3. Luckin 2 years stock price

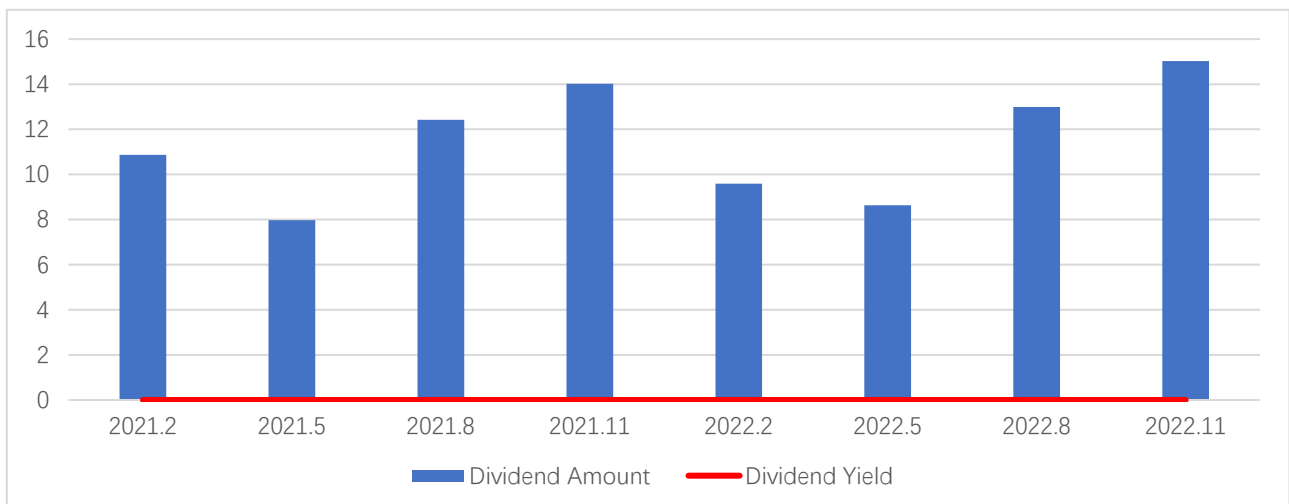


Figure 4. Dividend Amount and yield of Luckin

3.3. Nestle S.A.

Nestle S.A.'s stock price (seen from Fig. 5) shows an overall upward trend first, followed by a downward trend. The year 2021 shows an overall upward trend, with brief dips in January, September, and December. However, the maximum value of 140.37 was reached in January 2022. Subsequently, there was a downward trend, with only brief price recoveries in March, June, and October. According to Fig. 6, single-share dividends and dividend rates have stabilized after declining by a certain amount. The equity for the quarter was 1.22, and a D/E ratio less than one is considered relatively safe, whereas 1.22 indicates a certain level of risk.



Figure 5. Nestle S.A. 2 years stock price.

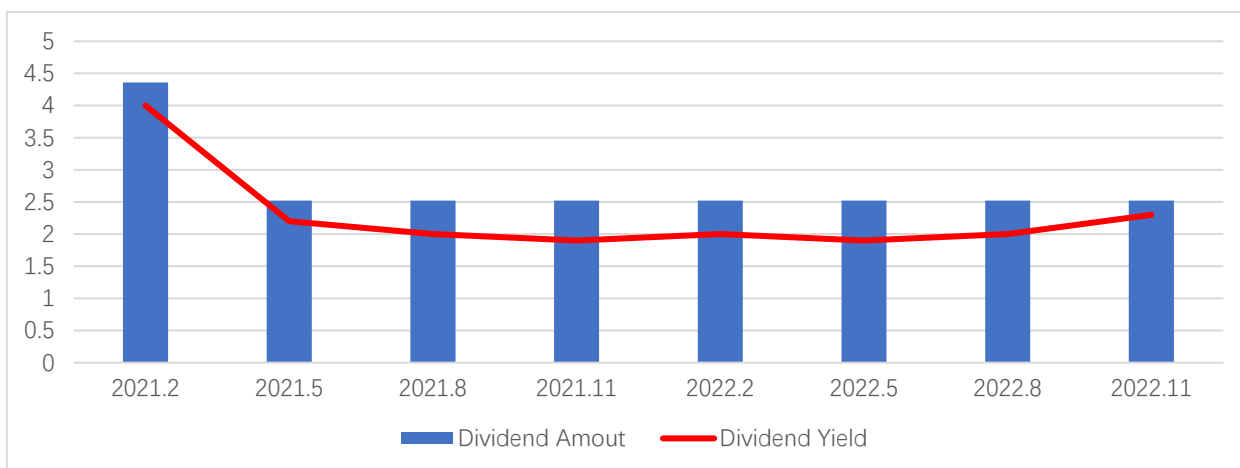


Figure 6. Dividend Amount and yield of Nestle S.A.

3.4. Comparison

As shown in Fig. 7, Starbucks' WACC is 8.25%, this value is higher, which means the risk of investing in Starbucks is higher. Luckin's WACC is -0.58%. Even though WACC is negative, it does not mean it is worth investing in. Since this negative value is ascribed to Luckin's negative earnings in the previous quarters, the company's WACC should be super high, which means that the company is probably in a huge economic crisis and not worth investing in. Nestle S. A's WACC is 3.81%, this is a relatively small value compared to the other two companies, which means that investing in Nestle S.A is less risky and more valuable. After analyzing and comparing the WACC values of the three companies the report can learn that if people want to invest in the three companies, Nestle S. A. has the lowest business risk, followed by Starbucks and then Luckin, which is also can be seen as the highest cost for Luckin to carry out financing.

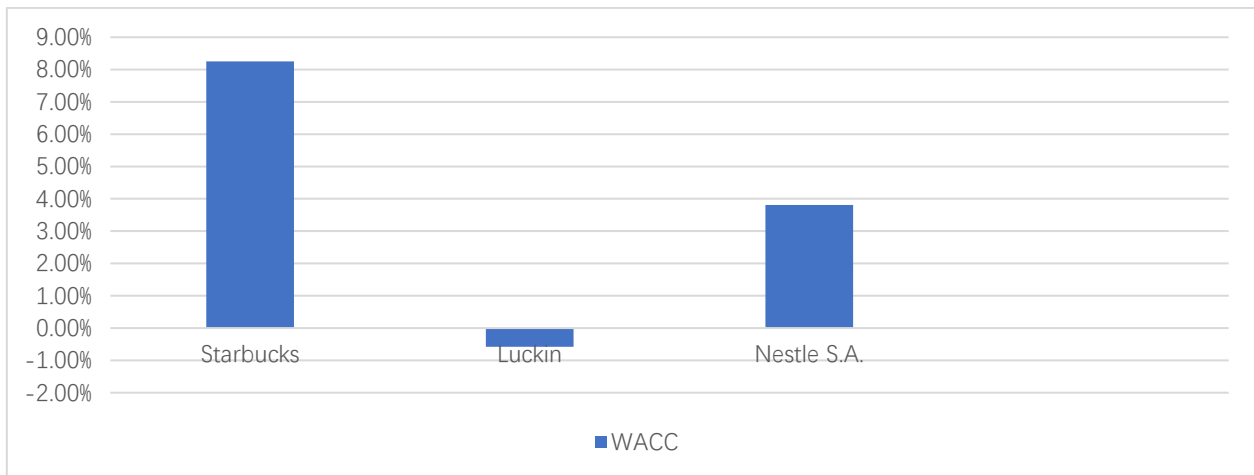


Figure 7. WACC of Starbucks, Luckin and Nestle S.A.

4. Suggestions

Starbucks was born with the introduction of boutique coffee in the United States, and its brand was positioned as a boutique coffee. With a quality product and a good reputation while expanding worldwide with a chain of coffee shops. More and more stores have made Starbucks a coffee industry giant, but such a large capital company has also exposed many problems under the impact of international expansion and COVID-19. In the wave of consumer upgrades in the coffee industry, Starbucks lags Bluebottle, Philz Coffee, and other anti-standardized boutique coffees. Moreover, at the lower end of the market, McDonald's and Dunkin launched low-priced coffee to steal many customers who originally belonged to Starbucks with price advantage. Furthermore, Starbucks does not have a delivery service in China, which means that customers can only buy coffee in-store or have it delivered from a third-party platform at a higher price. This drawback has also cost them many customers in China. The solution suggested by the author has three points. The first point is to improve the retail model promptly according to market conditions and add exclusive takeaway delivery services. The second point is to make timely modifications based on customer feedback, e.g., introducing more preferential membership programs, actively promoting the connection between online and offline physical stores, and making more marketing programs to attract more customers. The third point is to continue to adhere to the core concept of fine coffee and launch new products.

Luckin is now one of the most popular coffee brands in China, and its unique business model and marketing approach have enabled it to capture a large portion of the coffee market quickly. In terms of marketing, Luckin uses celebrity spokespersons and gives out coupons to new users. These users can get more coupons if they attract other new users, so the number of customers is rapidly increasing. In terms of business model, Luckin uses a combination of online and offline methods, which means that customers can order online and then pick up the goods offline or have them delivered directly to their homes. This convenient purchase mode also attracts most students and working people. However, because of the business scandal in 2020, Luckin Coffee exaggerated its sales revenue, which caused its stock price to plummet and trading to be suspended. On June 29, 2020, the company was delisted from NASDAQ. Although Luckin has since continued to operate with various programs and returned to NASDAQ, it has lost some of its customers' trustworthiness. Three suggested options are proposed. The first point is to continue their unique marketing program to attract customers with celebrity endorsements. The second point is to continue to innovate the product and introduce "memorable" drinks to win back the trust of the market and customers. Thirdly, expand the product range appropriately, such as introducing portable coffee machines or brand peripherals.

Nestle, founded in 1905, is now one of the world's largest publicly traded food companies, with its coffee brands ranging from the high-end line of Nespresso to the regular Nescafe. Nestle's distributor-dependent sales system and old sales system made it fall behind. This study gives two pieces of advice.

First, make strategic changes in time according to market conditions, such as abandoning some low-end businesses in a particular market and focusing on more profitable ones. Second, strengthen the launch of marketing strategies and make full use of the convenience of the Internet. For example, let the network influencer recommend goods and launch more promotional activities. However, because of the business scandal that broke in 2020, which is Luckin Coffee exaggerated its sales revenue, which caused its stock price to plummet and trading to be suspended. On June 29, 2020, the company was delisted from NASDAQ. Although Luckin has since continued to operate with various programs and returned to NASDAQ, it has lost some of its customers' trustworthiness. The author gives three suggested options. The first point is to continue their unique marketing program to attract customers with celebrity endorsements. The second point is to continue to innovate the product and introduce "memorable" drinks to win back the trust of the market and customers. Thirdly, expand the product range appropriately, such as introducing portable coffee machines or brand peripherals. Nestle, founded in 1905, is now one of the world's largest publicly traded food companies, with its coffee brands ranging from the high-end line of Nespresso to the regular Nescafe. Nestle's distributor-dependent sales system and old sales system made it fall behind. Two pieces of advice are given. First, it is necessary to make strategic changes in time according to market conditions, e.g., abandoning some low-end businesses in a certain market and focusing on more profitable ones. Second, it ought to strengthen the launch of marketing strategies and make full use of the convenience of the Internet. For example, let the network influencer to recommend goods and launch more promotional activities.

5. Limitations and prospects

The limitation of the study is selecting the indicator WACC and the company. The indicator WACC used in this study has some limitations. First, the ratio of the company's capital structure is not constant, and people are calculating it assuming a stable capital in the future, so there are limitations. The second point is that the equity returns values used in the WACC calculation are historical values, which means that future returns are assumed to be the same as historical, thus there is some numerical bias. The third point is that when calculating WACC, people assume that business risk remains constant over time, but risk changes with market movements. The limitation of company selection is reflected in the fact that Luckin Coffee, chosen by the author, is only relatively well known in the Chinese coffee industry but is less known in the world and does not serve as a typical representative of the coffee industry. In fact, it is very optimistic about the market prospects of the coffee industry. Although it is not a new industry, there is a market if there is demand. Moreover, there are countries where the mainstream drink is not coffee, so there is a vast market to explore.

6. Conclusion

In summary, this paper investigates the risks of investing in the international coffee market based on indicator analysis. According to the evaluations, it is found that the three selected coffee companies have high WACC values. Therefore, the coffee industry is not worth investing in right now. The current study fills the gap by comparing international coffee companies. Nevertheless, the limitations of WACC indicators make the current study still inadequate, and future studies should select more indicators to make improvements. These results offer a guideline for investors to consider whether the coffee industry is worth investing in from multiple perspectives.

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