Usage of Beta in Risk Analysis of Coffee Retailers: Study of Dutch bros and Starbucks

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Abstract. As a beverage favoured by consumers around the world, coffee and coffee market is developing rapidly. There are now many coffee retail companies running famous coffee brands, whose business mode and feature are worth analyzing. This article selects Dutch bros and Starbucks as example, and uses equity beta and asset beta to find out the state of business and risk of the two companies. The data shows that Dutch bros is more unpredictable with higher risk. On the other hand, Starbucks has a steady cash flow and return despite of high equity beta and unusual negative asset beta. The analysis also points out that fiscal data alone may be misleading while looking into a company, and other factors including stage of development and company policies shall be taken into consideration as well.

Keywords: Coffee brands; Starbucks; Dutch bros; equity beta; asset beta.

1. Introduction

Coffee is one of the most popular beverages worldwide which is especially popular among young generation. Number of coffee shops has kept rising for years. With this trend, some shops became big brands by opening chain stores and copying previous successful operating cases, and by doing that, the operators get extra premium on their products from the brand name. This article focusses on two coffee brands with different characteristics, Dutch bros and Starbucks. Starbucks is one of the most famous coffee brands around the world with more than 30000 shops in 80 markets, while Dutch bros is a less familiar name with a smaller scale. The two companies differ in stage of development and business model, but they are both pure players in coffee retailing with similar products, making them comparable to each other.

When analyzing risk of a company, equity beta and asset beta are both commonly used methods. By comparing the fluctuation of the stock price with that of the whole market, the risk of investing a certain stock can be estimated. Then investors can get rid of the impact of capital structure and tax shield to look into the risk of a company's asset. Asset beta is used to measure the performance of a company regardless of its debt, and can provide a way to better compare companies in the same industry that have different capital structure.

Murthy and Naidu have done a review on coffee industry and coffee market. Coffee is one of consumers' favourite beverages, and coffee market is the second largest in the world. Fresh coffee beans are planted in tropical areas, then traded to other countries after simple pretreatment. Then the semi-finished product goes through roasting and brewing. Roasting calls for utmost care and scientific method to produce a certain flavour, and that is why many coffee retailers choose to roast their own coffee beans [1]. Giovannucci's survey based on 9000 firms in the coffee industry showed that businesses ranked coffee quality and special taste as the most important factor in making business decisions. The survey pointed out that in coffee market certificate and ranking is more considered than price, which means market is receptive to premium. Among all players, retailers like Starbucks and Dutch Bros generally pay a higher premium [2]. Kim and Kim studied the chained coffee retailers pointed out that affective commitment is the major driver of customers' loyalty to a brand while calculative commitment does the contrary. Service quality and environment quality are prior for customers to consider rather than coffee quality itself. Customers' preference to emotional function of coffee shops makes big retailers put more emphasis on upgrading environment and service [3]. Susanty and Kenny's study showed that among coffee brands, there is a difference between global brand like Starbucks and local brands like Excelso and Dutch Bros. Generally, customers have a tendency to choose global brands for a need of identification. The prestige of big brands gives companies like Starbucks an obvious competitive advantage. Meanwhile, brand identification has less contribution to the selling and customer loyalty of local coffee shops [4].

Geereddy's analysis on the strategy of Starbucks explained that Starbucks' strategy is to focus on premium products, and target high-visibility locations for their stores, which makes it hard for competitors to imitate. However, Starbucks is also facing the risk of self-cannibalization because of high store density in the US. To avoid such risk, a better choice is to raise penetration in emerging markets and other untapped areas [5]. Haskova done another research on Starbucks' marketing. Starbucks coffee has already taken a high market share, along with little future growth. Its marketing strategy of promoting interaction with customers makes its investment more price-worthy, and avoids spending money on aimless advertisements [6]. For drive-thru mode, Schau and Gilly's research on drive-thru restaurants found that process efficiency is the most prior to consider, as well as good management of car flow. Unlike dine-in restaurants, the queue in front of a drive-thru encounter is of fixed order, so quick service is essential to avoid blocking up and shorten average waiting time [7].

Allon et al. studied marketing of coffee retailers. Consumers tend to assign a high value for their waiting time in fast food stores. All retailers are putting great effort in cutting off customers' waiting time to ensure customer satisfaction. Generally, for big brands, reducing the same amount of waiting time brings more benefit, reflecting in higher increase of market shares [8]. Gumbelevičienė looked into digital marketing, and found a tendency for coffee companies to introduce digital marketing into their business strategy, which includes digital payment, online advertising, launching apps and websites. Search engines and social media software like Facebook are also ideal places to build up brand reputation. Coffee retailers are using mobile marketing to attract new customers and build brand loyalty more and more [9]. Castellana focused on the impact of COVID-19, which is worth mentioning in the analysis of coffee retailers. A survey found out that there is no obvious change of overall coffee consumption, but many coffee lovers turn to consuming coffee at home. For coffee shops, lock down policies and decrease of income had a negative impact of their sales, which is a predicament to overcome [10].

2. Method and Data

2.1 Listed companies

Starbucks:

Starbucks is one of the biggest and most famous coffee brands connecting with over 32000 stores in 82 markets around the world. The company went public in NASDAQ at 1992, and has been publicly traded in the US stock market. Starbucks target on high-end beverage and food. Besides coffee shops, it also produces bottled, ready-to-drink coffee sold in supermarkets.

Dutch bros:

Dutch bros were funded in 1992 and went public in 2021. In 2022, it was reported owning 538 stores in 11 US states. Dutch bros provide drive-thru service only, which means customers get their product ordered without getting off their cars. Products of this brand include coffee, energy drink, tea and smoothies.

2.2 Method

Equity beta:

$$\text{Equity beta} = \mathrm{Cov}(r_a, r_m)/\sigma_m^2 \tag{1}$$

Where $\mathrm{Cov}(r_a, r_m)$ stands for the covariance of stock return and market return; σ_m^2 stands for variance of market return. The most commonly used time span is 5Y1M, which means using data in the past 5 years, with time interval of 1 month. However, since Dutch bros was not a public traded company since September, 2021, the data used in this article will start form October, 2021.

Equity beta shows to what extent does the price of a certain stock change because of market fluctuations. A higher beta means the stock price changes more fiercely when the whole market goes up or down. On the contrary, a lower beta means the stock price tend to be stable regardless of market factors. Equity beta reveals business risk and financial risk at the same time.

Asset beta:

$$\text{Asset beta} = \text{Equity beta}/(1+(1-T)*D/E) \quad (2)$$

Where T stands for marginal tax rate of a company, D stands for market value of the company's debt, and E stands for market value of the company's equity.

Asset beta is an unlevered beta, and it assumes that the company has no debt holders, but only equity holders. Compared to equity beta, it eliminates the effect of the debt and equity structure, thus focusing on business risk only. Asset beta is used to compare the risk of an unlevered company with the risk of the whole market.

For investors, beta can be used to estimate the risk in purchasing and holding the stock of a certain company, and can serve as a guidance in decision making. In this article, the equity beta and asset beta of both Starbucks and Dutch bros will be calculated based on publicly released data. A further analysis of the beta of both companies will be made and several possible leading reasons will be given after the analysis.

3. Calculation

3.1 Equity beta

The author collects the adjusted close stock price of Starbucks and Dutch bros of the first day of a month since October, 2021, then calculates the growth rate of stock price each month to get r_a of each company. To estimate the market return, the fluctuation of S&P 500 is used. Monthly data is also collected and the growth rate, which is r_m, is calculated. the original data is listed in the table. Equity beta is the covariance of monthly stock return and market return divided by the variance of market return. For Dutch bros, the equity beta is 1.28, and for Starbucks it is 1.15.

Table 1. Original Data.

Date	Dutch bros	Starbucks	S&P 500
2021/11/1	-30.69%	3.36%	-0.83%
2021/12/1	-3.65%	7.14%	4.36%
2022/1/1	2.44%	-15.94%	-5.26%
2022/2/1	-7.56%	-6.65%	-3.14%
2022/3/1	14.64%	-0.39%	3.58%
2022/4/1	-13.57%	-17.95%	-8.80%
2022/5/1	-21.39%	5.17%	0.01%
2022/6/1	-15.71%	-2.00%	-8.39%
2022/7/1	18.45%	10.98%	9.11%
2022/8/1	-2.64%	-0.84%	-4.24%
2022/9/1	-6.41%	9.24%	-2.06%

3.2 Asset beta

Asset beta is then calculated based on equity beta using formula (2). Dutch bros reported debt of \$343.51 million and equity of \$210.19 million, while Starbucks reported debt of \$36707.1 million and a deficit of \$5314.5 million in 2021. From the annual report of the two companies, marginal tax rate is 21% and 21.6% respectively. Based on the numbers shown, the asset beta of Dutch bros and Starbucks is 0.56 and -0.26.

4. Discussion

4.1 Equity beta

For both Dutch bros and Starbucks, equity beta is higher than 1, which means the levered risk of the two companies are higher than the market average. However, through a more in-depth analysis of the managing, marketing and capital structure of the two companies, it can be found that the leading causes of their high risk are different.

For Dutch bros, the possible main reason is uncertain net income and cash flow. The company is just starting to expand rapidly with the help of capital market. In 2021, it reported to have opened 71 new stores, which is a large number compared to 370 existing stores in the end of 2020. With new stores setting up, all kinds of cost, from renovation to raw material and labour cost, as well as depreciation of fixed asset are getting higher. At the same time, same shop sales growth varied from 2% to 8% during 2018 to 2020, the relatively low number indicates that revenue growth is expected to come mostly from new shops. However, sales of new shops are usually unpredictable, and in many cases new shops go through a period of deficit at the very beginning. In the 2021, the company reported a net loss of 120 million dollars. Despite that, it reported a plan to open more shops in the next fiscal year. Since the company is not likely to get the money needed for carrying out this plan from net revenue, it faces the choice of raising new debt or issuing new stock shares. In 2021, a significant rise in revolving debt can be seen in the annual report. Such trend is likely to continue in the near future to cover the need for capital, which raises the company's leverage, increasing risk in capital structure and free cash flow.

For Starbucks, the leading reason is the unusual leverage of the company. Debt of Starbucks remained stable in the past few years on a reasonable level. However, from 2019 to 2021, the company reported a negative total shareholders' equity for three consecutive years. One of the reasons is Starbucks' cash dividend and stock repurchase strategy. The company maintained the frequency of paying dividend 4 times a year since 2010, and dividend on each share grew from 0.05 to 0.49. In 2018 the company landed an accelerated stock repurchase plan using up to 25 billion dollars by which the company intended to give feedback to its stock holders. In the same period, the debt-to-equity ratio raised to over 100%. Besides that, there are negative factors in the operation of Starbucks which increase the company's risk. COVID-19 pandemic had a large impact on Starbucks, decreasing guest flow and sales. In 2020, it announced to close more than 400 shops, and continued decreasing number of shops in the next few years. These factors can cause the stock price to be more unstable.

4.2 Asset beta

When calculating asset beta, analysts peel off the impact of capital structure to get a better insight of the risk caused by the marketing and operating of a certain company. In most cases, companies in the same field have similar asset beta, since their raw materials, daily operating and final products are alike. However, in this case, the two companies' asset beta different largely from each other, despite that they are all coffee retailers.

Dutch bros show a relatively high asset beta of 0.56 compared with other coffee retailers, which is likely to has relationship with its less common business model and radical expanding strategy. When ignoring the impact of capital structure, the company still has other potential risks. Unlike most of its competitors, the company operates drive-thru shops only, and does not have any plan to transform its business model. To open a new drive-thru shop, the company has to build its own building with lanes around, making initial investment higher. Compared with renting stores in business buildings, such business model also indicates that the company has a large amount of fixed assets without good liquidity as well as high depreciation, and may suffer from big loss because of possible mistake in address selection.

In addition, drive-thru shops are not very popular in areas other than Western US. Currently all of Dutch bros' shops are along the west coast. However, when trying to open new markets, the company may meet difficulties since consumers in other markets are not that used to visit drive-thru shops.

Starbucks has a peculiar asset beta, which is a negative number. If inferred from the definition of asset beta, it should mean that when ignoring capital structure, the company's performance tends to be opposite to the trend of the whole market. This situation is still mainly caused by Starbucks' insolvency. It is worth mentioning that despite of its net deficit, the sales and revenue is steadily growing with the speed of around 10% annually. For net profit, in 2020 there was a large decrease because of the pandemic, but it soon came back and continued to grow. So, the unusual data does not point to bad or abnormal operation. In addition, both stock repurchase and cash dividend benefit stock investors. Considering these factors, Starbucks is still a company that worth investing and may give a good return. There are a lot of noises in estimating beta, other factors like growth option and growing space should also be taken into consideration.[11] The risk and potential return of investment may be misjudged if only looking at beta and other fiscal ratios related to equity.

5. Conclusion

In this article the author calculated the equity beta and asset beta of two companies running chained coffee brands, Dutch bros and Starbucks. A comparison between the two companies was made, as well as an analysis of the underlying causes of data characteristics. In the case of Dutch bros, which is a new comer in stock market, the relatively higher beta points out that it fluctuates more fiercely compared to the whole market. Reasons was discussed in the former discussion part. The author discussed possible leading causes, including uncertain future income and cash flow, less common business model and radical expanding strategy. In this case, equity beta and asset beta reveal the risk of the company, and can remind investors of the potential risk when purchasing stock or making other kinds of investment.

In another case of Starbucks, it turns out that beta does not fully reveal the asset risk and the state of operation of the company. Starbucks has sent negative signals in its managing and operating, for example, shutting shops because of the pandemic. However, its sales revenue and net income still remained a tendency of steady growth in the past few years. As a matured company, Starbucks accelerated its plan of giving back to the shareholders through huge cash dividend and stock repurchase, which made an insolvency on the balance sheet. Investors may neglect part of the potential reward in investing the company if only looking at beta. This case warns that there are times when fiscal ratios including equity beta and asset beta cannot fully show the true picture of a company, and so data analysis should be combined with research of the company's stage of development, managing, operation and other policies.

Besides the findings, there are shortcomings of this research that need to be covered in future researches. This article focusses only on two companies, so that the findings may not be universal and does not fully exhibit the common characteristics when analyzing the whole coffee retail industry.

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