Investment Analysis of Wine Industry Based on Indicators: Evidence from MOUTAI, WULIANGYE and LUZHOU LAOJIAO

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Abstract. The wine industry of China has entered the fourth cycle, which means it enters the fourth round of boom with the rise of mass consumption. At the same time, the industry brand and high-end become the trend. Contemporarily, the revenue growth of wine industry has basically stagnated after rapid growth, but high-end liquor still shows vigorous growth. Focusing on the data of Kweichow Moutai, Wuliangye and Luzhou Laojiao, this paper analyzes and evaluates the risk indexes of the three high-end wine brands through liquidity, profitability, and beta. In addition, the investment suggestions are proposed in terms of the evaluations. According to the analysis, it is concluded that Moutai's financial risk, liquidity risk and operational risk are the lowest, but the other two companies still have high investment value. Moutai is suitable for stable investors and balanced investors, Luzhou Laojiao is appropriate for short-term investors due to the remarkable growth rate in recent years, and Wuliangye will be favorable for long-term investors due to the high potential. This study analyzes high-end wine brands and these results shed light on finding investment targets suitable for their risk appetite.

Keywords: Wine Industry, Kweichow Moutai, Wuliangye, Luzhou Laojiao.

1. Introduction

China's wine industry has gone through three full cycles so far and has entered the fourth cycle right now [1]. The first cycle was from 1949 to 1992 when China's production level was backward, the overall material shortage in society, and material consumption was mainly determined by supply. Therefore, wine was in the seller's market, and production capacity was the key points. The first cycle ended in 1989 with the government's regulation of economic overheating (tightening monetary policy, limiting government consumption, etc.). The second cycle is from 1993 to 2002, the wine industry has entered a boom period again after three years of adjustment. Meanwhile, since the 90s, the supply of the wine industry has gradually kept up with demand, the seller's market has transitioned to a buyer's market. Besides, the driving factors of production capacity have weakened, replaced by advertising and marketing. With the outbreak of the Asian financial crisis in 1997 that had an impact on the domestic economy, and the introduction of a series of wine industry policies to restrict government consumption, the second cycle of the wine industry gradually ended [2]. The third cycle is from 2003 to 2015, as of the end of the 90s, the wine industry has formally established the buyer's market after nearly 20 years of capacity expansion, entering the era of channel competition and terminal victory. With the shift in China's economic growth since 2012, and the introduction of a series of policies (e.g., eight regulations and six prohibitions by the state to control "three public consumption") superimposed on the plasticizer incident. Mao Wu's 449-million-yuan vertical anti-monopoly fine, the wine industry has entered a period of deep adjustment. The fourth cycle is from 2015 to the present, with the rise of mass consumption, the industry has entered the fourth round of prosperity. In the meantime, industry branding and high-end have become a trend, and Moutai is also firmly in the leading position in the industry driven by strong brand power [3].

Since 2005, the income level and consumption power of Chinese residents have increased rapidly, political and business activities have increased, the demand for wine consumption has expanded rapidly, and the industry has shown a pattern of supply and demand, and by 2012, the output of wine reached 11.5316 million kiloliters, with a compound annual growth rate of 17.77% [4]. After 2016,

wine enterprises actively adjusted their business strategies, eliminated backward production capacity, digested backlogged inventory, and the overall output of the industry continued to decline [5]. Driven by consumption upgrades, demand shifts to individual and household consumption, and the stock competition pattern has led to a rapid increase in market share concentration. To be specific, the number of wine enterprises above designated size has begun to decline since peaking in 2017, and the number of wine enterprises above designated size in 2019 was only 1,176, a decrease of 269 month-on-month.

Although the production and sales of wine enterprises above designated size in China have continued to decline since 2016, sales revenue has not declined significantly. In addition, the growth rate of sales revenue of wine enterprises above designated size in 2019 turned positive year-on-year, reflecting the obvious trend of consumption upgrading manifested by the increase in the price of tons of wine. Moreover, the total profit of wine enterprises above designated size has been rising since the year-on-year growth rate turned positive since 2015, indicating that the industry has shown a benign development under the existing competition pattern. From 2014 to 2019, the revenue growth of wine enterprises above designated size basically stagnated, with a compound growth rate of 1.33%, but the total profit grew rapidly, with a compound growth rate of 14.98% in the same period.

From the perspective of the past 5 years, the overall revenue growth rate of the wine industry is basically stagnant. The wine industry is by no means a high-growth industry, but high-end wine can still maintain a growth rate of about 10%. In other words, the main growth point of the wine industry is high-end wine. In the past 5 years, the profits of wine companies have maintained good growth, with a growth rate of about 15-40%, mainly due to the increase in sales of high-end wines, which has increased the overall gross profit of the industry.

As a matter of fact, the three major brands of high-end wine in China are Kweichow Moutai, Wuliangye and Luzhou Laojiao, and this paper will carefully analyze and value these three wine companies in China [6]. The rest part of the paper is organized as follows. The Sec. 2 will describe the data used in this paper. The Sec. 3 will analyze the three companies in terms of liquidity, profitability and bate. The Sec. 4 will give some investment suggestions. The Sec.5 will expatiate the deficiency of this article and the future prospect. And the Sec.6 will make a conclusion.

2. Data & Method

2.1. Data

As mentioned above, this paper chose Kweichow Moutai, Wuliangye and Luzhou Laojiao as the investigation target. To retrieve the data, yahoo finance, Wind financial data terminal, Kweichow Maotai, Wuliangye & Luzhoulaojiao official websites and Qichacha website are utilized. In addition, the Annual reports from second quarter for 2022 are also collected.

2.2. Indicators

The current ratio is the ratio of a business's current assets to current liabilities. The fomula is Current ratio=Current assets / Current liabilities. The quick ratio is the ratio of a business's quick assets to current liabilities, which can be obtained as Quick ratio=Quick assets / current liabilities. Both reflect the short-term solvency of the enterprise. The higher the ratio, the stronger the liquidity of the enterprise's assets, the stronger the short-term solvency, and vice versa. Generally speaking, it is as follows: CR<1 and QR<0.5 have poor liquidity, CR>2 and QR>1 have good liquidity. Operating leverage refers to the law that the rate of change in EBIT is greater than the rate of change in production and sales due to the existence of fixed costs in the production and operation of enterprises. The fomula is DOL=Q(P-V)/[Q(P-V)-F]. Reflect the degree of the role of business leverage, estimate the size of the benefit of business leverage, and evaluate the level of business risk. The higher the operating leverage, the greater the operating leverage rate and the higher the business letter. Days AR outstanding is the ratio of the main business cost to the average inventory balance of an enterprise in a certain period. It is one of the important indicators of enterprise operation capacity analysis, the

higher the inventory turnover rate, the stronger the liquidity of inventory assets, the faster the turnover of inventory and the capital occupied inventory. The β is a risk index that is used to quantify the fluctuations of individual investment instruments relative to the entire market, separating the price changes caused by individual risks from the fluctuations of the entire market, the higher the beta value, the greater the potential risk, and the higher the investment return. Conversely, the lower the beta value of a security, the less risk it is and the lower the return on investment. WACC is a method of calculating the cost of capital of a company based on the weighted average of the weights of various types of capital to the total capital source, which can be calculated as WACC=(E/V)×Re+(D/V)×Rd×(1-Tc). ROE is an indicator used to evaluate a company's profitability. The formula: ROE=Net income/ Total equity. The higher the investment, the higher the return. ROA is used to measure how much net profit is created per unit of assets. The fomula: ROA=Net income/Total assets. The higher the value, the better the use of enterprise assets, indicating that the enterprise has achieved good results in increasing income and saving the use of funds. Gross profit margin is gross profit as a percentage of sales revenue, which can be derived as Gross profit margin=Gross profit/Sales revenue. The higher the cost of sales, the smaller the proportion of the company's net sales revenue, and the higher the operating profit under the condition that the expenses and other business profits are certain during the period. Net profit margin is the ratio of a company's total profit to net sales revenue, where the expresion is Net profit margin=(net profit/sales revenue)×100%. Net profit margin is an indicator that measures the income level of a company's sales revenue. The higher the sales margin, the higher sales revenue. EPS refers to the ratio of after-tax profit to total equity, the higher the profit created. The fomula: EPS=Net income/ Shares outstanding.

3. Results & Discussion

3.1. Liquidity

Through the current and quick ratios, each company's short-term solvency could be reflected, which could analyze three companies' financial risk. In addition, days AR outstanding can reflect each company's operating risk. Moutai and Wuliangye both had current and quick ratios greater than 4, which significantly higher than Luzhou Laojiao's. It indicates that Moutai and Wuliangye had more sufficient cash to cover short term payables, and their liquid assets can be converted into cash more quickly. There are various reasons for this situation above. First of all, in terms of both brand value and the collector's value of products, Moutai and Wuliangye are higher than Luzhou Laojiao. Particularly, Moutai is generally considered to be the most collectible Chinese wine owing to its complex and special brewing process, which takes longer time, as well as being a World Intangible Cultural Heritage [7]. Therefore, Moutai is not only a high-end wine, but also a collection of financial attributes. Consequently, Moutai has strongest demand in the market among these three companies.

Moreover, Moutai always produces in limited quantities to ensure the high quality of its products. In other words, Moutai often practices supply falls short of demand. However, Wuliangye's strategy is to set production by sales, which basically meets the market demand, while Luzhou Laojiao has an overcapacity problem [8]. Hence, Moutai's wine is more obviously in short supply in the market. Therefore, as an ultra-high-end wine enterprise, Moutai has high inventory value, fast sales speed and rich cash flow. As a result, the current assets of the enterprise have a high degree of guarantee for the repayment of short-term liabilities, and the short-term solvency is strong. It is also worth mentioning that Moutai has a famous wine derivative product, wine ice cream, whose marketing has been successful as well. However, Wuliangye and Luzhou Laojiao do not have any derivative products. Hence, the successful sales of derivative products also brought in more cash flow for Moutai.

According to Table. 1, it could also be realized that Moutai and Luzhou Laojiao had lower accounts receivable turnover days than Wuliangye dramatically, indicating that Wuliangye had higher bad debt risk and operational risk significantly. The reason for this is that compared to Moutai and Luzhou Laojiao, Wuliangye has a large number of wine series and branches. Specifically, Moutai and Luzhou Laojiao have 9 and 8 series respectively, but Wuliangye has 12 series. On this basis, because of the

serious COVID-19 pandemic in the past two years, Wuliangye might have intentionally enlarged more credit support to some difficult distributors and branches, thus bringing about an increase in accounts receivable, which would affect its solvency and then raise its risk level.

Overall, it is commonly believed that companies with strong short-term solvency are less prone to financial risk, and are more favored by investors, especially conservative ones. Therefore, under the liquidity analysis, Moutai was reckoned to be the company with stronger short-term solvency and operational condition, so that it faced to lowest financial risk among three companies.

Table 1. Some liquidity data of Moutai, Wuliangye and Luzhou Laojiao

	WULIANGYE	MOUTAI	LUZHOULAOJIAO
CR	4.77	4.95	1.68
QR	4.26	4.1	2.42
Days AR Outstanding (day)	107.62	0	0.03

3.2. Profitability

It is clearly to see that Maotai's gross margin is the highest among these three companies, reaching about 92%, and the main reason is the high price. To be specific, only thirty percent of Maotai wine flows into the market for sale every year, so the low quantity and high demand leads to the price increase of Maotai. Furthermore, Maotai owns a stronger monopoly than other companies ascibed to its brand advantage and special status. The reason is that Maotai has been used in China's special supply and diplomatic fields for a long time, therefore has gained a historical accumulation of brand reputation. As a result, Maotai has a very high pricing power in the whole baijiu market, which allows it to obtain most of the profits in the industry. On top of that, Maotai uses a digital marketing platform called imaotai, which provides a new sales growth point for the company and therefore increases the company’s operating income [9].

To sum up, these reasons make the stock price of Maotai rises higher and higher and then its profitability is therefore stronger than others. As shown in Table. 2, it can also be found that Luzhou Laojiao's ROE is higher than the other two companies mainly because of its higher equity multiplier that is 1.55. On account of the fact that Luzhou Laojiao, it has been established for a shorter period of time and has smaller total assets compared to the other two companies. For example, Luzhou Laojiao’s total assets are about 45 billion CNY, whereas the total assets of other two companies both reach hundreds of billions CNY. Therefore, Luzhou Laojiao needs external financing to generate higher corporate earnings, but that also brings more financial risks.

In terms of net profit margin, Wuliangye has a lower value for 38.45% due to its large credit impairment loss, close to 4 million CNY. The reason for this is that the dealers are too aggressive and therefore the company is unable to manage its accounts receivable well. For example, in these two years under the COVID-19, Wuliangye intentionally enlarged the dealers' acceptances and gave some credit support to some relatively difficult dealers, which brought about the increase of accounts receivable. In conclusion, Maotai’s profitability performs better than the other two companies, which is conducive to promoting the sustainable and stable development of the enterprise, and therefore the financial risk and investment risk are less.

Table 2. Some profitability data of Moutai, Wuliangye and Luzhou Laojiao

	MOUTAI	WULIANGYE	LUZHOULAOJIAO
gross profit margin	92.11%	76.92%	85.92%
net profit margin	53.99%	38.45%	47.79%
ROA	16.55%	16.42%	15.07%
ROE	14.57%	14.43%	17.96%
EPS	23.72	3.89	3.76
PE ratio	37.24	25.96	31.54

3.3. The β & WACC

According to Table 3, it is easy to find that the beta and WACC of Moutai are lower than Wuliangye and Luzhou Laojiao. Since none of these three companies has debts, the 3 companies' WACC only receives β effects, which are directly proportional. Therefore analyzing why the β of Moutai is lower than that of Wuliangye and Luzhou Laojiao is meaningful.

Table 3. βE & WACC of Moutai, Wuliangye and Luzhou Laojiao

	MOUTAI	WULIANGYE	LUZHOU LAOJIAO
r_m	24.88%	24.88%	24.88%
r_f	1.78%	1.78%	1.78%
β_E	1.2	1.86	1.8
β_A	1.2	1.86	1.8
WACC	29.50%	44.75%	43.36%

There are two main reasons that Moutai can "through revenue periodicity". Primarily, because the older the wine, the better, which can help Moutai avoid the influence of the revenue periodicity partly. In addition, China's wine industry is almost fixed production based on sales, except for a kind of Feitian Moutai. Although wine is not "expired", overmuch occupied funds is not good. Kweichow Moutai wine sales are not far ahead, but Moutai is not hunger marketing but short supply, and the other two are not, so Moutai has relatively pricing power for high-end wine [10]. Moreover, with the stability of its demand and the characteristics of light luxury, Moutai can adjusts its business income, which can help Moutai through the cycle. Thus, Moutai can control the fluctuation range of its stock price to a certain extent, and the stock price is relatively stable.

The second factor is operating leverage. According to Table 4, the operating leverages of these three companies are 1.00, 1 03 and 1.01, respectively. The difference is not too big, but Moutai is still the lowest, that is, Moutai has the least operational risk. The first reason is that Moutai has a high degree of brand recognition [11]. Kweichow Moutai was once personally ordered as the national drink by Premier Zhou Enlai, so it has a high brand recognition in public. Kweichow Moutai, Wuliangye and Luzhou Laojiao are the main producers of high-end wine in China and brand power is the core competitiveness of high-end wine, but Wuliangye, the first echelon of the wine industry, has a large number of developed brands. There are many types and various names, which weakens the core brand power of Wuliangye. As an emerging high-end wine brand, Luzhou Laojiao has invested a lot of money in brand building, but its brand power is still inferior to the first two. The second reason is that Moutai pays more attention to intellectual property protection. According to Table 5, Moutai has the largest number of public invention patents. Doing a good job in patent protection is conducive to the innovation and development of enterprises, weakening the harm caused by unfair competition and reducing enterprise risks [12].

To sum up, relative pricing power of high-end wine and stable demand are the ingredient that make Moutai less affected by revenue periodicity. Moutai faces less operational risk because it has a much stronger brand identity than other baijiu brands and pays more attention to intellectual property protection. Based on the above two reasons and the previous analysis of liquidity and profitability, Moutai's solvency risk, profitability risk and operational risk are the lowest of the three companies. Hence, Moutai has smallest beta value.

Table 4. Operating leverage of Moutai, Wuliangye and Luzhou Laojiao

	MOUTAI	WULIANGYE	LUZHOU LAOJIAO
sales revenue	57563248884	38512739436	11549327272
variable cost	4472317869	8592448160	232951569.8
fixed cost	123080608.2	921857586.2	135902902
operating leverage	1.00	1.03	1.01

Table 5. The number of public invention patents of Moutai, Wuliangye and Luzhou Laojiao

	MOUTAI	WULIANGYE	LUZHOULAOJIAO
IPR	69	35	53

4. Investment suggestions

After the above comparative analysis, it is known that Moutai is the lowest risk among the three companies, the β is also small. It has the advantages of stable stock price among the three companies, suitable for stable investors and balanced investors, and because Moutai has a collection value and high-end wine pricing power that other brands cannot match, Moutai is the absolute leader of the first echelon of wine enterprises, which is worth investing. Although Moutai has significant advantages, these three companies are focused on the high-end wine industry and have great development potential in the wine industry. The investment analysis comparison between Wuliangye and Luzhou Laojiao is as follows. If it is a short-term investment, within one to three years, the growth rate of Luzhou Laojiao will be faster. Its planned production capacity will grow faster, the expansion of core products will be faster, and its competitiveness will not be weak, especially the national cellar series has a certain position in high-end wines. If the holding period is extended (e.g., 5 to 10 years), Wuliangye's staying power is greater because of its popularity, brand recognition, and high-quality wine production capacity, and the number and growth rate of high-quality cellars for its are deeper.

5. Limitation & Prospects

This paper focuses on the analysis of high-end wine brands in the wine industry, while lacks the analysis of mid-high-end, mid-range, low-end and low-end wine brands, as well as the analysis of mid-high-end and mid-range products of these three brands. These three Baijiu companies do not have debt. The main reason is that they have sufficient cash flow, especially in Maotai, where 65% of its asset structure is in cash. It is argued that why these companies have sufficient cash flow can be explained from the following three aspects. The main reason is Baijiu products have the feature of quick payment collection, healthy profit and strong premium ability [13]. In the future, the three companies can appropriately increase some liabilities to expand the value of the company through financial leverage.

6. Conclusion

In summary, this paper investigates wine industry based on liquidity, profitability, and risk index analysis. To be specific, the data of Kweichow Moutai, Wuliangye and Luzhou Laojiao were mainly compared. As for profitability risk analysis, due to the low supply of Maotai products and the pricing power brought by the brand advantage, Maotai's price keeps rising and its profitability stays strengthening, which means the financial risk is lowest. In liquidity risk analysis, Moutai's inventory can be converted to cash more quickly at a better price due to its more valuable craftsmanship and more limited market supply, thus generating more sufficient cash flow. Therefore, Moutai's liquidity risk is minimal. Regarding to the WACC and beta analysis, Moutai is less affected by revenue periodicity because of its specific characteristics. Additonally, since Moutai's brand identity is extraordinarily strong and it pays more attention to intellectual property protection, it faces less operational risk, i.e., Moutai has the lowest β value. On the whole, Kweichow Moutai is the originator and leader of sauce-flavored wine, and its status is difficult to shake, Luzhou Laojiao and Wuliangye have established the trend in the fragrant wine industry, and the brand recognition of high-end wine has been established. Other second- and third-tier wines can only fill the blank market, and reversal is unlikely. Overall, these results offer a guideline for investors who prefer high-end wine in China.

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