

Comprehensive Financial Analysis of Liquor Industry in China

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Abstract: Comprehensive financial analysis, which is based on the company's financial report, using a series of analysis methods to reflect the company's financial situation and business performance. Comprehensive financial analysis can provide investors, managers and other information users with more real, concise and credible information. With the continuous improvement to people's consumption level in China, the market demand for liquor keeps increasing, which brings liquor industry an inexhaustible driving force for sustainable development. Although the industry experienced a downturn in 2012 due to the government's restrictions on official consumption, liquor industry as a whole developed well. This paper uses the comprehensive financial analysis method to investigate the development of liquor industry, and we find that liquor industry is developing in a more stable and standardized direction. Finally, we forecast the future development trend of the industry in order to provide reference value for the investors.

1. Introduction

The stock price of Kweichow Moutai Co., Ltd. reached 1,018.63 yuan on August 12, 2019, and it was the first company whose stock price exceed 1,000 yuan in China's stock market and became a veritable "Stock King". The main reason for Moutai's stock price rising is the rapid development of liquor industry. Liquor culture, which is one of the representatives of Chinese culture, has been continued and passed on throughout the five thousand years of history of the Chinese nation. Liquor occupies an important position in politics, literature to entertainment. With the internationalization of China's economy, Liquor culture has gradually moved to the world stage.

Since the reform and opening up, Chinese residents' living standards have been continuously improved. And residents' consumption demands and capacity are growing rapidly in 21st century. From 2003 to 2012, liquor industry entered a period of "Rapid Development". In 2012, the total output value of liquor industry increased nearly three times compared with 2003, and the total revenue increased nearly eight times. It accounts for a large proportion of the national economy. However, the CPC Central Commission for Discipline Inspection issued the "Eight Regulation" to limit the consumption of public funds on three major private purposes, cars, banquets and oversea visits at the end of 2012, which had a serious impact on liquor industry. Liquor industry began to decline, only in 2015 did it begin to recover and experience transformation and development.

Financial analysis is an important way to understand company's financial situation and business

performance. This paper hopes to analyse China's liquor industry through the comprehensive financial analysis system, to reveal the development of liquor industry more vividly and specifically in recent years, and to provide investors, managers and other information users with more real, concise and credible information.

2. Literature Review

With financial reports becoming more and more complex, the single interpretation of the financial statements can no longer satisfy information users. A comprehensive financial analysis system can help information users strip away the complexity of financial statements and help them understand the company's financial situation and business performance.

The Dupont analysis was established around 1920, which is one of the most common framework for analyzing fundamental performance. There are three major financial metrics that drive return on equity (ROE): operating efficiency, asset use efficiency and financial leverage. Operating efficiency is represented by net profit margin or net income divided by total revenue. Asset use efficiency is measured by the asset turnover ratio. Leverage is measured by the equity multiplier, which is equal to average assets divided by average equity. The scholars redesigned and adjusted the ratio of Dupont analysis in order to evaluate the performance of insurance companies more specifically. Palepu (2013) proposed the Palepu analysis, which is a modification of Dupont analysis. He decomposed the financial indicators layer by layer, so as to explore the root reasons of the changes of the financial indicators [1].

Due to political and economic factors, research of Chinese scholars on financial analysis started relatively late. Scholars have found that analyzing the relevant information of a company's financial statements can help them understand company's actual financial situation and business performance. [9] Cheng Longyun and Peng san (2008) recognized that financial analysis is an internal management behavior based on financial statements, which adopting certain statistical analysis methods to systematically analyze and evaluate the company's current and past operating results and financial status, and help managers make correct decisions [2]. Qian Aimin and Zhang Xinmin (2011) proposed the quality evaluation system of financial status, which including three dimensions of growth, profitability and risk. And they recognized that companies should improve their profitability from the two dimensions of quantity and quality, and they also should pay attention to the risks of internal control [3]. Yu Changwen (2014) pointed out that the Harvard analysis framework can make up for the defects of traditional analysis methods in the aspect of corporate strategy [4]. Wu Chunhua (2016) found that financial analysis should not only consider financial statement information, but also refer to off-balance sheet information, such as product quality, customer satisfaction, enterprise popularity, etc [5].

Scholars' research on corporate financial analysis shows the transformation from single index analysis to comprehensive model analysis. It can be seen that the statement information is becoming more and more complex, and it is difficult to obtain useful information only by using traditional financial analysis. It is necessary to use comprehensive analysis methods to dig deeply into the company's financial information.

3. Financial Analysis Methods

Financial report, which reflects the financial situation and business performance of the listed company in a certain period, is an important way for information transmitting between the listed company and investors,. Based on the company's financial statements, investors can evaluate the company or predict the development trend of the company in the future, and the managers can make better decisions and reduce the risks of internal control.

The financial analysis methods include comparative analysis, ratio analysis, trend analysis, factor analysis, comprehensive analysis, etc. Comparative analysis refers to the direct comparison of financial indicators, which can reveal the differences between two or more parties. According to the types of comparison, comparative analysis can be divided into: the comparison between the current period and the base period, the target company and the comparison company, plan and actual, part and the whole, etc. Different ways of comparison can reflect the financial situation and business performance of companies from different aspects. The ratio analysis is applicable to the statement analysis. Common ratios include the asset liability ratio, current ratios, accounts receivable turnover rate, the growth rate and so on.

The trend analysis is mainly used to analyze multi-period data indicators. The factor analysis is based on the relationship between financial indicators and driving factors. Factor analysis can help managers find the difference in financial indicators and improve management efficiency. The comprehensive analysis generally refers to a systematic analysis of a company through multiple indicator systems or a combination of multiple analysis methods. For example, Dupont analysis system contains three indicators, corresponding to operating efficiency, asset use efficiency and financial leverage of companies respectively.

Financial analysis can not only analyze and evaluate the operating situation of companies in the past, but also be used for the early warning of the corporate financial difficulties. Beaver (1996) put forward a univariate judgment forecast and found that the debt ratio, which is equal to cash flow divided by liability, had the best judgment result [6]. Altman (1968) created the Altman Z-score multi-variable judgment model, which is better than the univariate model. Scholars constantly modify the predictive variables and prediction methods of the Altman Z-score [7]. At present, the Altman Z-score has become one of the most mature methods to evaluate the financial distress of a company, which is good at predicting and evaluating the future value of a company and helping investors make more rational investment strategies.

4. Financial Analysis of Liquor Industry

Table 1 Sample companies list

Num	Stock Number	Stock Name	Company Name
1	600519.SH	KWEICHOW MOUTAI	Kweichow Moutai Co.,Ltd.
2	600779.SH	SCSF	Sichuan Swellfun Co., Ltd.
3	600809.SH	SHANXI FEN WINE	Shanxi Xinghuacun Fen Wine Factory Co.,Ltd.
4	603589.SH	KOUZIJIAO	Anhui Kouzi Distillery Co.,Ltd.
5	002304.SZ	YANGHE	Jiangsu Yanghe Brewery Joint-Stock Co., Ltd.
6	000596.SZ	GUJING DISTILLERY	Anhui Gujing Distillery Company Limited
7	000858.SZ	WULIANGYE	Wuliangye Yibin Co.,Ltd
8	000568.SZ	LUZHOU LAO JIAO	Luzhou Laojiao Co.,Ltd
9	603369.SH	KING'S LUCK	Jiangsu King's Luck Brewery Joint-Stock Co., Ltd.
10	603198.SH	YINGJIA DISTILLERY	Anhui Ying Jia Distillery Co.,Ltd.
11	600197.SH	YLT	Xinjiang Yilite Industry Co.,Ltd
12	600559.SH	LAO BAI GAN JIU	Hebei Hengshui Laobaigan Liquor Co.,Ltd.
13	600702.SH	TUOPAI SHEDE	Shede Spirits Co., Ltd.
14	603919.SH	JINHUI LIQUOR	Jinhui Liquor Co.,Ltd.
15	000799.SZ	JGJC	Jiugui Liquor Co., Ltd.
16	000860.SZ	SHUNXIN AGRICULTURE	Beijing Shunxin Agriculture Co.,Ltd
17	002646.SZ	QQKJ	Qinghai Huzhu Barley Wine Co.,Ltd.
18	600199.SH	AGSW	Anhui Golden Seed Winery Co.,Ltd.

According to the industry classification standard revised by China Securities Regulatory Commission in 2012, the manufacturing industry contains a sub-industry: alcohol and beverage manufacturing industry. The listed firms that engaged in beer, wine and beverage manufacturing were excluded, and only the firms engaged in liquor manufacturing were retained. After delete the firms with special treatment, we get 18 listed firm in China in total.

4.1 Solvency analysis

Solvency, which means debt-paying ability of a company, can be divided into short-term and long-term solvency. Short-term solvency can be measured by current ratio, quick ratio and so on, while asset liability ratio, equity ratio and other indicators reflect the long-term solvency. Too much debt means high risks, and less debt indicates that the company does not make full use of financial leverage or too much current assets is idle, which could lead to insufficient investment. So it is essential for a company to establish a proper financial leverage.

Fig. 1 displays the trend of liquor industry flow ratio from 2010 to 2018. The average flow ratio of liquor industry remained within the range of 2.0 to 2.5. In recent years, the number has stabilized at around 2.5, slightly higher than the empirical reference value (2.0), indicating that liquor industry has relatively sufficient current assets. The current ratio of Moutai, liquor industry leader, fluctuated in the range of 3.0 to 4.0, and it even reached 4.5 in some years, which was the highest level in the industry, it shows that Moutai has abundant capital. SCSF, a midstream company in liquor industry, is significantly different. It underwent a downward trend from 3.5 to less than 2 in 2010, and its solvency was weakening. The flow ratio of AGSW ranked at the bottom of the industry is close to the average of Top5 (the mean values of top five companies in liquor industry according to Wind Database: KWEICHOW MOUTAI, WULIANGYE, LUZHOU LAO JIAO, YANGHE, SHANXI FEN WINE).

Compared with current ratio, the quick ratio and the cash ratio can better reflect the company's short-term solvency, as shown in Fig. 2 and Fig. 3, Moutai still leads the industry. What is unexpected is that the quick ratio and the cash ratio of AGSW even exceeded Moutai during the period from 2010 to 2012, and they have fallen slightly in recent years, but are still close to Top5. SCSF was much inferior, even lower than the industry average. The gap between the mean values Top5 and Last5 (the mean values of last five companies in liquor industry according to Wind Database: AGSW, TUOPAI SHEDE, QQKJ, YLT, JINHUI LIQUOR) has gradually widened over time, which indicating that capital is further concentrated in leading companies.

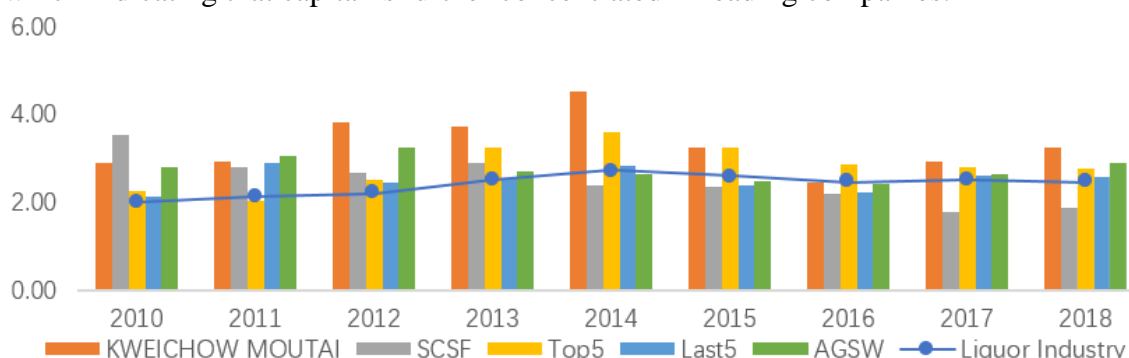


Figure. 1 Current ratio of liquor industry from 2010 to 2018

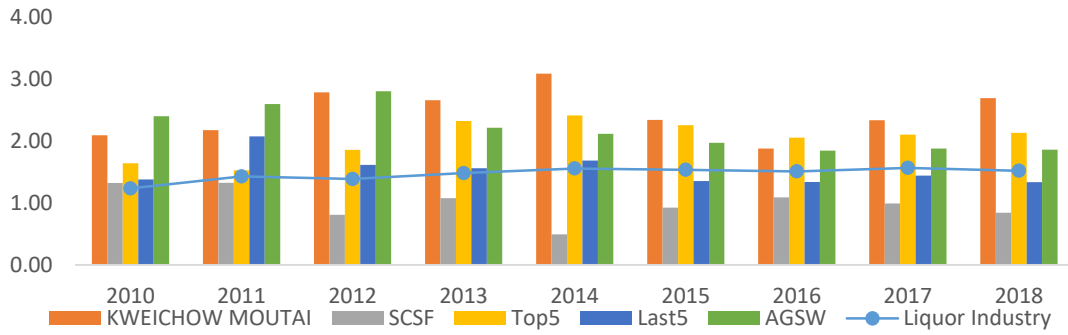


Figure. 2 Quick ratio of liquor industry from 2010 to 2018

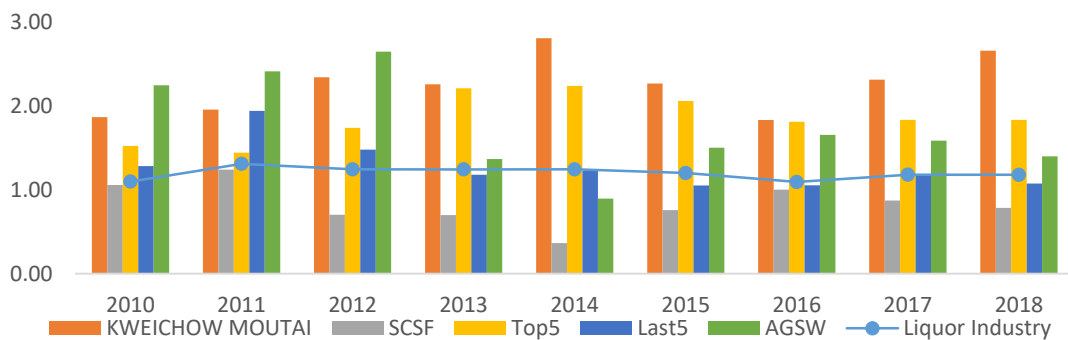


Figure. 3 Cash ratio of liquor industry from 2010 to 2018

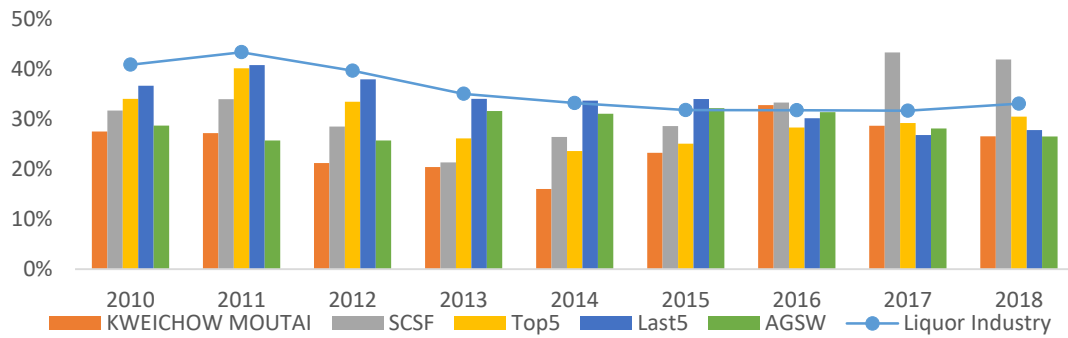


Figure. 4 Asset liability ratio of liquor industry from 2010 to 2018

As shown in Fig. 4, the difference of the debt asset ratio of the companies in liquor industry is small, generally below 40%. As a whole, the solvency has slightly increased from 2010 to 2014, and began to decline from 2014. The differences between the mean values of Top5 and Last5 gradually increased, but both of them were higher than the their respective empirical reference (current ratio is 2.0, quick ratio is 1.0).

4.2 Analysis of Profitability

The average gross profit margin of liquor industry gradually increased from 60% to nearly 70% from 2010 to 2018. The average net profit margin remained at around 20%, showing a trend of first

decline and then rise. The average gross profit margin of Top5 holding above 70%, net profit margin remains at around 35%, both at a relatively high level. Moutai's gross profit margin is even higher, which remains at more than 90%, and it's net profit margin also remains at more than 45%, both in an absolute leading position.

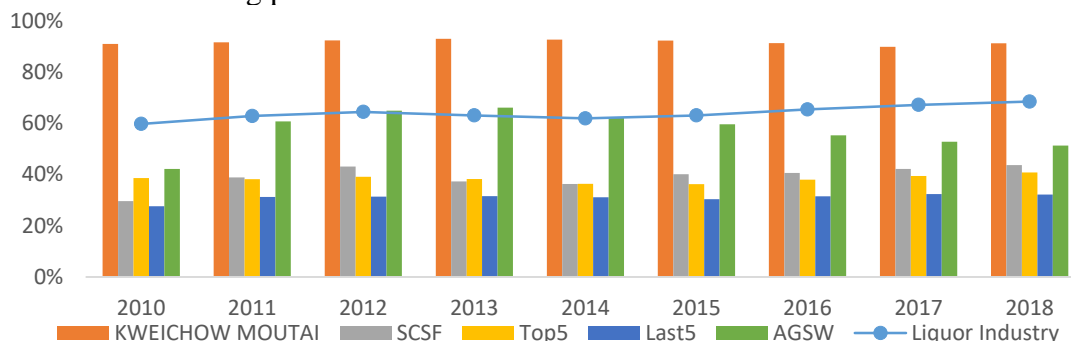


Figure. 5 Gross profit margin of liquor industry from 2010 to 2018

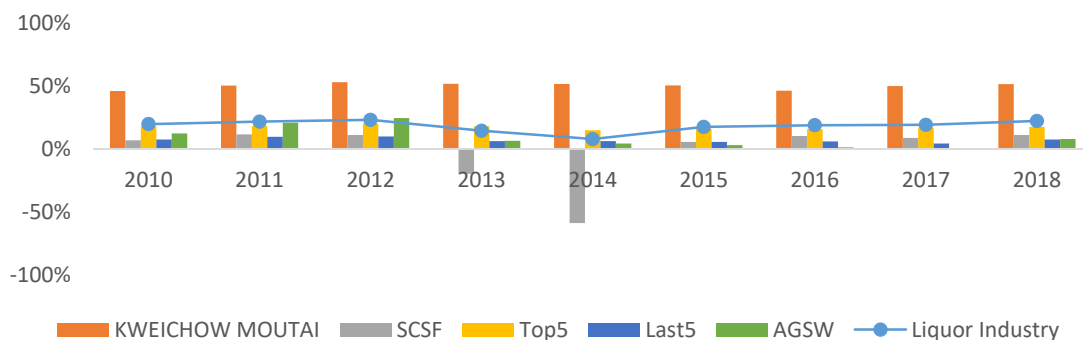


Figure. 6 Net profit margin of liquor industry from 2010 to 2018

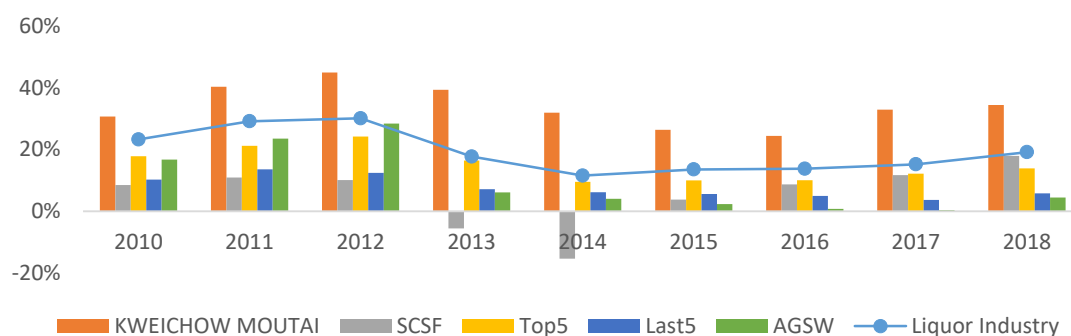


Figure. 7 Return on equity of liquor industry from 2010 to 2018

Although SCSF's gross profit margin performed well, maintaining around 75%, its net profit margin was less than 20%. It even made a loss on the profit for two consecutive years. After researching its annual report, we find the main reason for the loss of SCSF was the government restrictive policy in 2012, its revenue fell by 70% and 25% respectively in 2013 and 2014, net profit also fell by 145% and 172%. The gross and net profit margins of AGSW also began to decline in 2013 and has not yet fully recovered.

From the comparison between the mean values of Top5 and Last5, which are shown in Fig. 5 and Fig. 6, we can find that the “Eight Regulation” issued by the CPC Central Commission had less impact on the leading companies and had greater impact on companies in the bottom of the industry, which indicates that excellent companies have stronger resistance to market risk.

Generally speaking, the adjustment of national policies in 2012 has had a certain impact on the liquor industry. The gross profit margin of sales has not changed so much, but the net sales margin and return on net assets have a significant downward trend, especially in 2014. They have dropped by 46.0% and 33.3% respectively compared with 2013.

4.3 Analysis of Operating Capacity

As shown in Fig. 8, the mean values of inventory turnover rate of liquor industry showed a downward trend, gradually approaching 0.75; the averages of Top5 and Last5 both showed a downward trend, and the gap between them gradually became smaller, and finally approached 0.75. The inventory turnover of AGSW is relatively high, while Moutai has been maintained at around 0.2. This is mainly due to the different target consumers. Moutai supplies more high-end liquors, whose sales cycle period is relatively long, while AGSW sells more middle and low-end wines.

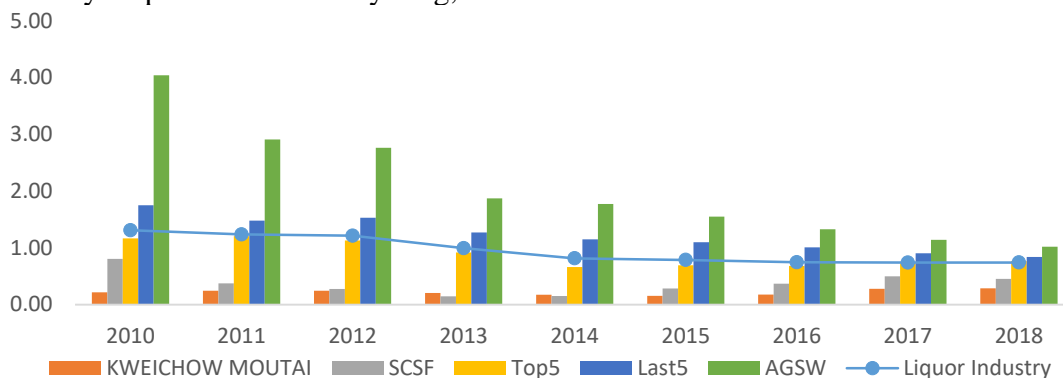


Figure. 8 Inventory turnover of liquor industry from 2010 to 2018

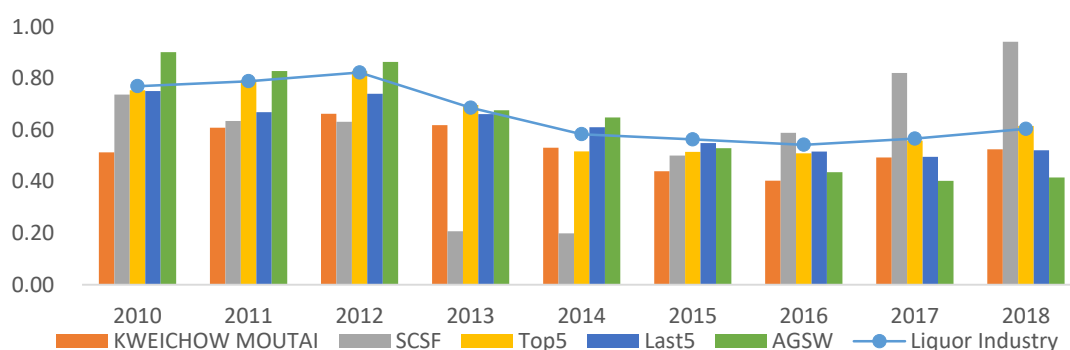


Figure. 9 Total asset turnover of liquor industry from 2010 to 2018

As shown in Fig. 8 and Fig. 9, liquor industry’s inventory turnover and total asset turnover both declined first and then increased. The main reason for the decline was the reduction in the overall sales of the liquor industry due to “Eight Regulation”.

From Fig. 10, it can be clearly seen that 2013 was a turning year for liquor industry. The growth of sales plummeted from nearly 40% to a negative value. The whole industry was faced with “cold

winter”, and it did not recover until 2015. In the following years, it maintained stable growth.

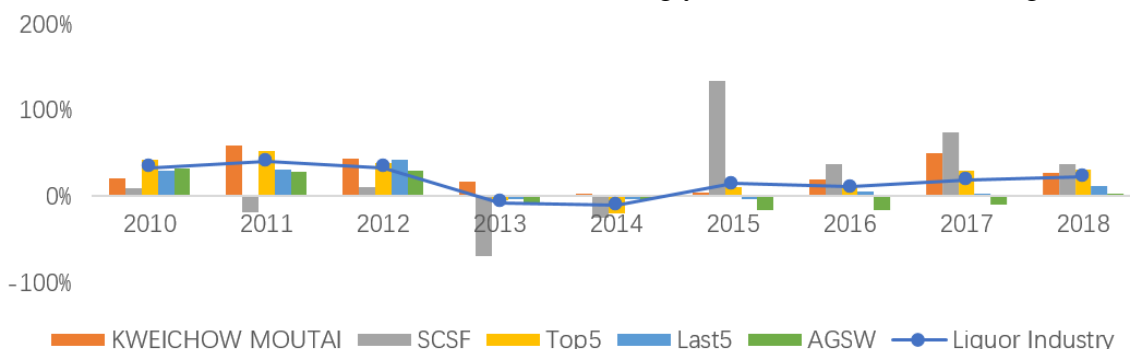


Figure. 10 Revenue growth rate of liquor industry from 2010 to 2018

By horizontally comparing the solvency, profitability, and operating capacity of liquor industry, Top5 and Last5 from 2010 to 2018, it can be found that the development of liquor industry shows a trend of first decline and then rise. However, the whole industry has gradually recovered with the further improvement of residents' living standards in recent years. The annual growth rate of sales has remained at 20%. The net profit growth rate reached more than 30%.

4.4 Comprehensive financial analysis

Table 2 Dupont analysis statistics of liquor industry in 2018

	Equity Multiplier	Net Profit Margin	Asset Turnover	ROE
Industry Average	1.55	22.12%	0.60	19.45%
KWEICHOW MOUTAI	1.36	51.37%	0.52	36.68%
SCSF	1.72	20.55%	0.94	33.34%
SHANXI FEN WINE	1.83	16.63%	0.90	27.42%
KOUZIJIAO	1.43	35.90%	0.52	26.61%
YANGHE	1.47	33.59%	0.52	25.78%
GUJING DISTILLERY	1.56	20.04%	0.77	23.94%
WULIANGYE	1.32	35.07%	0.51	23.64%
LUZHOU LAO JIAO	1.32	26.89%	0.62	21.88%
KING'S LUCK	1.41	30.80%	0.47	20.49%
YINGJIA DISTILLERY	1.48	22.34%	0.57	18.71%
YLT	1.31	20.42%	0.66	17.71%
LAO BAI GAN JIU	1.99	9.78%	0.86	16.65%
TUOPAI SHEDE	1.78	16.86%	0.46	13.94%
JINHUI LIQUOR	1.35	17.68%	0.58	13.89%
JGJC	1.32	18.76%	0.44	10.84%
SHUNXIN AGRICULTURE	2.57	6.03%	0.63	9.77%
QQKJ	1.24	7.55%	0.48	4.49%
AGSW	1.36	7.82%	0.42	4.42%

The mean values of sample companies' ROE was 19.45%, the median was 19.60%, and the standard deviation was 0.09 in 2018. Among those sample companies, Moutai has the highest ROE at 36.68%. Decomposing ROE, the mean values of sample companies' equity multiplier is 1.55, the median is 1.42, and the standard deviation is 0.33. The mean values of sample companies' net profit margin is 22.12%, the median is 0.11, and the mean values of sample companies' asset turnover

ratio is 0.60, and the median is 0.16.

Some of the top 5 listed companies, KWEICHOW MOUTAI, WULIANGYE, LUZHOU LAO JIAO, and YANGHE and, have lower financial leverage, higher profitability and lower asset turnover. Therefore, their ROE can be increased by appropriately increasing financial leverage. In contrast, SHANXI FEN WINE has higher leverage, lower profitability and higher asset turnover, and it should increase net profit margin by reducing expenses and controlling costs. By analyzing the last 5 companies of liquor industry, we can find that these companies has lower ROE because their net profit margin and asset turnover are lower than average.

The Z-score is the output of a credit-strength test that helps gauge the likelihood of bankruptcy for a publicly traded company. The Z-score is based on five key financial ratios that can be found and calculated from a company's annual report. The calculation used to determine the Altman Z-score is as follows:

$$Z = 1.2X_1 + 1.42X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5$$

Where:

A=Working capital/total assets

B=Retained earnings/total assets

C=Earnings before interest and taxes (EBIT)/total assets

D=Market value of equity/book value of total liabilities

E=Revenues/total assets

Typically, a score below 1.8 indicates that a company is likely heading for bankruptcy. Conversely, companies that score above 2.99 are less likely to experience bankruptcy. And companies with a Z-score 1.8 to 2.99 were in a zone of ignorance, or a grey zone in which distress may or may not be impending.

Table 3 The Z-score statistics of liquor industry in 2017 and 2018

Firm	2017	2018
SHUNXIN AGRICULTURE	1.938	2.3407
LAO BAI GAN JIU	8.7291	2.9986
AGSW	4.1894	3.2561
TUOPAI SHEDE	5.9543	3.7888
YINGJIA DISTILLERY	6.8094	5.2927
JINHUI LIQUOR	9.496	5.32
SHANXI FEN WINE	10.3967	5.7649
GUJING DISTILLERY	8.1812	6.0467
JGJC	11.5234	6.1858
KING'S LUCK	8.1092	6.6059
QKJ	12.6197	6.6937
YLT	9.9321	7.0141
KOUZIJIAO	8.6506	7.2121
YANGHE	9.9884	7.9586
WULIANGYE	13.9635	8.5114
LUZHOU LAO JIAO	15.4456	9.002
SCSF	13.3057	9.3957
KWEICHOW MOUTAI	16.5776	13.663

As shown in Table 3, all the Z-scores are greater than 1.8, which means no company is in the bankruptcy zone. Only SHUNXIN AGRICULTURE is in the gray zone, and other companies are all in the safe zone. It can be seen that the financial situation of the entire liquor industry is relatively healthy.

5. Conclusion

In recent years, liquor industry has maintained steady growth. The ratio of average operating cash flow to net profit has reached 1.04 in the past 10 years, and the annual compound earnings rate of the liquor industry has been 18.7% in the past 20 years. In the long run, the liquor industry has much investment opportunities. With the development of China's economy, the per capita consumption expenditure of food, tobacco and alcohol has gradually increased, reaching 5,631 yuan in 2018, and showing a continuous growth trend. It can be seen that liquor industry still has opportunities for high growth in the future. However, China's economy has remained sluggish, economic growth has slowed down in recent years, and there is greater uncertainty in the trade war between China and US, all of those might bring greater challenges to liquor exports.

References

- [1] Palepu, K. G., & Healy, P. M. (2013). *Business analysis and valuation: Using financial statements, text and cases*
- [2] Cheng, L., & Peng, S. (2008). *Reconstruction of the theoretical framework of financial statement analysis. Coal Economic Research*, (08): 75-77. (In Chinese)
- [3] Qian Aimin and Zhang Xinmin (2011)
- [4] Yu, C. (2014). *Improvements and Suggestions on the Technical Framework of Financial Analysis. Finance & Accounting for Communications*. (07):16-21. (In Chinese)
- [5] Wu, C. (2016). *Talking about the Current Status of Enterprise Financial Analysis. New Economy*, (06): 54. (In Chinese)
- [6] Beaver, W.H. (1966) *Financial Ratios as Predictors of Failure. Journal of Accounting Research*, 4, 71-111.
- [7] Altman, E. I. (1968). *Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy. Journal of Finance*, 23 (4), 589-609.
- [8] Helfert, E. A., & Helfert, E. A. (2001). *Financial analysis: tools and techniques: a guide for managers* (pp. 221-296). New York: McGraw-Hill.
- [9] Gibson, C. H. (2012). *Financial reporting and analysis. Nelson Education.*
- [10] Penman, S. H., & Penman, S. H. (2007). *Financial statement analysis and security valuation (Vol. 3). New York: McGraw-Hill.*
- [11] Siegle, J. G. (1978). *Financial Statement Analysis: Theory, Application, and Interpretation. The CPA Journal (pre-1986)*, 48 (000006), 95.