

Research on the Performance of Listed Companies in Automobile Manufacturing Industry

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Abstract—The automobile manufacturing industry is one of the important industries that drive GDP. Although under the influence of the international severe financial crisis, China Economic growth has slowed down, but the overall development of China's automobile manufacturing industry is still showing a thriving trend. As a leader in the development of the automobile industry, the automobile manufacturing industry not only has an important impact on the growth of the gross national product, but also drives the development of the road transportation industry, promotes the research and development of new technologies, and increases employment and fiscal revenue. It plays an important role in China's rapid economic growth in the future. Therefore, the financial performance of listed companies in the automobile manufacturing industry has also attracted wide attention, and it has certain practical significance for its financial performance evaluation. In view of this, this paper selects the financial data of some domestic A-share listed automobile manufacturing enterprises for statistical analysis, and compares the financial data of the same industry for evaluation research, and gives conclusions and recommendations for the research.

Index Terms—Automobile manufacturing, financial indicators, performance evaluation.

I. INTRODUCTION

As a leader in the development of the automobile industry, the automobile manufacturing industry not only has an important impact on the growth of the gross national product, but also drives the development of the road transportation industry, promotes the research and development of new technologies, and increases employment and fiscal revenue. It plays an important role in China's rapid economic growth in the future. Therefore, the financial performance of listed companies in the automobile manufacturing industry has also attracted wide attention, and it has certain practical significance for its financial performance evaluation.

As a representative of China's auto industry, the listed companies of automobile manufacturing industry are more and more concerned by investors. The financial performance status of listed companies in this industry has a great impact on the healthy development of China's securities market. At the same time, it is related to the stable development of China's national economy. The indicators selected in this research are the whole vehicle automobile manufacturing companies among the listed companies in China's automobile manufacturing industry, excluding the parts manufacturing industry, ST stock listed companies, SST stock listed

companies and loss-making listed companies. As of December 31, 2017, there were 146 listed companies in China's automobile manufacturing industry and 23 listed companies in the automobile manufacturing industry. From the five aspects of profitability, solvency, operational capability, development capability and investor profitability, it is used as an evaluation index of financial performance, and based on the evaluation results, combined with the current actual development level of each enterprise, by reference to the industry The average value is to find out the shortcomings of the company itself, so as to achieve the goal of improving the overall financial performance of the automotive industry.

II. LITERATURE REVIEW

Enterprise performance evaluation research can not neglect the growth and development of enterprises. Especially after entering the 21st century, many experts and scholars in China have a more heated discussion on the theory and methods of financial performance evaluation. Zhou Xing (2009) used the combination of factor analysis and DEA to evaluate the efficiency of listed banks [1]. In the analysis, factor analysis was used to reduce the original data, extract the common factors, and remove the linear relationship between the output factors and the input factors, effectively solving the problem. The technical requirements of the DEA model greatly improve the effectiveness and utilization of DEA analysis results. Wang Lei and Hu Weihua (2010) proposed to use the tiered analysis method to establish five first-level and eleven secondary financial indicators, including asset return rate, sales profit rate, cost-based profit rate, listed company profit index and social contribution assessment index. A multi-factor hierarchical comprehensive evaluation model for listed companies [2]. Pan Wei and Cheng Xiaoke (2009) used principal component analysis to select total return on assets, total asset growth rate, return on net assets, gearing ratio, current ratio, accounts receivable turnover, inventory turnover, and profit. The growth rate and operating profit margin have a total of 9 indicators, and the SSE 30 index sample stocks are evaluated [3]. Zhong Hua (2014) used factor analysis to evaluate the financial performance of listed companies in the automobile manufacturing industry. He believed that the comparison and other performance evaluation methods and factor analysis methods were more accurate and objective [4]. Sun Yuchi (2017) after comparing the four financial performance evaluation methods, the factor analysis method and the devaluation method were selected as the comparative analysis [5]. It is considered that the factor analysis helps to find out the listed company in the operation through the final factor score and ranking. Management of

various aspects and advantages and disadvantages, has a certain role in promoting the financial performance of enterprises.

Through the study of Chinese scholars' financial performance, it can be seen that China's research on corporate financial performance pays more attention to theoretical analysis and model construction. Many scholars use statistical methods to build financial performance analysis. However, there are few studies on the specific financial performance analysis of these research methods applied to listed companies in China's automobile manufacturing industry, and the research on the specific analysis of financial data of the whole industry is rare.

III. RESEARCH METHODS AND DATA DESCRIPTION

A. Research Methods

Based on the characteristics of the automobile manufacturing industry, this paper selects 23 automobile manufacturing companies listed in the 2013-2017 A-share market, 14 relevant financial indicators, and uses the factor analysis method in the principal component analysis method. The factor analysis method avoids subjective assumptions and comprehensively evaluates the financial performance of listed automobile companies on the basis of eliminating the correlation between relevant selected financial indicators [6].

B. Indicator Selection

In the selection of indicators, follow the principles of comparability, effectiveness, and feasibility. On the basis of unified accounting measurement, the more distinct the financial indicator system is constructed, the more accurately it can reflect the financial performance of listed companies. On the basis of relevant research, combined with the provisions of the "Business Performance Evaluation Operation Rules", the following indicators are selected to construct financial performance evaluation indicators as shown in Table I.

TABLE I: PERFORMANCE EVALUATION INDICATORS OF LISTED COMPANIES IN AUTOMOBILE MANUFACTURING INDUSTRY

comment content	Indicator name
Profitability	Sales margin
	ROE
	Total asset profit margin
Solvency	Cash asset ratio
	Quick ratio
	Assets and liabilities
Operating capacity	Total asset turnover
	Accounts receivable turnover
Development ability	Total asset growth rate
	Main business income growth rate

C. Data Sources and Their Description

The indicators selected in this research are the whole vehicle automobile manufacturing companies among the listed companies in China's automobile manufacturing industry, excluding the parts manufacturing industry, ST stock listed companies, SST stock listed companies and loss-making listed companies. As of December 31, 2017, there were 146 listed companies in China's automobile

manufacturing industry and 23 listed companies in the automobile manufacturing industry. The financial data of this sample is derived from the annual financial data of listed companies in the automobile manufacturing industry announced by Netease Financial Network.

IV. FINANCIAL PERFORMANCE ANALYSIS OF LISTED COMPANIES IN AUTOMOBILE MANUFACTURING INDUSTRY

A. Statistics on the Financial Status of Listed Companies in the Automobile Manufacturing Industry

This paper mainly uses the quartile method to analyze the financial performance of the company. The main financials of 23 listed companies in China's auto manufacturing industry from 2013 to 2017 are selected as samples. The specific analysis is as follows:

B. Analysis of the Financial Status of Listed Companies in the Automobile Manufacturing Industry.

1) Profitability

a) Sales gross profit margin

TABLE II: SALES GROSS PROFIT MARGIN UNIT (%)

	Industry average	Industry Higher	Industry general	Industry Lower
2017	15.78	24.53	16.46	6.01
2016	16.11	24.67	15.98	8.53
2015	15.47	24.08	15.54	7.42
2014	15.05	22.08	15.15	8.78
2013	15.47	23.39	15.37	8.62

It is known from the above Table II that the industry average value of sales gross profit margin is basically the same as the general value of the industry. It has shown a small upward trend in five years and is stable at around 15%. At the same time, the average value of the higher portion of the gross profit margin industry declined in 2014, and it rebounded in 2015, reaching its highest level in 2016. The lower part of the industry has dropped significantly from 2016 to 2017, and the difference between the industry and the industry average is large, indicating that the profit levels of different companies in the same industry are quite different.

b) Return on net assets

TABLE III: RETURN ON NET ASSETS UNIT (%)

	Industry average	Industry Higher	Industry general	Industry Lower
2017	10.95	23.27	10.39	1.69
2016	-5.54	22.93	6.18	-54.88
2015	7.58	19.63	8.36	-5.79
2014	7.03	16.08	7.14	-1.04
2013	10.34	22.45	10.70	0.44

As shown in Table III, the industry average value of the ROE and the industry's general value are basically the same except for 2016, and the higher part of the industry shows a steady upward trend. This shows that the utilization efficiency of the investment capital of the industry's leading shareholders is stable. In the industry's lowest, except for the lowest point in 2016, the rest of the values are similar, and the change in the five years is not large, indicating that the utilization efficiency of the capital invested by shareholders in the industry is relatively stable. However, in the lower middle

of the industry, we can clearly see that the lowest value of the industry in 2016 has reached more than -50%. From the table of return on net assets, it is found that the lowest value of the year is Yaxing Bus, and the return on net assets of the year. Delivered to -300%, the return on net assets as the core indicator of corporate profitability, Yaxing Bus's 16-year ROE is far lower than the industry average, indicating that corporate profitability is not optimistic, after checking the company's earnings per share Negative, earnings per share is an important indicator that comprehensively reflects the profitability of listed companies, reflecting the profit level of common stocks. Negative values will cause investors to avoid choosing the company's stocks, resulting in impaired financing capacity.

c) Total asset profit rate

TABLE IV: TOTAL ASSET PROFIT RATE UNIT (%)

	Industry average	Industry Higher	Industry general	Industry Lower
2017	4.22	10.25	4.07	0.70
2016	3.93	10.75	3.99	-0.92
2015	3.44	10.01	3.88	-2.93
2014	3.34	8.89	3.32	-0.40
2013	4.93	11.67	4.86	0.83

It is known from Table IV that the industry average value of the total asset profit rate is basically the same as the industry average value, and it is basically stable for five years. From the lower level of the industry, we can clearly see that the average value of the industry's lowest value reached -3% in 2015. From the summary of the total assets profit rate, it was found that the lowest value of the year was Dongan Power, and the total assets of Dongan Power in 2015. The profit rate is the lowest value of -19.23%. After the investigation, Dongan Power lost nearly 400 million yuan in 2015. The reason is that the company needs to make up the loan depreciation reserve of Hafei Automobile. It can be found from the income statement. In 2016, Dongan Power has Turning from loss to profit, Dongan Power actively seeks solutions to the problem after experiencing major losses, thus turning profitable in 16 years.

2) Analysis of solvency

a) Cash asset ratio

TABLE V: CASH ASSET RATIO UNIT (%)

	Industry average	Industry Higher	Industry general	Industry Lower
2017	37.80	64.21	36.45	16.72
2016	36.52	67.08	34.95	13.43
2015	39.33	70.38	37.76	15.02
2014	47.38	92.39	43.41	15.77
2013	43.46	74.79	41.23	22.07

As shown in Table V, the industry average of the cash ratio and the general value of the industry show a trend of increasing first and then decreasing. It shows that the ability of most enterprises in the industry to repay their debts at any time has decreased year-on-year. From the higher values of the industry, it can be clearly seen that except for the highest value of 92.395 in 2015, the overall downward trend is the highest point in the year. Guangzhou Automobile Group's cash ratio in 2014 reached 175.27%, indicating that Guangzhou Automobile Group's cash assets were sufficient to

repay current debt. The overall cash ratio of the industry is relatively stable, and the minimum value is not much different from the average, indicating that the industry's cash assets are relatively sufficient.

b) Quick ratio

TABLE VI: QUICK RATIOS UNITS (%)

	Industry average	Industry Higher	Industry general	Industry Lower
2017	0.99	1.30	0.98	0.69
2016	0.92	1.24	0.91	0.61
2015	0.95	1.29	0.95	0.63
2014	1.04	1.57	1.02	0.60
2013	1.00	1.41	1.00	0.61

As shown in Table VI, the industry average of the quick ratio is basically the same as the industry average, and it has not changed much in five years. From the higher values of the industry, it can be clearly seen that the overall stability is in addition to the highest value of 1.6% in 2014. The highest point is that Guangzhou Automobile Group's quick-moving ratio in 2014 was 2.13%, indicating that the current liquidity of GAC Group can be used to repay current liabilities. The overall quick ratio of the industry is relatively stable, and the lowest value is not much different from the average. The industry's current assets are relatively abundant.

c) Asset-liability ratio

TABLE VII: ASSET-LIABILITY RATIO UNIT (%)

	Industry average	Industry Higher	Industry general	Industry Lower
2017	59.48	79.96	59.10	40.53
2016	60.97	79.03	60.26	43.36
2015	59.52	76.89	59.40	41.66
2014	57.36	75.62	56.87	38.31
2013	58.42	75.67	58.18	40.32

As shown in Table VII, the industry average of the asset-liability ratio and the industry's general value showed a small upward trend, and the change was not significant in five years. It can be seen that the asset-liability ratio of the industry has risen as a whole. The asset-liability ratio is an important indicator to measure the level of debt and risk of the enterprise. From different perspectives, the level of debt and the level of risk represented by his level are also different. For investors and shareholders, a high debt ratio may bring certain benefits; from the perspective of the operator, the ability to borrow funds and make full use of the funds can increase the efficiency of capital use and achieve profitability. As can be seen from the above table, the industry average is concentrated at around 60%, which indicates that the average debt level of this industry is more appropriate. The industry's higher value is around 80%, and these companies need to control borrowing funds to reduce risks.

3) Analysis of operational capabilities

a) Total asset turnover

TABLE VIII: TOTAL ASSET TURNOVER RATE UNIT (%)

	Industry average	Industry Higher	Industry general	Industry Lower
2017	0.92	1.48	0.88	9.45
2016	0.94	1.42	0.95	0.52
2015	1.00	1.49	1.00	0.55
2014	1.12	1.89	1.07	0.53
2013	1.21	1.84	1.20	0.72

As shown in Table VIII, the industry average value of total asset turnover is similar to the industry average, and it is in a slow and steady downward trend in five years. From the above table, we can see that the overall asset turnover rate of the industry has shown a downward trend. This indicates that the overall sales capacity of the industry has declined. The reason may be that the increase in the number of enterprises in the industry has led to increased competition, resulting in a decline in sales capacity. It may also be imports. Declining car prices have put pressure on the domestic auto manufacturing industry, leading to a decline in sales. The high value of the industry fluctuates greatly, which indicates that the enterprises with strong sales ability in the industry have problems in sales or assets, and need to be decomposed into multiple turnover rate indicators for detailed analysis.

b) Accounts receivable turnover rate

TABLE IX: ACCOUNTS RECEIVABLE TURNOVER RATE UNIT (%)

	Industry average	Industry Higher	Industry general	Industry Lower
2017	60.98	46.32	28.73	-166.96
2016	55.28	185.23	35.36	3.33
2015	40.19	125.96	28.78	3.60
2014	36.60	109.76	27.93	3.58
2013	46.30	136.74	33.63	4.30

As shown in Table IX, there is a certain gap between the industry average of the accounts receivable turnover rate and the industry average value, but it has not changed much in five years, and it is a small upward trend. It is also clear that the higher value of the accounts receivable industry is much higher than the average value. After checking the table, the higher value of the industry is from FAW Car from 13 to 16 years. This shows that FAW Car collects quickly. The age is short, far below the average collection time of the industry, and the short-term solvency is very strong. The industry average has increased slightly, indicating that the industry's average collection period is shorter than before, and the collection time of accounts receivable is also faster than before.

4) Analysis of development capability

a) Total asset growth rate

TABLE X: TOTAL ASSET GROWTH RATE UNIT (%)

	Industry average	Industry Higher	Industry general	Industry Lower
2017	16.40	36.18	14.36	-4.00
2016	14.92	32.24	14.09	0.55
2015	14.37	29.82	14.14	-0.43
2014	12.71	34.70	11.47	-7.29
2013	14.51	35.71	14.32	-2.68

As shown in Table X, the average value of the total asset growth rate of the listed companies in China's auto manufacturing industry is close to the average value of the industry's general value, which is increasing year by year. Through comparison with the profit growth rate and net profit growth rate of the main business, it can be seen that the industry average value of the main business growth rate and the net profit growth rate are lower than the average value of total asset growth, that is, the growth of total assets does not bring In order to achieve rapid growth in sales revenue, it is necessary to have a detailed understanding of the asset growth

section to see if there is water.

b) Growth rate of main business income

TABLE XI: GROWTH RATE OF MAIN BUSINESS INCOME UNIT (%)

	Industry average	Industry Higher	Industry general	Industry Lower
2017	13.17	47.77	11.21	-17.23
2016	9.59	29.33	10.14	-11.57
2015	12.14	31.53	12.53	-11.63
2014	-1.50	18.83	-1.52	-22.44
2013	9.10	31.66	9.30	-12.99

As shown in Table XI, the average value of the industry average value of the main business income growth rate and the industry average value are very similar, and there are certain fluctuations, except for 2014, which shows an overall upward trend. As shown in the figure, the growth rate of the main business income, except for 14 years, is generally stable at around 10% in the industry average and industry. This shows that the industry is in a growth period and has basically risen from 15 years later. Generally speaking, when the main business income growth rate is lower than -30%, it indicates that the company's main business has fallen sharply. Therefore, the listed companies with lower value in the industry should pay attention to it. This shows that the company's products have entered a recession period and stabilized market share. It has been very difficult, profits have fallen sharply, and there is a risk of bankruptcy at any time. If there is no breakthrough in innovative products, then enterprises will fall into decline.

V. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusion

Based on the analysis of various indicators and comprehensive indicators of the above various capabilities, it can be seen that although the profitability of listed companies in the domestic automobile manufacturing industry has a certain fluctuation, it has generally increased slightly, indicating that the industry has good prospects and should be controlled. Costs are increased, investment in R&D is increased, and propaganda is increased, thereby increasing product market share and improving overall profitability. In terms of solvency, the overall liquid assets of the industry are relatively sufficient, and the overall asset-liability ratio is concentrated at around 60%, indicating that the industry's long-term solvency is moderate. Looking at the operational capabilities, the overall operating capacity of the industry has not fluctuated, but overall it has shown a slight downward trend. This shows that the competition in the industry is becoming more and more fierce. It also shows that the product market is becoming saturated and requires investment in new technologies. From the perspective of development capability, the industry is in the growth stage, and the development capabilities of various enterprises are quite different. This is because the original scale is different and the final development space is slightly different. From the analysis of investors' profitability, it can be seen that the average profitability of investors' profitability indicators is in a slow rising stage. This shows that China's automobile

manufacturing industry's ability to generate profits is increasing year by year, profitability is good, and dividend distribution sources are sufficient. The industry has a certain degree of profitability and is in a state of steady growth. The competition in the automobile manufacturing industry is not only due to the emergence of domestic automobile manufacturing enterprises, but also due to the decline in the price of imported automobiles. Domestic auto companies must survive and develop, and only increase their independent innovation capabilities and increase investment in research and development. In summary, innovation capability is one of the capabilities necessary in the increasingly fierce competition. There is no innovation in the enterprise, and sooner or later it will be eliminated.

B. Recommendations

First, continue to pay attention to the improvement of corporate profitability and operational capabilities, and improve capital turnover efficiency and capital use efficiency. For the development of the enterprise itself, profitability and operational capability are the key factors for the sustainable development of the enterprise. It is also the premise for the rational operation of the funds, improving the profitability, so as to achieve the purpose of earning more profits, and at the same time improve the efficiency of capital turnover. This is an effective way to improve the core competitiveness of enterprises and an effective way to improve the financial performance of enterprises.

Second, strengthen the company's own innovation capabilities, increase independent research and development efforts, increase market share, and enhance product core competitiveness. China's auto manufacturing listed companies should increase investment in R&D and innovation, increase investment, set up special funds, encourage innovation, strengthen cooperation with the same industry, and strive for a win-win situation; on the other hand, actively promote foreign advanced automobile manufacturing. The company learns, strives for cooperation opportunities, and cooperates in research and development. It should not only strengthen communication and cooperation in products,

technology, research and development, etc., but also exchange and learn from advanced foreign management levels, and develop into a first-class automobile brand.

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