# Application of Factor Analysis Method in Haier Group's Financial Performance Evaluation

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## Abstract

Financial performance evaluation is one of the important contents of financial management of listed companies.By comparing the characteristics of DuPont analysis, balanced scorecard method, eva economic value-added method and factor analysis method, this paper screens out the factor analysis method and uses spss23.0 software to analyze the financial performance of Qingdao Haier Group Corporation from 2008 to 2017. The empirical analysis of the indicators and the calculation of the dynamic changes of the company's financial performance in the past ten years have important guiding significance for summarizing the company's financial development, guiding consumers' investment and predicting the future development trend of the company.

## Keywords

Factor analysis; financial performance evaluation; Haier Group.

## 1. Introduction

With the development of the market economy, the competition among enterprises is becoming more and more fierce. In order to improve the comprehensive competitiveness and promote the sustainable development of the company, it is necessary to evaluate the financial performance of listed companies in a timely manner.As one of the "world-class top ten brands", Qingdao Haier Group has been achieving leap-forward development.At present, Haier Group has become one of the world-class brands, and its influence has rapidly increased with the expansion of globalization.In order to maintain its strong development momentum, it is necessary to evaluate its financial performance to find out the company's financial deficiencies, strengthen financial management, and take relevant measures to relevant indicators to make it develop.

## 2. Comparison and selection of financial performance evaluation methods

At present, domestic and international methods for corporate financial evaluation focus on DuPont analysis (Balanced Score Card, EVA Economic Value Added and Factor Analysis). They all have their own advantages and disadvantages. Choosing an objective and fair comprehensive evaluation method by comparing their respective characteristics is the basis for the correct evaluation of the financial status of the enterprise.

### 2.1 DuPont analysis

A financial performance evaluation method proposed by DuPont of the United States to comprehensively evaluate the financial status of a company from the perspective of financial management from the perspective of financial management.The method is based on the ROE and breaks down the ROE into the product of multiple financial ratios.The DuPont analysis method combines various financial indicators of the enterprise, which directly reflects the connection between them and forms a complete performance evaluation index system.However, because the DuPont analysis only reflects the financial information status of the enterprise, it is not conducive to the

development plan of the enterprise manager from the perspective of the long-term development of the company, resulting in short-term behavior of the enterprise; in addition, the DuPont analysis method can not solve the valuation problem of the intangible assets. It also considers the factors of the customers, suppliers and technological innovation of the company, and has certain one-sidedness.

### 2.2 Balanced Scorecard Method

It was proposed in the 1990s by David Kaplan, professor at Harvard University, and David Norton, CEO of the Nolan Norton Institute.The purpose of the Balanced Scorecard is to translate the organization's strategic plan into actual target values and metrics to continuously strengthen the company's strategic execution capabilities.The Balanced Scorecard comprehensively evaluates organizational performance by building four performance indicators: Financial, Customer, Internal Business Processes, and Learning and Growth.This performance evaluation method can help leaders to comprehensively coordinate their development goals, balance internal and external, long-term and short-term relationships, and is more conducive to long-term sustainable development. Therefore, the Balanced Scorecard is known as the world for nearly 75 years. The most important management tools and methods.However, due to the introduction of non-financial indicators and the difficulty in collecting non-financial indicators, it is difficult to use in practical applications.At the same time, due to the excessive number of indicators selected, the weight of the indicators is difficult to determine, and the implementation cost is also increased, which hinders its promotion.

### 2.3 Eva economic value added method

Also known as economic value added, it is the income after the after-tax operating profit minus the debt and equity costs, that is, the remaining income after all costs are deducted.It is a performance evaluation method that evaluates the value created by enterprises based on the after-tax profit and capital cost.Currently, some well-known multinational companies, such as the Coca-Cola Company, use the eva indicator to evaluate a company's financial performance.However, since the eva calculation method cannot reflect the value creation process of the enterprise, it is easy to be subjective and malicious, which reduces the reliability of the evaluation method.

### 2.4 Factor analysis

It is from the internal connection of variables, starting from a series of intricate and closely related variables, extracting several comprehensive factors that can fully reflect the selected variables, that is, a multivariate statistical research method of their common factors.The factor analysis method mainly includes two steps: constructing factor variables and naming and explaining the factor variables.In addition, after the factor model is established, the extracted common factor can also be used to calculate its factor score for comprehensive evaluation.Factor analysis can be used to reflect most of the original indicators with fewer factors. Factor analysis is mainly used to reduce the number of variables analyzed and to extract common factors with high correlation for comprehensive performance evaluation. The comparison and analysis, choose to use the factor analysis method to evaluate the financial performance of Haier Group.

## 3. Literature review

### 3.1 Literature Review on the Evaluation of Corporate Financial Performance by Factor Analysis

Factor analysis originated from the statistical analysis of the results of human intelligence tests by Karl Pearson and Charles Spearmen in the early 20th century. Based on the great advantages of this statistical method, it began to spread globally.The core idea is to reflect most of the information of the original variables with the least independent factors.In recent years, many scholars have used factor analysis to study the performance of companies in different industries, and at the same time have achieved certain research results.In recent years, through in-depth study and analysis of the literature, domestic scholars have adopted various methods to evaluate the performance of the

company.Including: balanced scorecard, factor analysis method, economic value added method, data envelopment analysis analytic method, multivariate statistical method, and cluster analysis and other econometric analysis methods to evaluate the company's performance, and build a series of indicator systems. Has a certain reference value.

At present, as far as the company is concerned, there are many studies on the performance of listed commercial banks.Throughout the domestic research situation, most of the performance evaluation models for commercial banks use multiple ratio indicators, and then give each indicator quantitative weight to build the model.The choice of indicators and the allocation of weights are often configured according to the focus of the evaluators, so the results are not the same. Typical representatives using financial indicators for comparative analysis are: 2004, Wang Cong, etc. The multivariate linear regression method is used to analyze the factors affecting the total cost of banks. The conclusion is that these factors are the key influencing factors of bank efficiency.

In 2010, Zhang He used the annual financial statements of China Southern Airlines from 2005 to 2009 as the research object. The factor analysis method and software spss16 were used to sort out the annual report data of the company, and the company's financial report was analyzed and evaluated.

In 2014, Guo Caixia, Ma Guozhong, and Rong Heping Economics took Liulin County as an example. On the basis of empirical research, factor analysis was used to sort, classify and analyze the influencing factors of county economic development in Liulin County. Assess the comprehensive competitiveness of the Liulin County economy and propose corresponding policy recommendations based on the results of the assessment.

Through the study of the literature, we found that the factor analysis method has become more and more mature in the research of company performance evaluation, involving banks, real estate, retail, manufacturing, energy and other industries, have been widely used.Based on factor analysis, the performance evaluation of home appliance companies is less and less concentrated. On June 20, 2018, World Brand Lab released the analysis of China's 500 Most Valuable Brands in Beijing in 2018. report.Haier (350.278 billion yuan) ranked third.Therefore, this paper selects Haier Company, a typical representative of the home appliance industry, to conduct research.

### 3.2 Summary of Financial Performance Evaluation Index System of Listed Companies

After studying the literature for nearly 6 years, it is summarized as follows:

In 2012, Chen Hao used the factor analysis method, which is a common method to examine the company's M&A performance, to select 13 indicators, including capital adequacy ratio, core capital adequacy ratio, deposit growth rate, loan growth rate, profit growth rate, and weighted average net assets. Yield, return on capital, asset utilization, debt ratio, equity ratio, total asset growth rate, commission and commission net income to operating income ratio, constructed a comprehensive scoring model of M&A performance, and examined its acquisition from 2008. The performance of the first two years to the two years after the acquisition shows that the comprehensive score of China Merchants Bank is not prominent enough in the year of the survey, indicating that the synergy effect of the merger is not obvious in the short term.

In 2012, Shen Mengkang used the factor analysis mathematical model to select the total industrial output value, industry specialization rate, capital investment, total assets, total asset contribution rate, total profit, and total value of 28 industries including Zhongshan Food Processing Industry in Guangdong Province in 2009. The nine evaluation indicators, such as asset profit rate, employment scale index and demand income elasticity, are used as examples to conduct comparative research and empirical analysis on regional strategic emerging industries. The conclusions point out the selection trend for strategic emerging industries in Zhongshan.

In 2014, Yan Jun used the factor analysis method to study the performance evaluation of listed companies in the blue economic zone of Shandong Peninsula. Based on the three principles of easy accessibility of data, comprehensive data, and comparability of indicators, it was chosen to directly reflect the listing. The company's profitability, solvency, operational capacity and growth capacity data, including earnings per share, return on equity, total return on assets, asset-liability ratio, current

ratio, growth rate of return on equity, Operating income growth rate, net profit growth rate, total asset growth rate, inventory turnover rate and accounts receivable turnover rate were ranked among 85 listed companies in 2010 and 2011, and their influencing factors were summarized and analyzed. Conclusion and give corresponding countermeasures and suggestions.

In 2014, Muxi, Ma Baoling, Chang Yiwen and Yan Changbo selected the oil and gas proven reserves, oil and gas production reserve ratio, annual average reserve growth rate and reserves of 20 typical oil companies for objective and correct evaluation of the competitiveness of oil companies. Factor analysis of 11 key indicators of replacement cost, exploration success rate, operating income, return on total assets, average return on capital used, asset-liability ratio and total asset turnover rate, including scale factor, benefit factor, technical factor, sustainable The four factors of development factor, based on these data, compare the competitive advantages between international oil companies, national oil companies and independent oil companies. The conclusions point out that Chinese oil companies should strengthen cooperation with international oil companies and adhere to internationalization. strategy.

In 2015, Li Wenting and Guo Xiaoshun selected 18 listed companies in Shanghai and Shenzhen stock markets, selected relevant data for 2012-2013, and used factor analysis to improve their solvency, profitability, operational capability, and growth ability. The analysis is carried out in some aspects, and the performance level is evaluated according to the results, and suggestions for improvement are put forward.

In 2016, Zuo Yuanli took Jiangsu listed companies as an example. Taking 204 listed companies in Jiangsu Province as the research object, he selected 19 financial indicators and used factor analysis to build a multi-dimensional comprehensive performance evaluation model for 2015. In the year, the comprehensive performance of listed companies in Jiangsu manufacturing industry was evaluated, and based on the results of empirical research, relevant recommendations were made on how to improve the overall performance level of listed companies in Jiangsu manufacturing.

In 2017, Zhao Xiaoge and Jiang Xin studied the company's financial data based on factor analysis using Stata13.0 when studying the performance of 40 pharmaceutical manufacturing companies in China in 2014.The results show that financial management ability is an important factor affecting the company's performance; at the same time, the performance of China's pharmaceutical manufacturing companies is generally poor, there is room for improvement, and company managers should pay attention to it.

The list is as follows:

Table 1 The literature financial performance evaluation indicators in the past 6 years

| time | Author | Selection of research indicators | Research areas |
|---|---|---|---|
| 2012 | Chen Yu | Capital adequacy ratio, core capital adequacy ratio, deposit growth rate, loan growth rate, profit growth rate, weighted average return on net assets, capital yield, asset utilization ratio, debt ratio, equity ratio, total asset growth rate, handling fee and Commission net income to operating income ratio | China Merchants Bank |
| 2012 | Shen Mengkang | Gross industrial output value, industry specialization rate, capital investment, total assets, total asset contribution rate, total profit, total asset profit rate, employment scale index, demand income elasticity | Zhongshan City War Slightly emerging industry |
| 2014 | Yan Jun | Earnings per share, return on net assets, return on total assets, gearing ratio, current ratio Rate, ROE growth rate, operating income growth rate, net profit growth rate, total asset growth rate, | Shandong Peninsula Blue economy Area |

| | | | |
|---|---|---|---|
| | | inventory turnover rate and accounts receivable turnover rate | |
| 2014 | Muxi, Ma Baoling | Oil and gas proven reserves, oil and gas production reserve-production ratio, annual average reserve growth rate, reserve replacement cost, exploration success rate, operating income, return on total assets, average return on capital used, asset-liability ratio and total asset turnover | Oil company |
| 2015 | Li Wenting, Guo Xiaoshun | Return on net assets, weighted average return on net assets, profit margin of main business, net profit margin after deducting non-recurring gains and losses, growth rate of main business income, growth rate of net assets and net cash flow from operating activities per share , gearing ratio, net worth and debt ratio, equity coefficient, asset turnover And net asset turnover | securities company |
| 2016 | Zuo Yuanli | Return on assets, net profit margin, cost and profit margin, net profit margin, operating profit margin, total asset turnover, accounts receivable turnover, current assets turnover , shareholder equity turnover rate, earnings per share growth rate, total profit growth rate, net profit growth rate, net asset growth rate, total asset growth rate, Flow ratio, quick ratio, Cash recovery rate of all assets Net cash flow from operations, net cash flow from operations | Made in Jiangsu industry |
| 2017 | Zhao Xiaoge, Jiang Xin | Return on net assets, return on total assets, total asset turnover, and current assets turnover Rate, inventory turnover rate, accounts receivable turnover rate, current ratio, quick ratio, asset-liability ratio, operating income growth rate, total asset growth rate, capital accumulation rate | Pharmaceutical manufacturing Listed public Division |

It can be seen from the above analysis that there are certain similarities in the selection of financial performance evaluation indicators for listed companies. Most listed companies select financial indicators from the financial indicators' profitability, operational capability, solvency, and growth ability.This provides a theoretical basis for the construction of the financial performance evaluation system in Chapter IV of this paper.

## 4. Haier Group Financial Performance Evaluation

### 4.1 Sample source

This paper mainly selects the relevant financial data of Qingdao Haier Group for the period from 2008 to 2017. The data is mainly from the Wind database and Guotaian database.

### 4.2 Indicator selection

This paper mainly selects the return on net assets, the rate of return on assets, the net profit rate of assets, the ratio of equity, the growth rate of earnings per share, the growth rate of total profit, the

growth rate of net profit, and the equity multiplier from three aspects of profitability, operational ability and growth ability. The eight financial indicators, such as the ratio of shareholders' equity, reflect the financial performance of the company more comprehensively. The calculation process of specific indicators is shown in Table 2.

Table 2 Selection and calculation of evaluation indicators

| Indicator type | Indicator name | Calculation formula |
|---|---|---|
| Profitability | Roe | Net profit / shareholder equity |
| | Return on assets | Profit before interest and taxes / average total assets |
| | Net asset interest rate | Net profit / average total assets |
| Operating capacity | Property ratio | Total liabilities / total owner's equity |
| | Equity Multiplier | Total liabilities / total shareholders' equity |
| | Shareholder equity ratio | Shareholders' equity / total assets |
| Growth ability | Earnings per share growth rate | (Year-per-year earnings per share - earnings per share last year) / earnings per share last year |
| | Gross profit growth rate | (Total profit this year - total profit last year) / total profit last year |

### 4.3 Data Processing and Analysis

4.3.1 Adaptability test

The sample data was subjected to kmo test and Bartlett sphericity test using spss 23.0 to verify whether the selected sample company data is suitable for factor analysis. The results are shown in Table 3-1.

Table 3 KMO and Bartlett's test

| | | |
|---|---|---|
| Sampling a sufficient Kaiser-Meyer-Olkin metric. | | .677 |
| Bartlett's sphericity test | Approximate chi square | 24820.487 |
| | df | 153 |
| | Sig. | .000 |

In this paper, the value of KMO is 0.677, which is greater than 0.5. The significance level of the test is Sig0.000, which is less than the significance level of 0.05, indicating that the correlation between variables is strong, and factor analysis can be performed.

4.3.2 Factor extraction and construction process

Using spss 23.0 statistical software to analyze the sample factor analysis, the data analysis results were obtained. According to the criterion of eigenvalue greater than 1, three principal factors were extracted by principal component analysis, and the sum of the eigenvalues accounted for 95.422% of the total variance. See Table 4.

Table 4 Total Variance Analysis

| ingredient | Initial eigenvalue | | | Extracting the sum of squared loads | | | Sum of squared rotational loads | | |
|---|---|---|---|---|---|---|---|---|---|
| | total | Percentage of variance | accumulation% | total | Percentage of variance | accumulation% | total | Percentage of | accumulation% |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | variance | |
| 1 | 3.499 | 43.741 | 43.741 | 3.499 | 43.741 | 43.741 | 3.000 | 37.501 | 37.501 |
| 2 | 2.970 | 37.122 | 80.863 | 2.970 | 37.122 | 80.863 | 2.664 | 33.297 | 70.798 |
| 3 | 1.165 | 14.559 | 95.422 | 1.165 | 14.559 | 95.422 | 1.970 | 24.624 | 95.422 |
| 4 | .316 | 3.951 | 99.373 | | | | | | |
| 5 | .028 | .347 | 99.720 | | | | | | |
| 6 | .022 | .270 | 99.990 | | | | | | |
| 7 | .001 | .010 | 100.000 | | | | | | |
| 8 | -2.398E-16 | -2.998E-15 | 100.000 | | | | | | |
| Extraction method: principal component analysis. | | | | | | | | | |

In Table 4, the first column of values represents the factor number, the second column is the eigenvalue, the third column is the variance contribution rate, and the last column is the cumulative variance contribution rate.It can be seen from the above table that the cumulative variance contribution rate of the three principal factors extracted by this factor analysis is 95.422%, and the cumulative variance contribution rate reaches 95.422%, which indicates that the three factors extracted can explain the total variance of the original variables. 95.422%, therefore, the information of the original variables is more completely retained, and the factor analysis is effective.

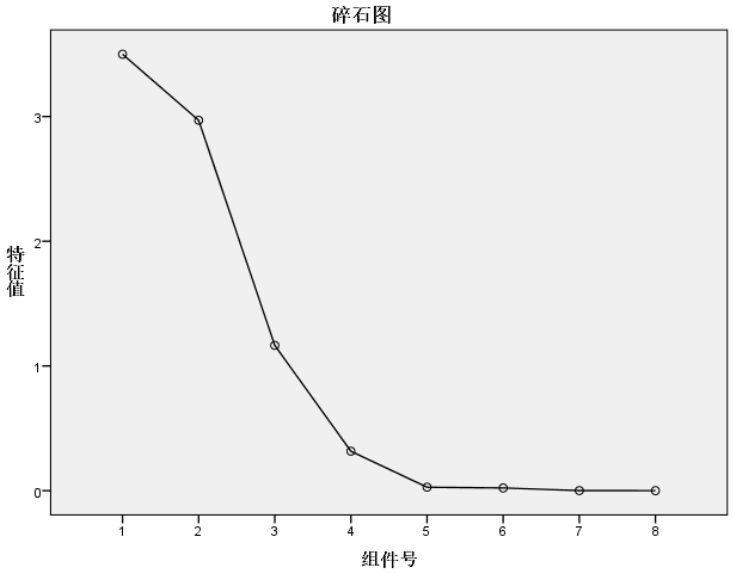


Figure 1 gravel map

In the above gravel diagram, the abscissa represents the number of factors, and the ordinate represents the characteristic root of the factor.As can be seen from the above figure, the eigenvalues of the first three factors are large, and the original variables can be explained relatively completely; the third and subsequent factor eigenvalues are significantly smaller, and the contribution to the interpretation of the original variables is small. It can be ignored, so it is reasonable to extract the first three main factors for comprehensive analysis.

Table 5 Factor Load Matrix after Rotation

| Rotating component matrixa | |
|---|---|
| | ingredient |

| | 1 | Ranking | 2 | Ranking | 3 | Ranking |
|---|---|---|---|---|---|---|
| Property ratio | .997 | 1 | .013 | 7 | .026 | 7 |
| Equity Multiplier | .997 | 2 | .013 | 7 | .026 | 7 |
| Shareholder equity ratio | -.986 | 3 | .040 | 4 | -.089 | 6 |
| Earnings per share growth rate | .104 | 4 | .960 | 1 | .116 | 5 |
| Gross profit growth rate | -.105 | 5 | .949 | 2 | .211 | 4 |
| Return on Assets | -.026 | 6 | .820 | 3 | .308 | 3 |
| Net asset interest rate | .016 | 7 | .181 | 6 | .980 | 1 |
| Return on assets | .123 | 8 | .367 | 5 | .921 | 2 |
| Extraction method: principal component analysis.<br>Rotation method: Caesar normalized maximum variance method. | | | | | | |
| a. The rotation has converged after 4 iterations. | | | | | | |

4.3.3 Factor naming

In this paper, the orthogonal rotation of the factor load matrix is taken as the maximum variance method. It can be seen from the factor load matrix after the rotation of the above table that the common factor 1 has three ratios of equity ratio, equity multiplier and shareholder equity ratio. High load, so 1 is named the operational capability factor.The public factor 2 has a higher load on the three indicators of earnings per share growth rate, total profit growth rate and asset return rate, so 2 is named growth capacity factor.The public factor 3 has a higher load on the return on assets and the rate of return on assets, so 3 is named the profitability factor.The three main factors extracted above fully and reasonably reflect the financial status of the enterprise.

4.3.4 Calculation factor score

After determining the three common factors, a matrix of component score coefficients can be obtained, as shown in Table 6.

Table 6 main factor values after factor analysis

| years | F1 | Ranking | F2 | Ranking | F3 | Ranking |
|---|---|---|---|---|---|---|
| 2008 | -1.99414 | 10 | .13772 | 4 | -.39682 | 8 |
| 2009 | -1.17825 | 9 | 1.34971 | 2 | -.14643 | 6 |
| 2010 | .37011 | 6 | 1.38326 | 1 | 1.58712 | 1 |
| 2011 | .89355 | 2 | -.40571 | 8 | .86275 | 2 |
| 2012 | .62404 | 4 | -.36247 | 7 | .42801 | 5 |
| 2013 | .39629 | 5 | -.20078 | 6 | .48054 | 3 |
| 2014 | -.28152 | 7 | -.75799 | 9 | .47971 | 4 |
| 2015 | -.63434 | 8 | -1.92555 | 10 | -.18491 | 7 |
| 2016 | 1.05031 | 1 | -.01017 | 5 | -1.40761 | 9 |
| 2017 | .75396 | 3 | .79197 | 3 | -1.70236 | 10 |

Based on the factor score coefficient and the data of the original variables, the number of scores (f1, f2, and f3) of each factor of each observation is calculated, and the sample is analyzed accordingly.Taking the ratio of the variance contribution rate of each factor to the variance contribution rate of the three principal factors as the weight, the comprehensive score y, y reflecting the financial performance of the company can be calculated to reflect the financial performance level of the listed companies on the GEM to a certain extent.The higher the overall score, the better the

financial performance of the company, and vice versa, the worse the financial performance of the company.

4.3.5 Establishing a score function for the factor

Using spss23.0 software to obtain the score coefficient matrix of the variable, the expression of the factor score based on the output data is as follows:

$$Y = 0.39F_1 + 0.35F_2 + 0.26F_3$$

4.3.6 Comparison of scores

According to the comprehensive score, the sample companies were ranked, and then the financial performance of Qingdao Haier Company was compared and analyzed, as shown in Table 7.

Table 7 Comprehensive scores

| years | overall ratings | Ranking |
|---|---|---|
| 2008 | -0.8326858 | 9 |
| 2009 | -0.0251908 | 7 |
| 2010 | 1.0411351 | 1 |
| 2011 | 0.430801 | 2 |
| 2012 | 0.2277937 | 3 |
| 2013 | 0.2092205 | 4 |
| 2014 | -0.2503647 | 8 |
| 2015 | -0.9694117 | 10 |
| 2016 | 0.0400828 | 6 |
| 2017 | 0.1286203 | 5 |

The above table shows the comprehensive financial performance score of Qingdao Haier Group for the decade from 2008 to 2017.As can be seen from the above table, the overall performance of Qingdao Haier Group has been in a state of ups and downs, and it has been upgraded from 2008 to 2010.In 2008, a global financial crisis occurred. Haier Group was affected by the financial crisis and its performance also experienced a serious decline. Afterwards, it began to increase gradually in 2009 and 2010.From 2011 to 2015, Haier Group's performance has gradually declined.The “Home Appliances Going to the Countryside” policy, which was launched in 2008, has stimulated the market and overdrafted demand in advance, and air conditioners are products purchased at low frequencies.Some of Haier's 2015 promotions have basically lowered the price range of 10%-20%. In the case of insufficient sales growth, it also led to a decline in sales.However, the sales of refrigerators and washing machines in the main business were all rising, and the air-conditioning business, which accounted for about 26% of total revenue, fell 18.79% to 16.251 billion yuan.The poor performance of the air-conditioning product market is also one of the factors dragging down Haier's performance.Although maintaining the number one position in the refrigerator and washing machine market, market share is falling.It fell from 29.91% and 29.88% in 2012 to 26.66% and 26.5% in the first quarter of 2015.From 2016 to 2017, Haier's performance has rebounded again.In 2016 and 2017, the market share of Haier brand continued to increase, which led to continuous improvement in its operating performance.

## 5. Relevant policy recommendations and conclusions

### 5.1 Policy recommendations

1. Enterprises should continuously strengthen financial management.The corporate finance department should establish an overall financial goal around the three aspects of profitability, operational capability and growth capability. All production activities, business activities and management activities of the enterprise must be carried out in strict accordance with the financial

goals set.In terms of profitability, we must continuously open source and reduce expenditures, raise awareness of energy conservation and consumption reduction, strictly control cost and expenditure, establish reasonable profit levels, and continuously strengthen sales management, expand sales channels, and maximize profits for enterprises; On the other hand, it is necessary to rationally control the level of liabilities, optimize the allocation of current assets and fixed assets, current liabilities and long-term liabilities to improve the operational capacity of enterprises; in terms of growth capacity, it is necessary to formulate long-term development plans and coordinate them from the perspective of long-term development. All business activities of the company to achieve more long-term, sustainable development.

2. Enterprises should adjust their financial goals according to macroeconomic conditions to adapt to the changing market economy.The development of enterprises is closely related to the macroeconomic situation. Under the conditions of good macroeconomic conditions, the development of enterprises will be relatively smooth. Under the conditions of poor macroeconomic conditions, it is difficult for enterprises to obtain healthy and sustainable development.Therefore, enterprises should adapt to the macroeconomic situation, adjust the financial goals of enterprises in a timely manner according to the development of the market economy, change marketing strategies, and improve the ability of enterprises to cope with changes in the market economy, so that enterprises can achieve rapid development.

### 5.2 Conclusion

This paper mainly analyzes the index system affecting the financial performance of listed companies by taking Qingdao Haier Group as an example, and uses factor analysis method to make a comprehensive evaluation of the financial performance of listed companies.Based on the financial indicators of Qingdao Haier from 2008 to 2017, this paper uses spss23.0 software for factor analysis, and obtains three main factor values and the weights of each value, and calculates the comprehensive of Haier Group for ten years. Performance score.Under the situation that the market economy is developing rapidly and the process of economic globalization is accelerating, listed companies will not retreat.Improving business capability and strengthening financial management are the only way for listed companies to remain invincible in the competition and achieve sustained, stable and rapid development.Therefore, the evaluation and analysis of the listed company's operating performance has also become a focus of attention. Through financial performance evaluation, we can more accurately understand the future development trend of the company and guide the investors to make reasonable investments, thus promoting the efficient and rapid development of China's capital market. .

## References

[1] Zhao Lu. Research on financial performance evaluation of coal listed companies in Shanxi Province based on factor analysis method [d]. Tianjin University of Commerce, 2017.

[2] Qi Lei. Evaluation of the performance of listed companies in the home appliance industry based on factor analysis [j]. China Gansu Agriculture, 2018 (8): 26-31.

[3] Li Qiong. An Empirical Analysis of the Trade and Circulation Efficiency of the Yangtze River Economic Belt Based on Factor Analysis——Based on the 2006-2016 Yangtze River Economic Belt 11 Area as Data [j]. Business Economics Research, 2018(9): 25-27.

[4] Liu Yu, Su Limin, Wang Guangwei. Application of Factor Analysis Method in Financial Performance Evaluation of Public Hospitals——Taking a Public Hospital in Chongqing as an Example [j]. China Management Informationization, 2016(9): 46- 49.

[5] Peng Xiaojie, Gao Mengjie. Evaluation of Business Performance of Agricultural Listed Companies Based on Factor Analysis[J]. Research on Financial and Economic Issues, 2014(11): 68-73.