

## Original Paper

# EVA Application in the Performance Evaluation of State-owned Enterprises in China—Take Gree Group as an Example

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### Abstract

*China's capital economy developed relatively late. In 2010, The State-owned Assets Supervision and Administration Commission (SASAC) officially stipulated that state-owned enterprises (SOES) should adopt EVA evaluation index. First introduced the traditional financial index system and measure of EVA index, and then by state-owned joint-stock enterprise group as an example, through the study of the application of EVA index in Gree, comparing to traditional financial index, analysis of the advantages of EVA index in performance evaluation of state-owned enterprises in China, and on the basis of the application of EVA index in our country state-owned enterprise puts forward some Suggestions to improve and perfect.*

### Keywords

*Enterprise performance evaluation, EVA economic added value, Gree Group, Capital Asset Pricing Model*

## 1. Introduction

### 1.1 Research Background

EVA (Economic Value Added) refers to Economic Added. EVA can not only be used to evaluate the specific business performance of an enterprise, but also serve as an incentive mechanism to motivate employees. Many foreign companies have achieved better performance by using EVA value management system. Economic added value on the one hand can overcome some defects of traditional performance evaluation indicators, to provide better and more suitable for managers to evaluate operating performance evaluation standard, make the enterprise to make scientific and reasonable decision, on the other hand can well combine performance management and risk management, to achieve the ultimate goal of enterprise value maximization through the whole process of enterprise management, can be very science very accurately measure the performance of an enterprise level.

Driven by the e-commerce industry, China's economy is booming in the Internet era. China has successfully leapfrogged Japan to become the world's second largest economy. At the same time, under the impact of virtual economy, China's real economy is facing new opportunities and challenges. On the one hand, real enterprises are committed to expanding online marketing channels; on the other hand, they use Internet thinking to conduct enterprise management and performance evaluation. For enterprises, performance evaluation system is not only a necessary assessment mechanism, but also a prerequisite for strategic decision-making. At present, the organization target of the maximization of shareholders' interests, traditional enterprise performance evaluation method has not meet the needs of times development, use the EVA method can better improve the enterprise performance evaluation of enterprise management and ownership division has become increasingly apparent agency costs under the present situation, and motivate top managers to improve asset utilization and maximize the enterprise value as much as possible. Gree company as global expansion in China's state-owned enterprises are leading enterprise, the enterprise can better practice and improvement of EVA performance evaluation methods, to promote and deepen the EVA in the implementation of the state-owned enterprises in our country so as to better adapt to market economic system deepening reform, accelerate transformation of the mode of economic development and promote the Chinese economy high speed development is of great significance.

## *1.2 Research Meaning*

### *1.2.1 Theoretical Significance*

Western countries related to EVA theory attention more and more high, but the use of EVA index in our country is still in its infancy stage, however, EVA index to the level of enterprise operating performance evaluation has the objectivity, authenticity and the superiority, is conducive to the long-term development of the enterprise, so Chinese enterprises should actively build reasonable EVA performance evaluation system. Operation system of our country's enterprises and western countries, is a certain difference between enterprises in the use of EVA as a performance evaluation index and cannot be directly used in western countries practice experience and research results, must be combined with the development of our country enterprise specific, to build a conducive to the development of our country enterprise EVA performance evaluation system.

### *1.2.2 Realistic Meaning*

China's manufacturing enterprises usually adopt the traditional performance evaluation index when evaluating their performance, which takes "profit maximization" as the goal and only pays attention to the current scale and benefits, and gives little consideration to the realization of the long-term value of the enterprise. Manufacturing enterprises to improve their performance of the method lies in innovation, innovation will require a large amount of capital in the research and development, research and development with investment, long period and too high risk, high return has the characteristics of high, this feature can lead to manufacturing enterprise operators and managers to increase the size of the enterprise blind investment, the end result is an enterprise in the cost of capital lack of constraints and

with low returns on capital, however, the use of traditional financial indicators for the calculation of the performance of the state-owned enterprises only consider the cost of capital, corporate debt in the cost of equity capital to did not make the influence of consideration, so the result is not to make the circumstances of the performance of the enterprise to make reasonable real reflection, is not conducive to safeguard the interests of the shareholders, but also not conducive to the goal of enterprise value maximization. And use EVA index not only considers the equity capital cost of the impact on performance, but also for some items have been adjusted, not only can create more wealth for the enterprise, the enterprise to maximize shareholder value, can effectively reflect the enterprise's real operating conditions and performance level, further enhance their competitive strength, to resist the ability of the various risks, improve manufacturing enterprises to better adapt to the environment of economic globalization. Therefore, our manufacturing enterprises should learn from the excellent practical experience of foreign and domestic enterprises, and at the same time combine with their own development situation, scientifically and rationally use EVA indicators, and build a scientific and effective performance evaluation system suitable for the development of Chinese manufacturing enterprises.

## 2. Literature Review

### 2.1 Literature Review of EVA Abroad

Foreign scholars have paid attention to the theory of EVA earlier, and explored the rationality and effectiveness of EVA. Foreign scholars have carried out in-depth and extensive research on the theory of EVA index, and also used empirical methods to verify the application of EVA index in enterprises and banks. The results of research and analysis are different.

#### 2.1.1 Research on EVA Theory, Relevant Accounting Adjustment, Advantages and Limitations

In the 1980s, Stern Stewart management consulting company of The United States put forward the concept of EVA index, which can be used to evaluate the business performance level of enterprises and also reflect the ability of enterprises to create wealth. The theory in the 1990 s got a wide range of promotion AIEhrbar (1998) illustrates in detail the application of EVA in enterprise performance evaluation, and the significance, points out that the EVA index can be as a form of enterprise management system, this system the most core part is within the enterprise to establish incentive mechanism, the introduction of it is a symbol of modern enterprise management mode change happened. At the same time, he summarized the related functions of EVA and proposed the "4M" theory. Wachowicz and Shrieves (2001) research suggests that companies use free cash flow discount valuation model or use EVA valuation model to its own business performance evaluation results are roughly the same, at the same time, these two models need to be for some of accounts must be adjusted to the real value of the enterprise for a certain evaluation David Young (2003) through the case analysis in the calculation of EVA index when need to adjust accounting subjects, In addition, it also analyzes the impact of different adjustment methods on EVA results. The research results show that the most

commonly used accounting items in enterprises should be adjusted. Phil Molyneux and Franco Fiordelisi (2004) studied 71 Banks in Europe. They conducted empirical research on EVA indicators of these Banks. When they calculated EVA value, they firstly adjusted several accounting indicators to some extent, demonstrated the specific process of calculating EVA value in detail, and found that EVA was significantly correlated with shareholder value of Banks. James and Scott Devin (2006) carried out corresponding research, and the research results showed that the maximization of EVA index is very similar to the maximization of corporate shareholder wealth, so EVA index can be used as a tool to manage enterprises and an incentive mechanism for enterprises. Theory Ying (2016) believes that EVA should be used in the evaluation of urban rail transit project. EVA based evaluation model can help urban rail transit project to make scientific and reasonable decisions.

John and Dodd (1999) argue that there is no need for accounting adjustments when calculating EVA. After a series of studies, they found that enterprises did not pay attention to the evaluation of customer satisfaction in the process of using EVA indicators, which led to long-term problems for the development of enterprises. Griffith (2009) studied the accounting adjustment items and calculation process of EVA indicators and tried to find out the relationship between EVA indicators and stock price prediction, but the results were unsatisfactory.

#### 2.1.2 EVA the Advantages of Performance Evaluation Index over Traditional Performance Evaluation Index

Pettit (1996), such as selecting several Banks as samples, studied the Banks of the correlation between EVA and MVA, research results show that the correlation coefficient is 0.4, while the rest of the traditional financial indicators (net profit, return on assets, earnings per share and net assets yield) and the correlation of MVA were 0.08, 0.13, 0.06, 0.1, shows that EVA index compared with the traditional financial indicators, the interpretation of the MVA ability stronger (Song, 2016). Lehn and Makhijia (1997) in the United States has selected 241 companies in the company as the research object, analyzed the enterprise relevant financial data between 1987-1993, the empirical research shows that the market value of the enterprise and the EVA index has a great deal of correlation, and free cash flow, earnings per share and accounting earnings have better than financial indexes such as correlation (Guo, 2011). Paulo (2002) compared EVA index with traditional financial index and studied the correlation between EVA index and enterprise stock price. The research results showed that EVA index had a higher correlation with enterprise stock price. Achuga (2002) analyzed in detail the differences between EVA index and EPS index and distinguished them. After measuring the company's performance with these two indexes, the results were compared and analyzed. The research results showed that EVA index could better predict the company's future earnings (Jiang, 2014). Robert T.K leiman selection (2003) 70 using EVA as indicators of performance evaluation of listed companies as research samples, the company's stock situation and other companies in the same industry with similar size comparison analysis, the conclusion shows that the EVA index of listed companies to create an average 2.9% more than the same industry companies to create wealth. Debdas (2006) selected some Indian enterprises as

research samples, conducted an empirical study on the five-year financial data of these companies, and compared the performance of EVA index with that of traditional performance evaluation index. The research results showed that enterprises should change the way of performance evaluation and actively adopt EVA performance evaluation index. Anastassis and Kyriazis (2007) used empirical research to prove that EVA had a better evaluation effect on the business performance of enterprises than traditional financial indicators. In addition, EVA had another advantage over traditional financial indicators in that it could well measure the level of value creation of enterprises. Ali Fatemi, Jeffrey P.K atz, Anand s.d. esai (2007) on the relationship between the EVA index and enterprise focus between end of the paper, the study found that for enterprise senior management personnel, EVA index compared with the traditional financial indicators can provide not only affect the enterprise strategic decision information, and the ability to predict the changes of cross section data. Abdullah (2011) selected logistics companies as research samples and conducted corresponding studies on their business performance. The research shows that COMPARED with other traditional performance evaluation indexes, EVA can better reflect the real performance level of logistics companies. Ismail (2011) studied the relationship between EVA index and business performance of an enterprise, and used multiple regression and other methods to find that EVA per share can better predict the business performance level of an enterprise compared with the traditional performance evaluation index. Joel (2012) introduced EVA and the concept of free cash flow, and compared the advantages and disadvantages of the two indicators. In addition, a number of enterprises are selected as research samples, and the empirical research method of regression analysis is adopted to prove that EVA index is superior. Alam and Nizamuddin (2012) believe that COMPARED with the traditional performance evaluation index, EVA is of greater help in improving enterprise value and can play a certain incentive role for enterprise managers.

## *2.2 Literature Review of EVA in China*

EVA index is a new concept for some Chinese scholars. In the initial stage, most of them are theoretical studies, and few scholars use empirical studies. In the study of EVA, scholars draw lessons from the empirical research methods of some foreign scholars, and make extensive exploration and Research on the basic theory and practice of EVA.

Song (2017) selected DM Vehicle System Co., Ltd. as the research sample, calculated the EVA value of the company in the past four years, and compared the index with the traditional financial indicators such as return on net assets and net profit. The research shows that the EVA index is more superior than the traditional financial indicators in reflecting the value creation ability of enterprises. Liu (2017) took Vanke Group as the research object, calculated the EVA value of the enterprise, and compared the EVA index with the business performance of Vanke Group under the traditional performance evaluation index. The research shows that the EVA index can more objectively and comprehensively evaluate the real business performance of the enterprise. Sun (2017) took company B as a research case, calculated the EVA value of the company and evaluated its business performance accordingly. At the same time,

the analysis results were compared with the business performance under the traditional performance evaluation indicators, and the research results showed that the EVA indicators were more superior than the traditional performance evaluation indicators.

### *2.3 Literature Review*

Through the literature review at home and abroad, it can be found that EVA index has been widely used in enterprise performance evaluation. Whether EVA is used to evaluate the performance of enterprises and banks or to study the driving factors of EVA has become the focus of empirical research. However, due to the differences between Chinese enterprises and foreign enterprises, the existing research results of foreign scholars can not be directly applied to Chinese enterprises. We should learn from the theoretical research results of these foreign scholars, and combine the actual development of Chinese enterprises, and further refine and deepen the use of EVA, so as to make EVA The index is more in line with the economic environment of the enterprise and highlights its role. From the literature, we can also find that the traditional performance evaluation index has some defects. If only using traditional financial indicators or other traditional evaluation indicators to evaluate business performance, then the business performance of the enterprise can not be truly reflected. Using EVA as the index of enterprise performance evaluation can reflect the true level of enterprise performance and promote the further improvement of enterprise competitive strength. However, the research shows that the EVA index is also defective. We need to improve the EVA performance evaluation index to make the EVA index play a greater and better role in the evaluation of business performance.

## **3. Theoretical Basis**

### *3.1 Value Management Theory*

In the 1950s, scholars in western countries put forward relevant concepts of value management theory, and later more and more scholars supplemented and explained this theory. Value management is a relatively advanced management mode for enterprises. Its function is to create more value for the stakeholders of enterprises through management and evaluation of their business activities. The implementation of the value management theory can help the business managers to better solve the problem of investment diversification, and promote the better and faster development of enterprises. The internal environment of enterprises is different, so the management methods among enterprises will be different to some extent, so will the definition of enterprise value management. The definition of value management by enterprises can be generally divided into three parts: (1) define value management according to the management results. From the perspective of management results, the most important goal of value management is to promote the realization of enterprise value maximization, which is achieved by making up the capital cost invested by shareholders. Value management is closely related to the strategic decisions made by enterprises and is a crucial factor to realize the maximization of enterprise value. (2) Define value management according to the management process. Value management can be applied in production operation, performance

evaluation, development decision and compensation incentive of enterprises. Its essence is internal management process. (3) Define value management according to management process and management results. Some scholars believe that value management can integrate result management and process management, constantly improve the creativity of enterprises and realize the goal of maximizing shareholder value. Meanwhile, it can also help enterprises rebuild internal management process and guide enterprises to achieve multi-level and global management.

### *3.2 Principal-agent Theory*

The features of the principal-agent system include three aspects, which are as follows: (1) the principal-agent is formed after the agent entrusts. (2) Agent includes two aspects: on the one hand, natural person; On the other hand, it refers to the relevant agency with legal personality. (3) The principal shall pay the corresponding remuneration. Professional agency and natural person will receive certain remuneration after accepting entrustment. In the enterprise, the enterprise owners to enjoy the ownership of the enterprise, but may not have the ability of operation and management, so in the management of many enterprises are now with all the separate phenomenon, these owners have strong management ability and abundant professional knowledge managers certain privileges, to make the managers directly involved in the enterprise operation and management, to ensure that the resources get optimal configuration. In this principal-agent relationship, the goals of the owner and the agent manager are different. The ultimate goal of the owner is to maximize their own value. The agent manager's goal is to constantly increase personal salary and leisure time, and then he will care about the business investment risk of the enterprise. There is a conflict between the two. In order to better improve the integrity of the agent and the enthusiasm of the agent to create more wealth for the enterprise, the enterprise should take incentive measures for the principal, so the business performance created by the agent for the enterprise needs to be measured. In this situation, EVA can not only be used as an effective incentive method, but also as a superior and effective management method. Meanwhile, it can make reasonable and true evaluation on the business performance of an enterprise.

### *3.3 Residual Income Theory*

Marshall put forward the concept of "residual income" at the end of the 19th century. He believed that the remaining part of an enterprise's economic benefits after deducting the interest of its invested capital is the "real profit" of the enterprise. In the 20th century, some companies began to apply this theory to their own operation and management, but due to the lack of theoretical basis, especially in the aspect of capital cost, there is a lack of reasonable measurement method, resulting in the residual income theory has not been widely promoted and applied. As the theory becomes more and more mature, some scholars have developed a new concept-capital asset pricing model based on the theory of optimal portfolio selection. Many scholars have carried out specific analysis on this model and gradually developed and improved it, laying a theoretical foundation for the perfection of the residual income theory, making the residual income theory more operable, and gradually developing and evolving into EVA theory on this basis. Residual income theory is an important principle to deduct pay

investment income part of investors, and the fees included in the cost of this kind of practice and EVA performance evaluation system to deduct enterprise debt capital and equity capital have a common place, EVA is adjusted in essence theory of residual income.

#### 4. EVA Method Introduction

##### 4.1 EVA Concept of

EVA is an index formally put forward by Stern Stewart consulting company in 1982. It indicates that the net value of adjusted after tax profit minus all capital costs is the newly created value of the enterprise. In essence, it is a redefinition of accounting profit from the perspective of economics. The calculation method is as follows:  $EVA = \text{NOPAT} - \text{Na} \times \text{kW}$ , NOPAT refers to the after tax operating profit, which is the adjusted net profit after tax; Na represents the total capital investment, which needs to be adjusted according to the accounting statement data when calculating the EVA value; kW is the weighted average capital cost rate, taking into account the cost of equity capital and the cost of debt capital. The basic idea of EVA system is that enterprise investors can freely realize their investment in the capital of enterprises in the stock market, and then transfer it to other investments. Therefore, investors should at least obtain the opportunity cost of investment from enterprises, that is, the weighted average capital cost of enterprises. At this time, the EVA value is equal to or greater than zero. If the EVA value is less than zero, it indicates that the net profit of the enterprise is not enough to make up for the cost of capital, and the wealth of shareholders is eroded.

##### 4.2 EVA Calculation Principle of

###### 4.2.1 Adjustment Principle

Adjust the after tax operating profit and capital investment to eliminate the distortion of accounting information. According to the latest assessment rules issued by SASAC, the specific adjustment items are as follows:

- (1) Adjustment of interest expense. Interest expense belongs to capital expenditure and should be added back to operating profit.
- (2) Adjustment of R & D expenses. According to the performance evaluation of traditional enterprises, it is easy for the managers to reduce the R & D expenditure for their own short-term interests and give up the long-term development of the company. Therefore, in order to avoid this kind of situation, the R & D expenses should be capitalized when calculating the EVA value, and the amortized expenses should be added back to the operating profit.
- (3) Adjustment of goodwill. Goodwill refers to the acquisition cost. Like R & D expenses, in order to make the managers not have any scruples when facing the M & A activities that can create shareholder value, they should add the amortized goodwill back to the operating profit.
- (4) Adjustment of deferred income tax. Due to the inconsistency of depreciation methods, the time difference between the payable income tax and the accounting income tax results in the formation of deferred tax. When calculating EVA value, the credit balance of deferred tax should be added to after



tax operating profit and capital, while the debit balance should be deducted from capital and after tax net profit.

(5) Adjustment of various reserves. According to the principle of accounting prudence, bad debt reserves, inventory depreciation reserves, long-term equity investment depreciation reserves, fixed assets depreciation reserves, etc. will be accrued for assets. However, in the calculation of EVA value, only the occurred reserves can be considered. Therefore, after tax net profit and capital will be added to the increase of current reserves, otherwise, it will be deducted.

#### 4.2.2 Calculation of Weighted Cost of Capital

The cost of enterprise capital consists of debt capital and equity capital cost, which can be calculated by the following formula: weighted capital cost = debt capital cost  $\times$  debt capital weight + equity capital cost  $\times$  equity capital weight  $k_W = K_L * W_L + K_e * w_e$

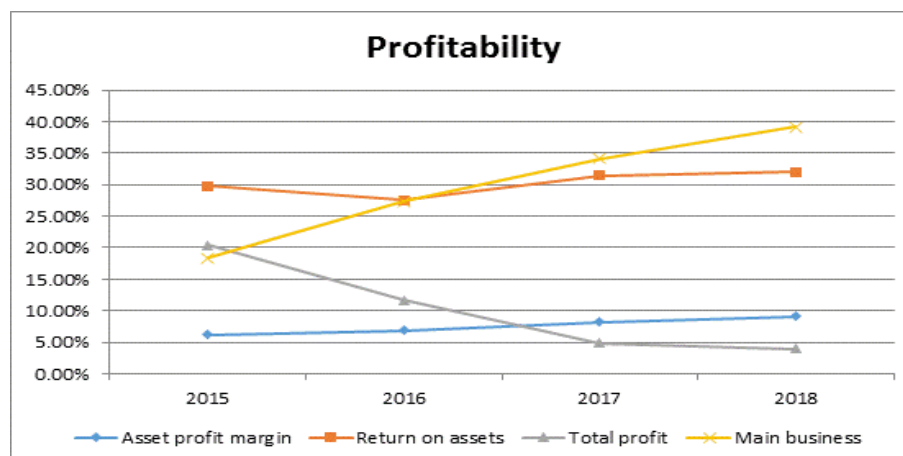
## 5. Case Study

### 5.1 Analysis of Current Situation of Gree

According to the research on the 2014-2018 financial statements of Gree Group, it is found that the total assets, operating revenue and net profit indicators in the accounting statements of Gree Group reflect the gradual growth of the accounting profit of the enterprise. The operating results and development of the enterprise are good. The operating revenue and net profit of the year 2017-2018 decreased slightly, but not obviously. Then, by analyzing the ratio reflecting the profitability, operation ability, debt paying ability and growth ability of the enterprise, we can find that the growth rate of the main business income has an inverse growth from 2017 to 2018, which indicates that Gree may use the new enterprise accounting system to adjust the profit. In these two years, the turnover rate of the accounts receivable in enterprise and the turnover rate of the total assets have declined significantly.

### 5.2 Traditional Financial Analysis of Gree

This paper will analyze the development of Gree Group in 2014-2018 from the perspective of traditional performance evaluation, such as basic indicators, profitability indicators, operating capacity indicators, solvency indicators and growth capacity indicators.

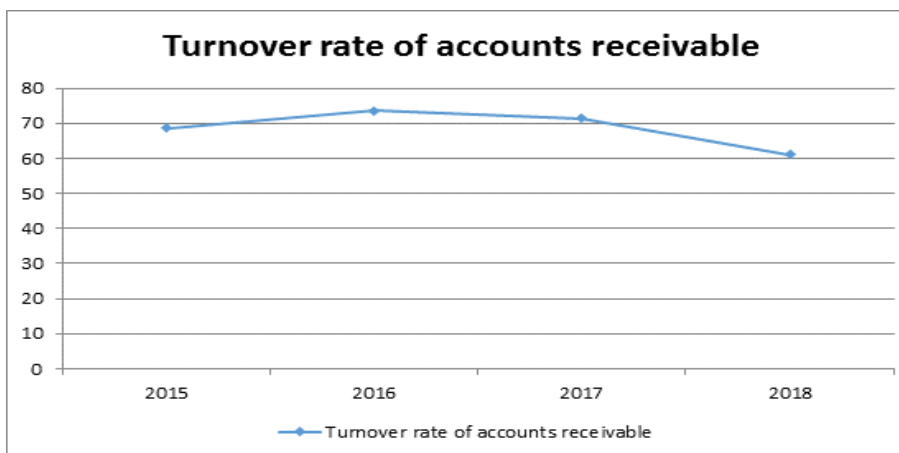
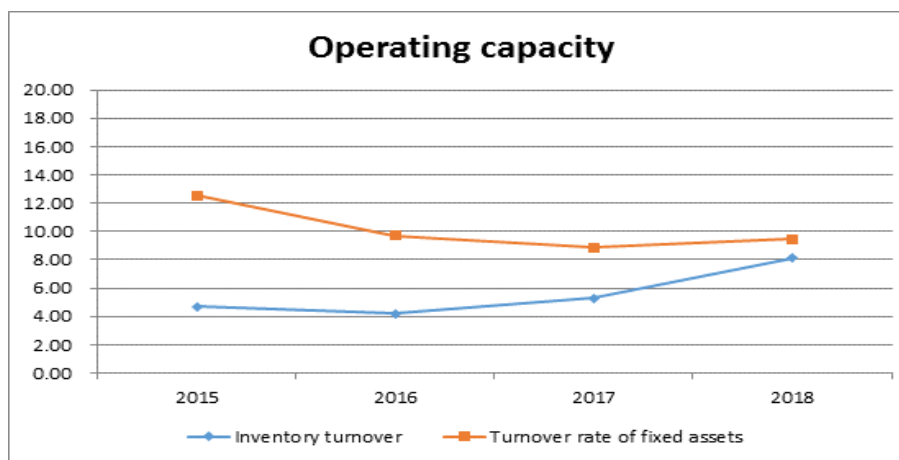


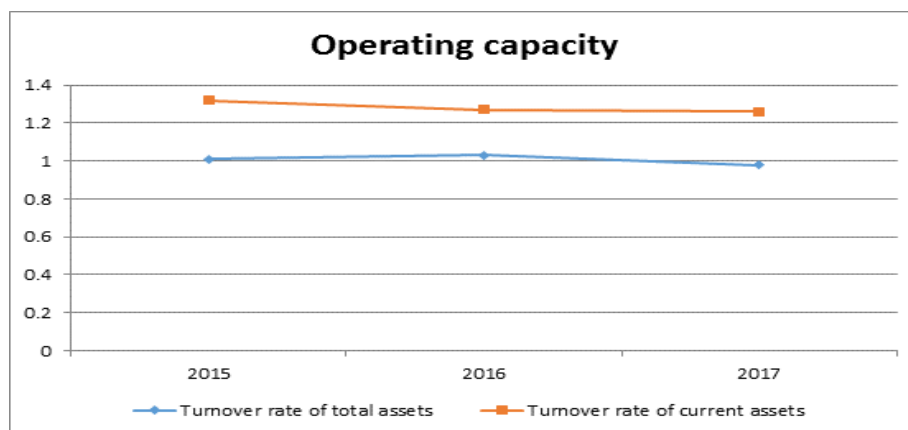
## 5.2.1 Profitability Analysis

	2015	2016	2017	2018
Asset profit margin	6.22%	6.92%	8.18%	9.12%
Return on assets	29.74%	27.59%	31.43%	32.06%
Total profit	20.38%	11.64%	4.88%	3.96%
Main business	18.36%	27.26%	34.09%	39.11%

## 5.2.2 Operational Capacity Analysis

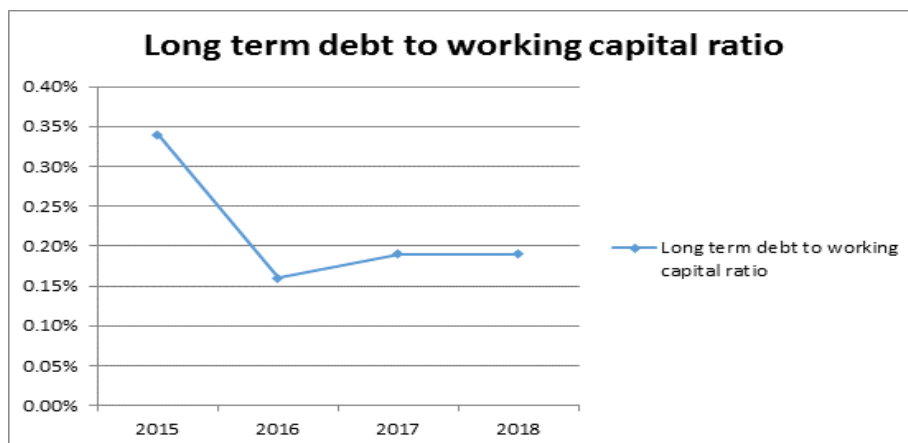
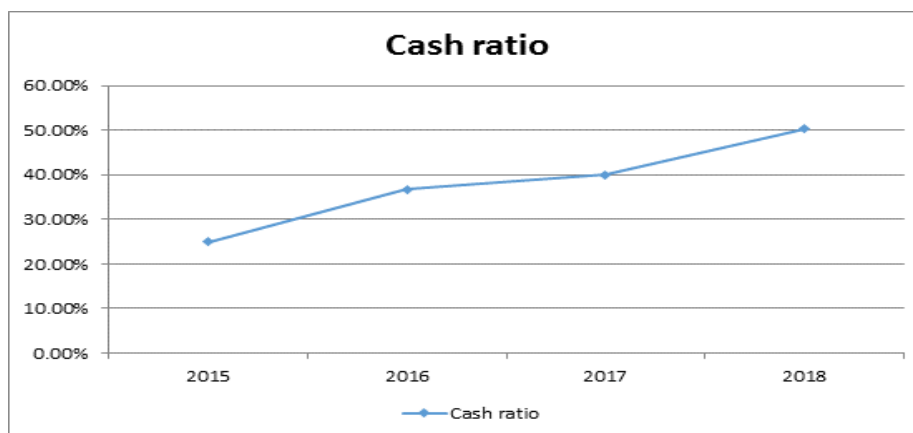
Operating capacity				
	2015	2016	2017	2018
Turnover rate of total assets	1.01	1.03	0.98	0.95
Turnover rate of current assets	1.32	1.27	1.26	1.23
Turnover rate of accounts receivable	68.56	73.52	71.37	61.08
Inventory turnover	4.69	4.21	5.30	8.10
Turnover rate of fixed assets	12.54	9.72	8.87	9.45

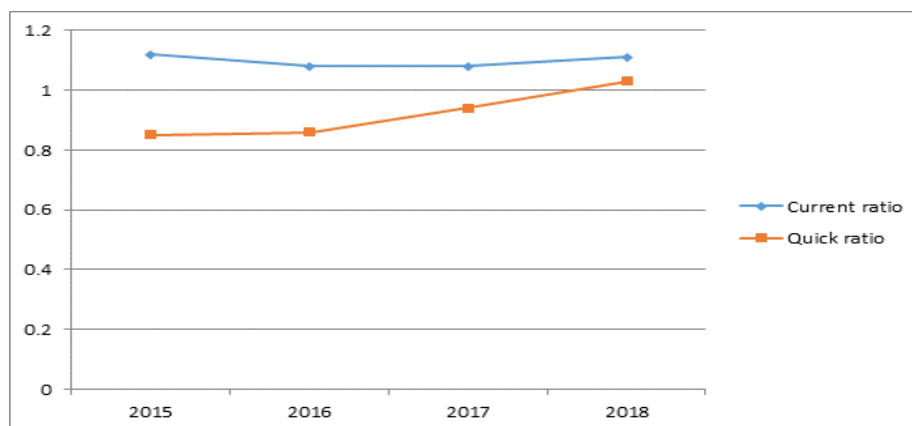




### 5.2.3 Solvency Analysis

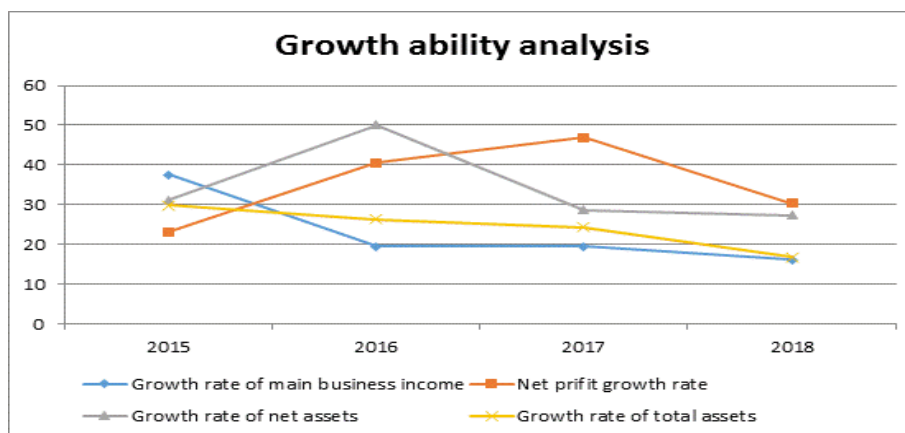
Solvency				
	2015	2016	2017	2018
Current ratio	1.12%	1.08%	1.08%	1.11%
Quick ratio	0.85%	0.86%	0.94%	1.03%
Cash ratio	24.98%	36.72%	39.94%	50.32%
Long term debt to working capital ratio	0.34%	0.16%	0.19%	0.19%





#### 5.2.4 Ability to Grow

Growth ability analysis				
	2015	2016	2017	2018
Growth rate of main business income	3706	19.43	19.44	16.12
Net profit growth rate	23.1	40.56	46.87	30.33
Growth rate of net assets	31.16	50.08	28.59	27.25
Growth rate of total assets	29.89	26.24	24.3	16.85



According to the above analysis, Gree Electric Appliances Group performs well in profitability, operation ability, debt paying ability and capital market performance, except for the poor debt paying ability ratio due to the influence of cash back account of current liabilities, Gree Electric Appliances has excellent performance in other aspects. In the future, we will also change the way of promoting sales in the past, weaken the scale, and focus on channelling sales and pursuing healthy sales growth as the main goal. At the same time, we will pay attention to improving the construction of online channels to ensure online sales services through offline stores. Due to the difficulties in expanding overseas market, Gree hopes to find a better breakthrough in overseas market. In terms of the main business, first of all, air conditioning is still the main source of profit, and in the future, the focus will be on the mobile phone series and energy management as the core of the smart home and consumer experience services. Recently, Gree suspended trading and announced plans to issue shares to buy main new

energy vehicles and new energy technology research and development of Silver Long New energy, to expand the new direction of development. We can see that although the main business revenue of Gree Electric Appliances has declined due to the overall sales decline of air conditioners, the company has strong financial strength as the foundation and has taken solid steps on the road of diversification. However, the road of diversification is tortuous, and it will certainly encounter difficulties in the middle. Whether the company can successfully carry out diversification construction and leave the sales decline dilemma is still full of uncertainty. Although temporary difficulties encountered, in growth stage, but still maintain operating profit was flat, Gree electric appliances and hand heavily, industry leading technology, efforts to expand online sales and overseas markets, the development of small home appliance, smart home and die manufacturing, believe Gree electric appliances based on the air conditioning industry, the future can find new business FaZhanDian, in new business, also can enter the new business growth. Although Gree Electric Appliances Group has achieved the first consecutive sales volume in the industry in the past and the sales myth of high gross margin,

However, through the analysis of operating revenue in the first three quarters of 2019, it was found that Gree electric Appliances experienced a sharp decline in operating revenue in the overall declining environment of the industry. While the decline was largely a reflection of the industry downturn, Gree's main rival, Midea Appliances, managed to stabilize its revenue and even posted a small increase. Investigate its reason, Gree electric appliances, although with the product quality is superior, the original sales rebate, the off-season sales, boutique, unique sales model, pay the coma now occupy the dominant position in the sales of industrial chain, but the sales model under the circumstances of air-conditioning sales slump, it will have adverse effect on sales in the case of a decline in sales, internally, Gree electric appliances need to repair relations with major domestic suppliers, and the use of Gree mall service. Externally, efforts should be made to expand overseas markets and increase revenue by opening new markets. Air conditioning industry demand will not increase indefinitely, the company needs to step up the development of smart home and expand new areas of new business, only walk in front of people, to maintain the sustained growth of the enterprise.

### 5.3 Calculation of Performance Evaluation Index of Gree Company Based on EVA

According to the basic data provided by Gree, calculate the EVA index value of the enterprise in 2016-2018. The NOPAT and TC calculation results after adjustment are shown in Table 1 and table 2.

**Table 1. Gree Company's NOPAT Value for 2016-2018 (Unit: Ten Thousand Yuan)**

Projects/Year	2016	2017	2018
Net profit after tax	1226300	1425300	1262370
Add: interest expense	49196.4	70976.50	65235.20
Add: Impairment of fixed assets	688.21	1997.23	1892.27
Minus: Deferred tax assets	568261.00	819296.00	876438.00

Add: Deferred income tax liabilities	32894.30	25684.70	24413.70
Operating profit after tax	740817.91	704662.43	477473.17

**Table 2. Gree Company's Captial Value in 2016-2018**

Year	2016		2017		2018	
Projects	Value (ten thousand yuan)	Weight (%)	Value (ten thousand yuan)	Weight (%)	Value (ten thousand yuan)	Weight (%)
Debt capital	9823540	73.47	11109900	71.11	11283847.63	42.45
Equity capital	3546670	26.53	4513150	28.89	15295254.27	57.55
TC	13370200	100	15623100	100	26579101.90	100

It can be seen from table 1 that in 2016-2018, due to the continuous growth of deferred income tax, and the growth rate exceeds the total change range of after tax net profit, interest expense and fixed assets depreciation reserves, after tax operating profit starts from 2016 GREE company began to decline in, due to several consecutive years of main business income downturn led to the decline in enterprise value, accounts receivable turnover rate and total assets turnover rate deterioration led to the decline in the company's operating capacity, and these phenomena are mixed with investors's attention because of the spread of statistical system and other business income as well as the coat of non business income.

It can be seen from Table 2 that Gree Group raised a lot of equity capital in 2018. The high leverage capital structure of the previous two years has been transformed into equity capital structure. At present, there is little difference between equity capital and debt capital. Maybe Gree executives realize that the company's business is not good and it is necessary to reduce business risk. As Gree is a state-owned listed company, according to its special status, this paper uses the central bank's 3-5-year loan interest rate (4.75%) to determine the cost of debt capital. Only the capital asset pricing model is used to determine the cost rate of equity capital. The risk-free rate of return is calculated according to the five-year treasury bond interest rate index (4.4%), and the market risk premium in China is basically between 3% and 5%. Therefore, the market risk premium is 4%, and the  $\beta$  coefficient is determined as 0.7505 according to the research results of the authoritative database Ruisi on the risk factors of the camp model of Gree enterprises. According to the formula  $RI = RF + \beta I (RM - RF)$ , it is calculated that the cost of equity capital is 5.05% and the weighted cost of capital is 4.92%. According to the above analysis, the EVA value of Gree from 2016 to 2018 is calculated.

**Table 3. Gree Company's EVA Value for 2016-2018**

Year/Projects	2016	2017	2018
EVA (ten thousand yuan)	83004.07	-63994.09	-830218.64

According to Table 3, the enterprise value has increased in 2016, but the enterprise has been consuming value from 2017 to 2018. This is contrary to the results of traditional enterprise performance evaluation methods.

#### *5.4 EVA Comparison between Indicators and Traditional Financial Indicators*

Through comparative analysis of net profit and EVA value in 2016-2018, it can be found that the net profit of an enterprise does not mean that the enterprise has created value, on the contrary, the loss of enterprise value may occur. As a traditional enterprise performance evaluation index, the net profit value can not measure the real value of an entity enterprise in essence, it exaggerates the enterprise value, and comprehensively considers the EVA value of the enterprise's equity capital cost and debt capital cost, which is calculated from the after tax profit adjusted to the after tax operating profit which can more truly reflect the enterprise's capital flow, and can provide more information to the senior managers. Accurate financial information of the enterprise can make it use of the enterprise resources efficiently to improve the economic benefits of the enterprise.

### **6. Conclusions and Suggestions**

Through the above analysis of financial ratio and EVA index of Gree Group, we can find out that we can grasp the enterprise's operation status as a whole, find out the possible adverse trend of the enterprise, and find out the reasons for the inefficient use of assets. EVA value is affected by operating profit and capital structure of enterprises. Therefore, it can be combined with traditional financial indicators such as sales growth rate and asset turnover rate to find out the problems existing in the operation and management of enterprises comprehensively and efficiently and decompose them to all departments as management objectives. On this basis, the following suggestions are put forward for the EVA index to be included in the performance evaluation system of state-owned enterprises:

First, enterprise managers should accept value management from the concept, understand that EVA value is not only a calculated index, its core is that any capital has opportunity cost, managers should consider the opportunity cost when making every strategic investment, so as to make effective decision.

Second, set up the implementation plan of EVA index system scientifically. Although it is very difficult to calculate EVA value at present, enterprises should set up adjustment projects and calculate capital cost in strict accordance with the concept of economic added value. If they only follow the same industry standard or directly use financial data, the application of EVA index is meaningless.

Third, the implementation of EVA is bound to be a long process. Managers should actively learn from the experience of foreign successful cases, and gradually implement EVA from top to bottom.

Fourth, to carry out internal training, not only the financial department should master the core of EVA, but also every employee of all levels of departments should actively participate in the value management of the enterprise.

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