



# Research on Earnings Management of Chinese Listed Companies in Electrical Industry: Taking Wintime Energy as an Example

Kehan Zhou <sup>1</sup>

<sup>1</sup> Department of Accounting, Shanghai Lixin University of Accounting and Finance, Shanghai, China  
Email: wfzczkh@163.com

## ABSTRACT

China as one of the significant emerging markets is high attention to the reality of financial reports. While earnings management is likely to impact the accuracy of accounting information, disturb the market and influence the stakeholder's judgement. It is essential to research the motivation and detailed method of earnings management for better control of this behaviour. This study, therefore, is based on a case analysis of Wintime Energy, which aims to analyse the rationality of the behaviour of changing accounting estimates to realise earnings management. For this, a study is conducted by researching the time and policy of accounting estimate change and comparing the changed policies with other similar enterprises. Then, this paper analyzes the effect of this change using the stock price, financial indicators, and other related factors. The results indicate that the behaviour of Wintime Energy's accounting estimate change was unreasonable. The intention to manipulate profits and alleviate capital flow problems could be verified.

**Keywords:** *Change of accounting estimate; Earnings management; Depreciation of fixed assets.*

## 1. INTRODUCTION

Social developments gradually increase the demand for efficient operation of capital markets. However, enterprises tend to use earnings management by changing accounting estimate methods, like changing the depreciation method of fixed assets, to improve competitiveness, which disturbed the whole market order and was unfair to other companies and stakeholders.

The motivation of earning management in the past 20 years was highly considered by scholars [1]. The theory from Healy and Wahlen [2] was the most representative one, which classified the motivation of earnings management into three directions: capital market motivation, contract motivation which is based on the statistic of accounting and government regulation motivation. In addition, Scott [5] also mentioned that except for the above three motivations, earnings management also has other two inspiration elements: income tax savings and the turnover of the CEO. In China, Li [3] emphasised that "raising capital" and "avoiding tax rebates" are the two most prominent motivations for earnings management.

After comparing the related research between China and the Western countries, the research gap on earnings management is obvious. The research in China was almost ten years late and was not systematic and comprehensive [10]. The research field was mainly focused on the capital market. Only a few studies combined the earnings management issues with the problem of debt and the compensation of managers or other levels [17]. In addition, due to the huge variety of capital structures, economic systems and market environment between China and the Western countries, China cannot simply imitate the western earnings management theories [9]. Further studies of the motivation of earnings management still have a large improving space.

The characteristics of accounting estimate change tend to be subjective, which was frequently used and manipulated by companies to achieve expected profits. It has become a common method of earning management as well [12]. However, the related accounting standards on depreciation policy of fixed assets are still imperfect in China, leading to enterprises can choose the depreciation methods independently and deliberately. In addition, studies on earnings management in China are based on empirical analysis, several case studies were

ignored the case analysis which leads to low representativeness and operability.

In this context, this paper can add new value to current studies. The remainder of this paper is organized as follows: Section 2 reviews relevant studies and presents the gaps. Section 3 overviews the process of the case of Wintime Energy and analyzes the reliabilities of its earnings management behaviour. Section 4 provides additional analysis and discussion. Section 5 concludes the paper and gives some suggestions.

## 2. CASE ANALYSIS

### 2.1. Company information

#### 2.1.1. The current situation in the electrical industry

The electrical industry in China, as one of the most significant fundamental industries of the nationality, has a large scale while the operation is weak. The core strength and the quality of the product are not competitive compared with the western countries. According to the statistic from the listed companies, the operating income and profits of the electrical industry were much lower. The prospect of this industry in China is very difficult.

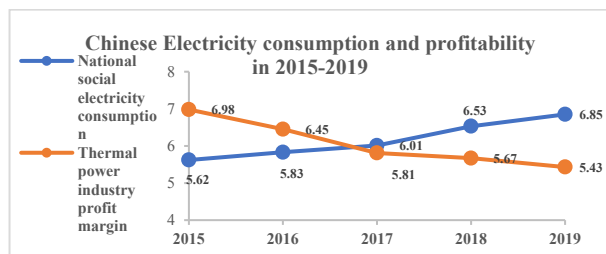


Figure 1 Chinese Electricity consumption and profitability in 2015-2019

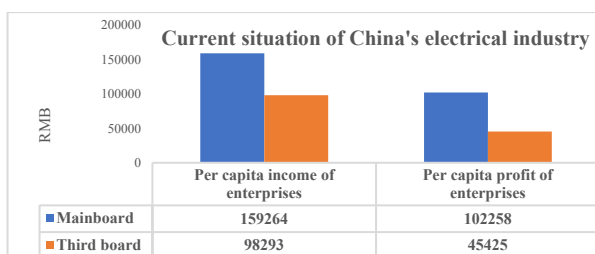


Figure 2 Current situation of China's electrical industry

The problems of the Chinese electrical industry were extremely severe. Such as high failure rate, short life cycle and less power generation. The supply of products exceeds demand, and operating revenue consistently declines. Compared with foreign brands, the Chinese electrical industry lacks competitive products and innovation, traditional product updating is also extremely difficult. It is difficult to get the board market in the world. In this case, problems of oversupply and occupying several resources are gradually serious. Chinese electrical

industry is facing dramatically crisis and challenges. In addition, with the influence of sustainable policies, like energy retrofits and green construction, the national electricity consumption decreased obviously, by 4.5% in 2019. In this context, the operating income of the electrical industry suffered a significant decline.

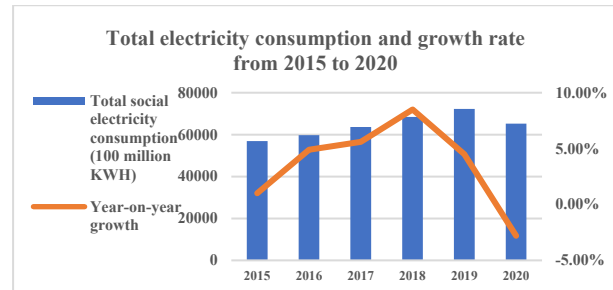


Figure 3 Total electricity consumption and growth rate from 2015 to 2020

#### 2.1.2. Company introduction

Wintime Energy Co., Ltd. is a leading enterprise in the Chinese electrical industry, which was listed in the 1980s. The company focuses on developing power, coal, petrochemical and other energy industries, and has formed a comprehensive energy supplier pattern based on the integration of coal and electricity. The main shareholder of this company is Wintime enterprise, an investment holding enterprise group, mainly engaged in energy, real estate, investment, finance etc.

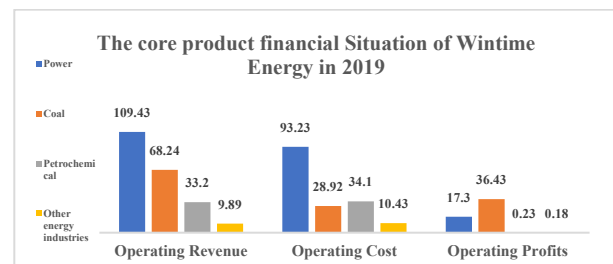


Figure 4 The core product financial Situation of Wintime Energy in 2019

Although Wintime Energy has had a stable development trend for a long period, it still failed to pay interest on the fourth term short-term financing bonds until the end of payment on 5th July 2019, resulting in a serious debt default. Besides, until the end of 2019, Wintime Energy still had no relevant measure for this default problem. What's wrong, in 2019, Wintime Energy not only faced a serious debt burden but also suffered the operating revenue declining and operating costs rising significantly. The annual net profit was only 159,229,700 RMB, compared with 86,711,700 RMB in 2018, which decreased up to 81.64%. In this case, Wintime Energy was facing a severe financial crisis in 2019. If excluding the non-operating profit, the net profit of Wintime Energy has dramatically lost in 2019. Earnings management becomes a strategy for enterprises to turn losses into profits.

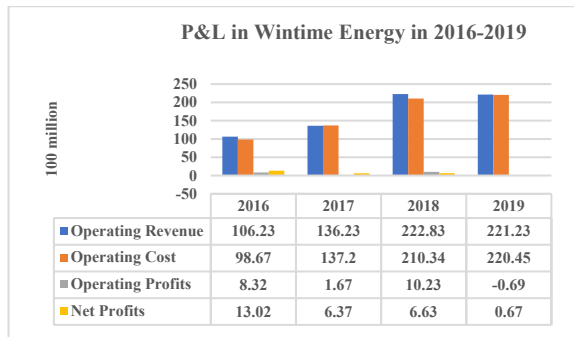


Figure 5 P&L in Wintime Energy in 2016-2019

### 2.1.3. The change of accounting estimate in Wintime Energy

On 25th December 2019, Wintime Energy released an announcement about changing accounting estimates. The reason was that part of the company's old equipment was using international advanced technology, which technology and operation capacity were much higher than the similar equipment in China. Besides, the consumption in the operating process was small, making its expected life cycle could exceed the design life of other equipment. In this situation, the company decided to adjust the expected service life of this equipment and extend its depreciation period. However, through the analysis of the financial statements of Wintime Energy in 2019, the turnover rate of this equipment has not changed significantly, and its utilization rate still fluctuates within the normal range. The rationality of this adjustment needs to be considered.

## 2.2. Earning management

### 2.2.1. Motivation

#### 2.2.1.1. Debt crisis

On 5th July 2019, Wintime Energy failed to pay the fourth short-term financing bonds of 2019 on schedule, resulting in a serious debt default. In addition, dramatic price fluctuations occurred in the "13 Wintime bonds, 16 Wintime 01, 16 Wintime 02, 16 Wintime 03" and other corporate bonds that Wintime Energy subordinated, resulting in all of the bonds and stocks of Wintime Energy being suspended next day. What's worse, the medium-term bond of "15 Wintime Energy MTN001", which should be redeemed on 22nd October 2019, was not paid to the relevant institutions on 2nd November 2019, breaching the contract again. Besides, since then, the short-term financing bond "18 Wintime Group SCP001" of Wintime Energy in 2019 did not transfer the payment amount to relevant institutions eventually, causing a default of the bond again.

Through analysis, it can be concluded that the severe internal and external situation led to the debt burden increase, and the liquidity problem was prominent. In 2015, Wintime Energy gradually integrated logistics and

investment into cooperative development, hoping to reduce the proportion of traditional coal mining. And increased goodwill reach 4.539 billion RMB by acquiring other enterprises. However, Jeong et al. [11] indicated that one of the significant financial pressure on traditional energy industries is product innovation. The cash flow burden of business model transformation and product updates led to the debt of Wintime Energy dramatically increasing. In just four years, the total debt of Wintime Energy increased from 43.194 billion at the end of 2014 to 77.354 billion at the end of 2018.

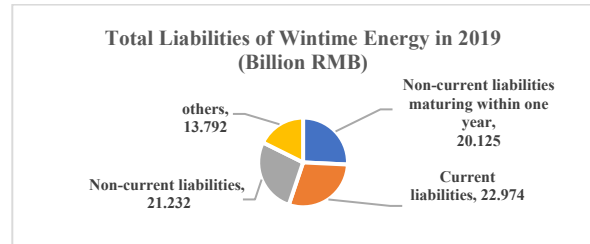


Figure 6 Total Liabilities of Wintime Energy in 2019

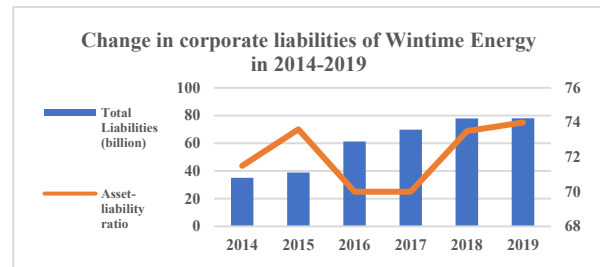
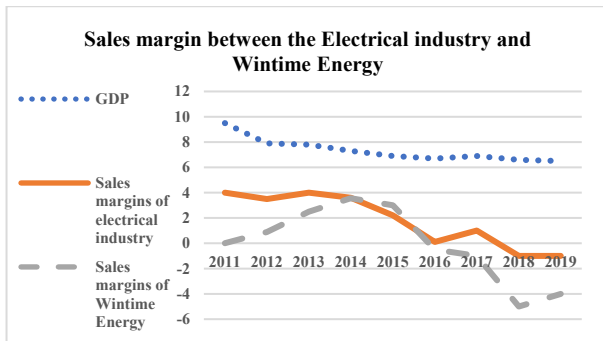


Figure 7 Change in corporate liabilities of Wintime Energy in 2014-2019

According to the financial statements of Wintime Energy in the third quarter of 2019, the total liabilities of the company were 78.123 billion RMB, including 20.125 billion RMB of Non-current liabilities maturing within one year and 22.974 billion RMB of non-current liabilities. The asset-liability ratio was 72.5% and the liquidity ratio was 0.25. Under this serious debt burden, the company's capital flow was difficult to turnover normally, resulting in the company's two consecutive short-term financing bonds were not paid on schedule in 2019, with the value of up to 1 billion RMB and 1.5 billion RMB respectively. After that, several of Wintime energy's similar debt default problems also be triggered.

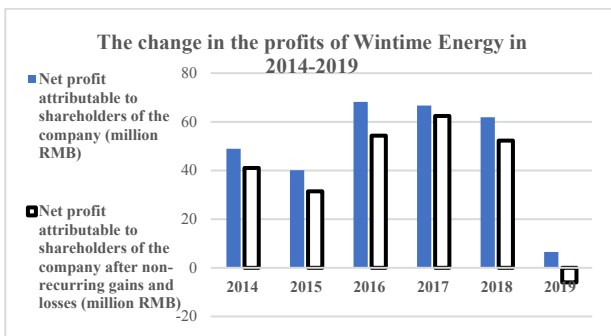
#### 2.2.1.2. Revenue reduces

In recent years, the Chinese economy is under great pressure [19]. Although the per capita GDP has only a small fluctuation, the overall GDP still decline obviously, and the overall economic situation in China was not optimistic [18]. In addition, influenced by the national policies about green production, the sales profit margin of the whole electrical industry has been greatly impacted [4]. As a leading enterprise in the electrical industry, Wintime Energy was also in dilemma, the sales profit margin has significantly decreased currently.



**Figure 8** Sales margin between the Electrical industry and Wintime Energy

In addition, the debt burden of the company was more and more serious in the long term. The continuous transformation and upgrading of production made the foreign debt increase. In this case, interest expenses also increased accordingly, reached to 3.13 million RMB in the first three quarters of 2019. Besides, being affected by the market situation and the company's business strategy, profits in 2019 declined to only 31.0828 million RMB, decreasing more than 90% compared with the previous year. The “Net profit attributable to shareholders after non-recurring gains and losses” even showed a loss of 61.21 million RMB.



**Figure 9** The change in the profits of Wintime Energy in 2014-2019

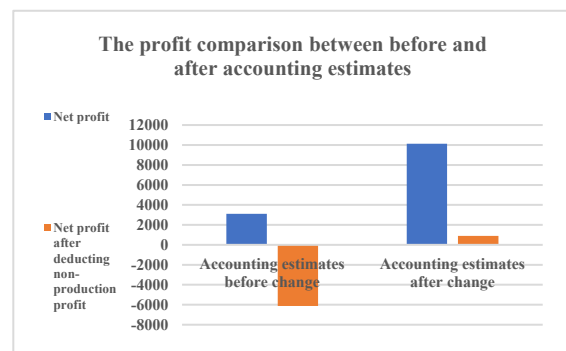
### 2.2.2. The specific manipulation of change accounting estimate

Wintime Energy proposed an accounting estimate change to extend the depreciation life of some fixed assets On 25th December 2019. The book balance of the relevant fixed assets involved after deducting the estimated net residual value from 1st October 2019, the remaining estimated useful life is calculated following the new provisions. After this adjustment, the depreciation amount of the fourth quarter of 2019 was 95,341,000 RMB, while the depreciation amount calculated according to the original depreciation life was 188,836,800 RMB.

**Table 1.** Desperation life of Wintime Energy of the original and adjusted

Asset class	Depreciation method	Original depreciation life (years)	Adjusted depreciation life (years)
Thermal power stations and other buildings	The straight-line method	25	50
Non-production buildings	The straight-line method	25	50
Generating and heating equipment	The straight-line method	20	30
Substation equipment	The straight-line method	22	30
Natural gas pipeline	The straight-line method	20	30

This accounting estimate change made the depreciation amount decrease by about 93 million BMR in the fourth quarter of 2019, leading to a net profit increase of about 70 million RMB. The financial reports of Wintime Energy in the first three quarters of 2019 showed that the net profit of the company was only 31.0828 million RMB, and the net profit after deducting the non-production profit was about 61.21 million losses. Therefore, the 70 million profits added played a significant role in turning the deficit into profit this year.



**Figure 10** The profit comparison of accounting estimates changed

## 3. RESULTS & DISCUSSION

### 3.1. Reasonable Doubt

#### 3.1.1. Whether extending the depreciation life of fixed assets is reasonable.

On 21st December 2019, the change of accounting estimate by extending the depreciation life of fixed assets was approved by the board of Wintime Energy. However, the changing date chosen on 1st October 2019 should be

doubted. It was not the date of the implementation meeting or on 1st January next year. If the depreciation time of fixed assets did not meet the normal requirements, it needed to be changed from the execution date, rather than two months later.

Besides, the depreciation rate of fixed assets can clearly show the residual value and utilization of fixed assets. From the diagram below, the depreciation rate of fixed assets of Wintime Energy was in the range of 5%-8% in recent years and even reached 8.67% in 2018, but suddenly significant decreased to 2.21% in 2019. The behaviour of significantly extending the fixed assets depreciation rate was being considered.

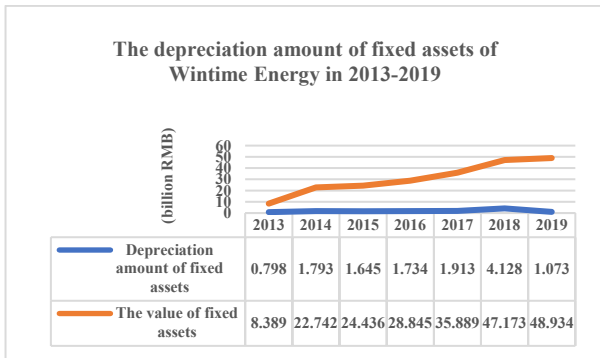


Figure 11 The depreciation amount of fixed assets of Wintime Energy

However, it is necessary to use the fixed asset turnover rate to analyze the utilization rate of fixed assets and explore the operating capacity of enterprises. By comparing the following two figures, Wintime Energy extended the depreciation period of fixed assets and reduced the depreciation amount by changing the accounting estimation in 2019, leading to the depreciation rate decreasing significantly. However, the turnover rate of fixed assets hasn't got such dynamic changes this year, just had a small fluctuation, with the same ratio as the previous years.

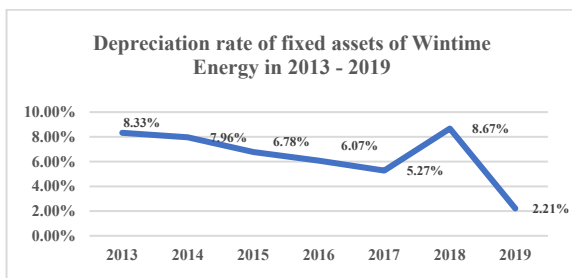


Figure 12 The depreciation rate of fixed assets of Wintime Energy

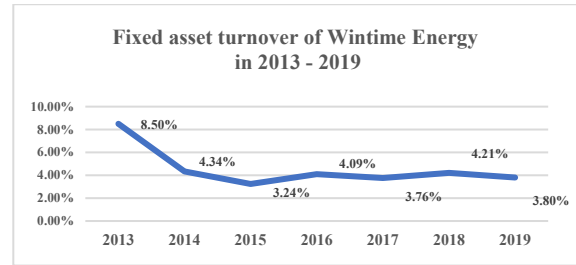


Figure 13 Fixed asset turnover of Wintime Energy

### 3.1.2. The basis selection of the depreciation life.

Comparing the fixed assets depreciation policy of Wintime Energy with other enterprises in the same industry is an acceptable method to further explore the rationality of this change [15]. This paper chooses the companies which are listed as electric companies with similar scale and status compared with Wintime Energy. The external environment and internal business model are similar. Besides, their fixed assets (Building and Generator heating equipment) are according to the IFRS, based on the original value of the fixed asset, depreciated by using the straight-line method.

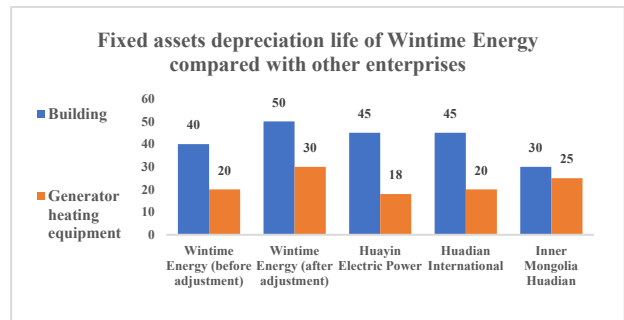


Figure 14 Fixed assets depreciation life compared with other enterprises

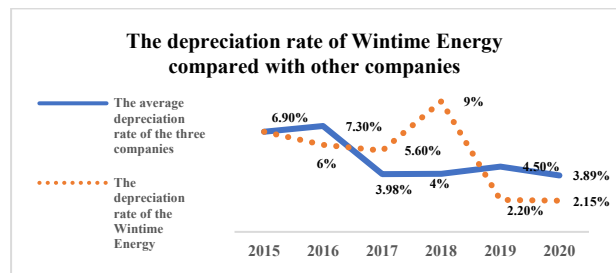


Figure 15 The depreciation rate compared with other companies

From the above tables, the depreciation life of buildings was generally 30-45 years, but Wintime Energy was extended to 50 years. The depreciation life of generator heating equipment was generally 20-25 years, but Wintime Energy has been adjusted to 30 years. The depreciation life of Wintime was far beyond the average level, with a higher level in the whole industry and constant for a long period, which also lacked rationality.

### 3.2. Effect of earning management by changing accounting estimation

#### 3.2.1. Impacts of change in accounting estimate on the stock price.

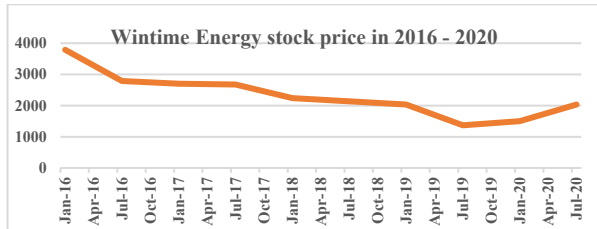


Figure 16 Wintime Energy stock price in 2016 - 2020

The above diagram showed that the stock price of Wintime Energy was on an obvious downward trend since 2018. The situation was difficult to effectively control due to the capital turnover problems, like the serious liabilities and significant losses. In July 2019, the stock price of Wintime Energy nearly reached the lowest, at 2.06 RMB per share. However, after changing the accounting estimate, the depreciation amount was greatly reduced, and the profit increased dramatically. It was a successful way to improve the operating condition of the company's external report, enhanced the confidence of investors, and rebounded the stock price.

#### 3.2.2. Impacts of change in accounting estimate on financial indicators

The fixed asset turnover rate of Wintime Energy did not fluctuate significantly, only had a slight downward trend, dropping from 4.22 in 2018 to 3.81 in 2019. The total asset turnover rate was also in the same trend, decreasing by 0.22. It indicated that the overall use efficiency of fixed assets and profitability decreased slightly, but the fluctuations were not significant. Besides, the gross profit margin on sales declined seriously from 2018, which was affected by the general environment of the electric market. Although there was a slight recovery in 2019, it was still lower than the previous year. The rate of cost of goods sold decreased significantly in 2019, from 10.03% to 8.02%, which occurred a big difference even compared with 2017. In this case, Wintime energy was lost in two consecutive years in 2017 and 2018. However, even though the service efficiency of fixed assets has not a significant change in 2019, the positive Return on Equity was achieved by extending the depreciation life to reduce the operating cost.

By judging the profit contribution rate, which is the proportion of the increased profit accounted for the net profit of the year, can know the significant impact of the change on corporate profits. Wintime Energy make a net profit of 60 million RMB through changing accounting estimates in 2019, while there is a loss of 61.21 million RMB in the current period before changing. Therefore, this change achieves a profit contribution increase of 75%.

The increase in net profit reverses the situation of serious loss, achieving the objective of earnings management.

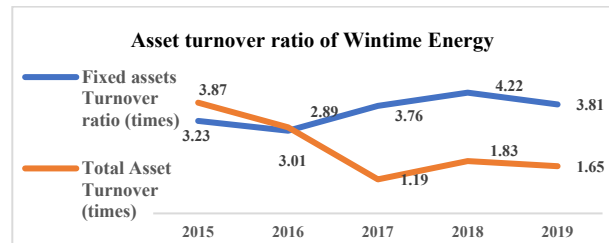


Figure 17 Asset turnover ratio of Wintime Energy in 2015-2019

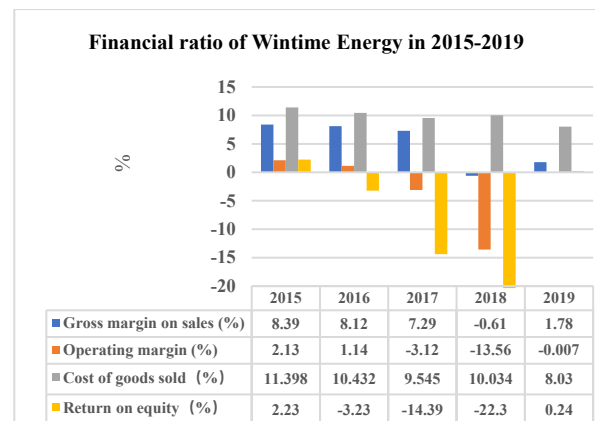


Figure 18 The financial ratio of Wintime Energy in 2015-2019

Table 2. Profit contribution from changing accounting estimate

Ten thousand RMB	2019
Increase of the net profit after changing	7019
Current net profit	-6121
The current profit contribution rate	75.23%

## 4. CONCLUSIONS

The main purposes of Wintime Energy's accounting estimate changes are manipulating profits and alleviating capital flow problems. This paper makes the following suggestions: Firstly, improve the supervision of changing accounting estimates. The government should introduce relevant systems and policies, to strengthen the sanction and punishment of enterprises' behaviour, which adjust profits and manipulate financial statements by changing accounting estimates. Besides, the beginning and end times of changing accounting estimates should also be supervised and managed. Secondly, limit the depreciation life of fixed assets. The relevant system to make the provisions and supervision from the government of the depreciation way and period of fixed assets should be more focused. Accounting standards should carry out relevant institutional constraints, such as the impairment reserves of fixed assets and other long-term assets are not allowed to turn back. However, the related restrictive

measures are not comprehensive and still need to be improved and strengthened. Lastly, enterprises should improve their ability to resist financial risks. Enterprises should solve the related problems by optimising their operation mode and financial management. Managers and accountants should enhance their professional abilities, such as predicting and scientific preventing financial risk, carrying out a suitable financial budget and investment analysis, adjusting the efficiency of operation by using financial data and financial indicators and improving the operation ability of enterprises etc.

## REFERENCES

- [1] Hastuti, T.D., Ghozali, I. and Yuyetta, E.N. (2016). The effect of International Financial Reporting Standards on the real earnings management and internal control structure as a moderating variable. *International journal of economics and financial issues*, 6(4), pp.1807–1814.
- [2] Jackson, A.B. (2018). *Discretionary Accruals: Earnings Management ... or Not?* Abacus (Sydney), 54(2), pp.136–153.
- [3] Li, L., Hwang, N.-C.R. and Nartea, G.V. (2021). Earnings management and earnings predictability: A quantile regression approach. *Australian Journal of Management*, 46(3), pp.389–408.
- [4] DECHOW, P.M. et al. (2012). Detecting Earnings Management: A New Approach. *Journal of accounting research*, 50(2), pp.275–334.
- [5] Nieken, P. and Sliwka, D. (2015). Management Changes, Reputation, and ‘Big Bath’-Earnings Management. *Journal of economics & management strategy*, 24(3), pp.501–522.
- [6] Kliestik, T. et al. (2020). Advanced methods of earnings management: Monotonic trends and change-points under the spotlight in the Visegrad countries. *Oeconomia Copernicana*, 11(2), pp.371–400.
- [7] BAIK, B., FARBER, D.B. and LEE, S. (SUNGHAN). (2011). CEO Ability and Management Earnings Forecasts. *Contemporary accounting research*, 28(5), pp.1645–1668.
- [8] Cai, G., Li, W. and Tang, Z. (2018). Religion and the Method of Earnings Management: Evidence from China. *Journal of business ethics*, 161(1), pp.71–90
- [9] Bao, S.R. and Lewellyn, K.B. (2017). Ownership structure and earnings management in emerging markets—An institutionalized agency perspective. *International business review*, 26(5), pp.828–838.
- [10] Lo, K. (2008). Earnings management and earnings quality. *Journal of accounting & economics*, 45(2), pp.350–357.
- [11] AHEARNE, M.J. et al. (2016). Real Earnings Management in Sales. *Journal of accounting research*, 54(5), pp.1233–1266.
- [12] DURTSCHI, C. and EASTON, P. (2009). Earnings Management? Erroneous Inferences Based on Earnings Frequency Distributions. *Journal of accounting research*, 47(5), pp.1249–1281.
- [13] Bozanic, Z., Roulstone, D.T. and Van Buskirk, A. (2018). Management earnings forecasts and other forward-looking statements. *Journal of accounting & economics*, 65(1), pp.1–20.
- [14] Grieser, W., Hadlock, C.J. and Pierce, J.R. (2021). Doing good when doing well: evidence on real earnings management. *Review of accounting studies*, 26(3), pp.906–932.
- [15] Abernathy, J.L., Beyer, B. and Rapley, E.T. (2014). Earnings Management Constraints and Classification Shifting. *Journal of business finance & accounting*, 41(5-6), pp.600–626.
- [16] Beyer, A., Guttman, I. and Marinovic, I. (2019). Earnings management and earnings quality: Theory and Evidence. *The Accounting Review*, 94(4), pp.77–101.
- [17] Yung, K. and Root, A. (2019). Policy uncertainty and earnings management: International evidence. *Journal of business research*, 100, pp.255–267.
- [18] Yue, T. et al. (2014). The Block Optimizing Selection and Eco-Environmental Problems of China Shale Gas Exploration and Development. In *Advanced materials research*. pp. 1532–1540.
- [19] Young, O.R. et al. (2015). Institutionalized governance processes. Comparing environmental problem-solving in China and the United States. *Global environmental change*, 31, pp.163–173.
- [20] Zhong, H. et al. (2015). Energy-saving generation dispatch toward a sustainable electric power industry in China. *Energy Policy*, 83, pp.14–25.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

